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# Field Assessment of Air Barriers at the Building Envelope Systems Test (BEST) Laboratory – Phase 1

**September 2011**

**Prepared by**

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ORNL/TM-2012/435

Energy and Transportation Science Division

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# TABLE OF CONTENTS

1. Introduction ..... 1
2. BEST Laboratory ..... 1
   2.1. Laboratory Equipment ..... 2
3. Panel Material and Sensor Layout ..... 3
4. Experimental Procedures ..... 19
5. Results ..... 20
6. References ..... 42
Appendix A: North Panels ..... 43
Appendix B: East Panels ..... 91
Appendix C: South Panels ..... 139
Appendix D: West Panels ..... 187
Appendix E: Solar Radiation ..... 235
Appendix F: Wind Speed ..... 251
Appendix G: Rain ..... 267
Appendix H: Pressure Differential ..... 271

# Field Assessment of Air Barriers at the Building Envelope Systems Testing (BEST) Laboratory Phase 1

## 1. Introduction

The Buildings Technologies Research and Integration Center (BTRIC) at the Oak Ridge National Laboratory (ORNL) performed field evaluations of 24 wall panels with different types of air barriers that are commonly used in residential and commercial construction. Field assessments were conducted from September 2009 until August 2010 at the Building Envelope Systems Test (BEST) laboratory, which is located at Syracuse University, Syracuse, NY. This project is a cooperative research among ORNL, the Air Barrier Association of America (ABAA), Syracuse University, and the New York State Energy Research and Development Authority (NYSERDA).

The 12-month data presented in this report is intended to be used to evaluate the energy and moisture performance of wall panels as individual specimens. ORNL measurements complement air leakage rates reported by Syracuse University for each of the panels (Pradhan et al. 2011). The data should not be used to compare the performance of different air barrier types because the panels were not designed for this purpose. Multiple factors varied among specimens such as the building materials used and their layout, as well as the location of the panel in the test hut. Furthermore, the installation of the air barrier assemblies was performed by representatives from 11 manufacturers, which introduced discrepancies in workmanship.

## 2. BEST Laboratory

The BEST lab is a two-story facility where up to 34 wall panels can be exposed to controlled indoor conditions (i.e., temperature) and the outdoor environment (Figure 1). The laboratory is equipped with a weather station that monitors temperature, relative humidity, solar radiation, rain accumulation, wind speed and direction, and atmospheric pressure.

Figure 1. Building Envelope Systems Testing (BEST) lab.

## 2.1. Laboratory Equipment

Laboratory monitoring instruments include:

1. Temperature: Honeywell/Fenwal 192-103LET-A01 thermistor (± 0.2% accuracy).

2. Relative humidity: Honeywell HIH-4000 Series (± 3.5% accuracy and ± 0.5% repeatability).

3. Dataloggers: Campbell Scientific CR1000.

4. Multiplexers: Campbell Scientific AM16/32.

5. Pressure: Energy Conservatory Automated Performance Testing system (resolution: 0.1 Pa; accuracy: ± 1% of reading or twice the resolution, whichever is greater)

Weather station instruments are:

1. Temperature: Campbell Scientific CS215 (accuracy: ± 0.3 °C at 25 °C; ± 0.4 °C over 25 °C to 40 °C; ± 0.9 °C over 40 °C to 70 °C).

2. Relative humidity: Campbell Scientific CS215 (accuracy at 25 °C: ± 2% over 10% to 90% RH, and ± 4% over 90% to 100% RH).

3. Wind speed: Gill Windsonic 1 (± 2% accuracy at 12 m/s).

4. Wind direction: Gill Windsonic 1 (± 3° accuracy at 20 m/s).

5. Rainfall: Texas Electronics TE525WS (± 1% accuracy at up to 2.54 cm/hr).

6. Total solar radiation flux: Hukseflux LP02.

7. Solar radiation on vertical surfaces: Campbell Scientific LI200X pyranometer.

8. Atmospheric pressure: Vaisala CS106 (accuracy: ± 0.3 mb at 20 °C; ± 0.6 mb over 20 °C to 40 °C; ± 1.5 mb over 40 °C to 60 °C).

Monitoring instruments within wall panels:

1. Temperature: Honeywell/Fenwal 192-103LET-A01 thermistor (± 0.2% accuracy). When installed in conjunction with a relative humidity sensor and in a location where the instruments could get wet (e.g., behind the cladding), the sensors were protected with a membrane that was impermeable to water and had a high water vapor permeability.

2. Relative humidity: Honeywell HIH-4000 Series (± 3.5% accuracy and ± 0.5% repeatability). When installed in a location where the instruments could get wet (e.g., behind the cladding), the sensors were protected with a membrane that was impermeable to water and had a high water vapor permeability.

3. Heat flux: Concept Engineering Model F-002-4.

## 3. Panel Material and Sensor Layout

Twenty-four panels were monitored in Phase 1 at the BEST lab. Figure 2 illustrates the arrangement of the panels in the building as well as the air barrier type utilized in them. The materials that were used in each of the panels are described in Table 1 and in more detail in Figures 3 to 24.

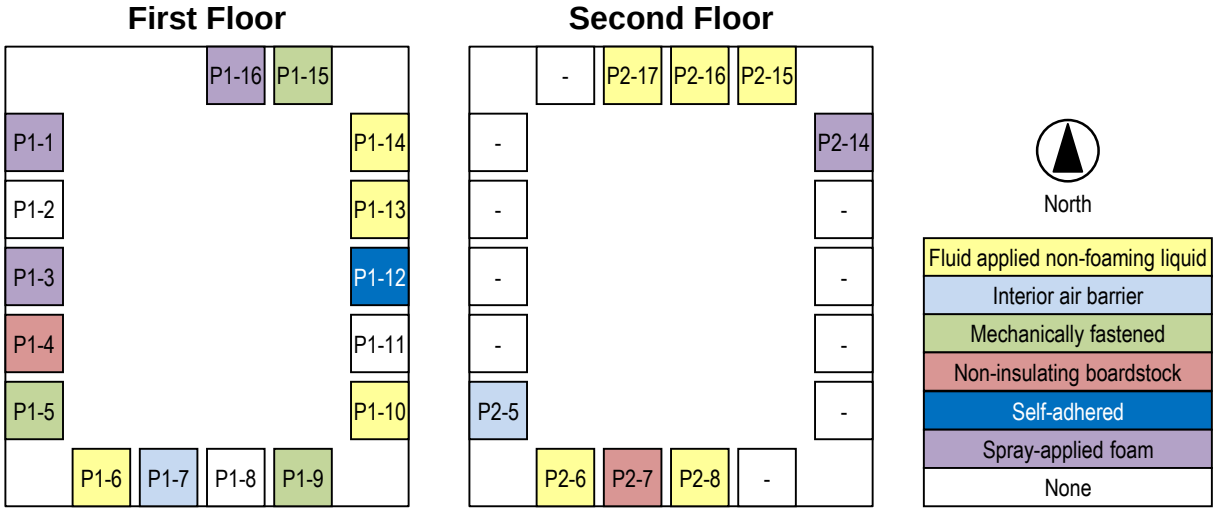



Figure 2. Panel layout at the BEST lab. The figure also illustrates the air barrier types utilized in the panels.

Table 1. Building materials and sensor layout in wall panels[a].

| Panel | ID[b] | Air Barrier Type | Cladding | Structural Framing | Exterior Sheathing | Insulation | Sensor Layout[c] |
|---|---|---|---|---|---|---|---|
| P1-1 | AB13 | Spray-applied foam | Brick | 8” CMU | - | 2 ½” Spray foam | C |
| P1-2 | - | No air barrier (control) | - | 8” split-faced CMU | - | - | D |
| P1-3 | AB27 | Spray-applied foam | Vinyl siding | 2×6 wood studs | OSB | Spray foam | B |
| P1-4 | AB16 | Non-insulating boardstock | Stone | 2×6 wood studs | OSB | R-21 Faced fiberglass | A |
| P1-5 | AB19 | Mechanically fastened membrane | Stone | 6” steel studs | Gypsum w/ fiberglass mat | R-21 Faced fiberglass | A |
| P1-6 | AB9 | Fluid-applied non-foaming liquid | Brick | 6” steel studs | Gypsum w/ fiberglass mat | R-10 XPS rigid foam | A |
| P1-7 | AB23 | Interior air barrier | Brick | 6” steel studs | Gypsum w/ fiberglass mat | R-21 Unfaced fiberglass and 1” XPS rigid insulation | A |
| P1-8 | - | No air barrier (control) | Brick | 6” steel studs | Gypsum w/ fiberglass mat | R-21 Faced fiberglass | B |
| P1-9 | AB6 | Mechanically fastened membrane | Brick | 6” steel studs | Gypsum w/ fiberglass mat | R-21 Faced fiberglass | B |
| P1-10 | AB24 | Fluid-applied non-foaming liquid | Brick | 8” CMU | - | R-10 XPS Rigid foam | C |
| P1-11 | - | No air barrier (control) | Brick | 8” CMU | - | - | C |
| P1-12 | AB20 | Self-adhered membrane | Brick | 6” steel studs | Gypsum w/ fiberglass mat | R-10 XPS Rigid foam | A |
| P1-13 | AB21 | Fluid-applied non-foaming liquid | Brick | 6” steel studs | Gypsum w/ fiberglass mat | R-21 Faced fiberglass | A |
| P1-14 | AB2 | Fluid-applied non-foaming liquid | Brick | 6” steel studs | Gypsum w/ fiberglass mat | R-21 Faced fiberglass | A |
| P1-15 | AB25 | Mechanically fastened membrane | Thin brick | 6” steel studs | Gypsum w/ fiberglass mat | R-21 Faced fiberglass | A |
| P1-16 | AB13 | Spray-applied foam | Brick | 6” steel studs | Gypsum w/ fiberglass mat | 2 ½” Spray foam | A |
| P2-5 | AB23 | Interior air barrier | Fiber cement siding | 2×6 wood studs | - | R-21 Unfaced fiberglass | B |
| P2-6 | AB10 | Fluid-applied non-foaming liquid | Metal panel | 6” steel studs | Gypsum w/ fiberglass mat | R-21 Faced fiberglass | A |
| P2-7 | AB16 | Non-insulating boardstock | Fiber cement siding | 2×6 wood studs | OSB | R-21 Faced fiberglass | B |
| P2-8 | AB7 | Fluid-applied non-foaming liquid | Stucco | 6” steel studs | Gypsum w/ fiberglass mat | R-21 Faced fiberglass | A |
| P2-14 | AB26 | Spray-applied foam | Vinyl siding | 2×6 wood studs | - | Spray foam | A |
| P2-15 | AB4 | Fluid-applied non-foaming liquid | Fiber cement siding | 2×6 wood studs | OSB | R-21 Faced fiberglass | A |
| P2-16 | - | No air barrier (control) | Stucco | 6” steel studs | Gypsum w/ fiberglass mat | R-21 EPS rigid foam | B |
| P2-17 | AB8-2 | Fluid-applied non-foaming liquid | Stucco | 6” steel studs | Gypsum w/ fiberglass mat | R-21 EPS rigid foam | B |

a. All panels, except P1-2, had drywall with latex paint on their interior side. In P1-2, the interior side of the CMU was coated with latex paint.
b. Panel ID used in the report “Air Leakage Measurement of 25 Wall Assemblies with Different Types of Air Barriers” (Pradhan et al. 2011).
c. Sensor layouts are depicted in Figures 25 through 28.

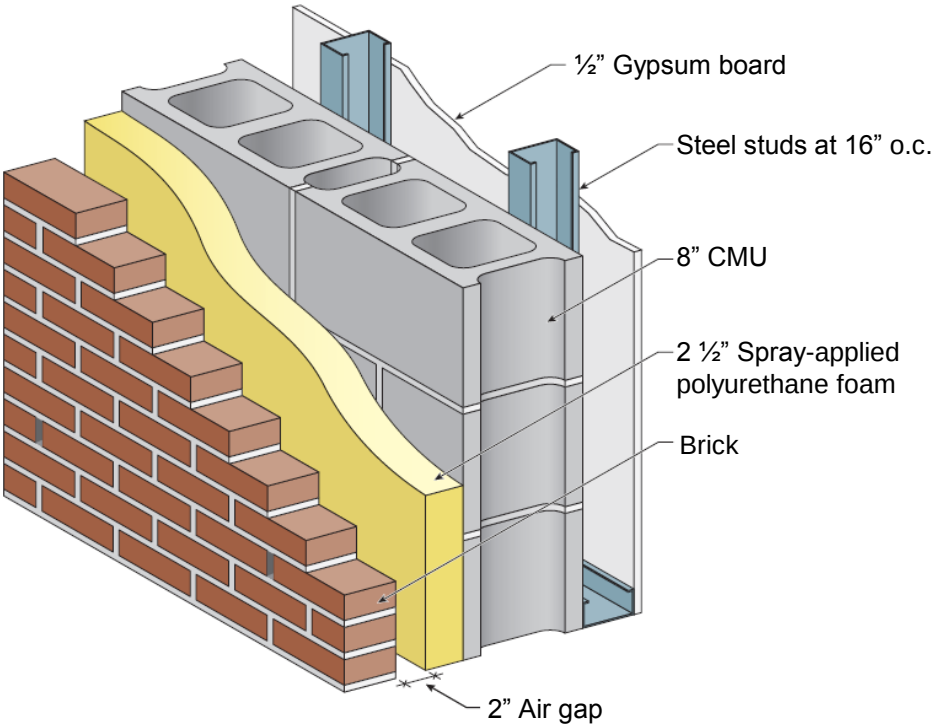



Figure 3. Material layout in panel P1-1.

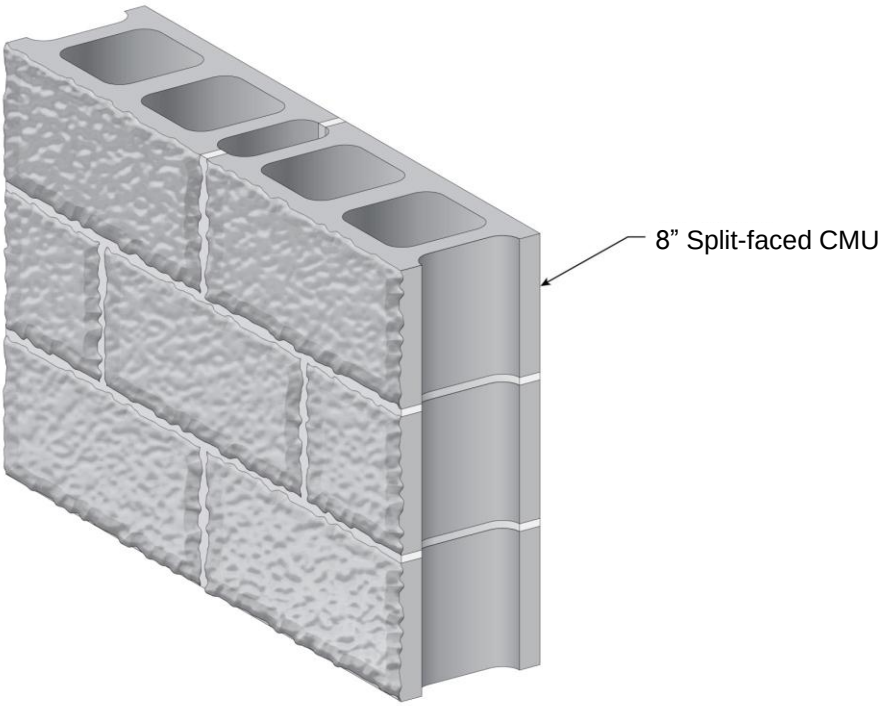



Figure 4. Material layout in panel P1-2 (control).

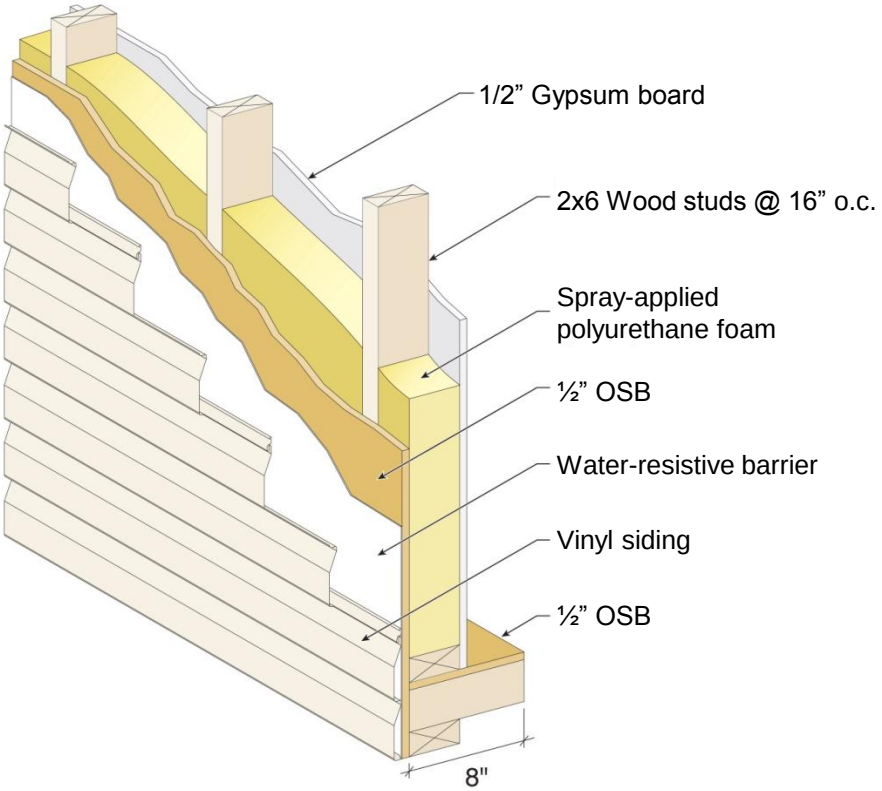



Figure 5. Material layout in panels P1-3 and P2-14.

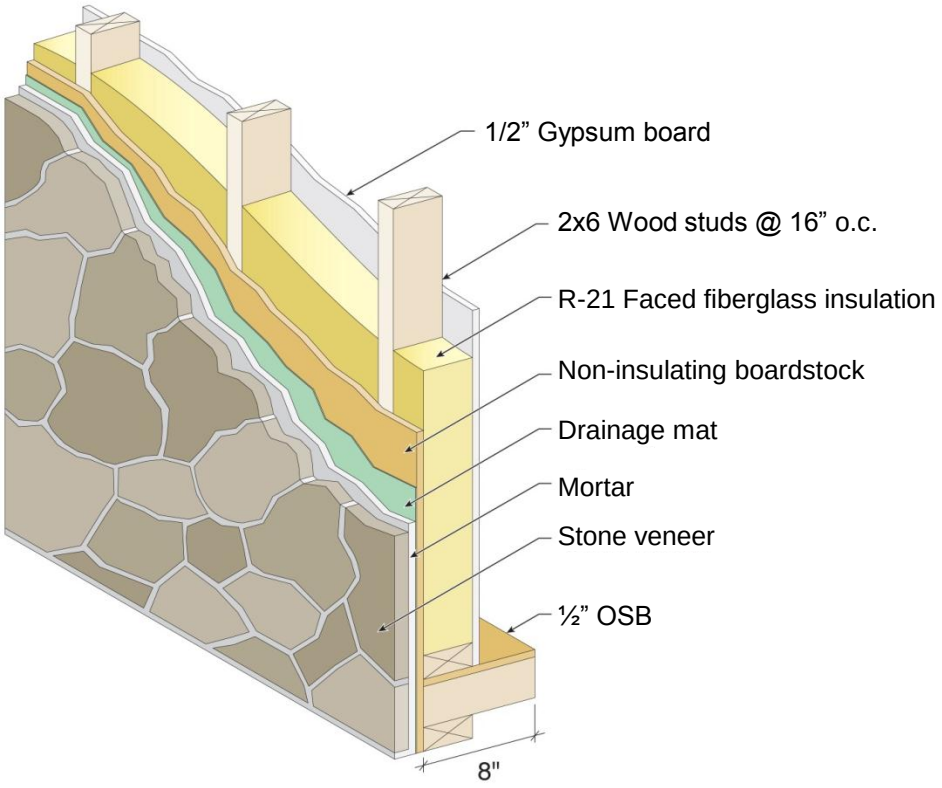



Figure 6. Material layout in panel P1-4

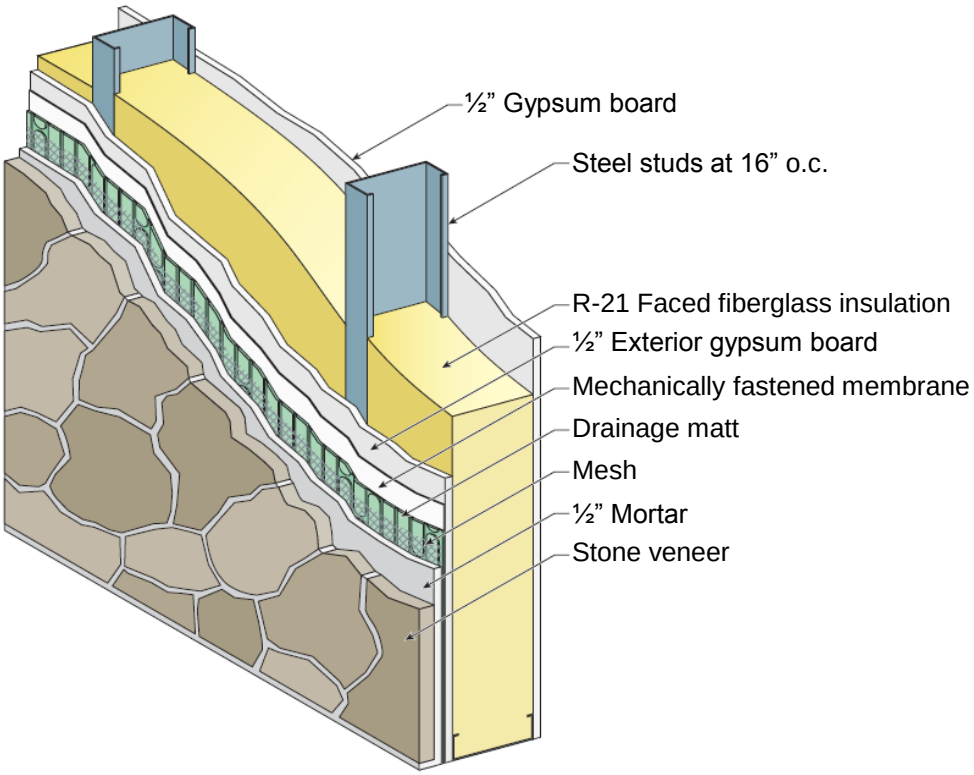



Figure 7. Material layout in panel P1-5.

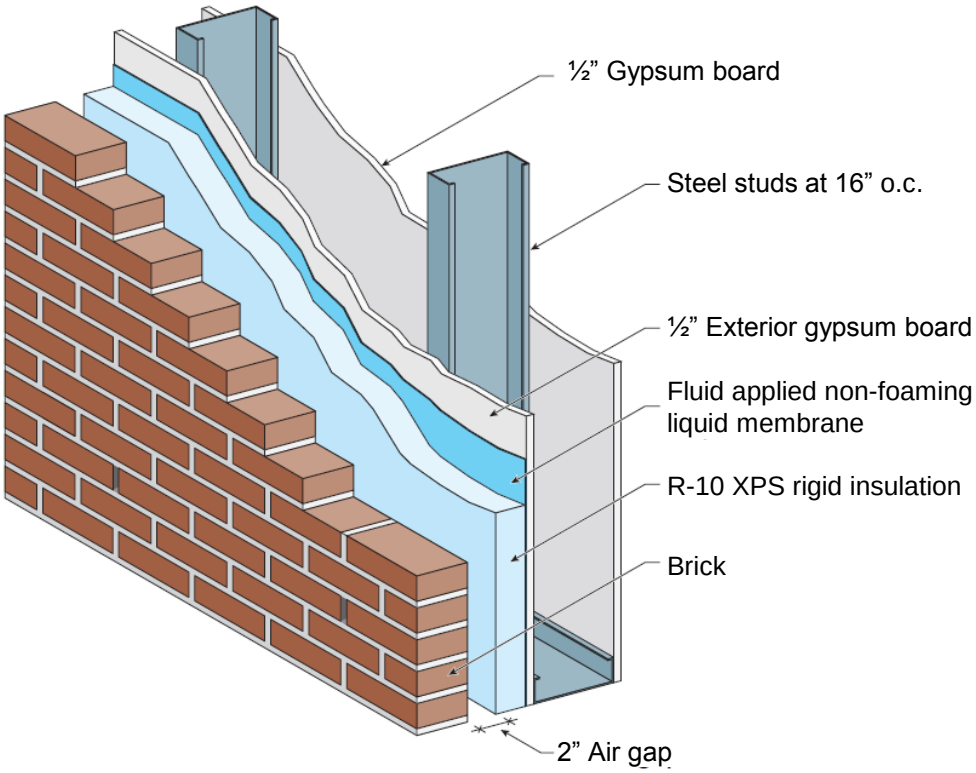



Figure 8. Material layout in panel P1-6.

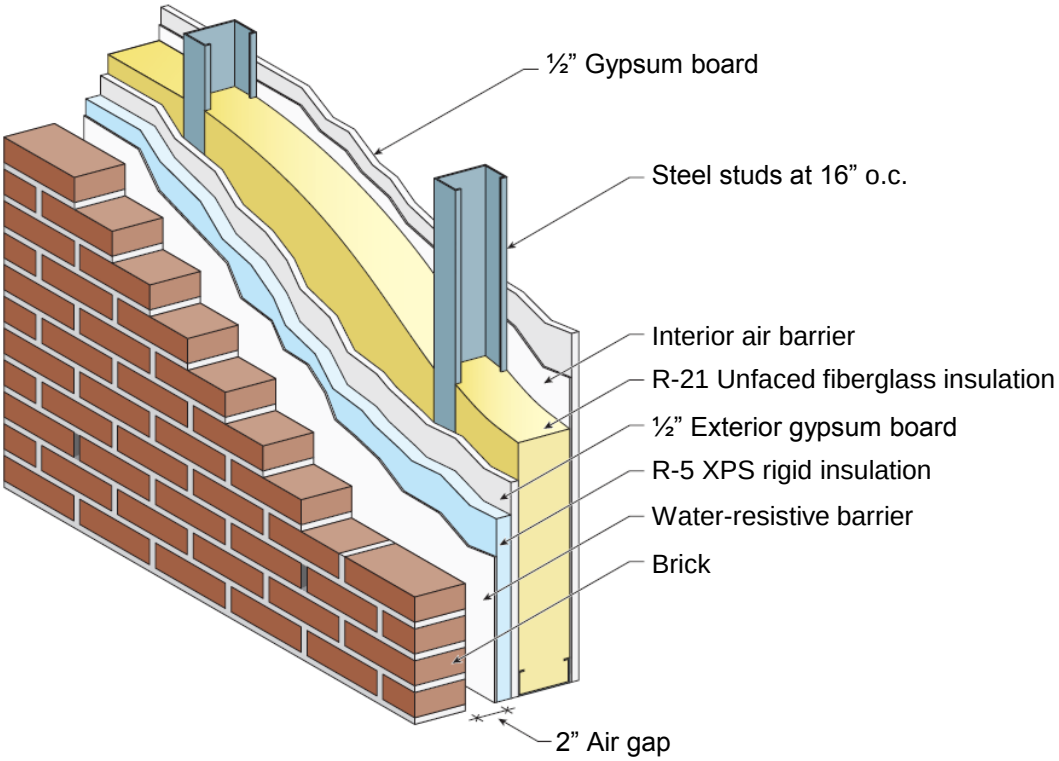



Figure 9. Material layout in panel P1-7.

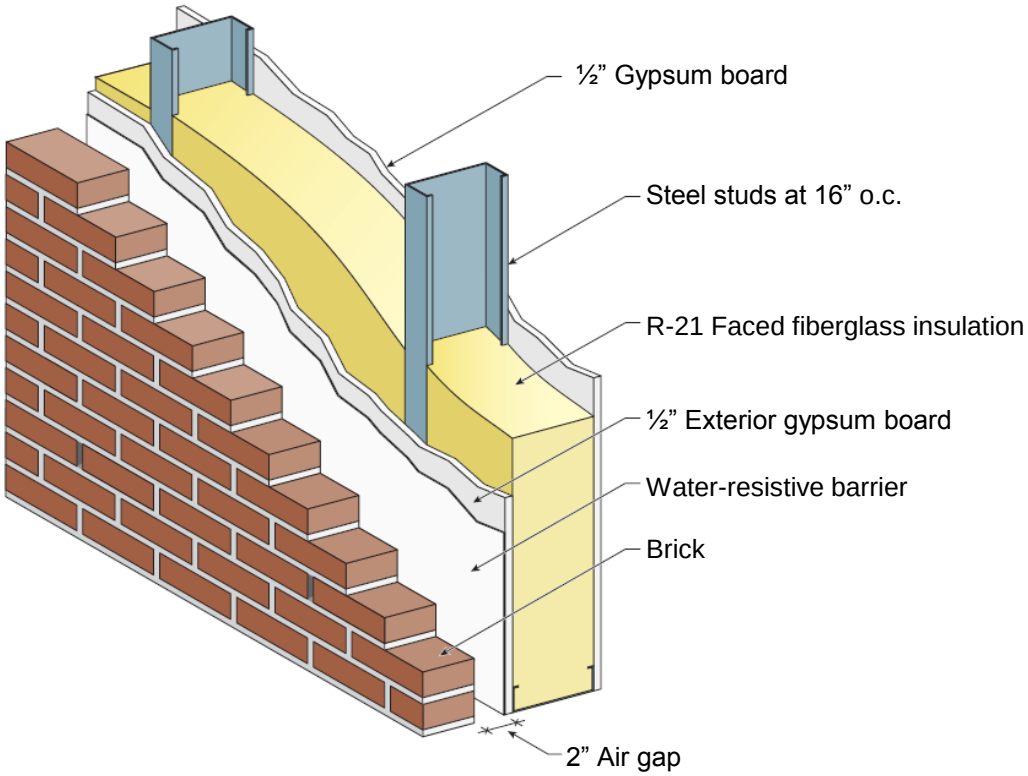



Figure 10. Material layout in panel P1-8 (control).

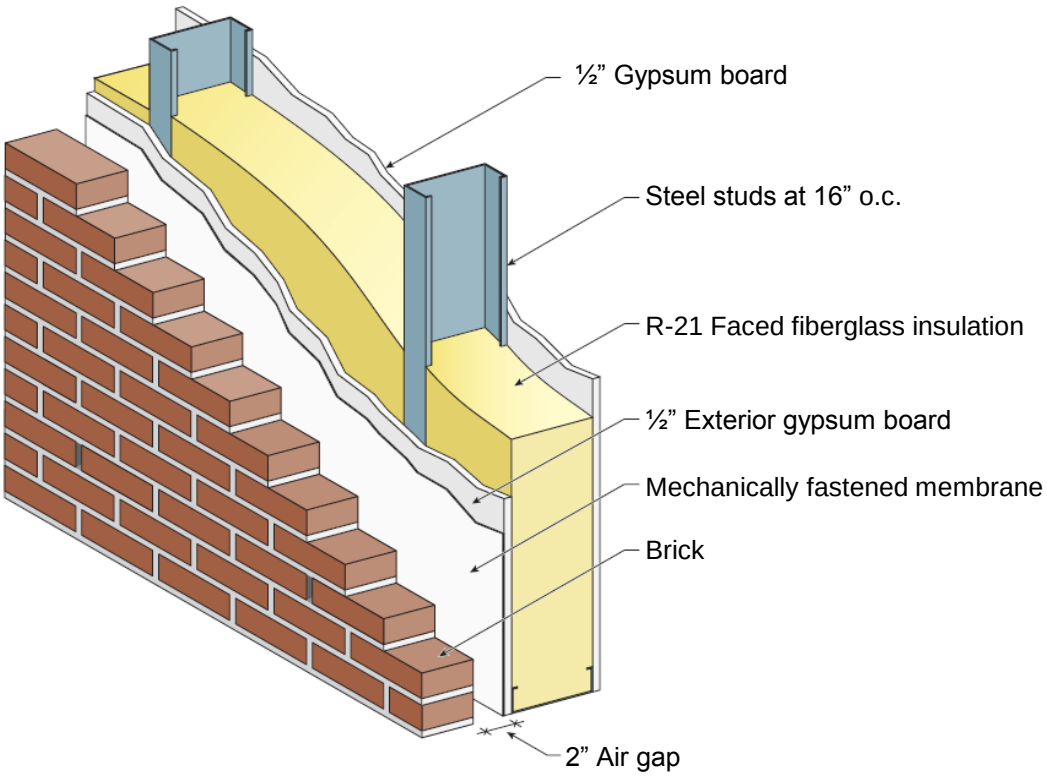



Figure 11. Material layout in panel P1-9.

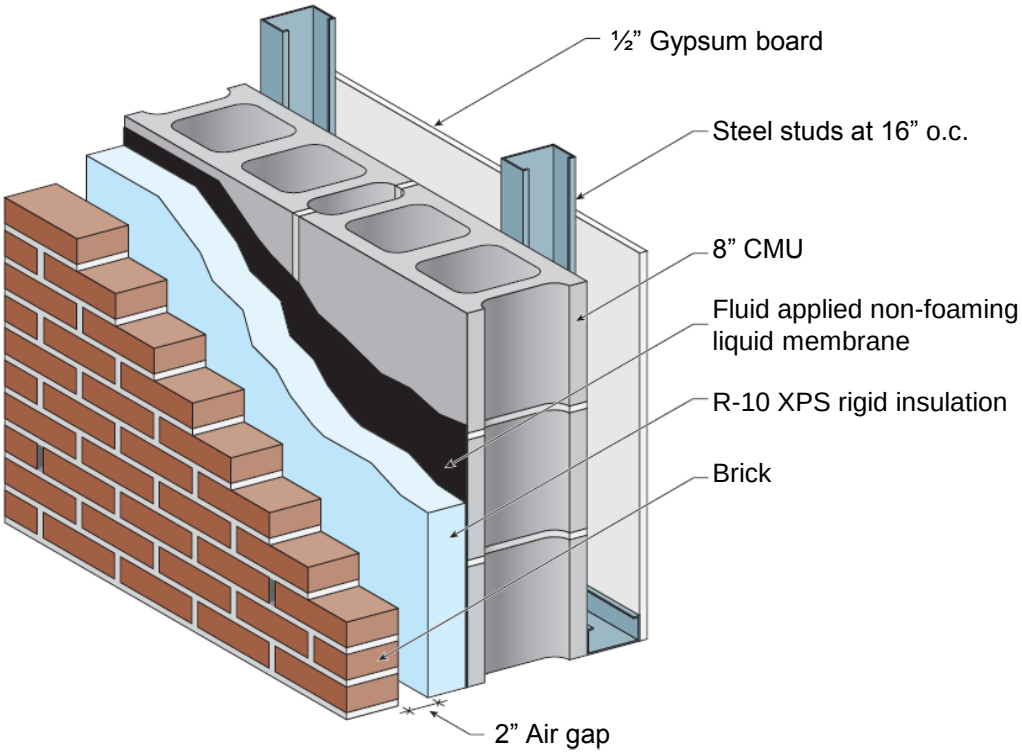



Figure 12. Material layout in panel P1-10.

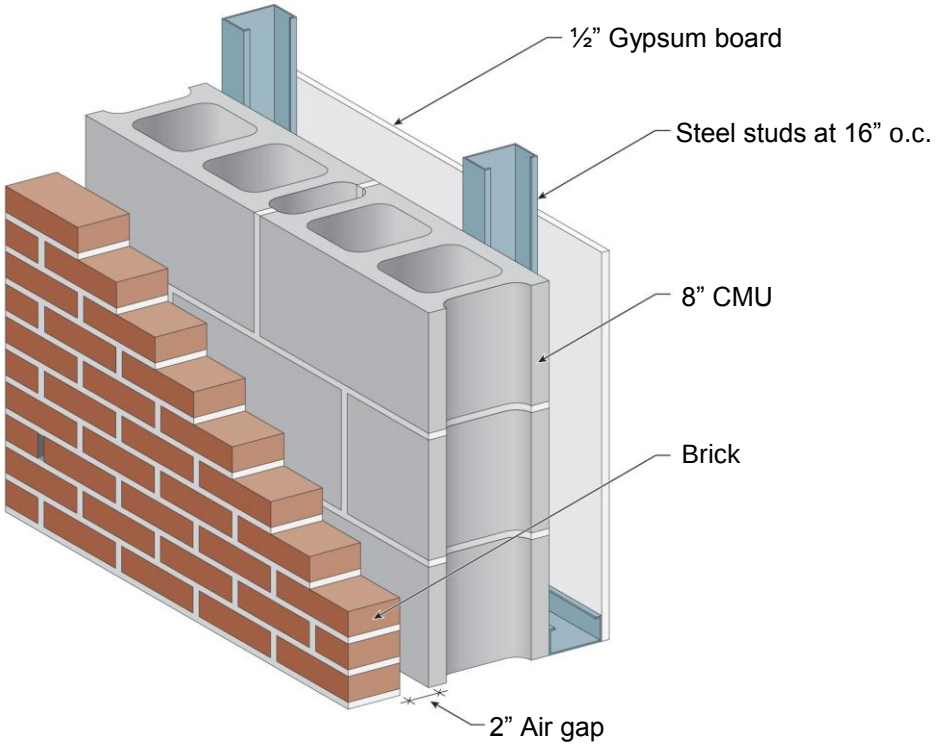



Figure 13. Material layout in panel P1-11 (control).

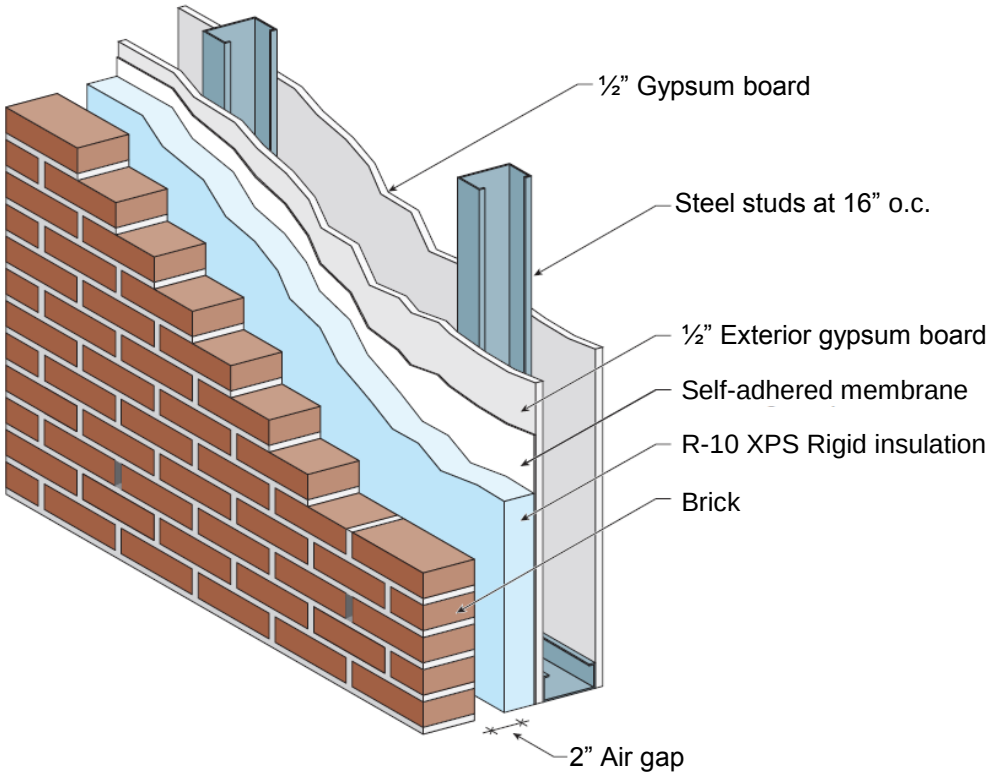



Figure 14. Material layout in panel P1-12.

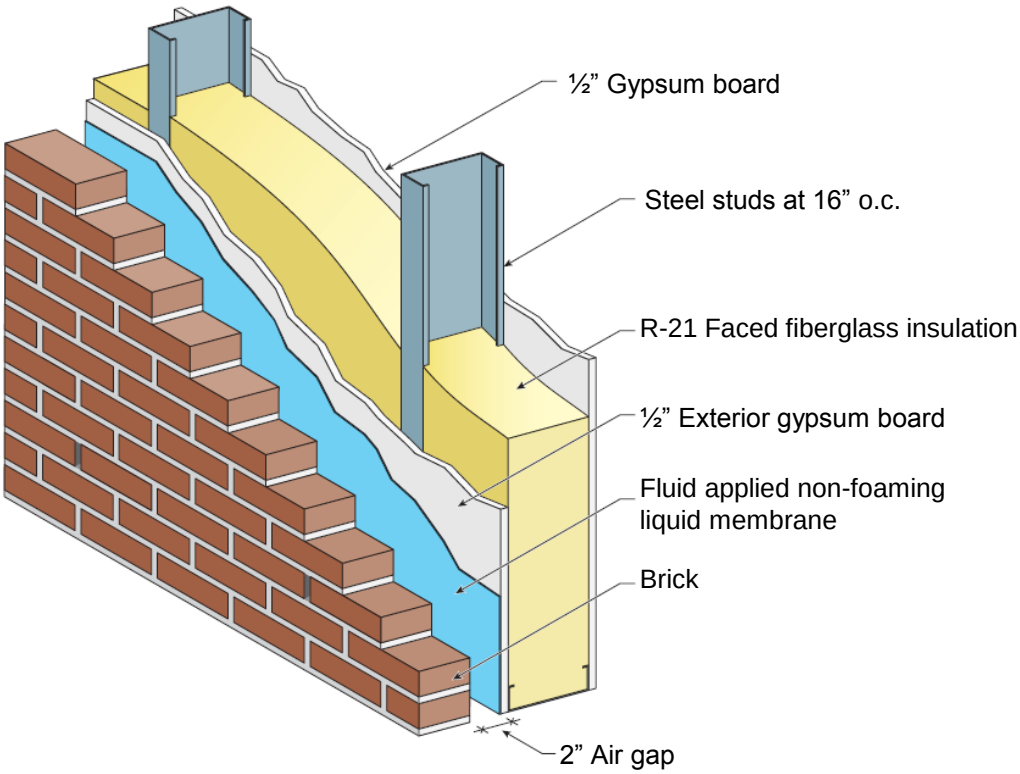



Figure 15. Material layout in panels P1-13 and P1-14.

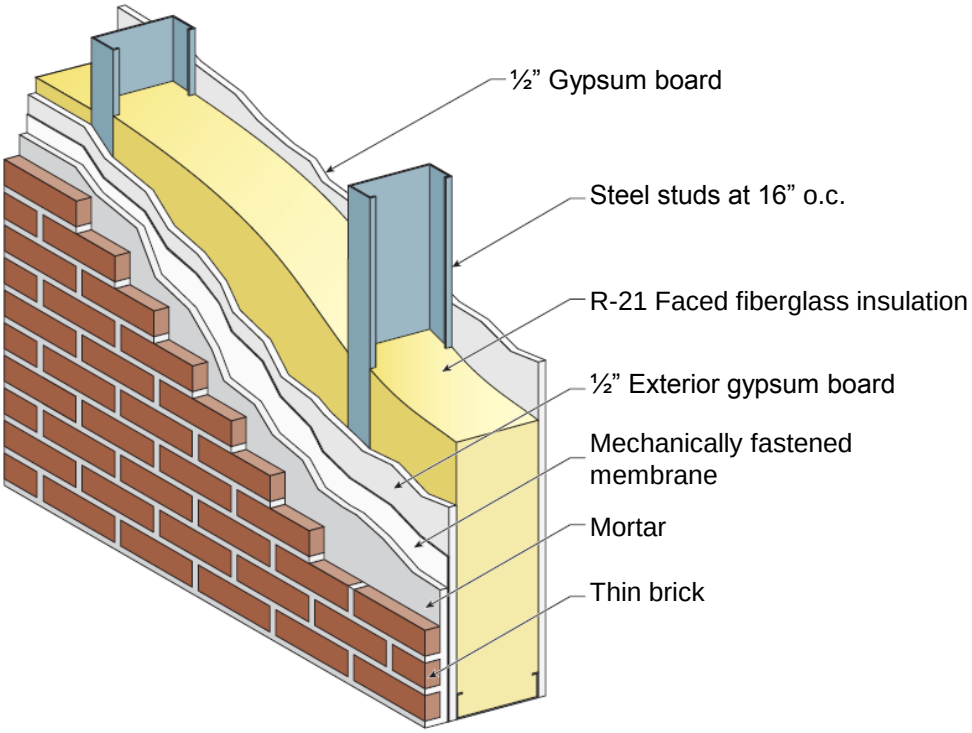



Figure 16. Material layout in panel P1-15.

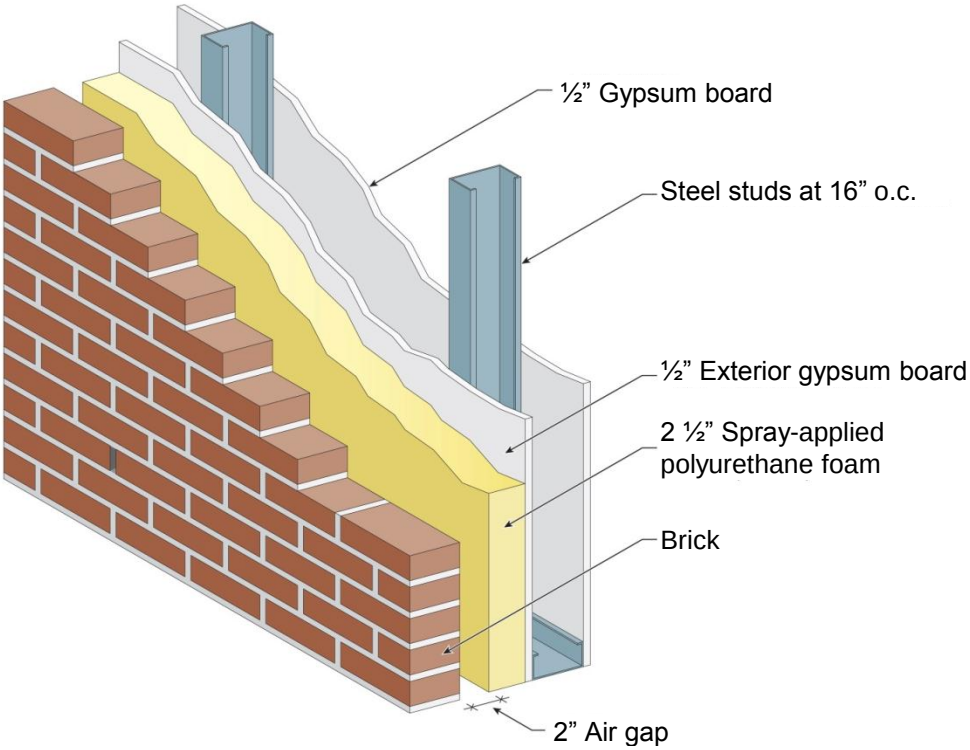



Figure 17. Material layout in panel P1-16.

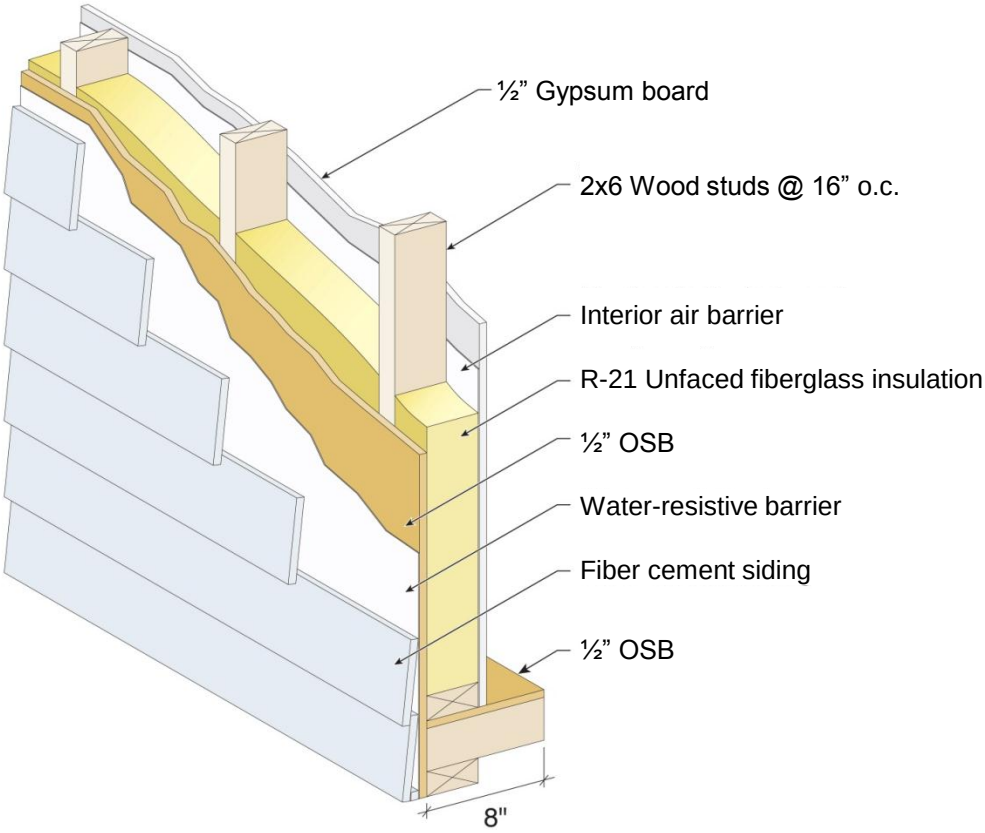



Figure 18. Material layout in panel P2-5.

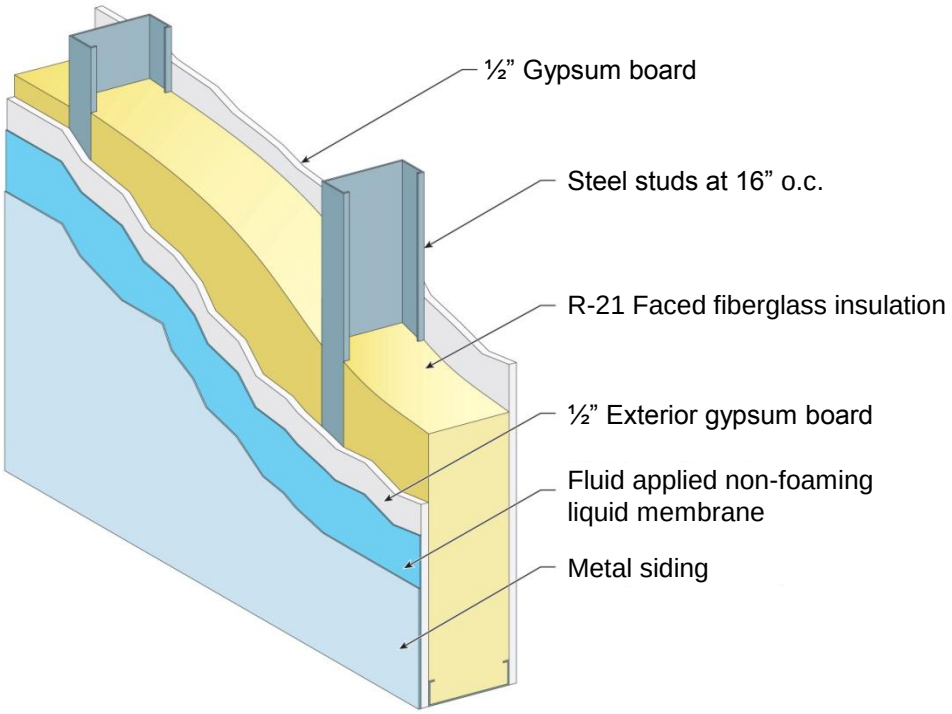



Figure 19. Material layout in panel P2-6.

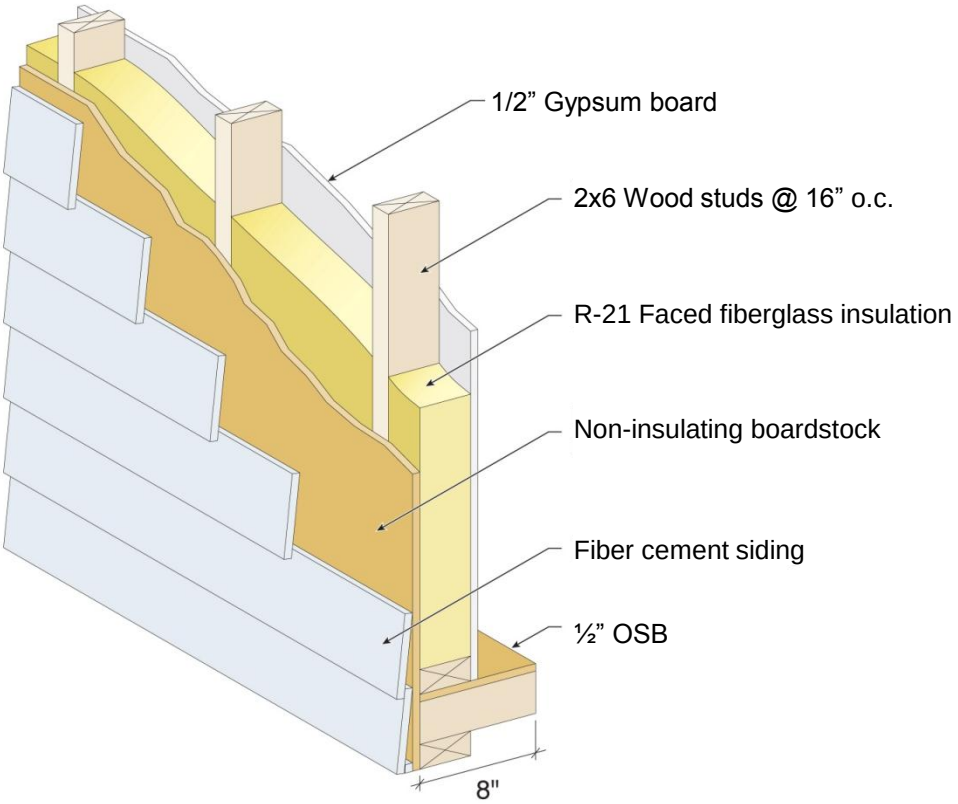



Figure 20. Material layout in panel P2-7.

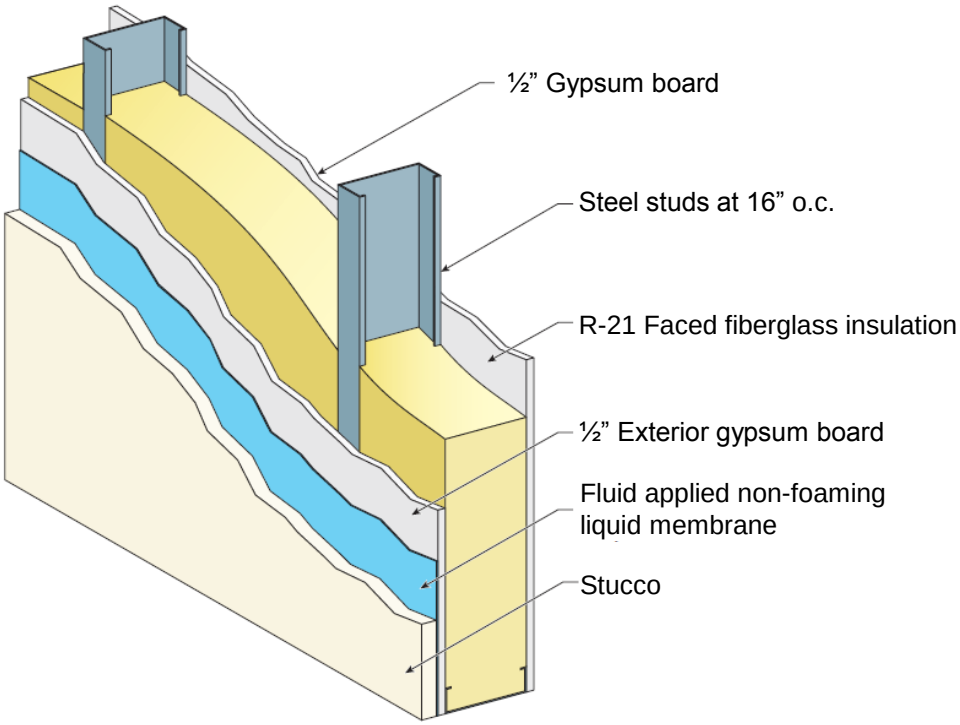



Figure 21. Material layout in panel P2-8.

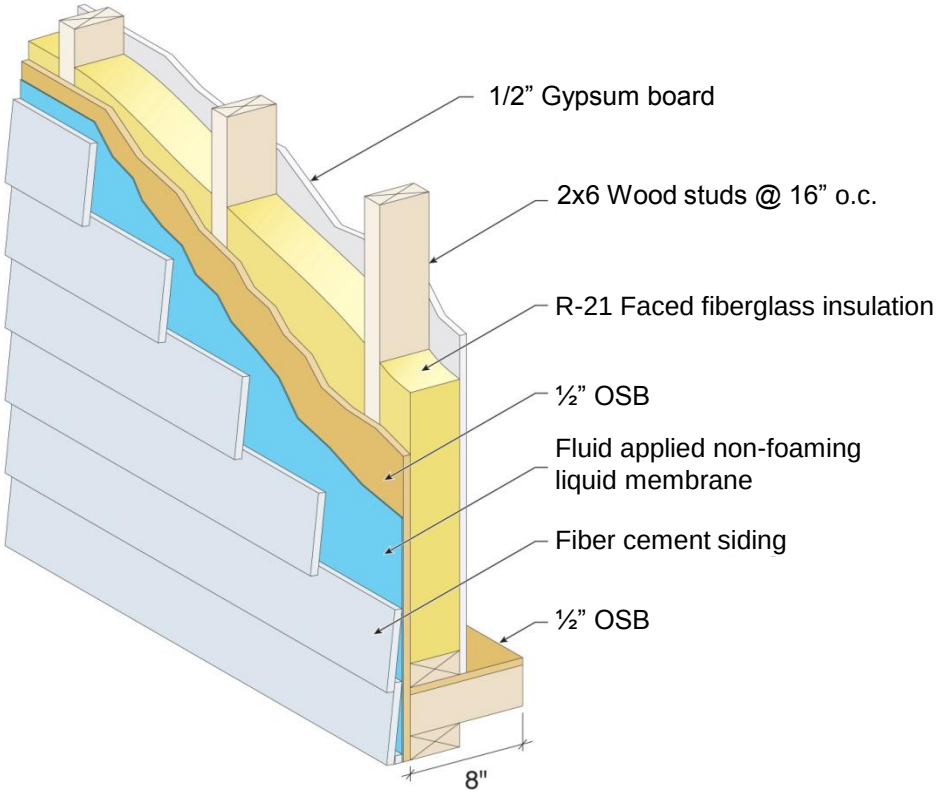



Figure 22. Material layout in panel P2-15.

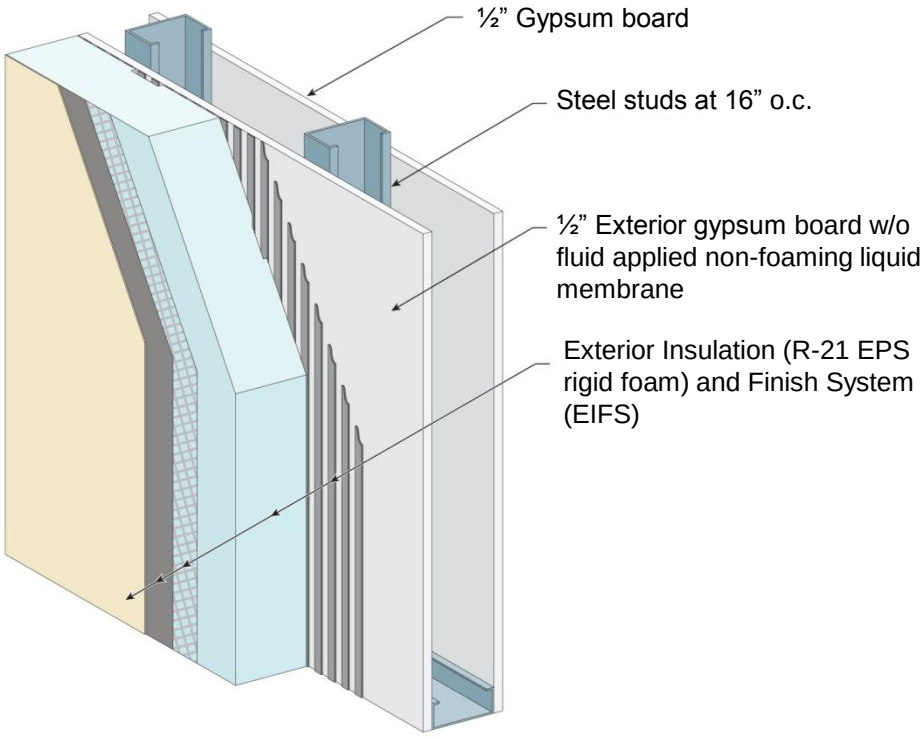



Figure 23. Material layout in panel P2-16 (control).

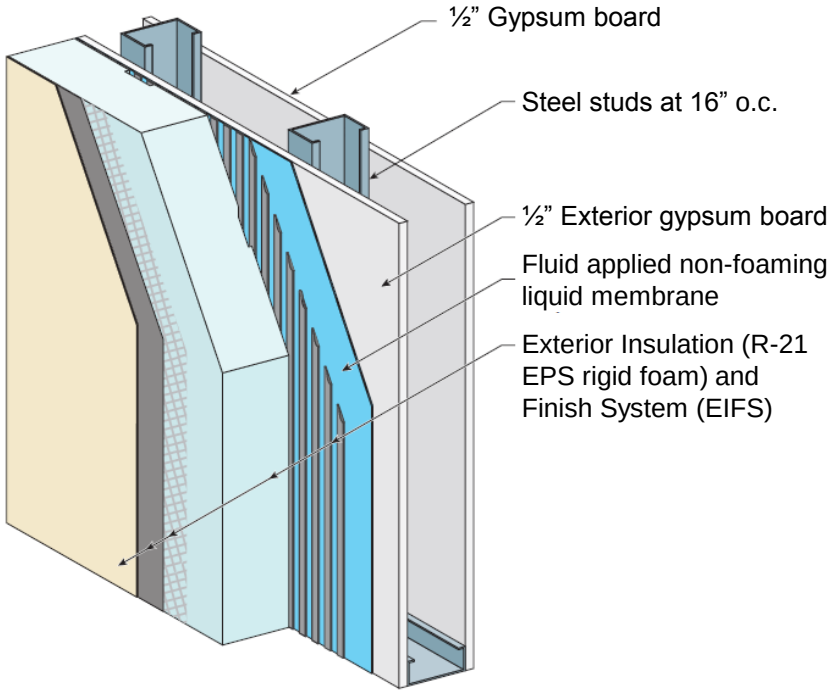



Figure 24. Material layout in panel P2-17.

The four layouts that were used with the temperature, relative humidity and heat flux sensors are illustrated in Figures 25 through 28. In these figures, "exterior" indicates that the instrument was on the outdoor side of the material, while "interior" implies that the sensor was on the indoor side of the member. The sensor layout used in each of the panels is described in Table 1.

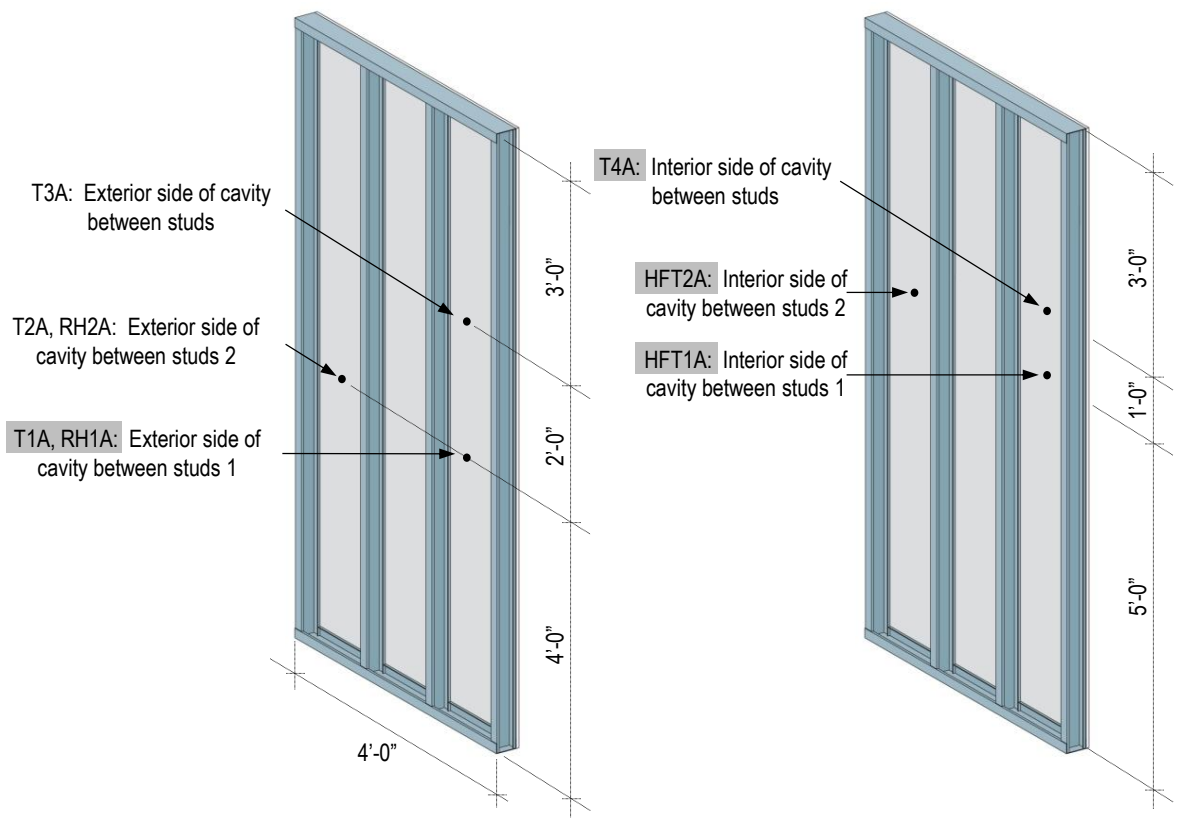



Figure 25. Sensor layout A.

Notes:

1. Data from sensors highlighted in gray are summarized in Tables 2 to 6 and are plotted in Appendixes A through D.
2. Sensor location
    a. "Exterior" indicates that the sensor was on the outdoor side of the material.
    b. "Interior" implies that the sensor was on the indoor side of the member.
3. Cavity insulation is not show for clarity.
4. Abbreviations: HFT: heat flux transducer; RH: relative humidity sensors; T: temperature sensors.

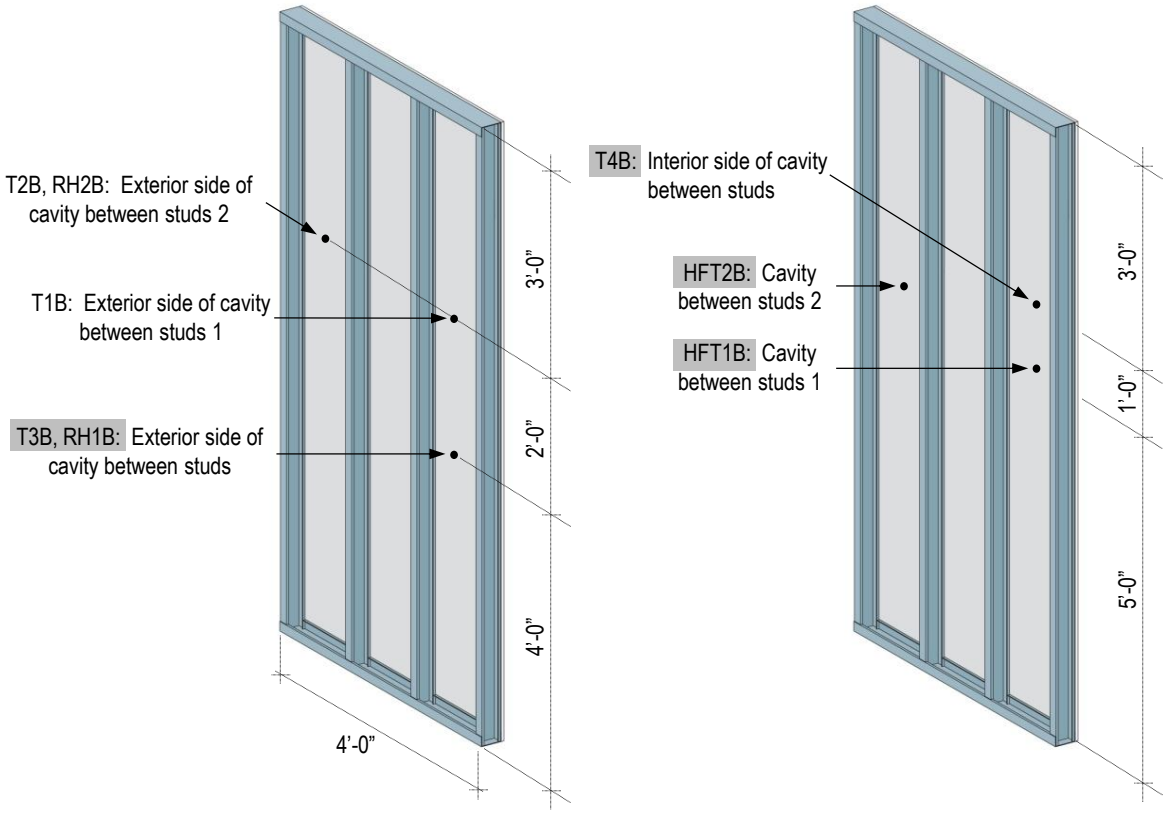



Figure 26. Sensor layout B.

Notes:

1. Data from sensors highlighted in gray are summarized in Tables 2 to 6 and are plotted in Appendixes A through D.
2. Sensor location
    a. "Exterior" indicates that the sensor was on the outdoor side of the material.
    b. "Interior" implies that the sensor was on the indoor side of the member.
3. Cavity insulation is not show for clarity.
4. Abbreviations: HFT: heat flux transducer; RH: relative humidity sensors; T: temperature sensors.

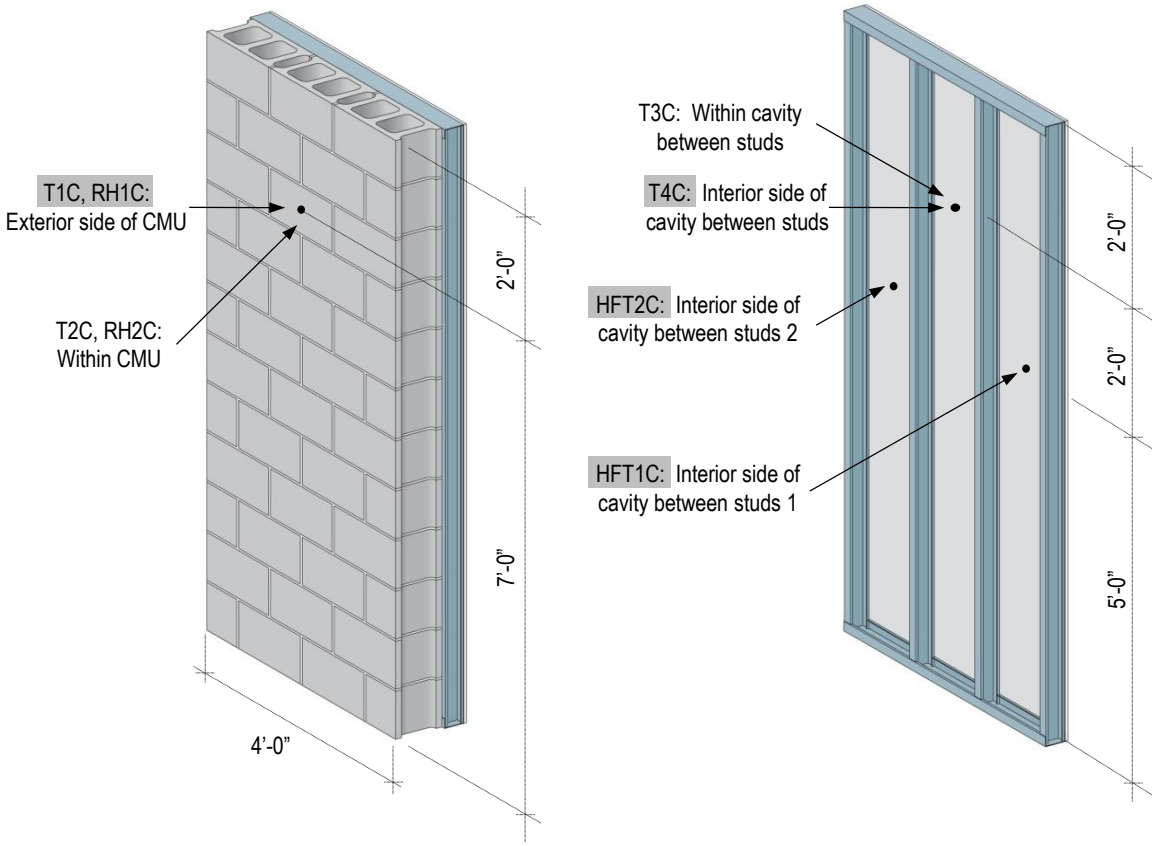



Figure 27. Sensor layout C.

Notes:

1. Data from sensors highlighted in gray are summarized in Tables 2 to 6 and are plotted in Appendixes A through D.
2. Sensor location
    a. "Exterior" indicates that the sensor was on the outdoor side of the material.
    b. "Interior" implies that the sensor was on the indoor side of the member.
    c. Sensors within the CMU and stud cavity were located at mid-depth.
3. Abbreviations: HFT: heat flux transducer; RH: relative humidity sensors; T: temperature sensors.

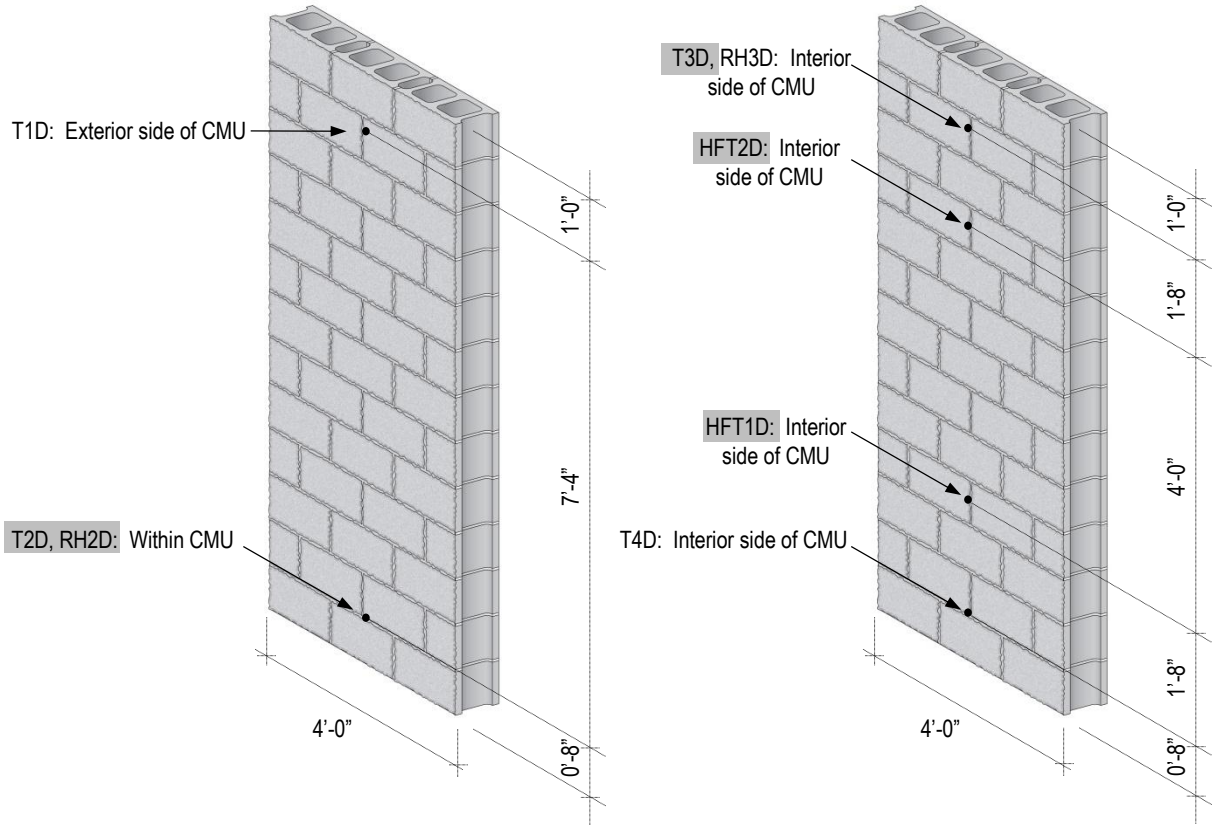



Figure 28. Sensor layout D

Notes:

1. Data from sensors highlighted in gray are summarized in Tables 2 to 6 and are plotted in Appendixes A through D.
2. Sensor location
    a. "Exterior" indicates that the sensor was on the outdoor side of the material.
    b. "Interior" implies that the sensor was on the indoor side of the member.
    c. Sensors within the CMU and stud cavity were located at mid-depth.
    d. Sensors shown as triangles were located on the interior side of the CMU.
3. Abbreviations: HFT: heat flux transducer; RH: relative humidity sensors; T: temperature sensors.

# 4. Experimental Procedures

Data from all sensors, except from pressure monitors, were scanned every minute and are reported as hourly averages. Pressure measurements were collected and are reported every minute. Temperature and relative humidity measurements collected indoors and from the specimens were utilized to estimate water vapor pressure based on equations from the 2005 ASHRAE Handbook – Fundamentals (ASHRAE 2005). Heat flux data from the two transducers were averaged and used to calculate cooling and heating loads.

# 5. Results

Monthly data from temperature, relative humidity and heat flux sensors that are highlighted in gray in Figures 25 through 28 were grouped based on panel orientation and are summarized in Tables 2 to 6. These tables also include indoor and outdoor measurements. Figures 29 through 36 show the monthly contribution to the cooling and heating loads from each of the panels. Additionally, Figures 37 and 38 indicate their respective annual contributions. Note that these heating and cooling load estimates were obtained from a section of the test panel; consequently, these are not representative of the heat transfer throughout the entire specimen. Monthly and hourly data for all of these variables are plotted in Appendixes A through D. Monthly total solar insolation on each side of the test hut is summarized in Table 7. Monthly average wind speeds are shown in Table 8. Rain accumulation per month is described in Table 9. Weekly and monthly differences in pressure between outdoors and indoors (reference) for each side of the building are shown in Table 10. Missing pressure measurements were due to equipment malfunction; more specifically, taps were clogged from the outside by insects. Pressure data and outdoor environmental measurements are plotted in Appendixes E to H. Spreadsheets with the aforementioned data will be available online.

Table 2. Monthly temperature (°C) at exterior side of stud cavity. Refer to Figures 25 through 28 for sensor location.

| Month | Descriptive Statistics | In 1st fl | In 2nd fl | Out | North Panels | | | | | East Panels | | | | | | South Panels | | | | | | | West Panels | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | P1-15 | P1-16 | P2-15 | P2-16 | P2-17 | P1-10 | P1-11 | P1-12 | P1-13 | P1-14 | P2-14 | P1-6 | P1-7 | P1-8 | P1-9 | P2-6 | P2-7 | P2-8 | P1-1 | P1-2 | P1-3 | P1-4 | P1-5 | P2-5 |
| | | | | | Layout A | Layout A | Layout A | Layout B | Layout B | Layout C | Layout C | Layout A | Layout A | Layout A | Layout A | Layout A | Layout A | Layout B | Layout B | Layout A | Layout B | Layout A | Layout C | Layout D | Layout B | Layout A | Layout A | Layout B |
| | | | | | T1A | T1A | T1A | T3B | T3B | T1C | T1C | T1A | T1A | T1A | T1A | T1A | T1A | T3B | T3B | T1A | T3B | T1A | T1C | T2D | T3B | T1A | T1A | T3B |
| Sep 09 | Mean | 21.5 | 21.8 | NA | 16.1 | 20.7 | 16.4 | 21.0 | 21.0 | 21.3 | 20.9 | 21.1 | 20.0 | 19.8 | 19.3 | 21.9 | 22.3 | 22.8 | 22.4 | 20.1 | 19.9 | 17.8 | 21.3 | 20.0 | 19.8 | 20.5 | 20.6 | 18.8 |
| | SD | 1.01 | 1.45 | NA | 5.11 | 1.24 | 5.07 | 1.56 | 1.58 | 1.17 | 3.56 | 1.36 | 5.36 | 5.17 | 7.19 | 1.74 | 3.19 | 7.37 | 7.09 | 9.65 | 7.95 | 6.66 | 1.26 | 4.67 | 7.75 | 8.73 | 7.81 | 7.34 |
| | 5th ptile | 19.6 | 19.5 | NA | 7.75 | 18.5 | 8.00 | 18.6 | 18.5 | 19.5 | 15.2 | 19.2 | 11.7 | 11.8 | 9.34 | 19.5 | 17.5 | 12.5 | 12.7 | 8.41 | 9.12 | 8.33 | 19.3 | 13.1 | 9.92 | 9.05 | 10.1 | 8.31 |
| | Median | 21.5 | 21.6 | NA | 15.8 | 20.7 | 16.3 | 20.8 | 20.8 | 21.2 | 20.7 | 21.0 | 19.4 | 19.3 | 17.9 | 21.8 | 22.0 | 21.1 | 20.8 | 17.0 | 17.9 | 16.6 | 21.3 | 19.3 | 18.0 | 18.6 | 18.9 | 17.6 |
| | 95th ptile | 23.1 | 24.2 | NA | 24.6 | 22.8 | 24.9 | 23.4 | 23.5 | 23.2 | 26.5 | 23.4 | 29.4 | 28.8 | 33.5 | 25.1 | 28.0 | 36.4 | 35.9 | 39.9 | 35.5 | 30.1 | 23.3 | 28.8 | 35.5 | 38.3 | 35.7 | 33.0 |
| Oct 09 | Mean | 21.3 | 21.4 | NA | 9.88 | 19.7 | 13.1 | 19.9 | 11.4 | 19.7 | 16.0 | 19.8 | 12.8 | 12.6 | 12.4 | 20.4 | 18.6 | 15.6 | 15.6 | 13.1 | 13.1 | 11.4 | 19.5 | 14.5 | 12.8 | 12.1 | 12.7 | 11.3 |
| | SD | 0.27 | 0.32 | NA | 4.24 | 0.55 | 7.60 | 0.62 | 5.26 | 0.58 | 2.01 | 0.66 | 3.80 | 3.79 | 5.30 | 1.15 | 2.69 | 6.43 | 6.05 | 7.60 | 6.22 | 5.26 | 0.58 | 3.20 | 5.04 | 5.73 | 5.05 | 4.95 |
| | 5th ptile | 20.9 | 21.0 | NA | 2.37 | 18.8 | 2.75 | 18.8 | 18.8 | 18.7 | 12.4 | 18.7 | 6.64 | 6.33 | 4.07 | 18.9 | 15.0 | 7.58 | 8.06 | 3.48 | 4.40 | 3.18 | 18.5 | 9.75 | 5.38 | 3.78 | 5.19 | 3.44 |
| | Median | 21.3 | 21.4 | NA | 10.2 | 19.7 | 10.5 | 19.9 | 19.9 | 19.7 | 16.0 | 19.8 | 12.6 | 12.5 | 12.1 | 20.1 | 18.1 | 14.2 | 14.2 | 11.8 | 12.2 | 11.1 | 19.6 | 14.2 | 12.4 | 11.6 | 12.3 | 11.2 |
| | 95th ptile | 21.8 | 22.1 | NA | 16.8 | 20.5 | 17.0 | 20.9 | 20.8 | 20.5 | 19.4 | 20.9 | 19.7 | 19.4 | 22.0 | 22.9 | 24.3 | 29.8 | 29.3 | 31.2 | 27.1 | 21.8 | 20.4 | 20.4 | 21.9 | 22.8 | 22.3 | 19.5 |
| Nov 09 | Mean | 21.2 | 21.4 | 6.81 | 6.68 | 19.2 | 7.09 | 19.4 | 19.4 | 19.2 | 14.6 | 19.4 | 10.5 | 10.2 | 9.7 | 20.0 | 17.7 | 13.8 | 13.8 | 10.6 | 10.9 | 8.93 | 18.9 | 12.4 | 10.0 | 9.00 | 9.78 | 8.25 |
| | SD | 0.22 | 0.30 | 4.47 | 4.56 | 0.57 | 4.47 | 0.69 | 0.70 | 0.57 | 2.09 | 0.70 | 3.96 | 3.96 | 5.47 | 1.27 | 2.98 | 7.11 | 6.67 | 8.32 | 7.10 | 5.90 | 0.58 | 3.22 | 5.05 | 5.71 | 5.07 | 5.27 |
| | 5th ptile | 20.8 | 21.0 | 0.09 | -1.21 | 18.3 | -0.63 | 18.3 | 18.3 | 18.3 | 11.4 | 18.3 | 4.27 | 3.80 | 1.66 | 18.4 | 13.7 | 5.08 | 5.93 | 0.69 | 1.81 | 0.22 | 17.9 | 7.61 | 2.49 | 0.49 | 2.12 | -0.07 |
| | Median | 21.2 | 21.3 | 6.93 | 7.13 | 19.2 | 7.58 | 19.5 | 19.4 | 19.2 | 14.6 | 19.4 | 10.6 | 10.4 | 9.54 | 19.8 | 17.3 | 12.3 | 12.4 | 9.04 | 9.86 | 8.54 | 19.0 | 12.5 | 9.93 | 8.86 | 9.72 | 8.37 |
| | 95th ptile | 21.6 | 21.9 | 14.7 | 13.6 | 20.1 | 14.0 | 20.5 | 20.4 | 20.3 | 18.3 | 20.6 | 17.6 | 17.1 | 20.2 | 22.6 | 23.6 | 29.1 | 27.9 | 29.0 | 26.7 | 20.5 | 20.0 | 18.1 | 19.3 | 19.4 | 18.8 | 17.6 |
| Dec 09 | Mean | 21.0 | 21.3 | -2.52 | -0.78 | 18.0 | 13.1 | 18.4 | 11.4 | 17.5 | 9.57 | 18.0 | 2.96 | 2.38 | 1.52 | 18.2 | 13.2 | 5.2 | 5.7 | 13.1 | 2.4 | 11.4 | 17.3 | 6.46 | 2.8 | 0.74 | 2.09 | 0.31 |
| | SD | 0.19 | 0.21 | 5.84 | 5.27 | 0.84 | 7.60 | 0.75 | 5.26 | 0.77 | 2.43 | 0.76 | 4.07 | 4.36 | 5.21 | 0.98 | 2.58 | 5.40 | 4.98 | 7.60 | 5.93 | 5.26 | 0.86 | 3.48 | 4.77 | 5.27 | 4.83 | 5.23 |
| | 5th ptile | 20.7 | 21.0 | -12.6 | -9.41 | 16.7 | -9.04 | 17.2 | 17.0 | 16.4 | 5.84 | 16.8 | -3.48 | -4.85 | -6.98 | 16.9 | 9.29 | -2.39 | -1.20 | -7.09 | -6.32 | -7.67 | 16.0 | 0.66 | -5.28 | -7.94 | -5.87 | -8.39 |
| | Median | 21.0 | 21.3 | -1.95 | -0.54 | 18.1 | -0.09 | 18.4 | 18.3 | 17.5 | 9.48 | 18.0 | 2.95 | 2.47 | 1.54 | 18.2 | 13.2 | 4.56 | 5.13 | 1.56 | 2.16 | 0.91 | 17.5 | 6.81 | 2.93 | 0.97 | 2.32 | 0.61 |
| | 95th ptile | 21.3 | 21.6 | 6.35 | 7.42 | 19.2 | 7.70 | 19.6 | 19.6 | 18.9 | 14.2 | 19.3 | 10.4 | 10.2 | 10.6 | 20.0 | 17.9 | 15.5 | 15.0 | 14.7 | 13.7 | 10.5 | 18.7 | 12.1 | 10.5 | 9.7 | 10.1 | 8.56 |
| Jan 10 | Mean | 21.3 | 20.9 | -4.86 | -2.71 | 17.6 | 13.1 | 18.0 | 11.4 | 17.2 | 8.90 | 18.0 | 1.81 | 1.05 | -0.19 | 18.1 | 12.6 | 4.01 | 4.61 | 13.1 | 0.67 | 11.4 | 17.1 | 6.26 | 1.37 | -0.70 | 0.68 | -1.45 |
| | SD | 0.23 | 0.25 | 6.13 | 5.80 | 0.88 | 7.60 | 0.81 | 5.26 | 0.78 | 2.60 | 0.79 | 4.41 | 4.72 | 5.72 | 1.20 | 3.23 | 6.83 | 6.30 | 7.60 | 6.89 | 5.26 | 0.93 | 4.04 | 5.51 | 6.19 | 5.58 | 5.97 |
| | 5th | 20.9 | 20.6 | -14.8 | -12.8 | 16.0 | -12.2 | 16.5 | 16.2 | 16.0 | 4.91 | 16.6 | -5.37 | -7.02 | -9.84 | 16.4 | 7.97 | -4.02 | -3.25 | -10.1 | -9.28 | -10.8 | 15.5 | -1.21 | -7.59 | -10.7 | -8.49 | -11.2 |
| | 50th | 21.4 | 20.9 | -4.53 | -2.37 | 17.7 | -2.34 | 17.9 | 17.8 | 17.2 | 8.76 | 18.0 | 1.72 | 1.01 | -0.04 | 18.0 | 12.3 | 3.13 | 3.73 | -0.19 | 0.49 | -0.99 | 17.2 | 6.71 | 1.55 | -0.49 | 0.75 | -1.27 |
| | 95th | 21.7 | 21.4 | 4.62 | 6.46 | 18.8 | 6.60 | 19.1 | 19.1 | 18.4 | 12.8 | 19.3 | 9.25 | 8.61 | 9.40 | 20.5 | 19.1 | 17.0 | 16.5 | 12.5 | 12.6 | 10.7 | 18.3 | 12.7 | 10.4 | 10.1 | 10.6 | 8.40 |
| Feb 10 | Mean | 21.4 | 21.1 | -3.86 | -0.85 | 17.9 | -0.70 | 18.4 | 18.2 | 17.4 | 9.68 | 18.3 | 3.08 | 2.40 | 1.31 | 18.3 | 13.1 | 4.89 | 5.30 | 1.55 | 1.79 | 0.13 | 17.3 | 7.27 | 2.73 | 0.85 | 2.04 | 0.03 |
| | SD | 0.26 | 0.27 | 3.19 | 4.04 | 0.60 | 3.81 | 0.56 | 0.61 | 0.46 | 1.62 | 0.53 | 3.09 | 3.20 | 4.13 | 0.83 | 2.06 | 4.81 | 4.34 | 5.72 | 4.68 | 4.00 | 0.54 | 2.73 | 3.88 | 4.59 | 4.07 | 3.99 |
| | 5th ptile | 20.9 | 20.7 | -9.41 | -7.65 | 17.0 | -7.21 | 17.4 | 17.1 | 16.5 | 7.01 | 17.4 | -1.62 | -2.53 | -5.13 | 17.3 | 10.3 | -1.28 | 0.06 | -5.55 | -4.77 | -6.10 | 16.3 | 3.24 | -3.10 | -6.08 | -3.89 | -6.37 |
| | Median | 21.4 | 21.0 | -3.61 | -0.77 | 18.0 | -0.67 | 18.4 | 18.2 | 17.4 | 9.68 | 18.3 | 3.12 | 2.43 | 1.28 | 18.2 | 12.8 | 4.26 | 4.56 | 0.76 | 1.53 | 0.22 | 17.3 | 7.19 | 2.54 | 0.64 | 1.86 | -0.08 |
| | 95th ptile | 21.8 | 21.6 | 1.21 | 5.76 | 18.9 | 5.64 | 19.3 | 19.2 | 18.2 | 12.6 | 19.1 | 8.61 | 8.10 | 7.78 | 19.9 | 16.8 | 14.0 | 13.6 | 12.5 | 10.3 | 6.57 | 18.2 | 12.1 | 9.77 | 9.01 | 9.30 | 6.62 |
| Mar 10 | Mean | 21.9 | 22.0 | 4.39 | 5.35 | 19.4 | 13.1 | 19.9 | 11.4 | 19.5 | 14.6 | 20.0 | 10.4 | 10.0 | 9.20 | 20.5 | 17.9 | 13.8 | 13.8 | 13.1 | 10.1 | 11.4 | 19.3 | 12.80 | 9.68 | 8.85 | 9.62 | 7.55 |
| | SD | 0.97 | 1.12 | 4.65 | 4.77 | 1.27 | 7.60 | 1.35 | 5.26 | 1.27 | 2.87 | 1.38 | 5.27 | 5.30 | 7.01 | 1.86 | 3.57 | 7.95 | 7.55 | 7.60 | 7.91 | 5.26 | 1.30 | 4.48 | 6.31 | 7.41 | 6.60 | 6.16 |
| | 5th ptile | 21.0 | 20.9 | -3.21 | -2.63 | 17.6 | -2.09 | 18.2 | 18.1 | 18.0 | 10.9 | 18.2 | 3.42 | 2.80 | 0.08 | 18.4 | 13.4 | 4.47 | 5.22 | -1.23 | -0.07 | -1.66 | 17.7 | 6.20 | 1.44 | -0.81 | 0.76 | -1.18 |
| | Median | 21.6 | 21.5 | 4.43 | 5.39 | 19.2 | 5.83 | 19.7 | 19.6 | 19.1 | 14.2 | 19.6 | 9.66 | 9.39 | 7.98 | 20.0 | 17.1 | 11.3 | 11.5 | 7.60 | 8.37 | 6.95 | 18.9 | 12.43 | 8.70 | 7.62 | 8.65 | 6.94 |
| | 95th ptile | 24.2 | 24.5 | 12.4 | 12.8 | 22.0 | 13.3 | 22.7 | 22.7 | 22.2 | 20.2 | 22.7 | 21.1 | 20.7 | 23.7 | 24.3 | 25.3 | 30.9 | 30.4 | 32.1 | 27.3 | 21.5 | 21.9 | 22.1 | 23.6 | 25.5 | 23.5 | 20.2 |
| Apr 10 | Mean | 22.5 | 22.5 | 11.3 | 11.5 | 20.7 | 11.8 | 21.1 | 21.1 | 21.2 | 18.7 | 21.4 | 16.1 | 15.9 | 15.4 | 21.8 | 20.4 | 18.2 | 18.1 | 15.3 | 15.2 | 13.1 | 21.0 | 17.4 | 15.5 | 15.4 | 15.9 | 13.7 |
| | SD | 3.61 | 3.91 | 6.10 | 5.96 | 3.51 | 5.87 | 3.89 | 3.89 | 3.30 | 4.07 | 3.56 | 6.38 | 6.31 | 8.23 | 3.64 | 4.41 | 7.66 | 7.39 | 9.55 | 8.00 | 7.10 | 3.32 | 5.28 | 7.72 | 8.66 | 7.97 | 7.42 |
| | 5th ptile | 17.7 | 17.3 | 2.58 | 2.97 | 15.9 | 3.49 | 15.6 | 15.6 | 16.6 | 12.5 | 16.5 | 6.79 | 6.54 | 4.74 | 16.6 | 13.8 | 7.56 | 7.78 | 3.78 | 4.89 | 3.59 | 16.3 | 9.90 | 5.82 | 4.28 | 5.32 | 3.80 |
| | Median | 21.6 | 21.5 | 10.8 | 11.1 | 20.0 | 11.4 | 20.2 | 20.2 | 20.9 | 18.3 | 20.7 | 15.3 | 15.3 | 13.9 | 21.3 | 20.1 | 17.0 | 16.8 | 12.9 | 13.8 | 12.2 | 20.5 | 16.7 | 14.0 | 13.7 | 14.3 | 12.6 |
| | 95th ptile | 28.3 | 28.9 | 23.3 | 22.9 | 26.6 | 22.9 | 27.6 | 27.6 | 26.7 | 26.2 | 27.5 | 27.3 | 26.9 | 31.9 | 27.9 | 28.1 | 32.1 | 31.9 | 34.8 | 30.9 | 26.2 | 26.4 | 27.3 | 31.0 | 33.4 | 31.5 | 28.2 |

Table 2. Continuation.

| Month | Descriptive Statistics | In 1st fl | In 2nd fl | Out | North Panels | | | | | East Panels | | | | | | South Panels | | | | | | | West Panels | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | P1-15 | P1-16 | P2-15 | P2-16 | P2-17 | P1-10 | P1-11 | P1-12 | P1-13 | P1-14 | P2-14 | P1-6 | P1-7 | P1-8 | P1-9 | P2-6 | P2-7 | P2-8 | P1-1 | P1-2 | P1-3 | P1-4 | P1-5 | P2-5 |
| | | | | | Layout A | Layout A | Layout A | Layout B | Layout B | Layout C | Layout C | Layout A | Layout A | Layout A | Layout A | Layout A | Layout A | Layout B | Layout B | Layout A | Layout B | Layout A | Layout C | Layout D | Layout B | Layout A | Layout A | Layout B |
| | | | | | T1A | T1A | T1A | T3B | T3B | T1C | T1C | T1A | T1A | T1A | T1A | T1A | T1A | T3B | T3B | T1A | T3B | T1A | T1C | T2D | T3B | T1A | T1A | T3B |
| May 10 | Mean | 21.5 | 21.7 | 16.5 | 17.4 | 20.8 | 13.1 | 21.1 | 11.4 | 21.4 | 21.4 | 21.2 | 20.8 | 20.8 | 20.9 | 21.2 | 21.8 | 22.7 | 22.7 | 21.7 | 21.2 | 20.2 | 21.5 | 21.8 | 23.0 | 23.7 | 23.4 | 21.9 |
| | SD | 1.77 | 2.12 | 7.18 | 7.53 | 2.31 | 7.60 | 2.58 | 5.26 | 2.46 | 4.77 | 2.36 | 7.58 | 7.65 | 9.77 | 1.91 | 2.50 | 4.95 | 4.93 | 6.59 | 5.29 | 5.08 | 1.82 | 4.23 | 7.03 | 7.78 | 7.02 | 6.24 |
| | 5th ptile | 17.5 | 17.0 | 3.20 | 3.90 | 15.8 | 4.15 | 15.5 | 15.5 | 16.3 | 12.3 | 16.2 | 7.65 | 7.52 | 5.56 | 18.3 | 17.3 | 14.6 | 14.6 | 11.8 | 12.8 | 11.7 | 18.7 | 15.6 | 13.8 | 13.2 | 13.9 | 12.6 |
| | Median | 22.3 | 22.5 | 17.0 | 17.0 | 21.7 | 17.5 | 21.8 | 21.9 | 22.1 | 22.0 | 21.9 | 20.5 | 20.5 | 19.5 | 21.7 | 22.0 | 22.3 | 22.2 | 20.6 | 20.7 | 19.9 | 22.0 | 21.2 | 21.6 | 22.0 | 22.0 | 21.0 |
| | 95th ptile | 23.0 | 23.8 | 27.5 | 29.5 | 23.2 | 29.7 | 24.1 | 24.1 | 24.1 | 28.8 | 24.0 | 33.9 | 34.0 | 38.8 | 24.0 | 25.8 | 31.4 | 31.3 | 34.0 | 30.8 | 28.8 | 23.8 | 30.0 | 37.6 | 39.2 | 37.2 | 34.0 |
| Jun 10 | Mean | 20.5 | 21.1 | 19.4 | 20.7 | 20.6 | 20.5 | 20.9 | 21.0 | 21.2 | 22.2 | 20.7 | 22.5 | 22.8 | 23.0 | 23.5 | 24.9 | 27.3 | 27.2 | 13.1 | 25.7 | 11.4 | 23.9 | 25.2 | 27.3 | 28.3 | 27.9 | 26.3 |
| | SD | 2.06 | 2.04 | 4.29 | 5.13 | 1.94 | 4.85 | 2.04 | 2.04 | 1.83 | 2.91 | 2.06 | 5.11 | 5.16 | 6.96 | 1.08 | 2.26 | 5.45 | 5.46 | 7.60 | 6.01 | 5.26 | 0.90 | 4.46 | 7.99 | 8.69 | 8.01 | 6.98 |
| | 5th ptile | 17.6 | 18.1 | 12.0 | 11.9 | 17.8 | 12.2 | 17.7 | 17.7 | 18.4 | 16.9 | 17.5 | 14.2 | 14.4 | 12.8 | 21.8 | 21.3 | 18.9 | 18.9 | 15.5 | 16.4 | 15.0 | 22.0 | 19.2 | 17.3 | 17.4 | 17.8 | 16.6 |
| | Median | 22.1 | 22.2 | 19.3 | 20.5 | 21.4 | 20.2 | 21.5 | 21.6 | 21.7 | 22.4 | 21.5 | 22.1 | 22.3 | 22.1 | 23.4 | 24.8 | 26.5 | 26.4 | 24.5 | 24.6 | 23.7 | 23.9 | 24.2 | 25.1 | 25.8 | 25.7 | 24.8 |
| | 95th ptile | 22.5 | 23.5 | 26.4 | 29.0 | 23.2 | 28.4 | 23.8 | 23.9 | 23.6 | 26.5 | 23.4 | 31.3 | 31.7 | 35.9 | 25.3 | 28.7 | 36.6 | 36.6 | 39.7 | 36.2 | 33.5 | 25.4 | 33.9 | 44.4 | 46.3 | 44.1 | 40.4 |
| Jul 10 | Mean | 22.4 | 23.2 | 23.6 | 24.4 | 22.7 | 13.1 | 23.2 | 11.4 | 23.6 | 25.7 | 22.9 | 27.0 | 27.3 | 27.7 | 23.3 | 24.4 | 25.9 | 26.1 | 13.1 | 24.3 | 11.4 | 23.2 | 23.6 | 25.0 | 25.6 | 25.4 | 23.8 |
| | SD | 0.16 | 0.64 | 4.26 | 5.33 | 0.72 | 7.60 | 0.99 | 5.26 | 0.82 | 2.84 | 0.91 | 5.47 | 5.49 | 7.76 | 1.18 | 2.42 | 5.64 | 5.87 | 7.60 | 6.28 | 5.26 | 0.78 | 3.99 | 7.21 | 7.84 | 7.11 | 6.25 |
| | 5th ptile | 22.1 | 22.3 | 16.3 | 15.8 | 21.5 | 16.3 | 21.6 | 21.7 | 22.2 | 21.1 | 21.5 | 18.7 | 18.9 | 17.1 | 21.7 | 20.7 | 18.0 | 18.2 | 14.5 | 15.7 | 14.4 | 21.8 | 18.3 | 16.2 | 16.1 | 16.6 | 15.3 |
| | Median | 22.4 | 23.1 | 23.3 | 24.2 | 22.7 | 24.1 | 23.2 | 23.2 | 23.6 | 25.6 | 22.8 | 26.2 | 26.6 | 26.4 | 23.1 | 24.1 | 24.9 | 24.9 | 22.8 | 23.0 | 22.0 | 23.2 | 22.8 | 23.2 | 23.6 | 23.6 | 22.8 |
| | 95th ptile | 22.6 | 24.3 | 30.4 | 33.5 | 24.0 | 33.3 | 25.0 | 25.1 | 25.2 | 30.9 | 24.4 | 36.3 | 36.6 | 41.9 | 25.6 | 28.6 | 36.9 | 37.1 | 41.4 | 36.7 | 33.3 | 24.5 | 31.8 | 40.7 | 42.1 | 40.1 | 37.0 |
| Aug 10 | Mean | 22.4 | 22.9 | 21.7 | 22.0 | 22.4 | 13.1 | 22.8 | 11.4 | 23.2 | 24.4 | 22.6 | 24.8 | 24.9 | 24.9 | 21.2 | 21.8 | 22.7 | 22.7 | 21.7 | 21.2 | 20.2 | 21.5 | 21.8 | 23.0 | 23.7 | 23.4 | 21.9 |
| | SD | 0.16 | 0.73 | 3.96 | 4.68 | 0.67 | 7.60 | 1.04 | 5.26 | 0.74 | 2.54 | 0.86 | 4.95 | 4.89 | 6.82 | 1.91 | 2.50 | 4.95 | 4.93 | 6.59 | 5.29 | 5.08 | 1.82 | 4.23 | 7.03 | 7.78 | 7.02 | 6.24 |
| | 5th ptile | 22.1 | 22.1 | 15.3 | 14.2 | 21.3 | 14.3 | 21.3 | 21.3 | 21.8 | 20.2 | 21.4 | 17.4 | 17.6 | 15.5 | 18.3 | 17.3 | 14.6 | 14.6 | 11.8 | 12.8 | 11.7 | 18.7 | 15.6 | 13.8 | 13.2 | 13.9 | 12.6 |
| | Median | 22.4 | 22.7 | 21.3 | 21.8 | 22.3 | 21.9 | 22.7 | 22.7 | 23.2 | 24.3 | 22.5 | 24.2 | 24.3 | 23.6 | 21.7 | 22.0 | 22.3 | 22.2 | 20.6 | 20.7 | 19.9 | 22.0 | 21.2 | 21.6 | 22.0 | 22.0 | 21.0 |
| | 95th ptile | 22.7 | 24.5 | 28.3 | 29.8 | 23.5 | 30.0 | 24.8 | 24.9 | 24.4 | 28.9 | 24.2 | 33.8 | 33.6 | 38.0 | 24.0 | 25.8 | 31.4 | 31.3 | 34.0 | 30.8 | 28.8 | 23.8 | 30.0 | 37.6 | 39.2 | 37.2 | 34.0 |

Notes: Layouts A, B, C and D refer to the location of the sensors per Figures 25 through 28.
Abbreviations: NA, not available; ptile, percentile; SD, standard deviation.

Table 3. Monthly temperature (°C) at interior side of stud cavity. Refer to Figures 25 through 28 for sensor location.

| Month | Descriptive Statistics | In 1st fl | In 2nd fl | Out | North Panels | | | | | East Panels | | | | | | South Panels | | | | | | | West Panels | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | P1-15 | P1-16 | P2-15 | P2-16 | P2-17 | P1-10 | P1-11 | P1-12 | P1-13 | P1-14 | P2-14 | P1-6 | P1-7 | P1-8 | P1-9 | P2-6 | P2-7 | P2-8 | P1-1 | P1-2 | P1-3 | P1-4 | P1-5 | P2-5 |
| | | | | | Layout A | Layout A | Layout A | Layout B | Layout B | Layout C | Layout C | Layout A | Layout A | Layout A | Layout A | Layout A | Layout A | Layout B | Layout B | Layout A | Layout B | Layout A | Layout C | Layout D | Layout B | Layout A | Layout A | Layout B |
| | | | | | T4A | T4A | T4A | T4B | T4B | T4C | T4C | T4A | T4A | T4A | T4A | T4A | T4A | T4B | T4B | T4A | T4C | T4A | T4C | T3D | T4B | T4A | T4A | T4B |
| Sep 09 | Mean | 21.5 | 21.8 | NA | 20.9 | 21.0 | 16.6 | 21.0 | 21.0 | 21.5 | 21.4 | 21.4 | 21.4 | 21.3 | 21.5 | 22.0 | 21.8 | 21.7 | 21.7 | 21.6 | 21.6 | 21.3 | 21.5 | 21.4 | 21.3 | 21.6 | 21.7 | 21.4 |
| | SD | 1.01 | 1.45 | NA | 1.22 | 1.17 | 4.84 | 1.56 | 1.56 | 1.03 | 1.58 | 1.22 | 1.18 | 1.16 | 1.53 | 1.45 | 1.29 | 1.41 | 1.36 | 1.96 | 1.67 | 1.80 | 1.07 | 3.51 | 1.33 | 1.46 | 1.43 | 1.74 |
| | 5th ptile | 19.6 | 19.5 | NA | 18.6 | 18.8 | 8.4 | 18.6 | 18.6 | 19.6 | 19.1 | 19.5 | 19.5 | 19.5 | 19.2 | 19.9 | 19.8 | 19.5 | 19.5 | 18.9 | 19.2 | 18.7 | 19.4 | 16.8 | 19.1 | 19.3 | 19.5 | 18.9 |
| | Median | 21.5 | 21.6 | NA | 20.8 | 20.9 | 16.4 | 20.8 | 20.9 | 21.3 | 21.2 | 21.2 | 21.3 | 21.2 | 21.2 | 21.8 | 21.6 | 21.5 | 21.5 | 21.4 | 21.4 | 21.1 | 21.4 | 20.8 | 21.2 | 21.3 | 21.4 | 21.2 |
| | 95th ptile | 23.1 | 24.2 | NA | 22.9 | 22.9 | 24.6 | 23.5 | 23.6 | 23.1 | 24.1 | 23.3 | 23.2 | 23.1 | 23.9 | 24.6 | 24.0 | 24.1 | 24.1 | 25.4 | 24.5 | 24.5 | 23.1 | 28.2 | 23.7 | 24.3 | 24.3 | 24.5 |
| Oct 09 | Mean | 21.3 | 21.4 | NA | 20.3 | 20.4 | 20.4 | 20.3 | 20.2 | 20.8 | 19.6 | 20.7 | 21.2 | 20.9 | 20.6 | 21.0 | 21.3 | 21.1 | 21.0 | 20.4 | 20.6 | 20.2 | 20.7 | 18.1 | 20.6 | 20.9 | 20.9 | 20.3 |
| | SD | 0.27 | 0.32 | NA | 0.40 | 0.32 | 1.16 | 0.48 | 0.89 | 0.24 | 0.68 | 0.37 | 0.33 | 0.27 | 0.56 | 0.71 | 0.45 | 0.66 | 0.60 | 1.16 | 0.72 | 0.89 | 0.25 | 1.90 | 0.42 | 0.46 | 0.45 | 0.64 |
| | 5th ptile | 20.9 | 21.0 | NA | 19.7 | 19.9 | 19.7 | 19.5 | 19.0 | 20.4 | 18.5 | 20.1 | 20.7 | 20.6 | 19.7 | 20.2 | 20.8 | 20.3 | 20.4 | 19.1 | 19.6 | 18.9 | 20.3 | 15.6 | 20.0 | 20.4 | 20.3 | 19.4 |
| | Median | 21.3 | 21.4 | NA | 20.3 | 20.4 | 20.5 | 20.3 | 20.0 | 20.8 | 19.7 | 20.7 | 21.1 | 20.9 | 20.6 | 20.9 | 21.1 | 20.9 | 20.9 | 20.1 | 20.5 | 20.1 | 20.7 | 17.9 | 20.6 | 20.9 | 20.9 | 20.3 |
| | 95th ptile | 21.8 | 22.1 | NA | 21.0 | 20.9 | 21.3 | 21.1 | 20.9 | 21.1 | 20.7 | 21.4 | 21.7 | 21.4 | 21.6 | 22.6 | 22.2 | 22.6 | 22.4 | 23.3 | 22.2 | 22.0 | 21.1 | 21.6 | 21.3 | 21.7 | 21.7 | 21.4 |
| Nov 09 | Mean | 21.2 | 21.4 | 6.81 | 20.0 | 20.2 | 20.2 | 20.0 | 19.6 | 20.6 | 19.2 | 20.5 | 21.1 | 20.8 | 20.3 | 20.8 | 21.2 | 20.9 | 20.9 | 20.1 | 20.4 | 19.8 | 20.4 | 17.0 | 20.4 | 20.7 | 20.7 | 20.0 |
| | SD | 0.22 | 0.30 | 4.47 | 0.41 | 0.35 | 0.52 | 0.53 | 0.64 | 0.24 | 0.71 | 0.38 | 0.28 | 0.22 | 0.58 | 0.76 | 0.47 | 0.72 | 0.66 | 1.19 | 0.80 | 0.97 | 0.25 | 1.80 | 0.41 | 0.41 | 0.44 | 0.68 |
| | 5th ptile | 20.8 | 21.0 | 0.09 | 19.5 | 19.6 | 19.3 | 19.1 | 18.6 | 20.2 | 18.1 | 19.9 | 20.7 | 20.6 | 19.4 | 19.9 | 20.7 | 20.1 | 20.2 | 18.8 | 19.3 | 18.4 | 20.0 | 14.5 | 19.8 | 20.3 | 20.1 | 19.0 |
| | Median | 21.2 | 21.3 | 6.93 | 20.0 | 20.2 | 20.2 | 20.0 | 19.6 | 20.6 | 19.2 | 20.5 | 21.0 | 20.8 | 20.3 | 20.7 | 21.1 | 20.8 | 20.8 | 19.9 | 20.3 | 19.7 | 20.4 | 17.0 | 20.3 | 20.7 | 20.7 | 20.0 |
| | 95th ptile | 21.6 | 21.9 | 14.7 | 20.7 | 20.7 | 21.0 | 20.8 | 20.6 | 21.1 | 20.5 | 21.1 | 21.6 | 21.2 | 21.3 | 22.4 | 22.2 | 22.5 | 22.3 | 22.8 | 21.9 | 21.7 | 20.9 | 20.3 | 21.1 | 21.5 | 21.5 | 21.2 |
| Dec 09 | Mean | 21.0 | 21.3 | -2.52 | 19.5 | 19.5 | 20.4 | 19.3 | 20.2 | 19.9 | 17.5 | 19.8 | 21.0 | 20.6 | 19.6 | 19.9 | 20.6 | 20.1 | 20.1 | 20.4 | 19.5 | 20.2 | 19.8 | 14.1 | 19.7 | 20.3 | 20.1 | 19.1 |
| | SD | 0.19 | 0.21 | 5.84 | 0.51 | 0.62 | 1.16 | 0.57 | 0.89 | 0.31 | 0.82 | 0.37 | 0.18 | 0.13 | 0.49 | 0.52 | 0.31 | 0.53 | 0.46 | 1.16 | 0.59 | 0.89 | 0.36 | 1.74 | 0.42 | 0.29 | 0.45 | 0.63 |
| | 5th ptile | 20.7 | 21.0 | -12.6 | 18.8 | 18.5 | 18.8 | 18.4 | 17.6 | 19.4 | 16.2 | 19.3 | 20.7 | 20.4 | 18.8 | 19.2 | 20.2 | 19.4 | 19.6 | 18.1 | 18.6 | 17.6 | 19.2 | 11.2 | 19.0 | 19.9 | 19.3 | 18.0 |
| | Median | 21.0 | 21.3 | -1.95 | 19.6 | 19.6 | 19.5 | 19.3 | 18.7 | 19.9 | 17.5 | 19.8 | 21.0 | 20.6 | 19.5 | 19.8 | 20.6 | 20.0 | 20.1 | 19.0 | 19.4 | 18.6 | 19.9 | 14.2 | 19.7 | 20.3 | 20.2 | 19.1 |
| | 95th ptile | 21.3 | 21.6 | 6.35 | 20.2 | 20.3 | 20.3 | 20.2 | 19.8 | 20.5 | 18.9 | 20.5 | 21.3 | 20.9 | 20.4 | 20.9 | 21.2 | 21.2 | 21.0 | 20.5 | 20.6 | 20.1 | 20.4 | 16.8 | 20.3 | 20.8 | 20.8 | 20.1 |
| Jan 10 | Mean | 21.3 | 20.9 | -4.86 | 19.0 | 19.0 | 20.4 | 19.0 | 20.2 | 19.8 | 17.6 | 19.6 | 20.7 | 20.5 | 19.2 | 19.7 | 20.5 | 19.9 | 19.9 | 20.4 | 19.0 | 20.2 | 19.7 | 15.3 | 19.8 | 20.1 | 20.2 | 18.6 |
| | SD | 0.23 | 0.25 | 6.13 | 0.50 | 0.65 | 1.16 | 0.59 | 0.89 | 0.31 | 0.77 | 0.4 | 0.21 | 0.16 | 0.53 | 0.65 | 0.37 | 0.64 | 0.58 | 1.16 | 0.69 | 0.89 | 0.37 | 1.91 | 0.45 | 0.33 | 0.48 | 0.70 |
| | 5th | 20.9 | 20.6 | -14.8 | 18.3 | 17.9 | 18.4 | 17.9 | 17.0 | 19.3 | 16.2 | 19.0 | 20.4 | 20.3 | 18.3 | 19.0 | 20.1 | 19.0 | 19.3 | 17.6 | 18.0 | 17.0 | 19.1 | 11.4 | 19.0 | 19.7 | 19.3 | 17.4 |
| | 50th | 21.4 | 20.9 | -4.53 | 19.0 | 19.1 | 19.2 | 19.0 | 18.3 | 19.8 | 17.6 | 19.6 | 20.7 | 20.5 | 19.2 | 19.6 | 20.5 | 19.8 | 19.8 | 18.5 | 18.9 | 18.2 | 19.7 | 15.4 | 19.8 | 20.1 | 20.2 | 18.5 |
| | 95th | 21.7 | 21.4 | 4.62 | 19.8 | 19.9 | 20.1 | 19.8 | 19.4 | 20.2 | 18.8 | 20.3 | 21.1 | 20.8 | 20.1 | 21.1 | 21.3 | 21.2 | 21.1 | 20.0 | 20.3 | 19.9 | 20.2 | 18.2 | 20.6 | 20.7 | 21.0 | 19.9 |
| Feb 10 | Mean | 21.4 | 21.1 | -3.86 | 19.3 | 18.7 | 19.0 | 19.3 | 18.6 | 19.9 | 17.9 | 19.7 | 20.7 | 20.5 | 19.6 | 19.8 | 20.7 | 20.0 | 20.0 | 19.0 | 19.3 | 18.6 | 19.8 | 15.8 | 19.9 | 20.3 | 20.2 | 18.9 |
| | SD | 0.26 | 0.27 | 3.19 | 0.43 | 0.51 | 0.68 | 0.51 | 0.58 | 0.20 | 0.45 | 0.28 | 0.25 | 0.18 | 0.46 | 0.46 | 0.28 | 0.47 | 0.42 | 0.68 | 0.51 | 0.58 | 0.26 | 1.23 | 0.31 | 0.30 | 0.33 | 0.54 |
| | 5th ptile | 20.9 | 20.7 | -9.41 | 18.6 | 17.8 | 18.2 | 18.6 | 17.7 | 19.6 | 17.2 | 19.3 | 20.3 | 20.3 | 18.9 | 19.3 | 20.3 | 19.4 | 19.5 | 18.2 | 18.6 | 17.7 | 19.4 | 14.1 | 19.5 | 19.9 | 19.8 | 18.1 |
| | Median | 21.4 | 21.0 | -3.61 | 19.3 | 18.7 | 18.9 | 19.3 | 18.6 | 19.9 | 17.9 | 19.7 | 20.7 | 20.5 | 19.7 | 19.8 | 20.7 | 20.0 | 19.9 | 18.9 | 19.3 | 18.6 | 19.8 | 15.6 | 19.9 | 20.2 | 20.2 | 18.9 |
| | 95th ptile | 21.8 | 21.6 | 1.21 | 20.0 | 19.5 | 20.0 | 20.2 | 19.5 | 20.2 | 18.6 | 20.2 | 21.2 | 20.9 | 20.4 | 20.7 | 21.2 | 20.8 | 20.7 | 20.0 | 20.2 | 19.5 | 20.3 | 18.1 | 20.4 | 20.8 | 20.8 | 19.8 |
| Mar 10 | Mean | 21.9 | 22.0 | 4.39 | 20.0 | 20.3 | 20.4 | 20.6 | 20.2 | 21.1 | 19.7 | 20.8 | 21.4 | 21.3 | 21.1 | 21.3 | 21.8 | 21.4 | 21.2 | 20.4 | 20.9 | 20.2 | 21.0 | 18.4 | 21.0 | 21.3 | 21.4 | 20.6 |
| | SD | 0.97 | 1.12 | 4.65 | 1.17 | 1.21 | 1.16 | 1.27 | 0.89 | 1.04 | 1.40 | 1.14 | 1.04 | 1.02 | 1.29 | 1.42 | 1.19 | 1.37 | 1.36 | 1.16 | 1.44 | 0.89 | 1.04 | 2.38 | 1.16 | 1.19 | 1.19 | 1.42 |
| | 5th ptile | 21.0 | 20.9 | -3.21 | 18.5 | 18.8 | 19.5 | 19.1 | 18.5 | 20.1 | 18.1 | 19.6 | 20.3 | 20.3 | 19.6 | 19.8 | 20.6 | 19.9 | 19.8 | 18.7 | 19.3 | 18.5 | 19.9 | 15.3 | 19.8 | 20.0 | 20.1 | 19.0 |
| | Median | 21.6 | 21.5 | 4.43 | 19.8 | 20.1 | 20.5 | 20.2 | 19.9 | 20.6 | 19.2 | 20.4 | 21.1 | 20.9 | 20.7 | 20.8 | 21.3 | 20.9 | 20.7 | 20.2 | 20.5 | 19.9 | 20.5 | 18.0 | 20.5 | 20.8 | 20.9 | 20.2 |
| | 95th ptile | 24.2 | 24.5 | 12.4 | 22.4 | 22.7 | 23.6 | 23.3 | 22.9 | 23.3 | 22.8 | 23.3 | 23.7 | 23.6 | 23.9 | 24.3 | 24.3 | 24.2 | 24.0 | 24.3 | 23.9 | 23.4 | 23.2 | 23.2 | 23.5 | 23.8 | 23.9 | 23.6 |
| Apr 10 | Mean | 22.5 | 22.5 | 11.3 | 21.1 | 21.3 | 21.7 | 21.5 | 21.2 | 22.0 | 21.3 | 21.8 | 22.1 | 22.0 | 21.9 | 22.2 | 22.4 | 22.1 | 22.0 | 21.7 | 21.8 | 21.3 | 21.9 | 20.6 | 21.8 | 22.1 | 22.2 | 21.5 |
| | SD | 3.61 | 3.91 | 6.10 | 3.60 | 3.65 | 3.89 | 3.91 | 3.89 | 3.47 | 3.56 | 3.59 | 3.64 | 3.61 | 3.94 | 3.61 | 3.66 | 3.66 | 3.62 | 3.97 | 3.92 | 3.93 | 3.51 | 4.08 | 3.59 | 3.64 | 3.58 | 3.95 |
| | 5th ptile | 17.7 | 17.3 | 2.58 | 16.0 | 16.2 | 16.5 | 16.1 | 15.8 | 17.2 | 16.4 | 17.0 | 17.3 | 17.2 | 16.6 | 17.4 | 17.6 | 17.3 | 17.2 | 16.2 | 16.4 | 16.0 | 17.0 | 14.5 | 17.0 | 17.2 | 17.4 | 16.1 |
| | Median | 21.6 | 21.5 | 10.8 | 20.3 | 20.5 | 20.8 | 20.6 | 20.4 | 21.4 | 20.9 | 21.1 | 21.3 | 21.1 | 21.1 | 21.5 | 21.4 | 21.3 | 21.3 | 21.1 | 21.0 | 20.7 | 21.3 | 20.1 | 21.0 | 21.3 | 21.5 | 20.8 |
| | 95th ptile | 28.3 | 28.9 | 23.3 | 26.9 | 27.3 | 28.1 | 27.9 | 27.7 | 27.6 | 27.3 | 27.8 | 28.1 | 27.8 | 28.4 | 28.1 | 28.3 | 28.2 | 28.0 | 28.4 | 28.3 | 28.0 | 27.5 | 27.5 | 27.7 | 28.0 | 28.0 | 28.1 |

Table 3. Continuation.

| Month | Descriptive Statistics | In 1st fl | In 2nd fl | Out | North Panels | | | | | East Panels | | | | | | South Panels | | | | | | | West Panels | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | P1-15 | P1-16 | P2-15 | P2-16 | P2-17 | P1-10 | P1-11 | P1-12 | P1-13 | P1-14 | P2-14 | P1-6 | P1-7 | P1-8 | P1-9 | P2-6 | P2-7 | P2-8 | P1-1 | P1-2 | P1-3 | P1-4 | P1-5 | P2-5 |
| | | | | | Layout A | Layout A | Layout A | Layout B | Layout B | Layout C | Layout C | Layout A | Layout A | Layout A | Layout A | Layout A | Layout A | Layout B | Layout B | Layout A | Layout B | Layout A | Layout C | Layout C | Layout B | Layout A | Layout A | Layout B |
| | | | | | T4A | T4A | T4A | T4B | T4B | T4C | T4C | T4A | T4A | T4A | T4A | T4A | T4A | T4B | T4B | T4A | T4C | T4A | T4C | T3D | T4B | T4A | T4A | T4B |
| May 10 | Mean | 21.5 | 21.7 | 16.5 | 20.9 | 20.9 | 20.4 | 21.2 | 20.2 | 21.4 | 21.5 | 21.3 | 21.4 | 21.4 | 21.6 | 21.7 | 21.6 | 21.5 | 21.4 | 20.4 | 21.4 | 20.2 | 21.4 | 21.5 | 21.3 | 21.4 | 21.6 | 21.3 |
| | SD | 1.77 | 2.12 | 7.18 | 2.26 | 2.13 | 1.16 | 2.43 | 0.89 | 1.98 | 2.61 | 2.12 | 1.98 | 2.03 | 2.47 | 2.26 | 2.04 | 2.13 | 2.17 | 1.16 | 2.54 | 0.89 | 2.09 | 3.86 | 2.17 | 2.21 | 2.12 | 2.67 |
| | 5th ptile | 17.5 | 17.0 | 3.20 | 16.1 | 16.2 | 16.3 | 16.0 | 15.7 | 17.0 | 16.0 | 16.7 | 17.0 | 17.0 | 16.3 | 16.8 | 17.1 | 16.7 | 16.7 | 15.8 | 16.1 | 15.7 | 17.0 | 14.2 | 16.7 | 16.8 | 17.1 | 15.8 |
| | Median | 22.3 | 22.5 | 17.0 | 21.6 | 21.8 | 22.1 | 22.0 | 21.9 | 22.4 | 22.4 | 22.1 | 22.2 | 22.2 | 22.2 | 22.4 | 22.4 | 22.3 | 22.2 | 22.0 | 22.1 | 21.8 | 22.5 | 21.6 | 22.1 | 22.0 | 22.4 | 22.0 |
| | 95th ptile | 23.0 | 23.8 | 27.5 | 23.5 | 23.0 | 23.8 | 23.9 | 24.2 | 23.1 | 24.5 | 23.6 | 23.3 | 23.5 | 24.4 | 24.2 | 23.6 | 23.7 | 23.8 | 25.1 | 24.5 | 24.6 | 23.2 | 28.2 | 23.9 | 24.5 | 24.2 | 24.8 |
| Jun 10 | Mean | 20.5 | 21.1 | 19.4 | 20.5 | 20.5 | 20.9 | 21.0 | 21.1 | 20.8 | 21.2 | 20.6 | 20.5 | 20.7 | 21.2 | 21.1 | 21.0 | 20.8 | 20.8 | 21.2 | 21.1 | 21.0 | 21.0 | 21.8 | 20.8 | 20.8 | 21.0 | 21.1 |
| | SD | 2.06 | 2.04 | 4.29 | 2.01 | 1.96 | 2.01 | 2.01 | 2.01 | 1.90 | 1.99 | 2.06 | 2.11 | 2.05 | 2.06 | 1.87 | 1.83 | 1.90 | 1.93 | 2.18 | 2.05 | 2.11 | 1.90 | 2.92 | 1.99 | 1.99 | 1.96 | 2.11 |
| | 5th ptile | 17.6 | 18.1 | 12.0 | 17.4 | 17.8 | 17.7 | 17.8 | 17.8 | 18.2 | 17.9 | 17.6 | 17.5 | 17.7 | 17.8 | 18.3 | 18.3 | 18.0 | 17.9 | 17.6 | 17.8 | 17.6 | 18.4 | 17.3 | 17.8 | 17.8 | 18.0 | 17.7 |
| | Median | 22.1 | 22.2 | 19.3 | 21.4 | 21.6 | 21.7 | 21.7 | 21.6 | 22.0 | 21.9 | 21.8 | 21.9 | 21.9 | 21.9 | 22.0 | 22.1 | 21.9 | 21.8 | 21.6 | 21.7 | 21.5 | 22.1 | 21.6 | 21.7 | 21.8 | 22.0 | 21.7 |
| | 95th ptile | 22.5 | 23.5 | 26.4 | 23.2 | 22.9 | 23.4 | 23.7 | 24.0 | 22.8 | 23.8 | 23.1 | 22.9 | 23.1 | 24.1 | 23.5 | 23.1 | 23.1 | 23.1 | 24.5 | 24.0 | 24.1 | 23.0 | 27.1 | 23.4 | 23.5 | 23.5 | 24.2 |
| Jul 10 | Mean | 22.4 | 23.2 | 23.6 | 22.6 | 22.6 | 20.4 | 23.2 | 20.2 | 22.8 | 22.7 | 22.7 | 22.5 | 22.8 | 23.6 | 23.3 | 22.9 | 22.8 | 22.8 | 20.4 | 23.5 | 20.2 | 23.1 | 24.6 | 23.0 | 23.0 | 23.1 | 23.5 |
| | SD | 0.16 | 0.64 | 4.26 | 0.81 | 0.55 | 1.16 | 0.91 | 0.89 | 0.38 | 0.37 | 0.70 | 0.50 | 0.69 | 1.04 | 0.79 | 0.51 | 0.58 | 0.64 | 1.16 | 1.09 | 0.89 | 0.43 | 2.91 | 0.79 | 1.13 | 0.83 | 1.26 |
| | 5th ptile | 22.1 | 22.3 | 16.3 | 21.4 | 21.7 | 21.8 | 21.8 | 21.7 | 22.2 | 22.1 | 21.8 | 21.8 | 21.9 | 22.0 | 22.1 | 22.1 | 21.9 | 21.9 | 21.6 | 21.8 | 21.4 | 22.2 | 20.9 | 21.9 | 21.8 | 22.1 | 21.8 |
| | Median | 22.4 | 23.1 | 23.3 | 22.5 | 22.5 | 23.0 | 23.2 | 23.3 | 22.8 | 22.6 | 22.6 | 22.4 | 22.6 | 23.5 | 23.2 | 22.9 | 22.7 | 22.8 | 23.5 | 23.4 | 23.3 | 23.1 | 23.8 | 22.8 | 22.6 | 22.8 | 23.4 |
| | 95th ptile | 22.6 | 24.3 | 30.4 | 24.2 | 23.6 | 24.6 | 24.9 | 25.3 | 23.6 | 23.4 | 24.0 | 23.4 | 24.1 | 25.4 | 24.6 | 23.8 | 23.8 | 24.0 | 26.2 | 25.4 | 25.7 | 23.8 | 30.5 | 24.5 | 25.5 | 24.7 | 25.9 |
| Aug 10 | Mean | 22.4 | 22.9 | 21.7 | 22.3 | 22.3 | 20.4 | 22.9 | 20.2 | 22.7 | 22.6 | 22.6 | 22.4 | 22.5 | 23.1 | 23.1 | 22.8 | 22.7 | 22.8 | 20.4 | 23.1 | 20.2 | 22.8 | 23.7 | 22.7 | 22.8 | 22.9 | 23.1 |
| | SD | 0.16 | 0.73 | 3.96 | 0.67 | 0.52 | 1.16 | 1.00 | 0.89 | 0.35 | 0.31 | 0.64 | 0.47 | 0.57 | 1.14 | 0.85 | 0.53 | 0.58 | 0.69 | 1.16 | 1.18 | 0.89 | 0.41 | 2.67 | 0.73 | 1.00 | 0.66 | 1.26 |
| | 5th ptile | 22.1 | 22.1 | 15.3 | 21.3 | 21.5 | 21.5 | 21.6 | 21.4 | 22.1 | 22.1 | 21.7 | 21.8 | 21.8 | 21.6 | 22.0 | 22.1 | 21.9 | 21.9 | 21.3 | 21.6 | 21.2 | 22.1 | 20.5 | 21.8 | 21.7 | 22.1 | 21.4 |
| | Median | 22.4 | 22.7 | 21.3 | 22.2 | 22.2 | 22.6 | 22.7 | 22.8 | 22.7 | 22.6 | 22.5 | 22.3 | 22.4 | 23.0 | 23.0 | 22.8 | 22.6 | 22.6 | 22.9 | 22.9 | 22.8 | 22.8 | 23.0 | 22.6 | 22.5 | 22.7 | 22.8 |
| | 95th ptile | 22.7 | 24.5 | 28.3 | 23.5 | 23.3 | 24.7 | 24.8 | 25.2 | 23.3 | 23.1 | 23.8 | 23.3 | 23.5 | 25.4 | 24.8 | 23.8 | 23.8 | 24.1 | 26.5 | 25.5 | 25.7 | 23.6 | 29.3 | 24.3 | 24.9 | 24.3 | 25.6 |

Notes: Layouts A, B, C and D refer to the location of the sensors per Figures 25 through 28.
Abbreviations: NA, not available; ptile, percentile; SD, standard deviation.

Table 4. Monthly relative humidity (%) at exterior side of stud cavity. Refer to Figures 25 through 28 for sensor location.

| Month | Descriptive Statistics | In 1st fl | In 2nd fl | Out | North Panels | | | | | East Panels | | | | | | South Panels | | | | | | | West Panels | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | P1-15 | P1-16 | P2-15 | P2-16 | P2-17 | P1-10 | P1-11 | P1-12 | P1-13 | P1-14 | P2-14 | P1-6 | P1-7 | P1-8 | P1-9 | P2-6 | P2-7 | P2-8 | P1-1 | P1-2 | P1-3 | P1-4 | P1-5 | P2-5 |
| | | | | | Layout A | Layout A | Layout A | Layout B | Layout B | Layout C | Layout C | Layout A | Layout A | Layout A | Layout A | Layout A | Layout A | Layout B | Layout B | Layout A | Layout B | Layout A | Layout C | Layout D | Layout B | Layout A | Layout A | Layout B |
| | | | | | RH1A | RH1A | RH1A | RH1B | RH1B | RH1C | RH1C | RH1A | RH1A | RH1A | RH1A | RH1A | RH1A | RH1B | RH1B | RH1A | RH1B | RH1A | RH1C | RH2D | RH1B | RH1A | RH1A | RH1B |
| Sep 09 | Mean | 51.3 | 50.8 | NA | 71.4 | 55.8 | NA | 52.1 | 58.0 | 59.9 | 53.9 | 51.6 | 62.0 | 61.0 | 52.5 | 50.4 | 54.3 | 55.5 | 51.1 | 51.6 | 46.9 | 67.0 | 68.3 | 80.8 | 45.5 | 54.1 | 54.1 | 53.3 |
| | SD | 1.73 | 1.82 | NA | 6.91 | 3.93 | NA | 1.33 | 1.33 | 0.52 | 4.25 | 1.67 | 12.1 | 10.7 | 6.90 | 2.27 | 5.38 | 17.6 | 14.0 | 16.7 | 6.88 | 9.07 | 1.90 | 5.66 | 2.93 | 8.96 | 14.7 | 6.77 |
| | 5th ptile | 48.3 | 47.7 | NA | 58.4 | 49.3 | NA | 50.2 | 56.0 | 58.9 | 46.1 | 48.5 | 42.1 | 43.5 | 40.6 | 46.6 | 46.2 | 27.9 | 27.4 | 22.4 | 33.8 | 49.8 | 64.9 | 73.9 | 41.3 | 36.9 | 30.3 | 41.5 |
| | Median | 51.5 | 50.9 | NA | 72.9 | 56.1 | NA | 52.0 | 58.1 | 60.0 | 54.2 | 51.8 | 61.5 | 60.8 | 52.5 | 50.5 | 54.2 | 56.5 | 53.2 | 53.5 | 47.7 | 68.0 | 68.5 | 79.4 | 45.1 | 55.5 | 52.9 | 53.8 |
| | 95th ptile | 54.2 | 53.6 | NA | 80.7 | 61.3 | NA | 54.4 | 60.1 | 60.7 | 61.5 | 54.1 | 82.3 | 79.3 | 63.9 | 54.3 | 64.7 | 88.6 | 73.9 | 76.7 | 57.2 | 81.1 | 71.0 | 91.7 | 50.4 | 67.1 | 78.1 | 64.9 |
| Oct 09 | Mean | 43.9 | 43.8 | NA | 76.7 | 41.0 | 77.2 | 46.1 | 89.7 | 56.6 | 56.9 | 48.1 | 86.1 | 84.6 | 65.8 | 21.0 | 21.3 | 21.1 | 21.0 | 20.4 | 20.6 | 20.2 | 61.3 | 87.3 | 55.7 | 70.7 | 81.7 | 67.2 |
| | SD | 3.15 | 3.07 | NA | 6.08 | 5.50 | 13.0 | 2.82 | 3.78 | 2.11 | 4.74 | 3.05 | 7.43 | 6.10 | 4.68 | 0.71 | 0.45 | 0.66 | 0.60 | 1.16 | 0.72 | 0.89 | 2.19 | 2.71 | 2.22 | 6.73 | 9.02 | 4.86 |
| | 5th ptile | 40.0 | 39.9 | NA | 64.3 | 32.9 | 40.2 | 42.4 | 49.0 | 54.1 | 48.8 | 44.0 | 75.1 | 74.7 | 58.4 | 20.2 | 20.8 | 20.3 | 20.4 | 19.1 | 19.6 | 18.9 | 59.0 | 83.4 | 52.9 | 58.1 | 65.4 | 59.5 |
| | Median | 42.8 | 42.8 | NA | 77.4 | 41.7 | 59.2 | 45.3 | 52.6 | 55.5 | 58.5 | 47.7 | 85.2 | 84.2 | 65.4 | 20.9 | 21.1 | 20.9 | 20.9 | 20.1 | 20.5 | 20.1 | 60.2 | 87.0 | 55.1 | 71.2 | 82.4 | 66.9 |
| | 95th ptile | 49.5 | 49.0 | NA | 84.4 | 49.4 | 79.5 | 50.9 | 58.2 | 59.5 | 63.3 | 52.8 | 99.5 | 95.5 | 74.6 | 22.6 | 22.2 | 22.6 | 22.4 | 23.3 | 22.2 | 22.0 | 64.9 | 92.3 | 60.4 | 81.4 | 96 | 76.1 |
| Nov 09 | Mean | 38.0 | 38.0 | 72.2 | 80.1 | 35.2 | NA | 41.0 | 47.4 | 52.1 | 53.4 | 42.7 | 87.6 | 87.0 | 68.5 | 41.8 | 43.8 | 60.4 | 58.6 | 79.5 | 60.4 | 91.1 | 55.8 | 85.0 | 57.5 | 78.2 | 88.0 | 71.2 |
| | SD | 1.72 | 1.64 | 18.0 | 6.50 | 3.06 | NA | 1.73 | 1.80 | 1.58 | 4.60 | 1.88 | 8.12 | 5.74 | 4.86 | 2.56 | 6.45 | 18.8 | 16.6 | 14.5 | 6.50 | 3.78 | 1.86 | 4.19 | 2.02 | 6.07 | 7.54 | 4.97 |
| | 5th ptile | 35.2 | 35.3 | 37.6 | 67.0 | 30.3 | NA | 38.5 | 44.8 | 49.9 | 44.1 | 40.1 | 73.9 | 77.1 | 60.8 | 37.9 | 35.4 | 25.7 | 28.9 | 44.8 | 47.0 | 83.9 | 52.0 | 78.8 | 54.5 | 67.3 | 73.2 | 63.0 |
| | Median | 51.5 | 50.9 | 76.7 | 81.7 | 35.1 | NA | 40.8 | 46.9 | 51.5 | 54.3 | 42.4 | 87.6 | 87.6 | 68.4 | 42.0 | 43.4 | 62.7 | 61.6 | 83.2 | 60.9 | 91.9 | 55.6 | 85.5 | 57.3 | 78.3 | 89.1 | 70.6 |
| | 95th ptile | 41.2 | 41.6 | 95.0 | 89.1 | 39.9 | NA | 44.8 | 51.4 | 55.0 | 59.5 | 46.7 | 100.6 | 95.4 | 76.1 | 47.3 | 56.4 | 84.9 | 81.8 | 93.9 | 68.9 | 95.6 | 59.3 | 91.2 | 61.2 | 87.6 | 98.5 | 79.6 |
| Dec 09 | Mean | 28.6 | 28.5 | 74.3 | 82.8 | 24.0 | NA | 32.2 | 89.7 | 46.3 | 52.1 | 34.7 | 98.5 | 98.4 | 80.7 | 34.3 | 40.3 | 71.7 | 72.2 | 77.2 | 71.1 | 89.7 | 45.2 | 85.1 | 63.5 | 90.4 | 98.5 | 80.8 |
| | SD | 3.81 | 3.82 | 15.2 | 4.93 | 6.02 | NA | 3.97 | 3.78 | 2.94 | 4.45 | 3.69 | 3.50 | 3.07 | 4.12 | 3.52 | 7.61 | 15.0 | 11.8 | 13.0 | 5.54 | 3.78 | 4.59 | 3.36 | 2.13 | 4.53 | 3.92 | 4.21 |
| | 5th ptile | 24.2 | 24.1 | 45.3 | 73.0 | 15.1 | NA | 27.0 | 32.5 | 42.2 | 44.3 | 30.2 | 89.3 | 90.0 | 72.7 | 29.9 | 29.6 | 43.4 | 48.2 | 86.3 | 61.2 | 94.5 | 38.8 | 79.3 | 59.7 | 81.1 | 89.0 | 73.1 |
| | Median | 27.7 | 27.6 | 77.8 | 83.2 | 23.6 | NA | 31.2 | 36.5 | 47.2 | 52.7 | 33.8 | 100 | 100 | 81.1 | 32.9 | 39.5 | 72.9 | 73.1 | 97.0 | 71.1 | 100 | 43.5 | 85.3 | 63.7 | 90.7 | 100 | 80.9 |
| | 95th ptile | 35.2 | 35.4 | 94.5 | 89.9 | 34.1 | NA | 38.7 | 44.7 | 51.0 | 58.0 | 40.8 | 100 | 100 | 86.2 | 40.4 | 55.4 | 93.1 | 88.8 | 100 | 79.1 | 100 | 52.6 | 90.3 | 66.8 | 96.8 | 100 | 87.2 |
| Jan 10 | Mean | 23.5 | 24.2 | 80.2 | 83.1 | 20.4 | NA | 27.4 | 89.7 | 41.4 | 47.6 | 28.5 | 95.6 | 98.6 | 81.3 | 28.9 | 37.0 | 71.8 | 70.1 | 77.2 | 73.5 | 89.7 | 37.7 | 75.3 | 62.5 | 92.0 | 95.6 | 81.4 |
| | SD | 2.07 | 1.99 | 12.4 | 5.72 | 4.32 | NA | 1.80 | 3.78 | 1.06 | 4.41 | 1.42 | 5.78 | 3.20 | 4.01 | 1.72 | 6.60 | 17.4 | 15.7 | 13.0 | 5.99 | 3.78 | 1.87 | 3.08 | 2.44 | 4.65 | 6.74 | 4.37 |
| | 5th | 19.9 | 21.0 | 57.3 | 72.3 | 12.5 | NA | 24.6 | 30.0 | 39.4 | 39.9 | 26.2 | 83.2 | 90.5 | 75.3 | 26.2 | 27.9 | 32.2 | 35.9 | 94.6 | 63.0 | 100 | 33.8 | 70.6 | 58.8 | 83.9 | 82.5 | 74.1 |
| | 50th | 23.4 | 24.2 | 83.8 | 83.9 | 20.1 | NA | 27.2 | 31.9 | 41.4 | 47.1 | 28.3 | 100 | 100 | 81.4 | 29.0 | 36.1 | 75.4 | 73.0 | 99.6 | 74.5 | 100 | 37.6 | 75.7 | 62.5 | 92.3 | 100 | 81.8 |
| | 95th | 26.7 | 27.5 | 95.4 | 91.4 | 26.5 | NA | 30.2 | 35.0 | 43.2 | 53.7 | 30.8 | 100 | 100 | 86.9 | 32.0 | 50.1 | 91.7 | 91.0 | 100 | 81.8 | 100 | 40.3 | 80.9 | 65.9 | 98.5 | 100 | 87.8 |
| Feb 10 | Mean | 22.3 | 22.9 | 82.0 | 25.3 | 30.0 | NA | 22.9 | 82.0 | 38.5 | 42.4 | 26.3 | 90.0 | 93.0 | 77.9 | 27.0 | 39.9 | 70.3 | 62.7 | 97.8 | 73.3 | 100 | 33.8 | 68.0 | 58.2 | 88.1 | 88.4 | 78.7 |
| | SD | 1.43 | 1.28 | 12.3 | 1.12 | 0.95 | NA | 1.28 | 12.3 | 0.44 | 2.31 | 1.00 | 6.62 | 6.22 | 2.44 | 1.16 | 8.66 | 13.4 | 8.29 | 2.08 | 3.22 | 0 | 0.77 | 3.51 | 1.59 | 3.30 | 6.78 | 2.97 |
| | 5th ptile | 19.8 | 20.7 | 56.8 | 23.5 | 28.4 | NA | 20.7 | 56.8 | 37.9 | 39.3 | 24.7 | 77.7 | 81.5 | 73.8 | 25.3 | 29.5 | 47.0 | 46.7 | 94.0 | 68.2 | 100 | 32.6 | 64.3 | 56.5 | 82.2 | 78.0 | 74.1 |
| | Median | 22.3 | 23.0 | 83.5 | 25.5 | 30.2 | NA | 23.0 | 83.5 | 38.4 | 41.6 | 26.3 | 90.7 | 94.7 | 77.8 | 27.1 | 37.5 | 71.2 | 64.6 | 98.2 | 73.3 | 100 | 33.7 | 66.6 | 57.7 | 88.0 | 88 | 78.2 |
| | 95th ptile | 24.7 | 25.0 | 98.7 | 27.2 | 31.5 | NA | 25.0 | 98.7 | 39.3 | 46.0 | 27.9 | 100 | 100 | 81.9 | 28.8 | 58.4 | 89.5 | 72.9 | 100 | 78.2 | 100 | 35.1 | 75.2 | 61.1 | 93.1 | 100 | 83.6 |
| Mar 10 | Mean | 24.8 | 25.0 | 64.8 | 64.5 | 23.9 | NA | 26.4 | 89.7 | 38.8 | 39.5 | 27.6 | 63.8 | 64.9 | 61.4 | 27.6 | 31.4 | 43.8 | 42.6 | 77.2 | 63.3 | 89.7 | 36.0 | 60.8 | 50.2 | 75.1 | 62.6 | 67.7 |
| | SD | 1.39 | 1.36 | 21.6 | 10.8 | 3.92 | NA | 1.97 | 3.78 | 0.76 | 3.78 | 1.17 | 11.0 | 9.80 | 7.41 | 1.47 | 4.94 | 16.4 | 13.2 | 13.0 | 7.39 | 3.78 | 1.13 | 5.97 | 4.49 | 6.67 | 11.8 | 5.51 |
| | 5th ptile | 22.2 | 22.6 | 31.5 | 46.3 | 16.7 | NA | 22.7 | 29.2 | 37.6 | 35.0 | 25.4 | 44.9 | 47.6 | 51.7 | 24.9 | 25.0 | 19.3 | 19.7 | 32.9 | 49.6 | 93.9 | 34.3 | 55.9 | 44.5 | 62.3 | 41.2 | 59.3 |
| | Median | 25.3 | 25.3 | 64.4 | 65.5 | 24.4 | NA | 26.6 | 31.2 | 38.7 | 38.8 | 27.7 | 63.7 | 65.1 | 59.6 | 27.8 | 31.0 | 43.4 | 43.4 | 69.9 | 62.7 | 100 | 35.9 | 59.4 | 49.8 | 75.2 | 63.8 | 67.2 |
| | 95th ptile | 26.7 | 27.1 | 97.6 | 81.5 | 29.9 | NA | 28.8 | 33.0 | 40.0 | 45.8 | 29.3 | 83.2 | 82.1 | 75.2 | 29.6 | 40.3 | 67.9 | 61.9 | 98.2 | 75.6 | 100 | 37.7 | 65.8 | 57.5 | 85.4 | 81.0 | 76.8 |
| Apr 10 | Mean | 27.8 | 28.0 | 54.6 | 60.8 | 28.5 | NA | 29.4 | 33.3 | 39.8 | 37.3 | 29.5 | 51.2 | 51.9 | 45.6 | 29.6 | 32.0 | 39.5 | 37.4 | 49.3 | 51.9 | 74.4 | 39.5 | 66.2 | 39.3 | 63.2 | 48.9 | 54.2 |
| | SD | 1.56 | 1.73 | 22.8 | 11.8 | 4.73 | NA | 2.83 | 1.59 | 1.03 | 3.77 | 1.37 | 10.5 | 9.36 | 5.59 | 1.67 | 5.04 | 14.0 | 11.3 | 14.2 | 5.71 | 7.99 | 2.49 | 10.1 | 3.00 | 7.67 | 12.9 | 5.39 |
| | 5th ptile | 24.9 | 25.0 | 25.4 | 40.4 | 20.1 | NA | 24.9 | 30.5 | 38.6 | 32.1 | 27.0 | 36.7 | 37.1 | 36.6 | 26.6 | 23.6 | 20.3 | 20.2 | 22.5 | 42.1 | 62.9 | 35.8 | 55.9 | 35.7 | 47.7 | 27.9 | 45.7 |
| | Median | 28.2 | 28.3 | 51.2 | 61.5 | 29.9 | NA | 29.6 | 33.9 | 39.4 | 37.1 | 29.5 | 49.5 | 51.1 | 45.3 | 29.7 | 32.3 | 37.2 | 36.5 | 49.6 | 52.0 | 74.6 | 40.3 | 61.6 | 38.2 | 64.1 | 48.3 | 54.1 |
| | 95th ptile | 30.0 | 30.9 | 94.9 | 78.3 | 35.0 | NA | 35.1 | 35.5 | 41.8 | 44.5 | 31.8 | 71.7 | 69.0 | 56.1 | 32.4 | 40.0 | 62.9 | 56.1 | 71.9 | 61.5 | 88.8 | 43.6 | 88.0 | 45.0 | 74.2 | 71.5 | 63.0 |

Table 4. Continuation.

| Month | Descriptive Statistics | In 1st fl | In 2nd fl | Out | North Panels | | | | | East Panels | | | | | | South Panels | | | | | | | West Panels | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | P1-15 | P1-16 | P2-15 | P2-16 | P2-17 | P1-10 | P1-11 | P1-12 | P1-13 | P1-14 | P2-14 | P1-6 | P1-7 | P1-8 | P1-9 | P2-6 | P2-7 | P2-8 | P1-1 | P1-2 | P1-3 | P1-4 | P1-5 | P2-5 |
| | | | | | Layout A RH1A | Layout A RH1A | Layout A RH1A | Layout B RH1B | Layout B RH1B | Layout C RH1C | Layout C RH1C | Layout A RH1A | Layout A RH1A | Layout A RH1A | Layout A RH1A | Layout A RH1A | Layout A RH1A | Layout B RH1B | Layout B RH1B | Layout A RH1A | Layout B RH1B | Layout A RH1A | Layout C RH1C | Layout C RH2D | Layout B RH1B | Layout A RH1A | Layout A RH1A | Layout B RH1B |
| May 10 | Mean | 36.4 | 36.1 | 61.6 | 57.7 | 40.1 | NA | 38.7 | 89.7 | 41.8 | 39.2 | 35.8 | 45.7 | 45.8 | 39.6 | 36.3 | 40.6 | 43.1 | 39.4 | 77.2 | 46.3 | 89.7 | 50.3 | 78.0 | 37.2 | 57.0 | 45.8 | 47.3 |
| | SD | 4.25 | 3.60 | 17.8 | 10.7 | 6.10 | NA | 3.78 | 3.78 | 1.45 | 3.26 | 2.79 | 11.3 | 10.6 | 5.21 | 2.52 | 3.87 | 12.1 | 9.84 | 13.0 | 4.64 | 3.78 | 4.37 | 10.1 | 1.84 | 9.43 | 15.0 | 5.07 |
| | 5th ptile | 31.0 | 31.4 | 33.2 | 40.9 | 30.5 | NA | 34.0 | 36.0 | 39.6 | 34.0 | 30.6 | 28.8 | 29.4 | 30.3 | 31.7 | 36.6 | 24.7 | 23.7 | 22.0 | 37.4 | 38.4 | 42.1 | 57.8 | 34.1 | 39.2 | 23.1 | 38.2 |
| | Median | 35.1 | 35.2 | 60.7 | 58.3 | 39.6 | NA | 37.4 | 40.3 | 41.5 | 39.1 | 35.3 | 44.2 | 44.7 | 40.0 | 36.1 | 39.6 | 43.0 | 39.6 | 42.7 | 47.1 | 57.2 | 52.3 | 80.1 | 37.2 | 58.2 | 44.6 | 47.6 |
| | 95th ptile | 44.3 | 43.0 | 94.2 | 75.8 | 50.8 | NA | 45.4 | 48.1 | 44.4 | 44.7 | 41.2 | 67.7 | 66.8 | 48.0 | 41.3 | 48.4 | 64.3 | 57.7 | 70.3 | 53.4 | 73.4 | 56.0 | 90.8 | 39.8 | 69.2 | 72.1 | 55.7 |
| Jun 10 | Mean | 46.8 | 48.9 | 72.7 | 59.3 | 52.9 | NA | 50.7 | 54.2 | 48.7 | 47.4 | 47.7 | 50.3 | 49.2 | 42.1 | 48.4 | 54.9 | 57.3 | 50.2 | 48.6 | 47.0 | 56.8 | 59.2 | 86.0 | 40.1 | 50.0 | 46.9 | 46.4 |
| | SD | 3.80 | 4.78 | 16.1 | 9.02 | 6.08 | NA | 4.66 | 4.10 | 2.33 | 4.32 | 3.83 | 9.3 | 8.58 | 4.88 | 4.62 | 6.37 | 12.9 | 10.2 | 11.7 | 3.95 | 7.37 | 2.47 | 7.05 | 2.73 | 8.13 | 12.2 | 4.59 |
| | 5th ptile | 41.2 | 41.6 | 43.1 | 43.0 | 38.6 | NA | 41.1 | 47.6 | 45.2 | 38.7 | 42.5 | 33.9 | 33.1 | 34.6 | 42.4 | 44.6 | 35.3 | 32.2 | 30.6 | 40.0 | 44.8 | 56.1 | 67.3 | 35.1 | 35.9 | 27.1 | 38.5 |
| | Median | 46.8 | 48.8 | 74.8 | 60.3 | 54.9 | NA | 52.0 | 54.1 | 48.0 | 48.3 | 46.7 | 49.9 | 48.9 | 42.0 | 47.8 | 54.4 | 58.5 | 51.1 | 48.0 | 47.0 | 56.2 | 58.6 | 87.5 | 40.2 | 50.1 | 46.6 | 46.3 |
| | 95th ptile | 52.9 | 57.0 | 95.3 | 73.1 | 59.2 | NA | 56.1 | 60.1 | 53.4 | 53.1 | 54.9 | 64.8 | 62.5 | 50.3 | 56.4 | 66.0 | 76.8 | 65.0 | 70.1 | 53.0 | 69.2 | 63.4 | 93.9 | 45.1 | 62.3 | 66.8 | 53.8 |
| Jul 10 | Mean | 45.4 | 52.5 | 66.4 | 52.7 | 55.2 | NA | 53.5 | 89.7 | 53.9 | 55.4 | 51.2 | 45.8 | 45.7 | 41.0 | 51.8 | 55.4 | 52.0 | 46.1 | 77.2 | 47.0 | 89.7 | 61.7 | 88.5 | 39.3 | 52.1 | 42.0 | 46.0 |
| | SD | 2.78 | 3.31 | 15.4 | 9.64 | 5.16 | NA | 4.50 | 3.78 | 1.39 | 3.67 | 2.73 | 9.58 | 9.00 | 6.05 | 2.91 | 6.65 | 14.6 | 11.4 | 13.0 | 5.01 | 3.78 | 2.19 | 4.4 | 3.65 | 10.6 | 11.7 | 5.51 |
| | 5th ptile | 40.4 | 46.3 | 41.6 | 36.8 | 44.2 | NA | 45.3 | 52.2 | 51.6 | 50.3 | 46.1 | 30.0 | 30.8 | 30.6 | 46.7 | 44.5 | 30.2 | 28.4 | 24.7 | 38.4 | 37.5 | 58.4 | 79.1 | 34.0 | 33.3 | 21.3 | 36.5 |
| | Median | 45.5 | 52.5 | 66.0 | 52.5 | 56.3 | NA | 53.5 | 58.1 | 53.8 | 55.2 | 51.5 | 45.2 | 45.4 | 41.0 | 51.8 | 55.2 | 51.0 | 45.9 | 42.4 | 47.4 | 51.0 | 61.6 | 89.3 | 38.8 | 53.0 | 42.5 | 45.7 |
| | 95th ptile | 49.6 | 57.8 | 92.5 | 68.6 | 62.4 | NA | 61.5 | 61.8 | 56.1 | 62.0 | 55.5 | 62.5 | 60.5 | 51.5 | 56.5 | 66.3 | 82.1 | 67.5 | 64.4 | 56.0 | 71.1 | 65.8 | 94.2 | 45.6 | 70.5 | 62.3 | 55.5 |
| Aug 10 | Mean | 58.7 | 57.6 | 70.6 | 65.5 | 59.0 | NA | 59.3 | 89.7 | 58.3 | 61.7 | 56.0 | 56.1 | 54.6 | 48.2 | 55.4 | 57.2 | 54.9 | 48.7 | 77.2 | 49.8 | 89.7 | 64.0 | 90.1 | 43.6 | 58.1 | 51.7 | 51.0 |
| | SD | 4.69 | 4.43 | 15.7 | 13.7 | 4.52 | NA | 6.09 | 3.78 | 1.85 | 4.85 | 3.00 | 11.09 | 9.74 | 5.61 | 3.26 | 6.34 | 14.0 | 12.1 | 13.0 | 5.30 | 3.78 | 2.00 | 4.07 | 3.15 | 10.7 | 14.9 | 5.93 |
| | 5th ptile | 51.2 | 50.5 | 44.9 | 43.3 | 51.0 | NA | 48.9 | 56.4 | 55.0 | 53.7 | 50.8 | 39.3 | 38.9 | 39.2 | 49.6 | 46.1 | 32.1 | 28.4 | 26.4 | 40.3 | 45.6 | 60.2 | 82.2 | 39.4 | 38.7 | 28.4 | 40.9 |
| | Median | 58.2 | 57.8 | 71.0 | 64.7 | 59.3 | NA | 57.5 | 63.0 | 59.0 | 61.0 | 56.0 | 54.9 | 54.5 | 47.9 | 55.5 | 57.0 | 55.2 | 49.5 | 48.5 | 50.6 | 57.7 | 63.6 | 90.2 | 43.0 | 58.0 | 51.0 | 51.1 |
| | 95th ptile | 69.1 | 66.3 | 96.0 | 86.9 | 65.4 | NA | 67.9 | 67.0 | 60.5 | 71.7 | 61.5 | 77.0 | 71.4 | 57.4 | 60.1 | 67.3 | 77.4 | 68.8 | 68.1 | 58.5 | 72.8 | 67.2 | 96.2 | 49.7 | 76.4 | 79.1 | 60.9 |

Notes: Layouts A, B, C and D refer to the location of the sensors per Figures 25 through 28.
Abbreviations: NA, not available; ptile, percentile; SD, standard deviation.

Table 5. Monthly water vapor pressure (kPa) at exterior side of stud cavity. Refer to Figures 25 through 28 for sensor location.

| Month | Descriptive Statistics | In 1st fl | In 2nd fl | Out | North Panels | | | | | East Panels | | | | | | South Panels | | | | | | | West Panels | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | P1-15 | P1-16 | P2-15 | P2-16 | P2-17 | P1-10 | P1-11 | P1-12 | P1-13 | P1-14 | P2-14 | P1-6 | P1-7 | P1-8 | P1-9 | P2-6 | P2-7 | P2-8 | P1-1 | P1-2 | P1-3 | P1-4 | P1-5 | P2-5 |
| | | | | | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout B T3B/RH1B | Layout B T3B/RH1B | Layout C T1C/RH1C | Layout C T1C/RH1C | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout B T3B/RH1B | Layout B T3B/RH1B | Layout A T1A/RH1A | Layout B T3B/RH1B | Layout A T1A/RH1A | Layout C T1C/RH1C | Layout D T2D/RH2D | Layout B T3B/RH1B | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout B T3B/RH1B |
| Sep 09 | Mean | 1.32 | 1.33 | NA | 1.34 | 1.37 | NA | 1.30 | 1.48 | 1.52 | 1.35 | 1.30 | 1.44 | 1.51 | 1.15 | 1.33 | 1.48 | 1.48 | 1.35 | 1.18 | 1.13 | 1.41 | 1.74 | 1.96 | 1.15 | 1.35 | 1.32 | 1.20 |
| | SD | 0.10 | 0.10 | NA | 0.35 | 0.18 | NA | 0.12 | 0.12 | 0.11 | 0.25 | 0.09 | 0.28 | 0.28 | 0.41 | 0.12 | 0.28 | 0.37 | 0.35 | 0.42 | 0.42 | 0.46 | 0.14 | 0.63 | 0.63 | 0.54 | 0.48 | 0.44 |
| | 5th ptile | 1.16 | 1.17 | NA | 0.82 | 1.04 | NA | 1.11 | 1.29 | 1.35 | 0.98 | 1.15 | 1.07 | 1.10 | 0.71 | 1.16 | 1.06 | 0.93 | 0.86 | 0.71 | 0.67 | 0.84 | 1.53 | 1.18 | 0.60 | 0.78 | 0.73 | 0.71 |
| | Median | 1.32 | 1.32 | NA | 1.30 | 1.38 | NA | 1.28 | 1.46 | 1.51 | 1.32 | 1.29 | 1.38 | 1.48 | 1.02 | 1.31 | 1.43 | 1.46 | 1.28 | 1.05 | 0.98 | 1.29 | 1.74 | 1.82 | 0.94 | 1.18 | 1.23 | 1.08 |
| | 95th ptile | 1.49 | 1.50 | NA | 1.96 | 1.65 | NA | 1.50 | 1.67 | 1.70 | 1.75 | 1.45 | 2.02 | 2.02 | 2.10 | 1.54 | 2.00 | 2.11 | 2.03 | 2.08 | 2.04 | 2.30 | 1.97 | 3.23 | 2.43 | 2.50 | 2.30 | 2.10 |
| Oct 09 | Mean | 1.11 | 1.12 | NA | 0.95 | 0.94 | NA | 1.07 | 1.23 | 1.30 | 1.04 | 1.11 | 1.29 | 1.25 | 0.98 | 1.14 | 1.09 | 1.12 | 1.07 | 1.20 | 0.91 | 1.26 | 1.39 | 1.46 | 0.86 | 1.03 | 1.23 | 0.92 |
| | SD | 0.08 | 0.08 | NA | 0.25 | 0.15 | NA | 0.08 | 0.09 | 0.07 | 0.16 | 0.08 | 0.25 | 0.25 | 0.34 | 0.11 | 0.27 | 0.37 | 0.30 | 0.51 | 0.32 | 0.43 | 0.08 | 0.32 | 0.31 | 0.32 | 0.35 | 0.25 |
| | 5th ptile | 1.01 | 1.03 | NA | 0.56 | 0.71 | NA | 0.97 | 1.12 | 1.18 | 0.75 | 1.02 | 0.95 | 0.90 | 0.60 | 1.01 | 0.73 | 0.63 | 0.69 | 0.72 | 0.56 | 0.73 | 1.27 | 1.06 | 0.53 | 0.64 | 0.80 | 0.59 |
| | Median | 1.08 | 1.09 | NA | 0.94 | 0.95 | NA | 1.04 | 1.20 | 1.28 | 1.03 | 1.08 | 1.25 | 1.23 | 0.92 | 1.10 | 1.06 | 1.10 | 1.04 | 1.05 | 0.82 | 1.18 | 1.38 | 1.42 | 0.80 | 0.97 | 1.17 | 0.89 |
| | 95th ptile | 1.25 | 1.25 | NA | 1.40 | 1.17 | NA | 1.21 | 1.38 | 1.41 | 1.30 | 1.24 | 1.77 | 1.72 | 1.62 | 1.32 | 1.58 | 1.72 | 1.66 | 2.41 | 1.68 | 2.15 | 1.55 | 2.09 | 1.42 | 1.67 | 1.91 | 1.37 |
| Nov 09 | Mean | 0.96 | 0.97 | 0.71 | 0.81 | 0.79 | NA | 0.92 | 1.07 | 1.16 | 0.89 | 0.96 | 1.12 | 1.10 | 0.86 | 0.98 | 0.89 | 0.93 | 0.90 | 1.06 | 0.83 | 1.10 | 1.22 | 1.25 | 0.74 | 0.93 | 1.10 | 0.80 |
| | SD | 0.04 | 0.04 | 0.21 | 0.22 | 0.09 | NA | 0.05 | 0.05 | 0.06 | 0.13 | 0.04 | 0.23 | 0.25 | 0.32 | 0.06 | 0.18 | 0.29 | 0.24 | 0.51 | 0.35 | 0.44 | 0.07 | 0.29 | 0.26 | 0.31 | 0.36 | 0.25 |
| | 5th ptile | 0.88 | 0.90 | 0.43 | 0.48 | 0.64 | NA | 0.84 | 0.98 | 1.07 | 0.70 | 0.90 | 0.81 | 0.75 | 0.50 | 0.89 | 0.65 | 0.51 | 0.61 | 0.59 | 0.47 | 0.59 | 1.09 | 0.88 | 0.43 | 0.55 | 0.69 | 0.48 |
| | Median | 0.96 | 0.97 | 0.68 | 0.77 | 0.78 | NA | 0.93 | 1.07 | 1.14 | 0.88 | 0.95 | 1.10 | 1.08 | 0.80 | 0.96 | 0.86 | 0.90 | 0.85 | 0.92 | 0.74 | 1.02 | 1.22 | 1.21 | 0.69 | 0.88 | 1.03 | 0.78 |
| | 95th ptile | 1.05 | 1.06 | 1.14 | 1.20 | 0.93 | NA | 1.02 | 1.16 | 1.27 | 1.11 | 1.05 | 1.54 | 1.53 | 1.52 | 1.10 | 1.21 | 1.47 | 1.44 | 2.32 | 1.65 | 2.05 | 1.34 | 1.79 | 1.23 | 1.53 | 1.78 | 1.25 |
| Dec 09 | Mean | 0.71 | 0.72 | 0.40 | 0.50 | 0.50 | NA | 0.69 | 0.80 | 0.93 | 0.63 | 0.72 | 0.76 | 0.74 | 0.57 | 0.73 | 0.62 | 0.65 | 0.67 | 0.75 | 0.54 | 0.68 | 0.90 | 0.85 | 0.49 | 0.60 | 0.73 | 0.52 |
| | SD | 0.10 | 0.10 | 0.21 | 0.20 | 0.15 | NA | 0.10 | 0.11 | 0.09 | 0.14 | 0.10 | 0.20 | 0.22 | 0.20 | 0.09 | 0.16 | 0.23 | 0.19 | 0.43 | 0.22 | 0.28 | 0.13 | 0.23 | 0.16 | 0.21 | 0.24 | 0.18 |
| | 5th ptile | 0.60 | 0.61 | 0.15 | 0.22 | 0.29 | NA | 0.56 | 0.68 | 0.81 | 0.43 | 0.60 | 0.46 | 0.41 | 0.29 | 0.60 | 0.43 | 0.38 | 0.45 | 0.33 | 0.28 | 0.32 | 0.73 | 0.52 | 0.26 | 0.30 | 0.37 | 0.25 |
| | Median | 0.69 | 0.70 | 0.34 | 0.48 | 0.52 | NA | 0.67 | 0.78 | 0.93 | 0.62 | 0.70 | 0.76 | 0.72 | 0.55 | 0.71 | 0.58 | 0.61 | 0.65 | 0.66 | 0.50 | 0.64 | 0.88 | 0.84 | 0.48 | 0.59 | 0.72 | 0.52 |
| | 95th ptile | 0.88 | 0.89 | 0.75 | 0.85 | 0.76 | NA | 0.86 | 0.99 | 1.11 | 0.89 | 0.89 | 1.13 | 1.15 | 0.96 | 0.89 | 0.92 | 1.08 | 1.02 | 1.53 | 0.94 | 1.21 | 1.13 | 1.26 | 0.77 | 0.99 | 1.14 | 0.83 |
| Jan 10 | Mean | 0.60 | 0.60 | 0.37 | 0.44 | 0.42 | NA | 0.57 | 0.66 | 0.81 | 0.55 | 0.59 | 0.68 | 0.67 | 0.51 | 0.61 | 0.55 | 0.59 | 0.59 | 0.72 | 0.51 | 0.62 | 0.74 | 0.74 | 0.44 | 0.56 | 0.64 | 0.47 |
| | SD | 0.05 | 0.05 | 0.19 | 0.18 | 0.11 | NA | 0.06 | 0.05 | 0.04 | 0.09 | 0.04 | 0.18 | 0.22 | 0.21 | 0.05 | 0.15 | 0.23 | 0.17 | 0.59 | 0.27 | 0.33 | 0.08 | 0.19 | 0.18 | 0.25 | 0.25 | 0.20 |
| | 5th | 0.51 | 0.51 | 0.12 | 0.16 | 0.23 | NA | 0.46 | 0.55 | 0.74 | 0.42 | 0.52 | 0.39 | 0.34 | 0.22 | 0.53 | 0.37 | 0.30 | 0.40 | 0.26 | 0.22 | 0.24 | 0.60 | 0.42 | 0.20 | 0.23 | 0.29 | 0.20 |
| | 50th | 0.60 | 0.61 | 0.34 | 0.43 | 0.41 | NA | 0.58 | 0.67 | 0.81 | 0.54 | 0.59 | 0.68 | 0.65 | 0.50 | 0.60 | 0.52 | 0.56 | 0.56 | 0.60 | 0.46 | 0.57 | 0.75 | 0.74 | 0.43 | 0.54 | 0.62 | 0.45 |
| | 95th | 0.68 | 0.69 | 0.63 | 0.74 | 0.57 | NA | 0.66 | 0.74 | 0.87 | 0.71 | 0.66 | 1.00 | 1.06 | 0.92 | 0.70 | 0.91 | 1.12 | 0.96 | 1.38 | 0.92 | 1.29 | 0.83 | 1.06 | 0.76 | 1.03 | 1.05 | 0.83 |
| Feb 10 | Mean | 0.57 | 0.57 | 0.38 | 0.45 | 0.41 | NA | 0.54 | 0.63 | 0.77 | 0.51 | 0.55 | 0.69 | 0.68 | 0.54 | 0.57 | 0.61 | 0.62 | 0.56 | 0.72 | 0.53 | 0.63 | 0.67 | 0.70 | 0.44 | 0.59 | 0.64 | 0.49 |
| | SD | 0.04 | 0.04 | 0.12 | 0.14 | 0.09 | NA | 0.04 | 0.04 | 0.02 | 0.07 | 0.03 | 0.12 | 0.13 | 0.17 | 0.04 | 0.16 | 0.20 | 0.14 | 0.40 | 0.19 | 0.21 | 0.03 | 0.14 | 0.13 | 0.21 | 0.18 | 0.14 |
| | 5th ptile | 0.50 | 0.51 | 0.16 | 0.25 | 0.28 | NA | 0.48 | 0.56 | 0.72 | 0.40 | 0.50 | 0.52 | 0.48 | 0.32 | 0.51 | 0.40 | 0.35 | 0.42 | 0.38 | 0.32 | 0.37 | 0.62 | 0.54 | 0.28 | 0.34 | 0.42 | 0.30 |
| | Median | 0.57 | 0.58 | 0.36 | 0.43 | 0.40 | NA | 0.54 | 0.63 | 0.77 | 0.50 | 0.56 | 0.69 | 0.67 | 0.52 | 0.57 | 0.59 | 0.61 | 0.55 | 0.63 | 0.50 | 0.62 | 0.66 | 0.68 | 0.42 | 0.56 | 0.61 | 0.48 |
| | 95th ptile | 0.63 | 0.63 | 0.58 | 0.69 | 0.56 | NA | 0.60 | 0.69 | 0.80 | 0.65 | 0.61 | 0.89 | 0.90 | 0.78 | 0.63 | 0.90 | 0.89 | 0.79 | 1.36 | 0.85 | 0.97 | 0.72 | 0.98 | 0.69 | 0.94 | 0.97 | 0.74 |
| Mar 10 | Mean | 0.66 | 0.66 | 0.54 | 0.58 | 0.54 | NA | 0.61 | 0.72 | 0.88 | 0.66 | 0.64 | 0.81 | 0.81 | 0.78 | 0.67 | 0.65 | 0.66 | 0.65 | 0.95 | 0.85 | 1.14 | 0.81 | 0.93 | 0.65 | 0.92 | 0.77 | 0.74 |
| | SD | 0.06 | 0.06 | 0.19 | 0.17 | 0.11 | NA | 0.07 | 0.07 | 0.08 | 0.09 | 0.06 | 0.19 | 0.20 | 0.42 | 0.07 | 0.14 | 0.21 | 0.19 | 0.61 | 0.43 | 0.55 | 0.09 | 0.29 | 0.32 | 0.46 | 0.28 | 0.30 |
| | 5th ptile | 0.56 | 0.57 | 0.21 | 0.31 | 0.34 | NA | 0.48 | 0.61 | 0.81 | 0.51 | 0.57 | 0.57 | 0.56 | 0.42 | 0.57 | 0.45 | 0.33 | 0.39 | 0.51 | 0.44 | 0.53 | 0.71 | 0.60 | 0.37 | 0.47 | 0.46 | 0.40 |
| | Median | 0.65 | 0.66 | 0.54 | 0.59 | 0.55 | NA | 0.61 | 0.71 | 0.86 | 0.65 | 0.63 | 0.76 | 0.76 | 0.65 | 0.65 | 0.63 | 0.64 | 0.61 | 0.71 | 0.70 | 1.00 | 0.79 | 0.86 | 0.57 | 0.80 | 0.70 | 0.67 |
| | 95th ptile | 0.78 | 0.78 | 0.90 | 0.88 | 0.69 | NA | 0.74 | 0.86 | 1.06 | 0.84 | 0.76 | 1.21 | 1.22 | 1.73 | 0.81 | 0.92 | 0.99 | 1.06 | 2.34 | 1.87 | 2.44 | 0.99 | 1.59 | 1.45 | 1.98 | 1.44 | 1.42 |
| Apr 10 | Mean | 0.77 | 0.78 | 0.71 | 0.87 | 0.71 | NA | 0.75 | 0.85 | 1.02 | 0.82 | 0.76 | 0.96 | 0.96 | 0.88 | 0.78 | 0.78 | 0.81 | 0.76 | 0.87 | 0.98 | 1.23 | 1.00 | 1.41 | 0.78 | 1.21 | 0.91 | 0.92 |
| | SD | 0.17 | 0.17 | 0.30 | 0.41 | 0.22 | NA | 0.19 | 0.20 | 0.23 | 0.23 | 0.17 | 0.31 | 0.30 | 0.52 | 0.18 | 0.23 | 0.27 | 0.25 | 0.39 | 0.48 | 0.64 | 0.24 | 0.64 | 0.47 | 0.63 | 0.39 | 0.45 |
| | 5th ptile | 0.58 | 0.59 | 0.38 | 0.46 | 0.48 | NA | 0.56 | 0.63 | 0.74 | 0.55 | 0.57 | 0.61 | 0.59 | 0.41 | 0.58 | 0.51 | 0.46 | 0.47 | 0.49 | 0.47 | 0.59 | 0.75 | 0.71 | 0.36 | 0.57 | 0.45 | 0.45 |
| | Median | 0.70 | 0.71 | 0.62 | 0.74 | 0.64 | NA | 0.67 | 0.77 | 0.96 | 0.76 | 0.69 | 0.88 | 0.89 | 0.72 | 0.71 | 0.73 | 0.76 | 0.71 | 0.74 | 0.83 | 1.02 | 0.91 | 1.19 | 0.62 | 1.02 | 0.81 | 0.79 |
| | 95th ptile | 1.12 | 1.13 | 1.34 | 1.73 | 1.19 | NA | 1.14 | 1.23 | 1.43 | 1.30 | 1.09 | 1.59 | 1.59 | 2.03 | 1.12 | 1.25 | 1.32 | 1.25 | 1.71 | 1.91 | 2.47 | 1.48 | 2.65 | 1.69 | 2.50 | 1.69 | 1.81 |

Table 5. Continuation.

| Month | Descriptive Statistics | In 1st fl | In 2nd fl | Out | North Panels | | | | | East Panels | | | | | | South Panels | | | | | | | West Panels | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | P1-15 | P1-16 | P2-15 | P2-16 | P2-17 | P1-10 | P1-11 | P1-12 | P1-13 | P1-14 | P2-14 | P1-6 | P1-7 | P1-8 | P1-9 | P2-6 | P2-7 | P2-8 | P1-1 | P1-2 | P1-3 | P1-4 | P1-5 | P2-5 |
| | | | | | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout B T3B/RH1B | Layout B T3B/RH1B | Layout C T1C/RH1C | Layout C T1C/RH1C | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout B T3B/RH1B | Layout B T3B/RH1B | Layout A T1A/RH1A | Layout B T3B/RH1B | Layout A T1A/RH1A | Layout C T1C/RH1C | Layout C T2D/RH2D | Layout B T3B/RH1B | Layout A T1A/RH1A | Layout A T1A/RH1A | Layout B T3B/RH1B |
| May 10 | Mean | 0.94 | 0.95 | 1.17 | 1.17 | 1.00 | NA | 0.97 | 1.04 | 1.08 | 1.02 | 0.91 | 1.11 | 1.12 | 1.07 | 0.94 | 1.07 | 1.10 | 1.00 | 0.96 | 1.10 | 1.18 | 1.30 | 1.93 | 1.01 | 1.50 | 1.11 | 1.13 |
| | SD | 0.17 | 0.18 | 0.43 | 0.39 | 0.25 | NA | 0.19 | 0.20 | 0.17 | 0.25 | 0.16 | 0.29 | 0.28 | 0.57 | 0.17 | 0.28 | 0.30 | 0.27 | 0.33 | 0.46 | 0.42 | 0.27 | 0.66 | 0.61 | 0.72 | 0.42 | 0.53 |
| | 5th ptile | 0.63 | 0.64 | 0.52 | 0.58 | 0.55 | NA | 0.65 | 0.68 | 0.76 | 0.62 | 0.63 | 0.68 | 0.66 | 0.43 | 0.64 | 0.63 | 0.63 | 0.59 | 0.57 | 0.47 | 0.58 | 0.84 | 1.07 | 0.38 | 0.58 | 0.61 | 0.45 |
| | Median | 0.95 | 0.96 | 1.11 | 1.13 | 1.02 | NA | 0.98 | 1.04 | 1.08 | 1.01 | 0.91 | 1.06 | 1.09 | 0.89 | 0.96 | 1.04 | 1.10 | 0.98 | 0.84 | 1.01 | 1.09 | 1.33 | 1.76 | 0.81 | 1.35 | 0.99 | 1.00 |
| | 95th ptile | 1.20 | 1.21 | 1.87 | 1.88 | 1.41 | NA | 1.30 | 1.39 | 1.30 | 1.48 | 1.15 | 1.69 | 1.65 | 2.33 | 1.20 | 1.57 | 1.68 | 1.49 | 1.67 | 2.03 | 2.01 | 1.64 | 3.39 | 2.41 | 3.02 | 2.02 | 2.24 |
| Jun 10 | Mean | 1.14 | 1.23 | 1.65 | 1.46 | 1.30 | NA | 1.27 | 1.36 | 1.23 | 1.28 | 1.17 | 1.37 | 1.36 | 1.24 | 1.23 | 1.45 | 1.58 | 1.38 | 1.26 | 1.21 | 1.36 | 1.53 | 2.30 | 1.22 | 1.50 | 1.35 | 1.26 |
| | SD | 0.15 | 0.22 | 0.43 | 0.35 | 0.23 | NA | 0.22 | 0.22 | 0.16 | 0.22 | 0.20 | 0.31 | 0.29 | 0.49 | 0.22 | 0.28 | 0.39 | 0.31 | 0.36 | 0.33 | 0.34 | 0.20 | 0.58 | 0.58 | 0.53 | 0.45 | 0.41 |
| | 5th ptile | 0.91 | 0.91 | 0.93 | 0.96 | 0.89 | NA | 0.91 | 1.02 | 1.01 | 0.95 | 0.91 | 0.96 | 0.97 | 0.71 | 0.94 | 1.04 | 1.05 | 0.93 | 0.82 | 0.76 | 0.90 | 1.27 | 1.56 | 0.67 | 0.88 | 0.79 | 0.77 |
| | Median | 1.16 | 1.22 | 1.64 | 1.43 | 1.28 | NA | 1.25 | 1.33 | 1.25 | 1.25 | 1.17 | 1.31 | 1.31 | 1.12 | 1.22 | 1.43 | 1.49 | 1.33 | 1.17 | 1.15 | 1.30 | 1.57 | 2.19 | 1.03 | 1.37 | 1.27 | 1.16 |
| | 95th ptile | 1.37 | 1.59 | 2.33 | 2.09 | 1.64 | NA | 1.61 | 1.73 | 1.50 | 1.67 | 1.49 | 1.96 | 1.89 | 2.32 | 1.58 | 1.94 | 2.25 | 1.92 | 2.00 | 1.83 | 1.99 | 1.83 | 3.47 | 2.39 | 2.59 | 2.26 | 2.12 |
| Jul 10 | Mean | 1.23 | 1.49 | 1.93 | 1.61 | 1.54 | NA | 1.53 | 1.65 | 1.57 | 1.85 | 1.43 | 1.61 | 1.64 | 1.58 | 1.51 | 1.75 | 1.84 | 1.64 | 1.42 | 1.59 | 1.58 | 1.82 | 2.90 | 1.55 | 2.03 | 1.55 | 1.62 |
| | SD | 0.08 | 0.11 | 0.45 | 0.31 | 0.17 | NA | 0.15 | 0.11 | 0.06 | 0.29 | 0.07 | 0.30 | 0.27 | 0.60 | 0.09 | 0.23 | 0.37 | 0.29 | 0.38 | 0.42 | 0.38 | 0.09 | 0.67 | 0.81 | 0.68 | 0.45 | 0.53 |
| | 5th ptile | 1.09 | 1.31 | 1.16 | 1.07 | 1.14 | NA | 1.22 | 1.44 | 1.45 | 1.38 | 1.29 | 1.20 | 1.23 | 0.91 | 1.35 | 1.38 | 1.25 | 1.17 | 0.96 | 1.02 | 1.07 | 1.61 | 2.05 | 0.84 | 1.27 | 0.95 | 1.02 |
| | Median | 1.23 | 1.50 | 1.93 | 1.58 | 1.57 | NA | 1.55 | 1.66 | 1.57 | 1.83 | 1.43 | 1.56 | 1.60 | 1.40 | 1.51 | 1.75 | 1.77 | 1.61 | 1.30 | 1.47 | 1.49 | 1.84 | 2.73 | 1.25 | 1.88 | 1.44 | 1.45 |
| | 95th ptile | 1.34 | 1.64 | 2.64 | 2.15 | 1.73 | NA | 1.75 | 1.82 | 1.66 | 2.35 | 1.55 | 2.14 | 2.11 | 2.93 | 1.64 | 2.16 | 2.55 | 2.15 | 2.13 | 2.38 | 2.29 | 1.95 | 4.28 | 3.49 | 3.51 | 2.39 | 2.79 |
| Aug 10 | Mean | 1.59 | 1.61 | 1.82 | 1.69 | 1.59 | NA | 1.64 | 1.74 | 1.66 | 1.90 | 1.54 | 1.75 | 1.70 | 1.57 | 1.59 | 1.74 | 1.78 | 1.61 | 1.48 | 1.54 | 1.63 | 1.82 | 2.67 | 1.48 | 1.93 | 1.64 | 1.54 |
| | SD | 0.13 | 0.15 | 0.36 | 0.34 | 0.14 | NA | 0.16 | 0.12 | 0.07 | 0.32 | 0.09 | 0.33 | 0.27 | 0.57 | 0.10 | 0.21 | 0.32 | 0.28 | 0.42 | 0.44 | 0.42 | 0.08 | 0.59 | 0.73 | 0.62 | 0.45 | 0.47 |
| | 5th ptile | 1.38 | 1.41 | 1.21 | 1.24 | 1.33 | NA | 1.38 | 1.58 | 1.55 | 1.43 | 1.39 | 1.31 | 1.31 | 0.98 | 1.43 | 1.42 | 1.22 | 1.15 | 0.99 | 1.02 | 1.12 | 1.70 | 1.98 | 0.87 | 1.31 | 1.04 | 1.03 |
| | Median | 1.57 | 1.58 | 1.81 | 1.64 | 1.60 | NA | 1.63 | 1.72 | 1.67 | 1.87 | 1.53 | 1.67 | 1.66 | 1.39 | 1.58 | 1.73 | 1.79 | 1.59 | 1.34 | 1.40 | 1.51 | 1.81 | 2.50 | 1.22 | 1.73 | 1.55 | 1.40 |
| | 95th ptile | 1.88 | 1.94 | 2.43 | 2.42 | 1.83 | NA | 1.92 | 1.99 | 1.75 | 2.47 | 1.69 | 2.39 | 2.22 | 2.80 | 1.78 | 2.07 | 2.29 | 2.09 | 2.32 | 2.49 | 2.47 | 1.97 | 3.93 | 3.10 | 3.27 | 2.53 | 2.54 |

Notes: Layouts A, B, C and D refer to the location of the sensors per Figures 25 through 28.
Abbreviations: NA, not available; ptile, percentile; SD, standard deviation.

Table 6. Monthly heat flux at interior side of stud cavity; data was obtained by averaging measurements from two transducers. Refer to Figures 25 through 28 for sensor location.

| Month | Descriptive Statistics | North Panels | | | | | East Panels | | | | | | South Panels | | | | | | | West Panels | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | P1-15 | P1-16 | P2-15 | P2-16 | P2-17 | P1-10 | P1-11 | P1-12 | P1-13 | P1-14 | P2-14 | P1-6 | P1-7 | P1-8 | P1-9 | P2-6 | P2-7 | P2-8 | P1-1 | P1-2 | P1-3 | P1-4 | P1-5 | P2-5 |
| | | Layout A | Layout A | Layout A | Layout B | Layout B | Layout C | Layout C | Layout A | Layout A | Layout A | Layout A | Layout A | Layout A | Layout B | Layout B | Layout A | Layout B | Layout A | Layout C | Layout D | Layout B | Layout A | Layout A | Layout B |
| Sep 09 | Mean | -1.21 | -1.25 | -1.17 | -1.56 | -1.56 | -0.50 | -1.24 | -0.62 | -0.32 | -0.34 | -0.52 | 0.61 | 0.25 | 0.24 | 0.17 | -0.18 | -0.37 | -0.85 | -0.13 | -1.6 | -0.39 | -0.29 | -0.26 | -0.70 |
| | SD | 1.09 | 0.80 | 0.90 | 0.71 | 0.72 | 0.93 | 2.51 | 1.61 | 1.14 | 1.02 | 1.53 | 2.40 | 1.14 | 1.59 | 1.50 | 2.40 | 1.63 | 1.43 | 1.12 | 12.1 | 1.80 | 2.07 | 1.61 | 1.67 |
| | 5th ptile | -2.89 | -2.52 | -2.58 | -2.77 | -2.75 | -2.43 | -5.86 | -3.27 | -2.06 | -1.92 | -2.37 | -2.97 | -1.52 | -2.00 | -1.98 | -2.60 | -2.25 | -2.58 | -2.23 | -18.3 | -2.67 | -2.63 | -2.31 | -2.69 |
| | Median | -1.27 | -1.24 | -1.27 | -1.56 | -1.55 | -0.26 | -1.01 | -0.74 | -0.49 | -0.52 | -0.88 | 0.14 | 0.14 | -0.11 | -0.18 | -1.08 | -0.86 | -1.21 | 0.02 | -4.0 | -0.78 | -0.87 | -0.62 | -1.13 |
| | 95th ptile | 0.66 | -0.01 | 0.29 | -0.52 | -0.52 | 0.63 | 2.33 | 2.18 | 1.81 | 1.49 | 2.44 | 5.12 | 2.31 | 3.18 | 2.91 | 5.09 | 2.93 | 2.07 | 1.49 | 22.7 | 3.28 | 3.91 | 2.95 | 2.65 |
| Oct 09 | Mean | -2.64 | -3.05 | -2.44 | -3.01 | -3.06 | -2.90 | -7.67 | -3.29 | -1.96 | -1.83 | -1.96 | -2.14 | -1.21 | -1.41 | -1.42 | -1.73 | -1.77 | -2.18 | -2.40 | -16.3 | -2.41 | -2.23 | -1.95 | -2.34 |
| | SD | 0.95 | 1.08 | 0.79 | 0.90 | 0.93 | 0.90 | 2.73 | 1.41 | 0.91 | 0.79 | 1.08 | 2.23 | 1.14 | 1.46 | 1.39 | 2.01 | 1.27 | 1.15 | 0.84 | 8.90 | 1.25 | 1.33 | 1.04 | 1.00 |
| | 5th ptile | -4.24 | -4.87 | -3.80 | -4.50 | -4.64 | -4.50 | -12.3 | -5.58 | -3.32 | -3.02 | -3.56 | -4.88 | -2.69 | -3.11 | -3.07 | -3.72 | -3.37 | -3.82 | -3.81 | -29.5 | -4.25 | -3.96 | -3.31 | -3.75 |
| | Median | -2.58 | -2.92 | -2.42 | -2.94 | -2.96 | -2.84 | -7.52 | -3.27 | -2.01 | -1.87 | -2.05 | -2.64 | -1.43 | -1.75 | -1.75 | -2.25 | -1.99 | -2.29 | -2.38 | -16.9 | -2.49 | -2.43 | -2.10 | -2.41 |
| | 95th ptile | -0.97 | -1.40 | -1.10 | -1.58 | -1.63 | -1.49 | -3.41 | -0.77 | -0.30 | -0.41 | 0.02 | 2.75 | 1.30 | 1.94 | 1.82 | 3.20 | 1.20 | 0.25 | -1.05 | 0.4 | -0.13 | 0.22 | -0.01 | -0.56 |
| Nov 09 | Mean | -3.32 | -3.92 | -3.02 | -3.70 | -3.77 | -3.60 | -9.65 | -4.16 | -2.46 | -2.28 | -2.49 | -2.79 | -1.58 | -1.78 | -1.81 | -2.20 | -2.17 | -2.66 | -3.12 | -21.9 | -3.19 | -2.90 | -2.49 | -2.91 |
| | SD | 1.02 | 1.21 | 0.83 | 0.95 | 0.99 | 0.86 | 2.81 | 1.48 | 0.90 | 0.76 | 1.07 | 2.44 | 1.25 | 1.58 | 1.52 | 2.14 | 1.45 | 1.28 | 0.87 | 8.85 | 1.25 | 1.27 | 0.98 | 0.99 |
| | 5th ptile | -5.02 | -5.83 | -4.43 | -5.22 | -5.33 | -4.86 | -14.03 | -6.46 | -3.74 | -3.33 | -4.00 | -5.80 | -3.11 | -3.64 | -3.57 | -4.31 | -3.83 | -4.39 | -4.78 | -34.7 | -5.09 | -4.69 | -3.76 | -4.28 |
| | Median | -3.19 | -3.81 | -2.91 | -3.66 | -3.73 | -3.66 | -9.54 | -4.17 | -2.52 | -2.35 | -2.54 | -3.23 | -1.82 | -2.14 | -2.12 | -2.73 | -2.44 | -2.77 | -3.11 | -21.7 | -3.15 | -3.02 | -2.61 | -2.92 |
| | 95th ptile | -1.65 | -2.12 | -1.69 | -2.27 | -2.27 | -2.09 | -4.57 | -1.64 | -0.80 | -0.89 | -0.50 | 2.29 | 0.92 | 1.53 | 1.41 | 2.91 | 1.23 | -0.04 | -1.67 | -5.5 | -0.92 | -0.48 | -0.67 | -1.16 |
| Dec 09 | Mean | -5.05 | -6.58 | -4.53 | -5.55 | -5.78 | -6.24 | -16.8 | -7.09 | -4.06 | -3.59 | -4.15 | -5.94 | -3.29 | -3.66 | -3.68 | -3.98 | -3.84 | -4.33 | -5.54 | -37.7 | -5.32 | -4.72 | -3.88 | -4.37 |
| | SD | 1.26 | 2.36 | 1.03 | 1.35 | 1.44 | 1.27 | 3.52 | 1.62 | 0.92 | 0.72 | 1.04 | 1.89 | 0.99 | 1.15 | 1.13 | 1.53 | 1.10 | 1.07 | 1.43 | 9.69 | 1.36 | 1.16 | 0.88 | 0.89 |
| | 5th ptile | -7.10 | -10.32 | -6.27 | -7.66 | -8.11 | -8.22 | -22.5 | -9.71 | -5.62 | -4.79 | -5.84 | -8.63 | -4.78 | -5.34 | -5.29 | -5.82 | -5.46 | -6.03 | -7.98 | -54.0 | -7.57 | -6.69 | -5.37 | -5.74 |
| | Median | -4.92 | -6.06 | -4.48 | -5.39 | -5.60 | -6.19 | -16.9 | -7.06 | -4.00 | -3.55 | -4.13 | -6.14 | -3.32 | -3.74 | -3.78 | -4.19 | -3.89 | -4.32 | -5.34 | -37.0 | -5.19 | -4.62 | -3.78 | -4.32 |
| | 95th ptile | -3.10 | -3.61 | -2.90 | -3.54 | -3.64 | -4.00 | -10.8 | -4.22 | -2.54 | -2.36 | -2.35 | -2.46 | -1.53 | -1.55 | -1.61 | -1.35 | -1.80 | -2.39 | -3.39 | -22.8 | -3.11 | -2.87 | -2.54 | -3.00 |
| Jan 10 | Mean | -5.44 | -7.37 | -4.87 | -6.00 | -6.25 | -6.85 | -19.1 | -7.67 | -4.20 | -3.77 | -4.43 | -6.38 | -3.51 | -3.84 | -3.90 | -4.19 | -4.08 | -4.61 | -6.23 | -44.3 | -5.75 | -5.08 | -4.12 | -4.60 |
| | SD | 1.35 | 2.42 | 1.11 | 1.41 | 1.52 | 1.29 | 3.83 | 1.76 | 0.99 | 0.76 | 1.13 | 2.37 | 1.26 | 1.46 | 1.44 | 2.15 | 1.33 | 1.24 | 1.63 | 11.95 | 1.54 | 1.37 | 1.00 | 0.96 |
| | 5th | -7.87 | -11.67 | -6.75 | -8.51 | -9.00 | -8.88 | -25.6 | -10.51 | -5.96 | -5.09 | -6.32 | -9.45 | -5.26 | -5.78 | -5.83 | -6.37 | -5.90 | -6.44 | -9.01 | -65.3 | -8.41 | -7.27 | -5.77 | -6.07 |
| | 50th | -5.34 | -6.91 | -4.85 | -5.94 | -6.13 | -6.86 | -19.2 | -7.69 | -4.12 | -3.74 | -4.38 | -6.68 | -3.62 | -3.99 | -4.05 | -4.45 | -4.13 | -4.64 | -6.05 | -43.5 | -5.65 | -5.02 | -4.06 | -4.63 |
| | 95th | -3.33 | -4.37 | -3.17 | -3.97 | -4.09 | -4.90 | -13.4 | -4.88 | -2.52 | -2.47 | -2.50 | -1.49 | -0.91 | -0.95 | -1.13 | -1.77 | -1.97 | -2.45 | -3.97 | -24.6 | -3.05 | -2.74 | -2.40 | -2.82 |
| Feb 10 | Mean | -5.07 | -7.05 | -4.62 | -5.77 | -6.06 | -6.56 | -18.2 | -7.21 | -3.89 | -3.54 | -4.20 | -6.09 | -3.33 | -3.61 | -3.71 | -4.06 | -3.95 | -4.44 | -6.16 | -42.1 | -5.43 | -4.78 | -3.95 | -4.52 |
| | SD | 0.96 | 1.54 | 0.73 | 0.84 | 0.90 | 0.83 | 2.38 | 1.27 | 0.77 | 0.61 | 0.84 | 1.71 | 0.85 | 1.05 | 1.02 | 1.45 | 0.89 | 0.80 | 1.01 | 8.98 | 1.07 | 1.04 | 0.74 | 0.67 |
| | 5th ptile | -6.63 | -9.80 | -5.84 | -7.01 | -7.40 | -7.87 | -22.0 | -9.10 | -5.09 | -4.48 | -5.48 | -8.23 | -4.46 | -4.94 | -4.99 | -5.57 | -5.16 | -5.68 | -7.69 | -54.8 | -6.97 | -6.30 | -4.99 | -5.41 |
| | Median | -5.14 | -6.99 | -4.66 | -5.79 | -6.06 | -6.61 | -18.1 | -7.31 | -4.01 | -3.65 | -4.25 | -6.41 | -3.45 | -3.77 | -3.91 | -4.32 | -4.09 | -4.52 | -6.21 | -42.6 | -5.56 | -4.95 | -4.08 | -4.62 |
| | 95th ptile | -3.40 | -4.48 | -3.31 | -4.32 | -4.52 | -5.02 | -14.2 | -4.84 | -2.56 | -2.50 | -2.79 | -2.79 | -1.81 | -1.69 | -1.89 | -1.81 | -2.36 | -3.03 | -4.13 | -26.1 | -3.52 | -2.95 | -2.64 | -3.29 |
| Mar 10 | Mean | -3.74 | -5.14 | -3.48 | -4.50 | -4.64 | -4.16 | -11.5 | -4.56 | -2.48 | -2.34 | -2.74 | -3.01 | -1.74 | -1.86 | -1.89 | -2.37 | -2.45 | -3.03 | -3.72 | -26.8 | -3.52 | -3.10 | -2.65 | -3.26 |
| | SD | 1.03 | 1.69 | 0.80 | 0.99 | 1.01 | 0.93 | 2.93 | 1.71 | 1.01 | 0.87 | 1.43 | 2.62 | 1.28 | 1.66 | 1.61 | 2.37 | 1.55 | 1.35 | 1.10 | 12.7 | 1.53 | 1.59 | 1.13 | 1.11 |
| | 5th ptile | -5.65 | -8.29 | -4.94 | -6.54 | -6.72 | -5.94 | -16.4 | -7.35 | -4.17 | -3.73 | -4.56 | -6.29 | -3.35 | -3.84 | -3.85 | -4.78 | -4.33 | -4.80 | -5.53 | -45.4 | -5.71 | -5.22 | -4.26 | -4.80 |
| | Median | -3.68 | -4.73 | -3.45 | -4.29 | -4.45 | -4.10 | -11.6 | -4.71 | -2.56 | -2.47 | -2.94 | -3.79 | -2.20 | -2.44 | -2.47 | -3.19 | -2.76 | -3.24 | -3.64 | -28.2 | -3.68 | -3.32 | -2.79 | -3.45 |
| | 95th ptile | -2.21 | -3.19 | -2.36 | -3.22 | -3.34 | -2.86 | -6.5 | -1.22 | -0.36 | -0.46 | 0.48 | 2.49 | 0.97 | 1.81 | 1.69 | 3.37 | 1.17 | -0.15 | -2.12 | -0.7 | -0.38 | 0.33 | -0.15 | -0.89 |
| Apr 10 | Mean | -2.48 | -3.21 | -2.35 | -3.03 | -3.07 | -2.25 | -6.08 | -2.48 | -1.41 | -1.34 | -1.54 | -1.54 | -0.94 | -1.01 | -1.05 | -1.46 | -1.55 | -2.03 | -2.02 | -14.1 | -1.98 | -1.72 | -1.53 | -2.05 |
| | SD | 1.24 | 1.36 | 1.02 | 0.96 | 1.00 | 1.34 | 3.13 | 1.88 | 1.18 | 1.07 | 1.70 | 2.23 | 1.12 | 1.50 | 1.46 | 2.13 | 1.49 | 1.40 | 1.55 | 15.0 | 1.87 | 2.02 | 1.53 | 1.56 |
| | 5th ptile | -4.52 | -5.80 | -4.12 | -4.82 | -4.89 | -4.51 | -11.61 | -5.43 | -2.98 | -2.83 | -3.85 | -4.72 | -2.56 | -3.00 | -3.01 | -3.92 | -3.59 | -4.02 | -4.77 | -35.2 | -4.60 | -4.12 | -3.48 | -4.22 |
| | Median | -2.54 | -2.99 | -2.44 | -2.88 | -2.91 | -2.09 | -5.74 | -2.58 | -1.65 | -1.60 | -1.94 | -1.99 | -1.07 | -1.28 | -1.32 | -2.20 | -1.91 | -2.28 | -1.97 | -16.4 | -2.34 | -2.24 | -1.91 | -2.34 |
| | 95th ptile | -0.24 | -1.27 | -0.55 | -1.66 | -1.74 | -0.21 | -1.26 | 0.97 | 0.87 | 0.71 | 2.10 | 2.63 | 1.22 | 1.99 | 1.85 | 2.92 | 1.47 | 0.60 | 0.19 | 16.7 | 1.98 | 2.53 | 1.77 | 1.33 |

Table 6. Continuation.

| Month | Descriptive Statistics | North Panels | | | | | East Panels | | | | | | South Panels | | | | | | | West Panels | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | P1-15 | P1-16 | P2-15 | P2-16 | P2-17 | P1-10 | P1-11 | P1-12 | P1-13 | P1-14 | P2-14 | P1-6 | P1-7 | P1-8 | P1-9 | P2-6 | P2-7 | P2-8 | P1-1 | P1-2 | P1-3 | P1-4 | P1-5 | P2-5 |
| | | Layout A | Layout A | Layout A | Layout B | Layout B | Layout C | Layout C | Layout A | Layout A | Layout A | Layout A | Layout A | Layout A | Layout B | Layout B | Layout A | Layout B | Layout A | Layout C | Layout C | Layout B | Layout A | Layout A | Layout B |
| May 10 | Mean | -0.85 | -0.98 | -0.88 | -1.28 | -1.28 | -0.38 | -0.6 | -0.24 | -0.11 | -0.06 | -0.10 | 0.21 | 0.04 | 0.07 | 0.04 | -0.35 | -0.48 | -0.86 | -0.11 | -0.7 | -0.25 | -0.17 | -0.16 | -0.55 |
| | SD | 1.55 | 1.62 | 1.32 | 1.27 | 1.25 | 1.59 | 4.47 | 2.39 | 1.48 | 1.42 | 1.97 | 2.44 | 1.20 | 1.53 | 1.51 | 2.03 | 1.51 | 1.41 | 1.72 | 18.2 | 2.24 | 2.62 | 1.92 | 1.94 |
| | 5th ptile | -3.23 | -3.77 | -2.82 | -3.32 | -3.39 | -2.71 | -7.6 | -3.66 | -2.36 | -2.14 | -2.53 | -3.27 | -1.85 | -2.26 | -2.30 | -2.84 | -2.50 | -2.88 | -2.94 | -26.4 | -3.35 | -2.97 | -2.68 | -3.04 |
| | Median | -1.08 | -1.01 | -1.05 | -1.45 | -1.43 | -0.55 | -1.1 | -0.59 | -0.30 | -0.26 | -0.64 | -0.11 | -0.04 | -0.14 | -0.15 | -0.97 | -0.78 | -1.10 | -0.27 | -3.9 | -0.70 | -0.97 | -0.57 | -1.02 |
| | 95th ptile | 1.85 | 1.53 | 1.57 | 0.85 | 0.73 | 2.23 | 7.3 | 4.55 | 2.73 | 2.70 | 3.80 | 4.65 | 2.12 | 2.81 | 2.68 | 3.64 | 2.46 | 1.88 | 2.65 | 36.1 | 4.31 | 5.90 | 3.70 | 3.35 |
| Jun 10 | Mean | 0.08 | 0.24 | -0.08 | -0.26 | -0.24 | 0.83 | 2.05 | 0.81 | 0.49 | 0.54 | 0.48 | 0.94 | 0.44 | 0.50 | 0.50 | 0.22 | 0.02 | -0.19 | 1.28 | 7.0 | 0.75 | 0.66 | 0.58 | 0.24 |
| | SD | 1.25 | 1.20 | 1.05 | 1.06 | 1.06 | 1.24 | 3.42 | 1.95 | 1.19 | 1.15 | 1.53 | 1.90 | 0.90 | 1.15 | 1.13 | 1.51 | 1.08 | 1.08 | 1.35 | 15.4 | 1.90 | 2.36 | 1.65 | 1.61 |
| | 5th ptile | -2.07 | -2.15 | -1.91 | -2.25 | -2.24 | -1.33 | -3.81 | -2.39 | -1.33 | -1.25 | -1.58 | -2.12 | -1.01 | -1.34 | -1.33 | -1.97 | -1.71 | -2.01 | -1.11 | -14.1 | -1.97 | -1.95 | -1.71 | -2.04 |
| | Median | -0.01 | 0.27 | -0.09 | -0.20 | -0.18 | 0.89 | 1.91 | 0.67 | 0.38 | 0.43 | 0.25 | 0.82 | 0.39 | 0.40 | 0.44 | -0.04 | -0.08 | -0.26 | 1.35 | 3.9 | 0.43 | -0.02 | 0.25 | -0.02 |
| | 95th ptile | 2.12 | 2.12 | 1.69 | 1.45 | 1.55 | 3.12 | 8.24 | 4.56 | 2.78 | 2.74 | 3.21 | 4.37 | 1.98 | 2.54 | 2.48 | 3.14 | 2.10 | 1.76 | 3.46 | 36.3 | 4.30 | 5.41 | 3.69 | 3.16 |
| Jul 10 | Mean | 0.57 | 0.77 | 0.37 | 0.29 | 0.25 | 1.65 | 1.7 | 1.82 | 1.11 | 1.15 | 1.09 | 2.13 | 1.00 | 1.15 | 1.16 | 0.82 | 0.57 | 0.29 | 1.87 | 13.1 | 1.46 | 1.40 | 1.25 | 0.86 |
| | SD | 1.26 | 1.12 | 1.08 | 1.01 | 0.97 | 1.03 | 1.03 | 2.01 | 1.25 | 1.20 | 1.72 | 2.08 | 0.95 | 1.26 | 1.22 | 1.78 | 1.24 | 1.17 | 1.14 | 17.3 | 2.10 | 3.37 | 1.86 | 1.83 |
| | 5th ptile | -1.53 | -1.22 | -1.41 | -1.68 | -1.67 | -0.26 | -0.3 | -1.30 | -0.82 | -0.67 | -1.17 | -1.12 | -0.55 | -0.86 | -0.80 | -1.69 | -1.36 | -1.65 | -0.46 | -9.09 | -1.27 | -2.12 | -1.10 | -1.54 |
| | Median | 0.49 | 0.76 | 0.24 | 0.31 | 0.25 | 1.74 | 1.7 | 1.62 | 0.96 | 1.02 | 0.75 | 1.93 | 0.97 | 1.01 | 1.05 | 0.39 | 0.34 | 0.15 | 1.95 | 8.41 | 0.99 | 0.33 | 0.75 | 0.42 |
| | 95th ptile | 2.59 | 2.55 | 2.25 | 2.01 | 1.79 | 3.54 | 3.5 | 5.32 | 3.29 | 3.15 | 4.37 | 5.68 | 2.54 | 3.31 | 3.18 | 4.19 | 2.72 | 2.31 | 3.61 | 47.1 | 5.77 | 8.97 | 4.96 | 4.68 |
| Aug 10 | Mean | -0.03 | -0.01 | -0.16 | -0.32 | -0.31 | 1.01 | 1.0 | 1.05 | 0.59 | 0.56 | 0.46 | 1.72 | 0.76 | 0.81 | 0.88 | 0.57 | 0.33 | 0.00 | 1.01 | 7.0 | 0.76 | 0.76 | 0.62 | 0.25 |
| | SD | 1.18 | 0.98 | 0.94 | 0.83 | 0.85 | 0.96 | 0.96 | 1.86 | 1.12 | 1.03 | 1.46 | 2.27 | 0.98 | 1.26 | 1.30 | 1.95 | 1.34 | 1.20 | 0.95 | 15.1 | 1.87 | 2.80 | 1.61 | 1.57 |
| | 5th ptile | -1.94 | -1.76 | -1.67 | -1.84 | -1.80 | -0.77 | -0.8 | -1.96 | -1.24 | -1.08 | -1.52 | -1.55 | -0.71 | -1.04 | -0.96 | -1.81 | -1.38 | -1.77 | -0.74 | -12.1 | -1.63 | -2.12 | -1.36 | -1.73 |
| | Median | -0.08 | 0.07 | -0.19 | -0.24 | -0.24 | 1.09 | 1.1 | 0.89 | 0.47 | 0.46 | 0.14 | 1.40 | 0.65 | 0.60 | 0.63 | 0.00 | 0.03 | -0.16 | 1.05 | 2.92 | 0.35 | -0.06 | 0.21 | -0.05 |
| | 95th ptile | 1.89 | 1.52 | 1.53 | 0.97 | 1.00 | 2.49 | 2.5 | 4.38 | 2.62 | 2.42 | 3.42 | 5.94 | 2.46 | 3.17 | 3.20 | 4.47 | 2.86 | 2.21 | 2.46 | 38.7 | 4.69 | 7.04 | 3.89 | 3.47 |

Notes: Layouts A, B, C and D refer to the location of the sensors per Figures 25 through 28.
Abbreviations: NA, not available; ptile, percentile; SD, standard deviation.

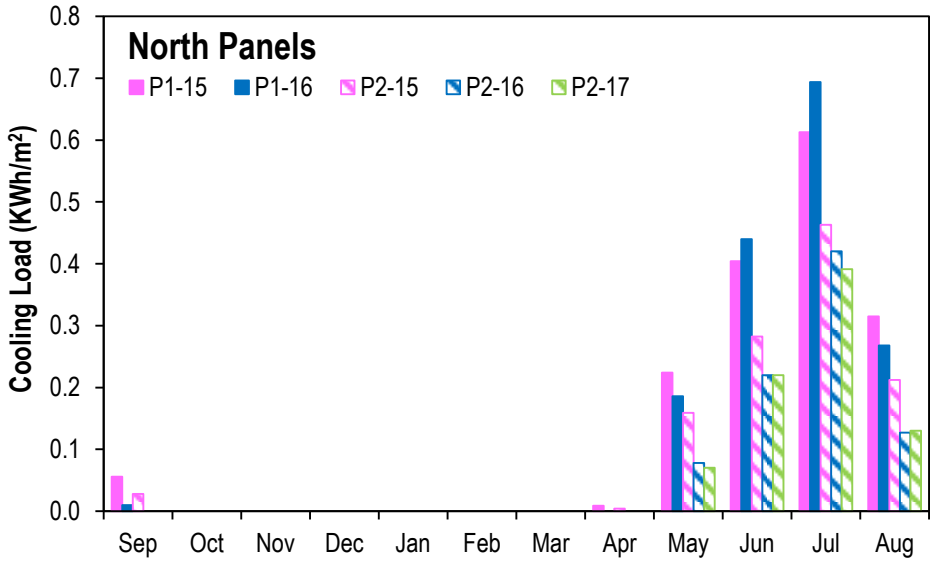



Figure 29. Monthly cooling loads from panels facing north.

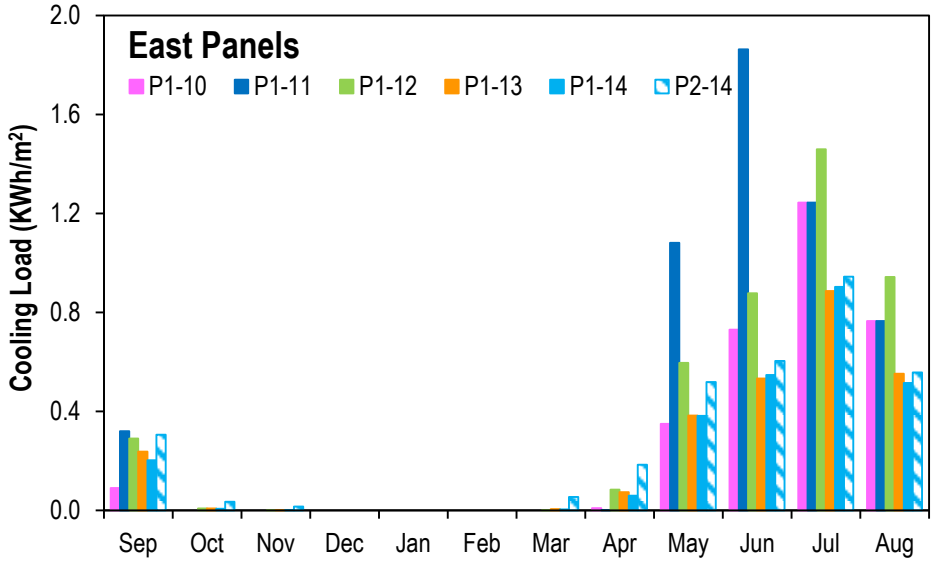



Figure 30. Monthly cooling loads from panels facing east.

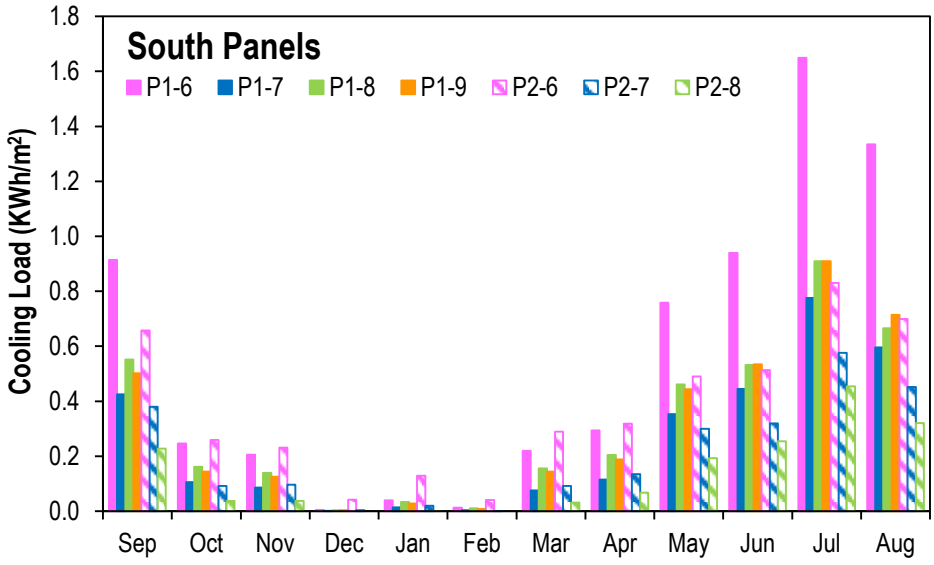



Figure 31. Monthly cooling loads from panels facing south.

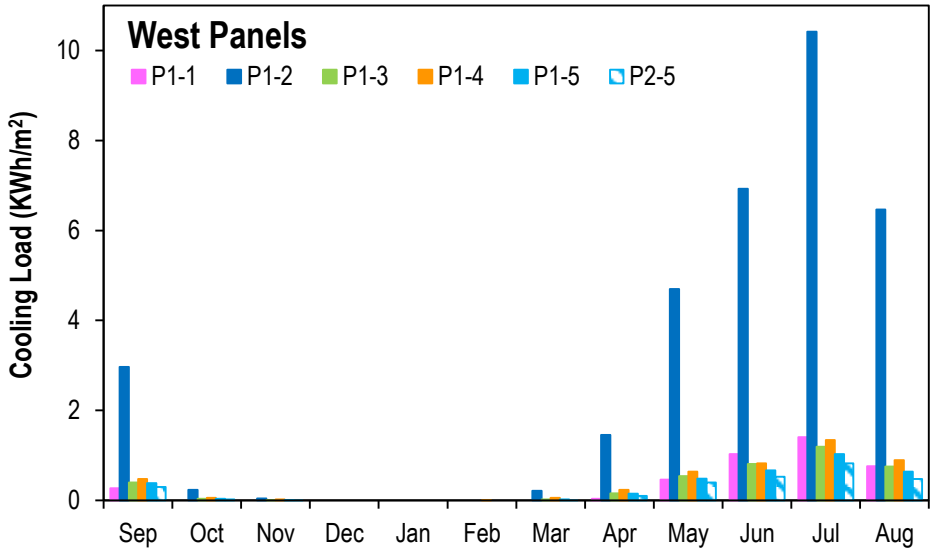



Figure 32. Monthly cooling loads from panels facing west.

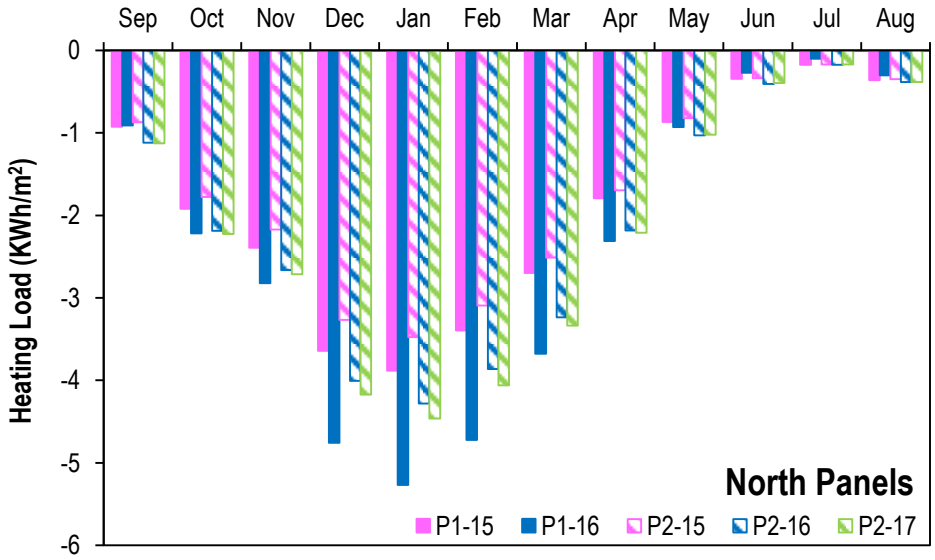



Figure 33. Monthly heating loads from panels facing north.

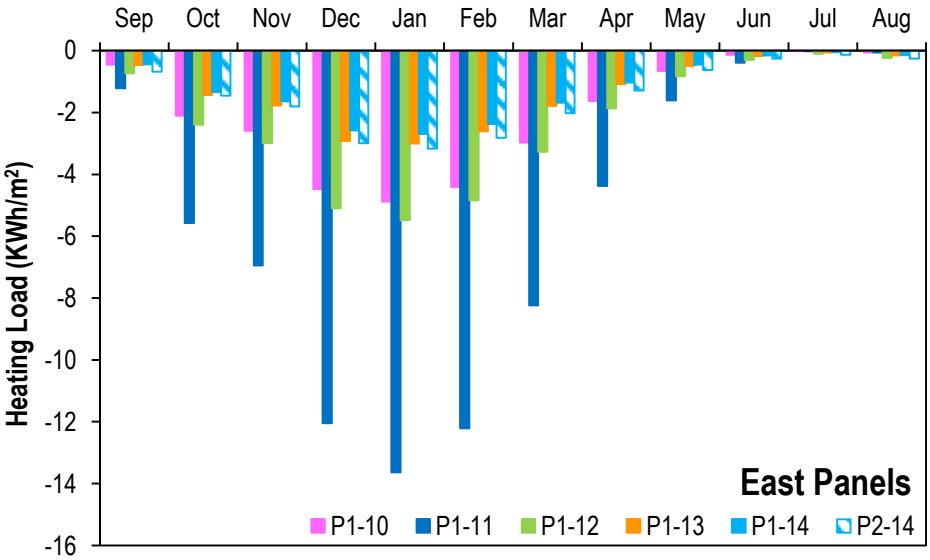



Figure 34. Monthly heating loads from panels facing east.

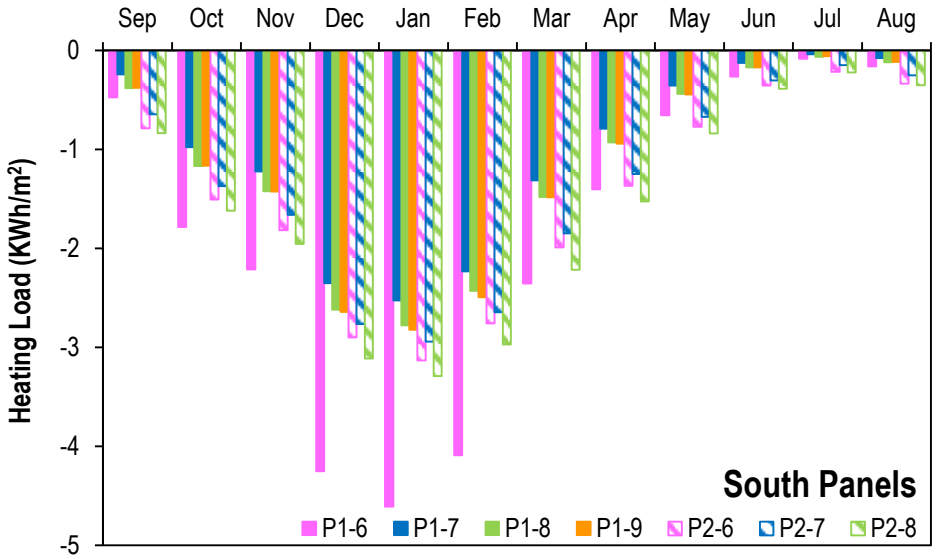



Figure 35. Monthly heating loads from panels facing south.

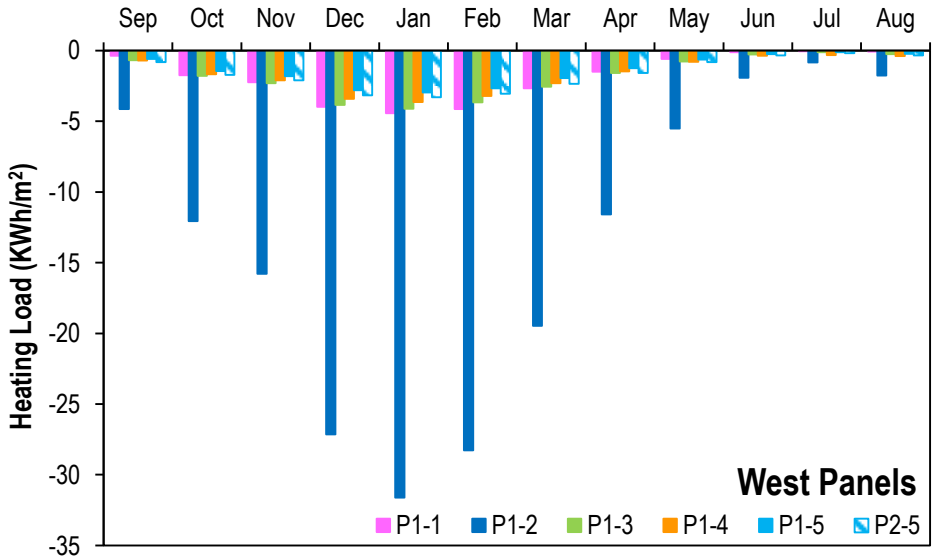



Figure 36. Monthly heating loads from panels facing west.

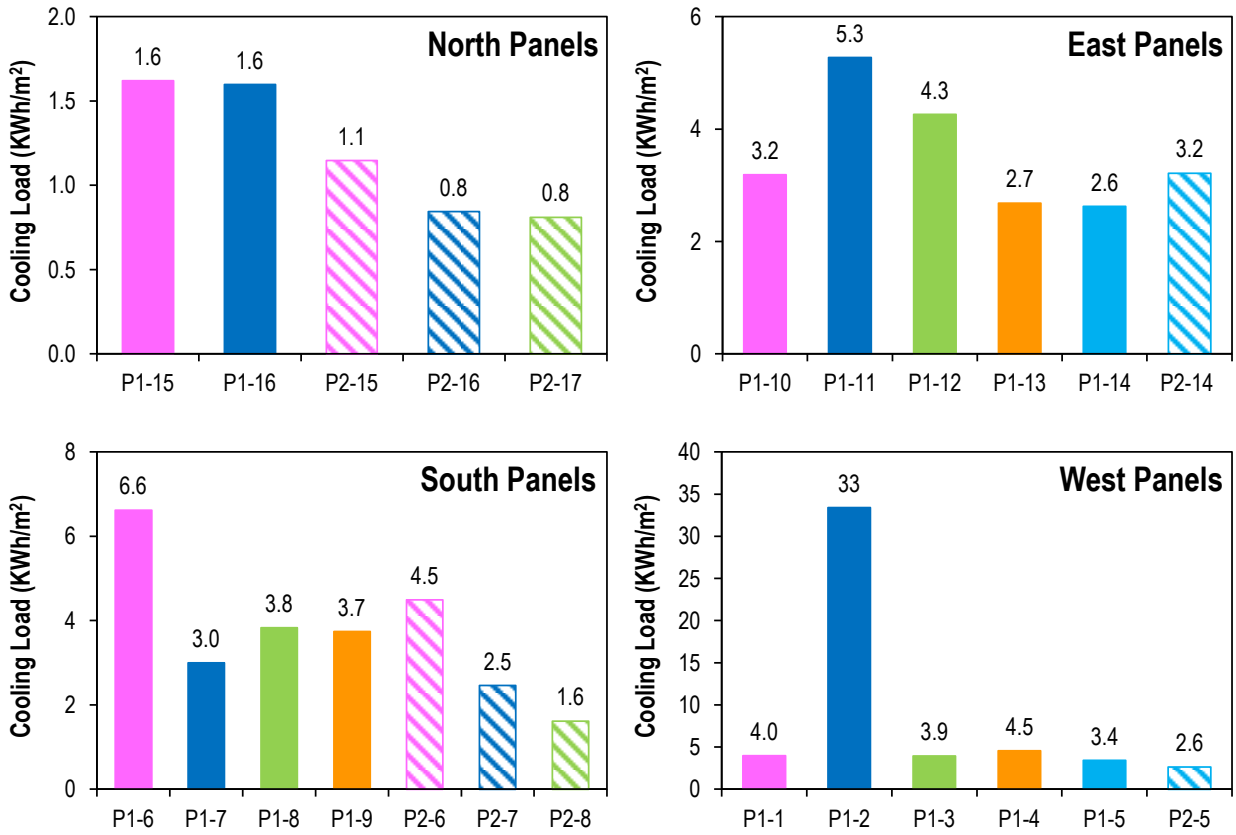



Figure 37. Annual cooling loads.

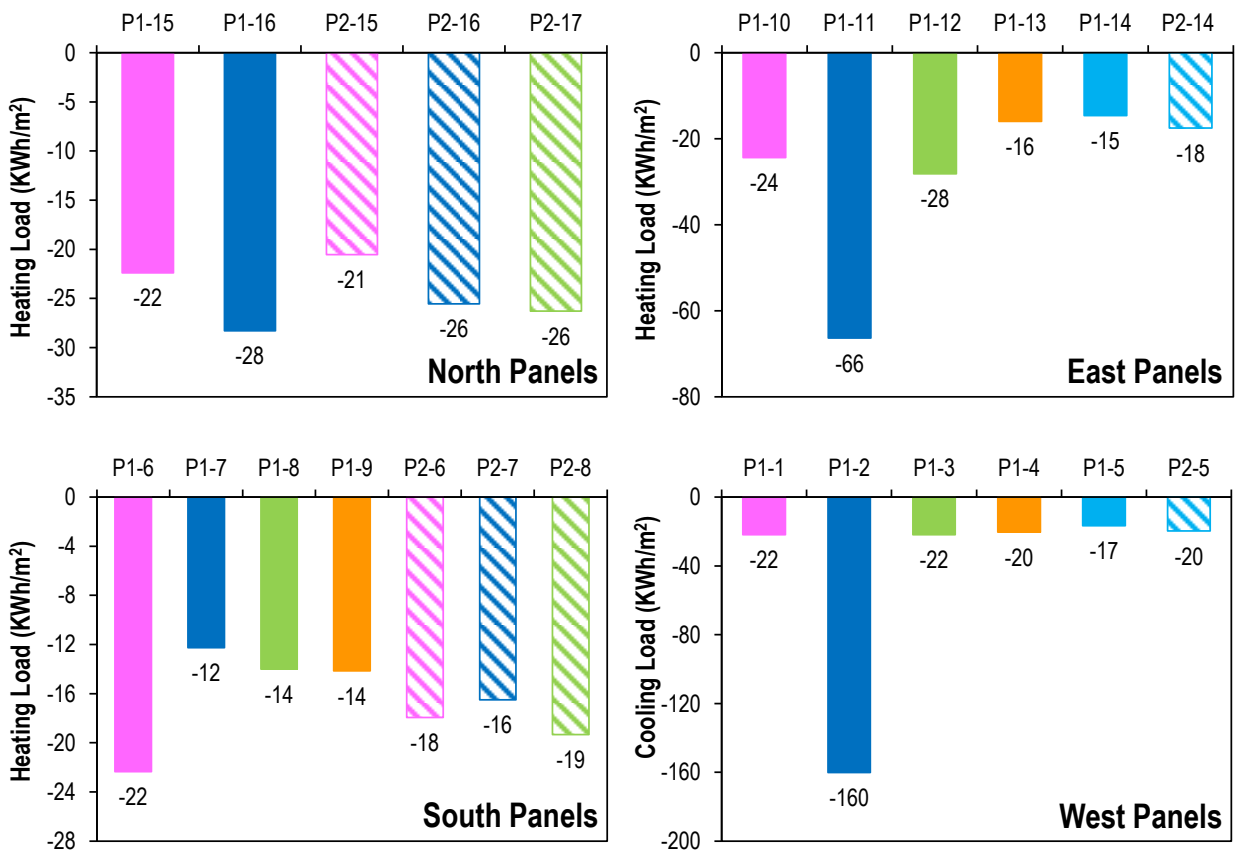



Figure 38. Annual heating loads.

Table 7. Monthly total solar insolation (kW/m$^2$) on each side of the BEST lab.

| Month | East | North | South | West |
|---|---|---|---|---|
| Sep 09 | 34 | 13 | 56 | 37 |
| Oct 09 | 28 | 13 | 62 | 30 |
| Nov 09 | 33 | 12 | 81 | 30 |
| Dec 09 | 23 | 13 | 60 | 24 |
| Jan 10 | 29 | 20 | 64 | 32 |
| Feb 10 | 31 | 27 | 56 | 37 |
| Mar 10 | 65 | 27 | 116 | 67 |
| Apr 10 | 73 | 29 | 104 | 84 |
| May 10 | 82 | 46 | 94 | 99 |
| Jun 10 | 67 | 46 | 72 | 94 |
| Jul 10 | 87 | 49 | 97 | 112 |
| Aug 10 | 73 | 34 | 97 | 83 |

Table 8. Monthly average wind speeds (m/s).

| Month | Descriptive Statistics | North | East | South | West |
|---|---|---|---|---|---|
| Sep 09 | Mean | 0.42 | 0.77 | 1.59 | 1.49 |
| | SD | 0.77 | 0.42 | 1.31 | 1.06 |
| | 5th ptile | 0.00 | 0.14 | 0.10 | 0.12 |
| | Median | 0.00 | 0.73 | 1.19 | 1.26 |
| | 95th ptile | 2.22 | 1.66 | 4.14 | 3.56 |
| Oct 09 | Mean | 0.82 | 0.93 | 1.82 | 1.80 |
| | SD | 1.05 | 0.52 | 1.94 | 1.33 |
| | 5th ptile | 0.00 | 0.11 | 0.07 | 0.23 |
| | Median | 0.37 | 0.86 | 1.15 | 1.56 |
| | 95th ptile | 3.20 | 1.81 | 6.38 | 4.37 |
| Nov 09 | Mean | 1.49 | 0.97 | 1.54 | 2.14 |
| | SD | 1.28 | 0.52 | 1.37 | 1.42 |
| | 5th ptile | 0.16 | 0.13 | 0.11 | 0.25 |
| | Median | 1.16 | 0.91 | 1.04 | 1.87 |
| | 95th ptile | 3.77 | 1.97 | 4.58 | 5.00 |
| Dec 09 | Mean | 2.38 | 1.39 | 2.28 | 3.17 |
| | SD | 6.07 | 2.02 | 8.52 | 3.62 |
| | 5th ptile | 0.15 | 0.13 | 0.13 | 0.43 |
| | Median | 1.33 | 1.03 | 1.41 | 2.52 |
| | 95th ptile | 6.43 | 3.13 | 4.89 | 6.74 |
| Jan 10 | Mean | 2.02 | 1.15 | 1.74 | 2.80 |
| | SD | 3.09 | 0.81 | 1.63 | 2.29 |
| | 5th | 0.19 | 0.14 | 0.12 | 0.38 |
| | 50th | 1.31 | 1.02 | 1.11 | 2.45 |
| | 95th | 5.19 | 3.07 | 5.26 | 5.94 |
| Feb 10 | Mean | 2.99 | 1.19 | 5.12 | 8.21 |
| | SD | 10.4 | 0.63 | 20.5 | 39.6 |
| | 5th ptile | 0.27 | 0.41 | 0.05 | 0.59 |
| | Median | 1.44 | 1.14 | 0.87 | 3.34 |
| | 95th ptile | 5.00 | 2.43 | 20.9 | 5.94 |
| Mar 10 | Mean | 2.16 | 1.82 | 1.21 | 2.09 |
| | SD | 1.46 | 1.17 | 1.23 | 1.16 |
| | 5th ptile | 0.14 | 0.39 | 0.07 | 0.37 |
| | Median | 2.09 | 1.50 | 0.85 | 1.98 |
| | 95th ptile | 4.61 | 4.27 | 3.77 | 3.95 |
| Apr 10 | Mean | 2.22 | 0.90 | 1.49 | 2.59 |
| | SD | 1.58 | 0.46 | 1.47 | 1.50 |
| | 5th ptile | 0.21 | 0.14 | 0.09 | 0.35 |
| | Median | 2.05 | 0.91 | 1.00 | 2.41 |
| | 95th ptile | 5.28 | 1.67 | 4.95 | 5.21 |

Table 8. Continuation.

| Month | Descriptive Statistics | North | East | South | West |
|---|---|---|---|---|---|
| May 10 | Mean | 1.99 | 0.80 | 1.31 | 2.25 |
| | SD | 1.41 | 0.55 | 1.05 | 1.59 |
| | 5th ptile | 0.19 | 0.10 | 0.12 | 0.22 |
| | Median | 1.65 | 0.69 | 1.02 | 1.95 |
| | 95th ptile | 4.64 | 1.90 | 3.61 | 5.37 |
| Jun 10 | Mean | 1.78 | 0.73 | 1.55 | 2.07 |
| | SD | 1.30 | 0.46 | 1.21 | 1.21 |
| | 5th ptile | 0.14 | 0.12 | 0.13 | 0.31 |
| | Median | 1.52 | 0.63 | 1.21 | 1.97 |
| | 95th ptile | 4.13 | 1.65 | 3.81 | 4.24 |
| Jul 10 | Mean | 1.63 | 0.56 | 1.53 | 1.86 |
| | SD | 1.23 | 0.38 | 1.16 | 0.96 |
| | 5th ptile | 0.10 | 0.11 | 0.15 | 0.37 |
| | Median | 1.35 | 0.44 | 1.15 | 1.81 |
| | 95th ptile | 4.11 | 1.29 | 3.85 | 3.55 |
| Aug 10 | Mean | 1.33 | 0.79 | 1.50 | 1.57 |
| | SD | 1.12 | 0.51 | 1.19 | 1.04 |
| | 5th ptile | 0.10 | 0.09 | 0.12 | 0.21 |
| | Median | 1.04 | 0.75 | 1.15 | 1.31 |
| | 95th ptile | 3.71 | 1.83 | 3.95 | 3.66 |

Abbreviations: ptile, percentile; SD, standard deviation.

Table 9. Monthly rain accumulation (mm).

| Month | Rain Accumulation (mm) |
|---|---|
| Sep 09 | 42 |
| Oct 09 | 92 |
| Nov 09 | 39 |
| Dec 09 | 45 |
| Jan 10 | 24 |
| Feb 10 | 21 |
| Mar 10 | 57 |
| Apr 10 | 29 |
| May 10 | 53 |
| Jun 10 | 151 |
| Jul 10 | 96 |
| Aug 10 | 150 |

Table 10. Weekly and monthly pressure differentials (Pa) across building sides[a, b].

| Month | Descriptive Statistics | North | | | | | East | | | | | South | | | | | West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Weekly | | | | Monthly | Weekly | | | | Monthly | Weekly | | | | Monthly | Weekly | | | | Monthly |
| | | 1st | 2nd | 3rd | 4th | | 1st | 2nd | 3rd | 4th | | 1st | 2nd | 3rd | 4th | | 1st | 2nd | 3rd | 4th | |
| Sep 09 | Mean | - | - | 0.19 | -0.01 | - | - | - | -1.14 | -2.16 | - | - | - | 0.84 | 3.06 | - | - | - | 0.78 | 0.56 | - |
| | SD | - | - | 1.50 | 1.49 | - | - | - | 2.67 | 3.60 | - | - | - | 3.20 | 5.14 | - | - | - | 1.54 | 3.67 | - |
| | Min. | - | - | -5.56 | -9.83 | - | - | - | -23.7 | -28.5 | - | - | - | -22.6 | -11.4 | - | - | - | -12.3 | -22.4 | - |
| | 5th ptile | - | - | -1.08 | -2.07 | - | - | - | -6.25 | -9.29 | - | - | - | -3.54 | -2.50 | - | - | - | -1.31 | -5.83 | - |
| | 25th ptile | - | - | -0.41 | -0.54 | - | - | - | -1.87 | -3.56 | - | - | - | -0.35 | -0.11 | - | - | - | 0.13 | -1.07 | - |
| | Median | - | - | -0.22 | -0.13 | - | - | - | -0.15 | -1.07 | - | - | - | 0.59 | 1.33 | - | - | - | 0.71 | 0.67 | - |
| | 75th ptile | - | - | 0.19 | 0.38 | - | - | - | 0.45 | 0.25 | - | - | - | 1.26 | 5.21 | - | - | - | 1.08 | 2.43 | - |
| | 95th ptile | - | - | 3.30 | 2.46 | - | - | - | 0.94 | 1.21 | - | - | - | 5.89 | 13.3 | - | - | - | 3.69 | 6.46 | - |
| | Max. | - | - | 14.4 | 13.4 | - | - | - | 5.11 | 36.5 | - | - | - | 26.2 | 39.3 | - | - | - | 10.6 | 20.3 | - |
| Oct 09 | Mean | -0.08 | 0.60 | -0.12 | -0.13 | 0.05 | -1.03 | -0.88 | 0.38 | -1.93 | -0.97 | 1.08 | 0.50 | 1.16 | 3.82 | 1.85 | 2.19 | 2.53 | 1.56 | -0.02 | 1.41 |
| | SD | 2.13 | 2.33 | 1.43 | 1.89 | 1.99 | 3.11 | 2.55 | 1.76 | 5.48 | 3.84 | 3.86 | 2.76 | 1.83 | 8.24 | 5.44 | 4.20 | 2.88 | 1.63 | 5.32 | 4.08 |
| | Min. | -12.2 | -11.0 | -6.44 | -14.1 | -14.1 | -38.6 | -19.1 | -14.3 | -51.7 | -51.7 | -27.0 | -13.7 | -13.7 | -13.3 | -27.0 | -21.0 | -8.05 | -9.96 | -45.8 | -45.8 |
| | 5th ptile | -2.95 | -2.22 | -3.07 | -3.18 | -2.94 | -7.21 | -5.92 | -3.23 | -13.0 | -7.43 | -4.50 | -4.35 | -2.28 | -3.15 | -3.51 | -2.66 | -1.37 | -1.40 | -10.8 | -3.81 |
| | 25th ptile | -0.66 | -0.38 | -0.39 | -0.63 | -0.50 | -1.67 | -1.89 | 0.00 | -2.61 | -1.58 | -0.17 | -0.74 | 0.49 | 0.34 | 0.09 | 0.43 | 0.96 | 0.90 | -0.68 | 0.53 |
| | Median | -0.25 | -0.01 | -0.22 | -0.21 | -0.20 | 0.01 | -0.08 | 0.82 | 0.21 | 0.29 | 0.95 | 0.68 | 1.21 | 1.15 | 1.04 | 1.36 | 1.94 | 1.55 | 0.92 | 1.39 |
| | 75th ptile | 0.23 | 1.11 | 0.09 | 0.24 | 0.36 | 0.75 | 0.72 | 1.31 | 0.78 | 0.91 | 1.99 | 1.82 | 1.91 | 3.86 | 2.17 | 3.07 | 3.65 | 2.07 | 1.83 | 2.56 |
| | 95th ptile | 2.85 | 5.13 | 2.05 | 2.85 | 3.29 | 1.57 | 1.67 | 2.29 | 1.85 | 1.87 | 6.96 | 4.84 | 3.99 | 22.0 | 9.55 | 10.4 | 8.22 | 4.27 | 6.64 | 7.22 |
| | Max. | 36.9 | 20.5 | 13.9 | 16.2 | 36.9 | 6.11 | 6.29 | 5.38 | 10.4 | 10.4 | 33.2 | 15.0 | 12.4 | 69.9 | 69.9 | 37.1 | 21.3 | 13.9 | 23.4 | 37.1 |
| Nov 09 | Mean | 0.18 | -0.03 | 0.01 | 0.38 | 0.15 | -1.28 | -0.45 | -0.04 | -1.17 | -0.77 | 2.10 | 1.57 | 0.56 | 1.07 | 1.31 | 2.16 | 1.07 | 2.24 | 2.77 | 2.11 |
| | SD | 2.36 | 1.30 | 1.85 | 3.46 | 2.47 | 3.99 | 2.99 | 2.12 | 4.46 | 3.61 | 5.02 | 3.54 | 2.24 | 4.29 | 3.98 | 3.85 | 2.16 | 2.50 | 4.85 | 3.66 |
| | Min. | -9.30 | -6.56 | -8.36 | -10.3 | -10.3 | -34.2 | -21.7 | -18.0 | -39.2 | -39.2 | -18.7 | -11.5 | -15.1 | -27.9 | -27.9 | -21.0 | -17.6 | -9.19 | -16.4 | -21.0 |
| | 5th ptile | -3.37 | -1.89 | -3.08 | -3.39 | -3.10 | -9.42 | -6.82 | -4.26 | -10.2 | -7.66 | -4.17 | -2.07 | -3.14 | -6.13 | -3.65 | -3.83 | -2.87 | -1.50 | -2.76 | -2.72 |
| | 25th ptile | -0.61 | -0.39 | -0.60 | -0.56 | -0.52 | -2.56 | -1.01 | -0.81 | -2.06 | -1.64 | -0.06 | 0.19 | -0.35 | -0.13 | -0.08 | 0.82 | 0.65 | 0.97 | 0.76 | 0.81 |
| | Median | -0.24 | -0.19 | -0.24 | -0.23 | -0.22 | 0.00 | 0.64 | 0.59 | 0.56 | 0.52 | 1.42 | 0.92 | 0.80 | 1.23 | 1.07 | 1.88 | 1.26 | 1.77 | 1.48 | 1.57 |
| | 75th ptile | 0.68 | 0.31 | 0.54 | 0.30 | 0.44 | 1.24 | 1.10 | 1.20 | 1.16 | 1.17 | 2.96 | 1.69 | 1.57 | 2.43 | 2.03 | 3.76 | 1.88 | 3.30 | 3.83 | 3.07 |
| | 95th ptile | 3.88 | 2.12 | 3.34 | 5.79 | 3.55 | 2.32 | 1.92 | 2.24 | 2.35 | 2.21 | 11.6 | 9.36 | 3.44 | 7.45 | 7.92 | 8.48 | 4.01 | 6.83 | 12.2 | 8.15 |
| | Max. | 22.1 | 14.2 | 13.9 | 38.9 | 38.9 | 6.22 | 6.41 | 6.47 | 6.44 | 6.47 | 48.1 | 28.3 | 57.3 | 30.4 | 57.3 | 21.0 | 16.0 | 25.6 | 46.1 | 46.1 |
| Dec 09 | Mean | -0.59 | -0.85 | 1.04 | 0.24 | -0.01 | -0.89 | -3.09 | -0.98 | -0.84 | -1.39 | 3.13 | 3.15 | 0.28 | 1.33 | 1.91 | 2.04 | 3.90 | 4.71 | 3.91 | 3.67 |
| | SD | 1.98 | 2.63 | 3.59 | 3.59 | 3.16 | 3.56 | 8.98 | 4.38 | 5.25 | 5.93 | 4.71 | 6.79 | 3.60 | 4.88 | 5.24 | 4.34 | 6.70 | 4.03 | 5.59 | 5.39 |
| | Min. | -16.5 | -15.9 | -12.0 | -11.6 | -16.5 | -28.3 | -67.3 | -29.3 | -46.5 | -67.3 | -18.9 | -21.9 | -22.3 | -33.7 | -33.7 | -25.9 | -27.7 | -10.3 | -14.3 | -27.7 |
| | 5th ptile | -4.29 | -5.52 | -3.79 | -3.99 | -4.30 | -7.98 | -14.7 | -9.78 | -11.6 | -11.0 | -2.94 | -5.00 | -6.46 | -7.31 | -5.59 | -4.26 | -5.42 | -0.85 | -2.27 | -2.91 |
| | 25th ptile | -1.02 | -1.75 | -0.55 | -0.83 | -0.95 | -2.22 | -4.18 | -2.54 | -1.91 | -2.63 | 0.85 | -0.07 | -1.46 | -0.15 | -0.22 | 0.37 | 0.54 | 2.53 | 1.40 | 1.21 |
| | Median | -0.37 | -0.49 | 0.22 | -0.31 | -0.30 | 0.10 | -0.75 | 0.23 | 1.14 | 0.31 | 2.33 | 2.02 | 1.09 | 1.93 | 1.88 | 1.81 | 2.64 | 3.65 | 2.36 | 2.61 |
| | 75th ptile | 0.05 | 0.31 | 2.06 | 0.43 | 0.60 | 1.34 | 1.18 | 1.99 | 1.91 | 1.66 | 4.81 | 4.71 | 2.46 | 3.04 | 3.36 | 3.57 | 6.98 | 6.21 | 5.14 | 5.37 |
| | 95th ptile | 2.24 | 2.87 | 8.29 | 6.46 | 4.81 | 2.75 | 2.84 | 3.41 | 3.53 | 3.19 | 11.6 | 15.3 | 4.80 | 7.68 | 10.3 | 9.35 | 16.5 | 12.8 | 14.7 | 13.7 |
| | Max. | 13.4 | 22.9 | 30.8 | 38.1 | 38.1 | 17.5 | 46.8 | 7.19 | 9.43 | 46.8 | 42.4 | 108 | 27.1 | 31.1 | 108 | 29.7 | 41.3 | 31.0 | 54.4 | 54.4 |

Table 10. Continuation.

| Month | Descriptive Statistics | North | | | | | East | | | | | South | | | | | West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Weekly | | | | Monthly | Weekly | | | | Monthly | Weekly | | | | Monthly | Weekly | | | | Monthly |
| | | 1st | 2nd | 3rd | 4th | | 1st | 2nd | 3rd | 4th | | 1st | 2nd | 3rd | 4th | | 1st | 2nd | 3rd | 4th | |
| Jan 10 | Mean | -0.15 | 0.48 | -0.17 | 0.07 | 0.06 | -1.04 | -0.69 | 0.51 | -1.03 | -0.61 | -0.06 | 2.37 | 1.65 | 2.59 | 1.73 | 6.45 | 3.27 | 2.52 | 3.31 | 3.83 |
| | SD | 2.94 | 2.46 | 1.33 | 3.39 | 2.73 | 3.42 | 3.59 | 2.11 | 5.51 | 4.09 | 3.08 | 4.15 | 2.35 | 6.27 | 4.58 | 3.94 | 3.24 | 2.05 | 6.46 | 4.73 |
| | Min. | -12.9 | -7.80 | -8.83 | -20.8 | -20.8 | -33.1 | -21.7 | -18.8 | -53.7 | -53.7 | -25.9 | -16.3 | -10.5 | -33.1 | -33.1 | -5.94 | -17.1 | -11.4 | -32.7 | -32.7 |
| | 5th ptile | -4.39 | -3.34 | -2.88 | -4.14 | -3.77 | -7.33 | -8.00 | -3.56 | -11.0 | -8.11 | -5.75 | -3.46 | -1.82 | -6.4 | -4.59 | 0.98 | -1.80 | -0.79 | -7.7 | -1.97 |
| | 25th ptile | -1.63 | -0.62 | -0.52 | -1.08 | -0.85 | -2.35 | -2.10 | -0.06 | -2.81 | -1.91 | -1.55 | 0.40 | 0.80 | -0.16 | -0.16 | 3.87 | 1.96 | 1.63 | 1.30 | 1.82 |
| | Median | -0.21 | -0.07 | -0.25 | -0.37 | -0.25 | -0.14 | 0.37 | 1.21 | 0.25 | 0.50 | 0.49 | 2.18 | 1.68 | 2.09 | 1.64 | 5.86 | 3.17 | 2.21 | 2.88 | 3.24 |
| | 75th ptile | 1.04 | 1.25 | 0.27 | 0.62 | 0.74 | 1.12 | 1.77 | 1.66 | 1.87 | 1.63 | 1.87 | 3.78 | 2.27 | 4.24 | 2.98 | 8.52 | 4.86 | 3.34 | 5.52 | 5.63 |
| | 95th ptile | 4.13 | 5.44 | 1.95 | 6.54 | 4.55 | 2.48 | 3.09 | 2.73 | 3.78 | 3.12 | 3.97 | 9.23 | 4.57 | 14.8 | 9.01 | 13.6 | 8.56 | 5.92 | 13.8 | 11.6 |
| | Max. | 38.1 | 18.7 | 9.50 | 41.1 | 41.1 | 6.44 | 5.24 | 4.86 | 43.0 | 43.0 | 11.9 | 30.3 | 26.5 | 50.9 | 50.9 | 37.7 | 23.9 | 22.6 | 47.1 | 47.1 |
| Feb 10 | Mean | -0.28 | - | - | - | - | 0.19 | - | - | - | - | 1.41 | - | - | - | - | 3.97 | - | - | - | - |
| | SD | 1.84 | - | - | - | - | 2.38 | - | - | - | - | 2.42 | - | - | - | - | 3.27 | - | - | - | - |
| | Min. | -11.8 | - | - | - | - | -15.7 | - | - | - | - | -9.51 | - | - | - | - | -3.53 | - | - | - | - |
| | 5th ptile | -3.68 | - | - | - | - | -4.51 | - | - | - | - | -3.20 | - | - | - | - | -0.16 | - | - | - | - |
| | 25th ptile | -0.75 | - | - | - | - | -0.96 | - | - | - | - | 0.08 | - | - | - | - | 2.00 | - | - | - | - |
| | Median | -0.36 | - | - | - | - | 0.84 | - | - | - | - | 1.99 | - | - | - | - | 2.98 | - | - | - | - |
| | 75th ptile | 0.53 | - | - | - | - | 1.89 | - | - | - | - | 2.73 | - | - | - | - | 5.57 | - | - | - | - |
| | 95th ptile | 2.72 | - | - | - | - | 2.86 | - | - | - | - | 4.77 | - | - | - | - | 10.4 | - | - | - | - |
| | Max. | 9.90 | - | - | - | - | 4.48 | - | - | - | - | 11.7 | - | - | - | - | 22.5 | - | - | - | - |
| May 10 | Mean | - | - | - | - | - | - | - | - | -1.24 | - | - | - | - | -0.34 | - | - | - | - | 1.09 | - |
| | SD | - | - | - | - | - | - | - | - | 2.29 | - | - | - | - | 2.39 | - | - | - | - | 2.17 | - |
| | Min. | - | - | - | - | - | - | - | - | -15.6 | - | - | - | - | -14.8 | - | - | - | - | -9.23 | - |
| | 5th ptile | - | - | - | - | - | - | - | - | -6.06 | - | - | - | - | -3.99 | - | - | - | - | -1.15 | - |
| | 25th ptile | - | - | - | - | - | - | - | - | -2.15 | - | - | - | - | -1.09 | - | - | - | - | -0.04 | - |
| | Median | - | - | - | - | - | - | - | - | -0.39 | - | - | - | - | -0.43 | - | - | - | - | 0.49 | - |
| | 75th ptile | - | - | - | - | - | - | - | - | 0.30 | - | - | - | - | 0.14 | - | - | - | - | 1.73 | - |
| | 95th ptile | - | - | - | - | - | - | - | - | 0.90 | - | - | - | - | 3.98 | - | - | - | - | 5.58 | - |
| | Max. | - | - | - | - | - | - | - | - | 2.79 | - | - | - | - | 15.3 | - | - | - | - | 15.8 | - |
| Jun 10 | Mean | - | - | - | - | - | -1.63 | - | - | - | - | 1.73 | - | - | - | - | 0.67 | - | - | - | - |
| | SD | - | - | - | - | - | 2.16 | - | - | - | - | 3.83 | - | - | - | - | 2.58 | - | - | - | - |
| | Min. | - | - | - | - | - | -13.1 | - | - | - | - | -7.11 | - | - | - | - | -10.6 | - | - | - | - |
| | 5th ptile | - | - | - | - | - | -5.83 | - | - | - | - | -3.57 | - | - | - | - | -3.14 | - | - | - | - |
| | 25th ptile | - | - | - | - | - | -2.66 | - | - | - | - | -0.48 | - | - | - | - | -0.61 | - | - | - | - |
| | Median | - | - | - | - | - | -1.08 | - | - | - | - | 1.07 | - | - | - | - | 0.34 | - | - | - | - |
| | 75th ptile | - | - | - | - | - | -0.16 | - | - | - | - | 3.67 | - | - | - | - | 1.80 | - | - | - | - |
| | 95th ptile | - | - | - | - | - | 0.85 | - | - | - | - | 8.83 | - | - | - | - | 5.40 | - | - | - | - |
| | Max. | - | - | - | - | - | 4.18 | - | - | - | - | 22.2 | - | - | - | - | 15.7 | - | - | - | - |

Table 10. Continuation.

| Month | Descriptive Statistics | North | | | | | East | | | | | South | | | | | West | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Weekly | | | | Monthly | Weekly | | | | Monthly | Weekly | | | | Monthly | Weekly | | | | Monthly |
| | | 1st | 2nd | 3rd | 4th | | 1st | 2nd | 3rd | 4th | | 1st | 2nd | 3rd | 4th | | 1st | 2nd | 3rd | 4th | |
| Jul 10[c] | Mean | 0.34 | 0.42 | 0.07 | 0.45 | 0.33 | -1.47 | -1.68 | -1.92 | -1.83 | -1.79 | -1.21 | 0.81 | -0.15 | -0.23 | 0.04 | - | 0.18 | 0.55 | 1.42 | - |
| | SD | 0.93 | 1.45 | 1.31 | 2.02 | 1.63 | 1.42 | 2.62 | 2.33 | 8.53 | 5.43 | 1.44 | 3.75 | 2.96 | 3.55 | 3.41 | - | 6.24 | 1.63 | 5.65 | - |
| | Min. | -2.13 | -5.34 | -12.9 | -12.5 | -12.9 | -8.10 | -26.7 | -21.4 | -39.1 | -39.1 | -7.45 | -14.7 | -14.8 | -23.2 | -23.2 | - | -38.1 | -8.59 | -34.9 | - |
| | 5th ptile | -0.80 | -0.99 | -1.77 | -1.43 | -1.35 | -4.33 | -6.94 | -6.51 | -18.0 | -8.54 | -3.94 | -3.56 | -4.81 | -5.52 | -4.66 | - | -5.05 | -1.51 | -3.33 | - |
| | 25th ptile | -0.21 | -0.29 | -0.34 | -0.52 | -0.37 | -2.17 | -2.52 | -3.03 | -3.20 | -2.85 | -1.98 | -1.03 | -1.53 | -1.57 | -1.39 | - | -1.13 | -0.29 | -0.10 | - |
| | Median | 0.09 | -0.02 | -0.05 | -0.06 | -0.03 | -1.17 | -0.86 | -1.26 | -0.66 | -0.92 | -0.98 | -0.06 | -0.21 | -0.36 | -0.27 | - | -0.03 | 0.20 | 0.97 | - |
| | 75th ptile | 0.76 | 0.77 | 0.50 | 0.80 | 0.68 | -0.49 | -0.09 | -0.24 | 0.15 | -0.04 | -0.25 | 1.60 | 0.86 | 0.80 | 0.90 | - | 1.16 | 1.19 | 2.60 | - |
| | 95th ptile | 2.21 | 3.22 | 2.04 | 4.66 | 3.31 | 0.26 | 0.95 | 0.52 | 9.40 | 1.44 | 0.78 | 8.38 | 5.29 | 5.50 | 6.13 | - | 6.18 | 3.65 | 8.67 | - |
| | Max. | 4.61 | 14.9 | 14.8 | 16.2 | 16.2 | 1.59 | 7.59 | 3.51 | 57.5 | 57.5 | 3.12 | 37.0 | 19.9 | 37.8 | 37.8 | - | 34.0 | 12.4 | 48.6 | - |

a. Positive values denote that pressure was higher outdoors than indoors.
b. Data missing (March, April, August and various weeks) due to equipment malfunction.
c. Measurements obtained while Syracuse University pressurized the test hut to characterize the air leakage of wall panels are not included.
Abbreviations: NA, not available; ptile, percentile; SD, standard deviation.

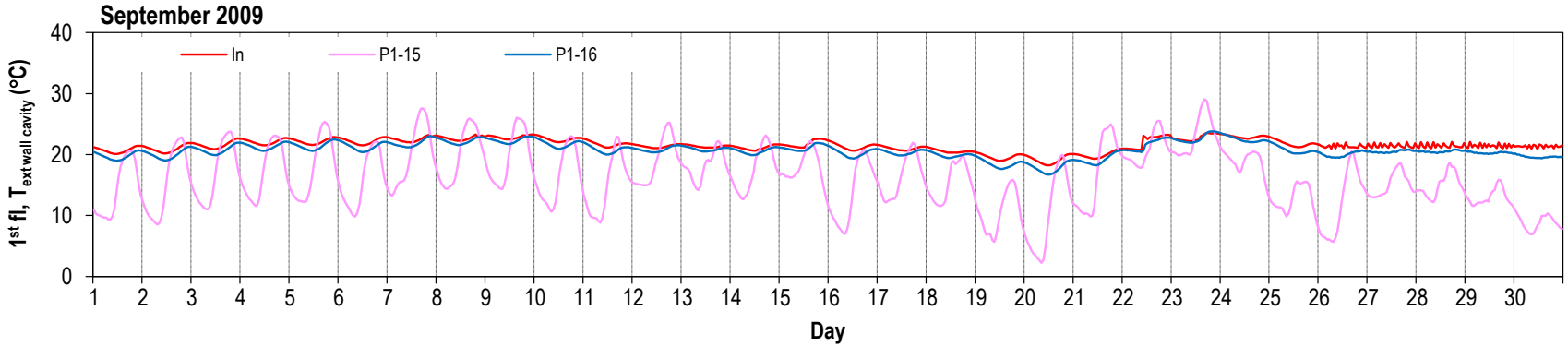
# 6. References

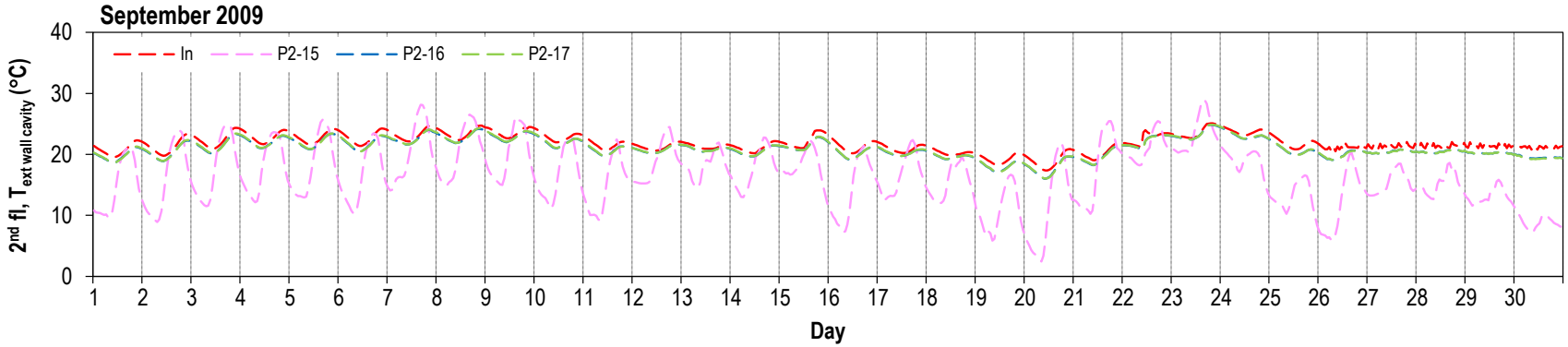
ASHRAE. 2005. *2005 ASHRAE Handbook – Fundamentals*. Atlanta: American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc.

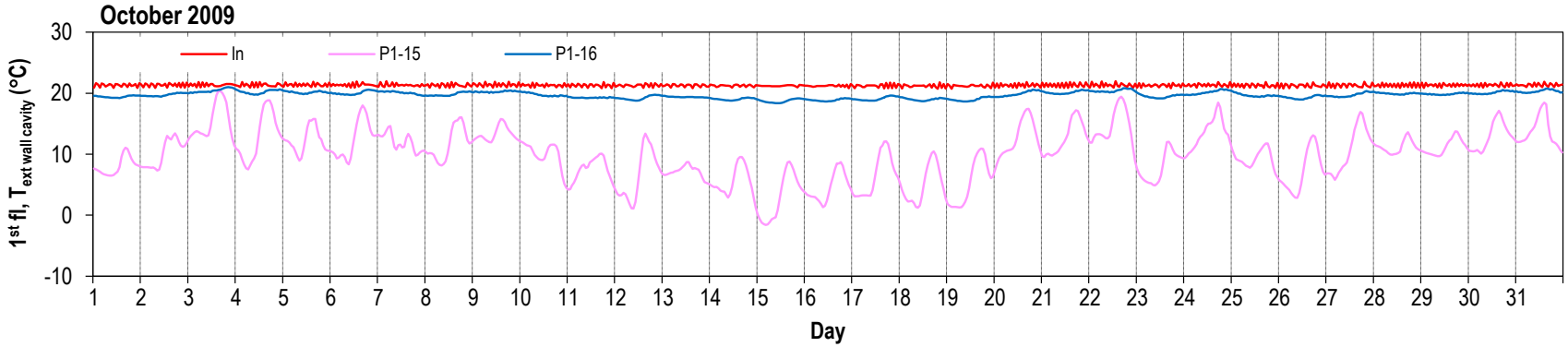
Pradhan, Denis; Zhang, Jensen; Thorsell, Thomas; Mocarski, Robbin. 2011. *Air Leakage Measurement of 25 Wall Assemblies with Different Types of Air Barriers*. Report issued by Syracuse University to the Air Barrier Association of America.

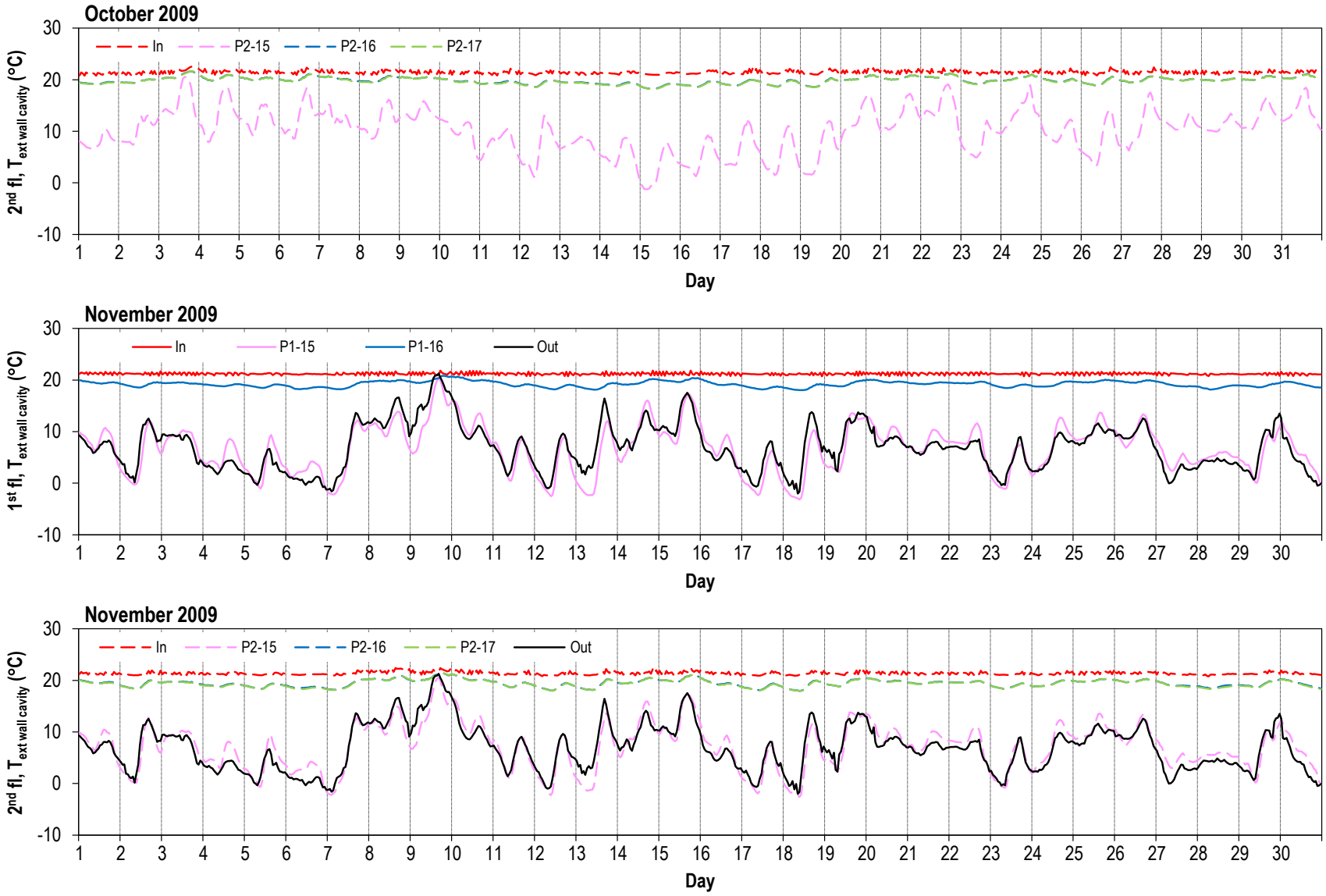
# Appendix A: North Panels

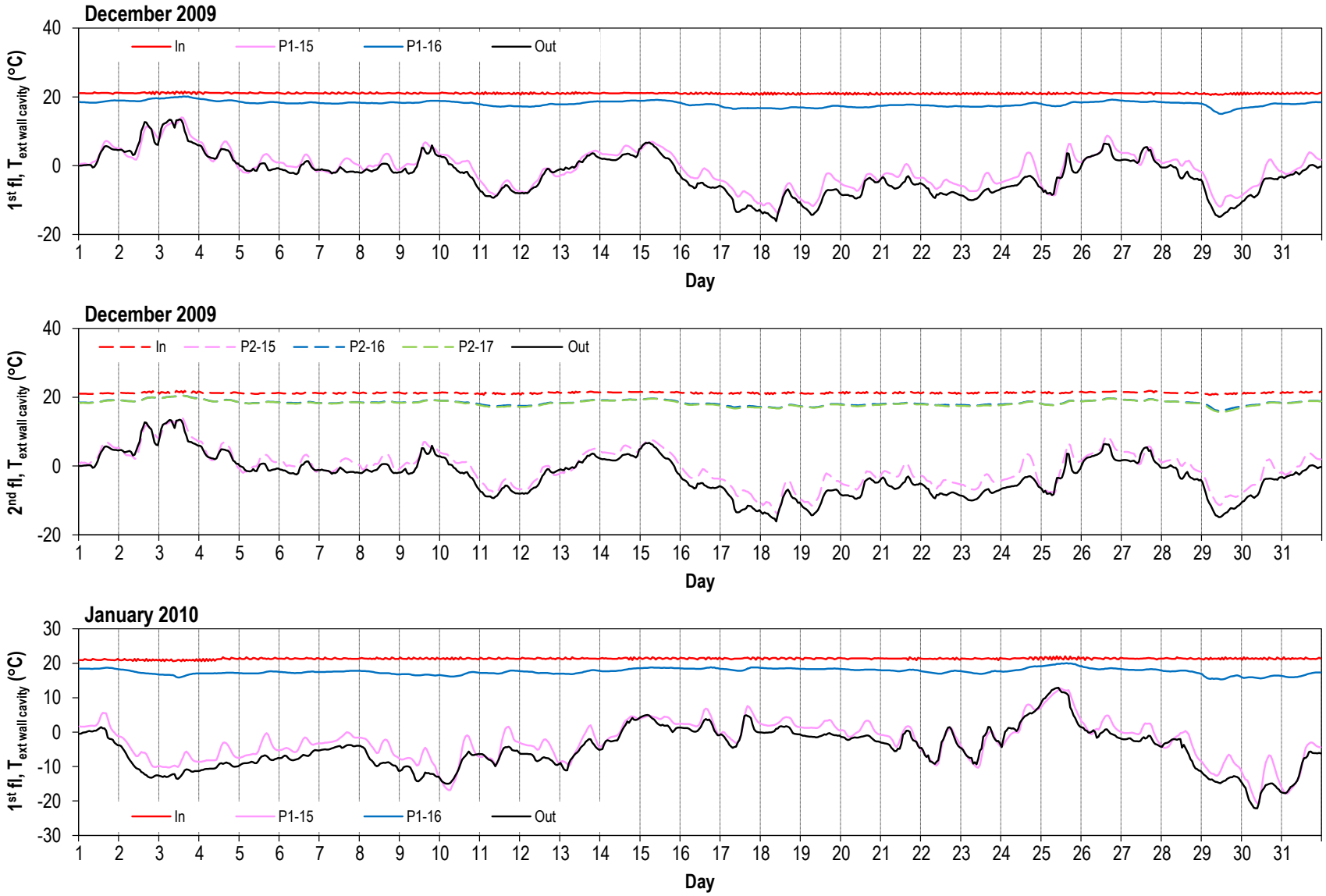
Temperature (°C) at exterior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

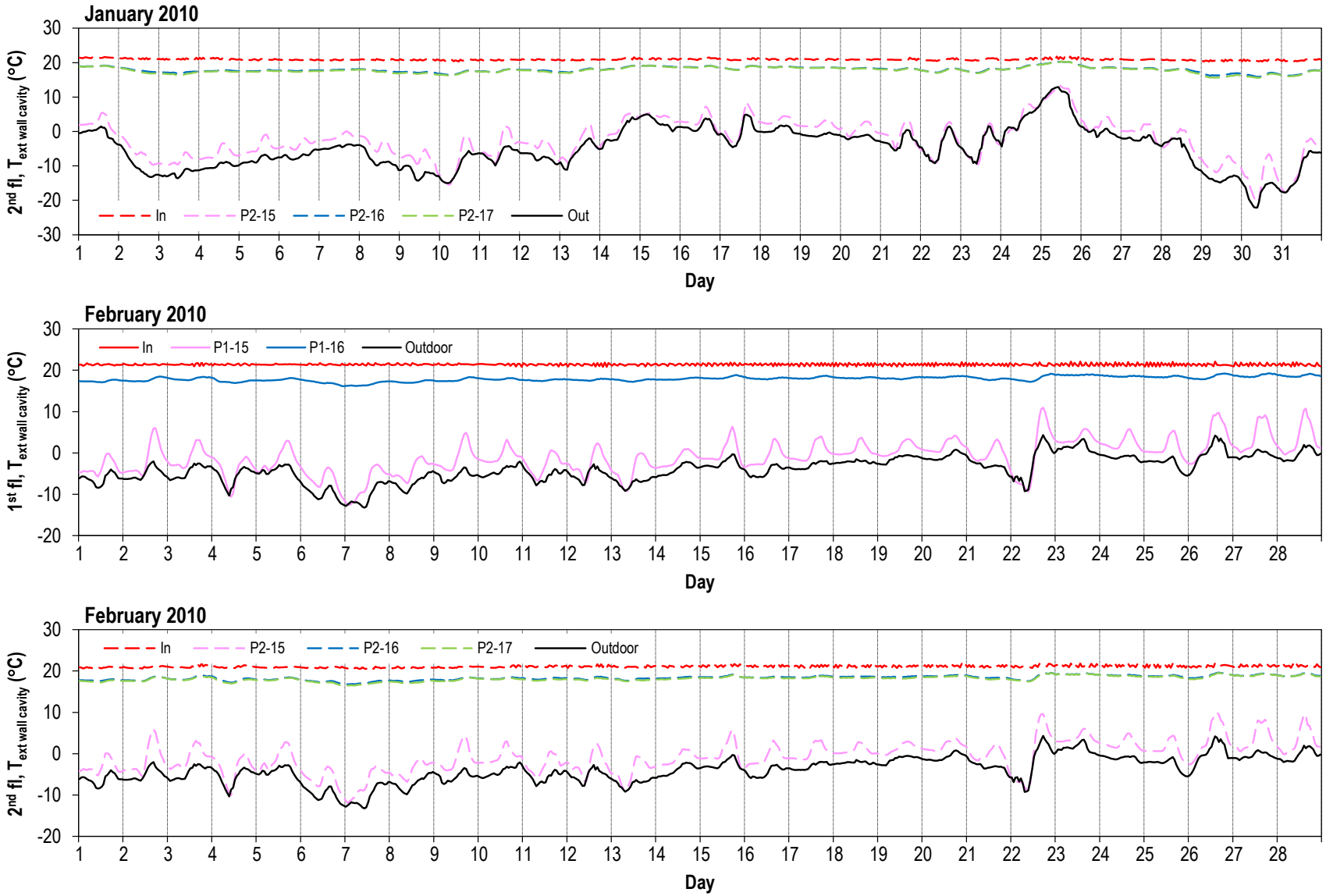


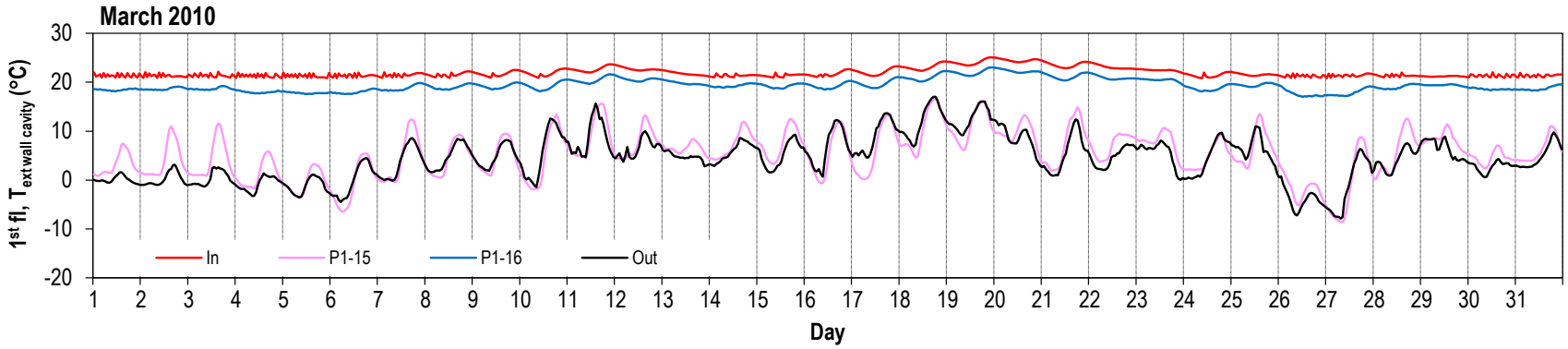



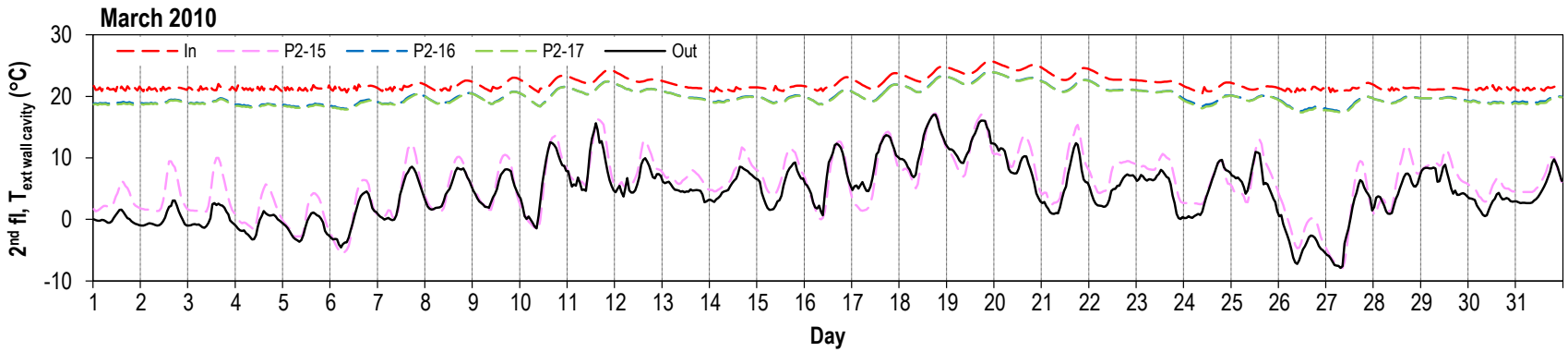



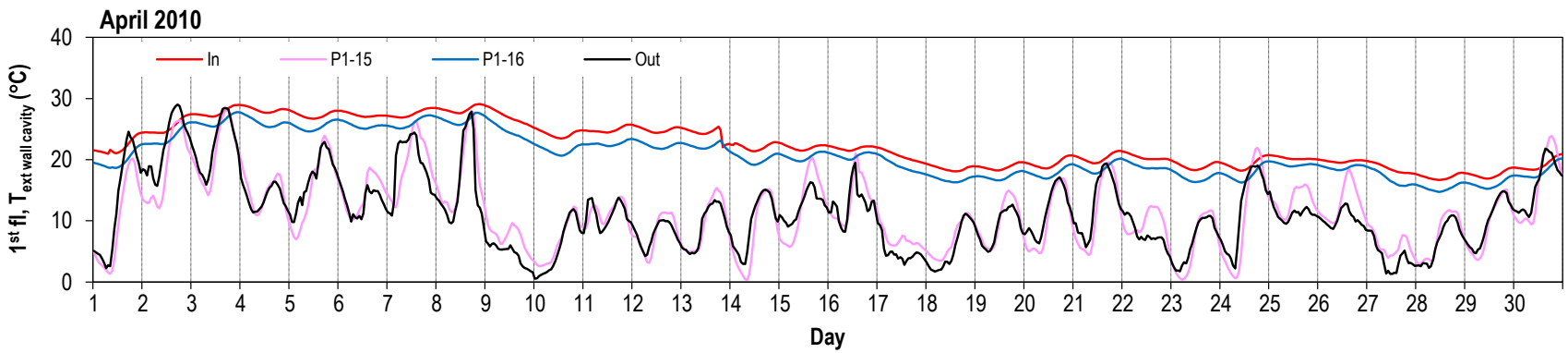

October 2009
In
P2-15
P2-16
P2-17
2nd fl, T ext wall cavity (°C)
Day
November 2009
In
P1-15
P1-16
Out
1st fl, T ext wall cavity (°C)
Day
November 2009
In
P2-15
P2-16
P2-17
Out
2nd fl, T ext wall cavity (°C)
Day

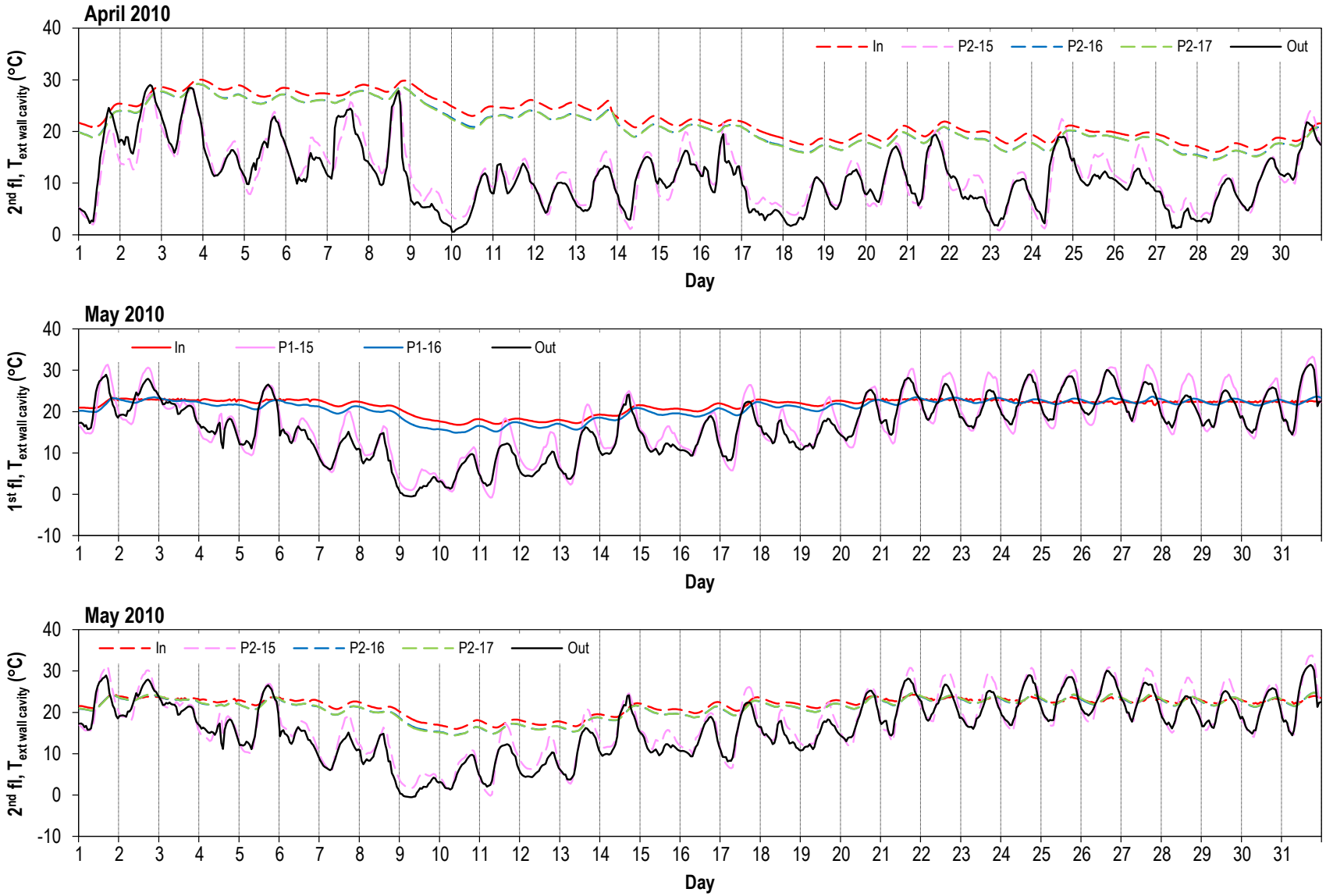

December 2009
In
P1-15
P1-16
Out
1st fl, T ext wall cavity (°C)
Day
December 2009
In
P2-15
P2-16
P2-17
Out
2nd fl, T ext wall cavity (°C)
Day
January 2010
In
P1-15
P1-16
Out
1st fl, T ext wall cavity (°C)
Day

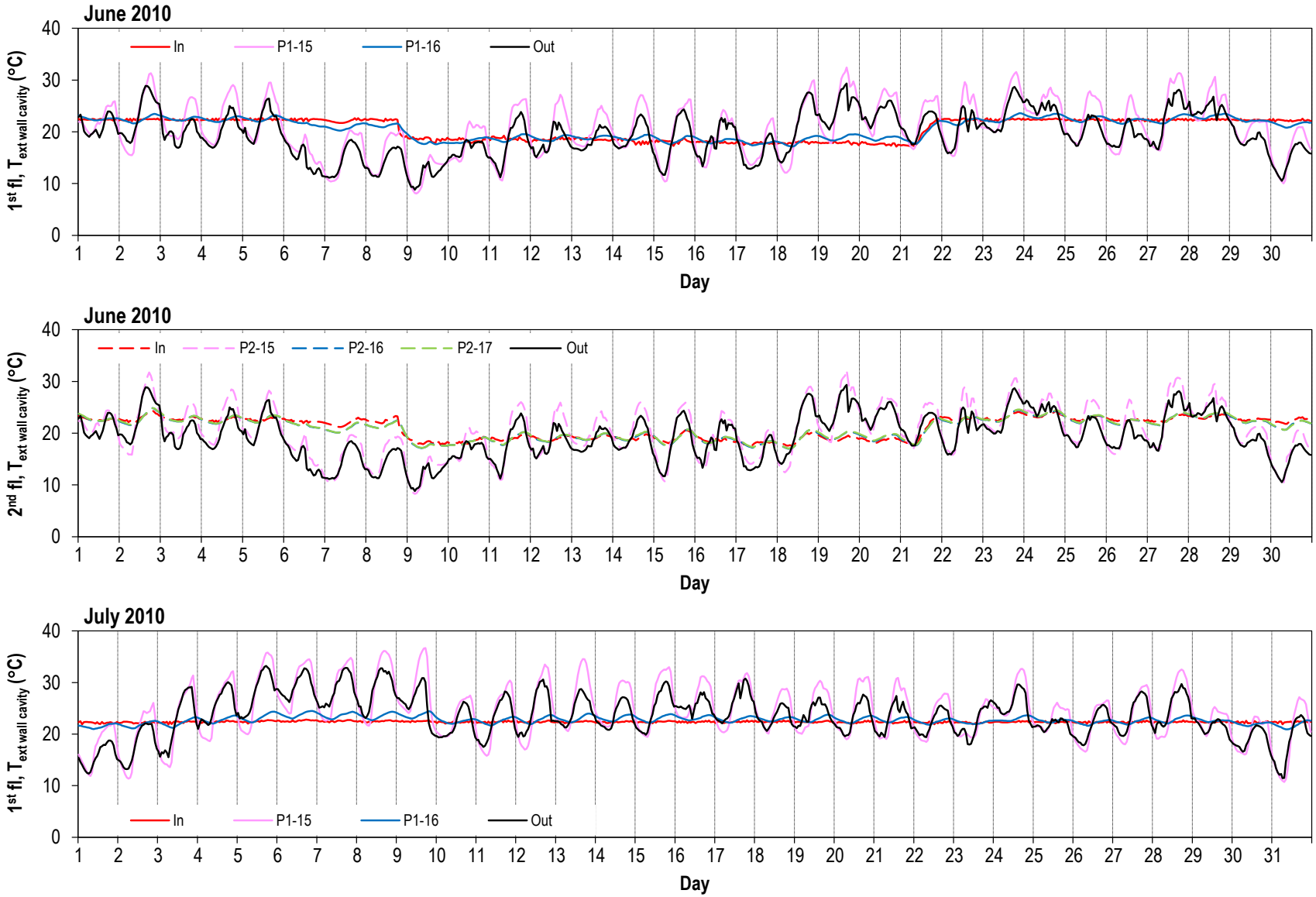

January 2010
2nd fl, T ext wall cavity (°C)
In
P2-15
P2-16
P2-17
Out
Day
February 2010
1st fl, T ext wall cavity (°C)
In
P1-15
P1-16
Outdoor
Day
February 2010
2nd fl, T ext wall cavity (°C)
In
P2-15
P2-16
P2-17
Outdoor
Day

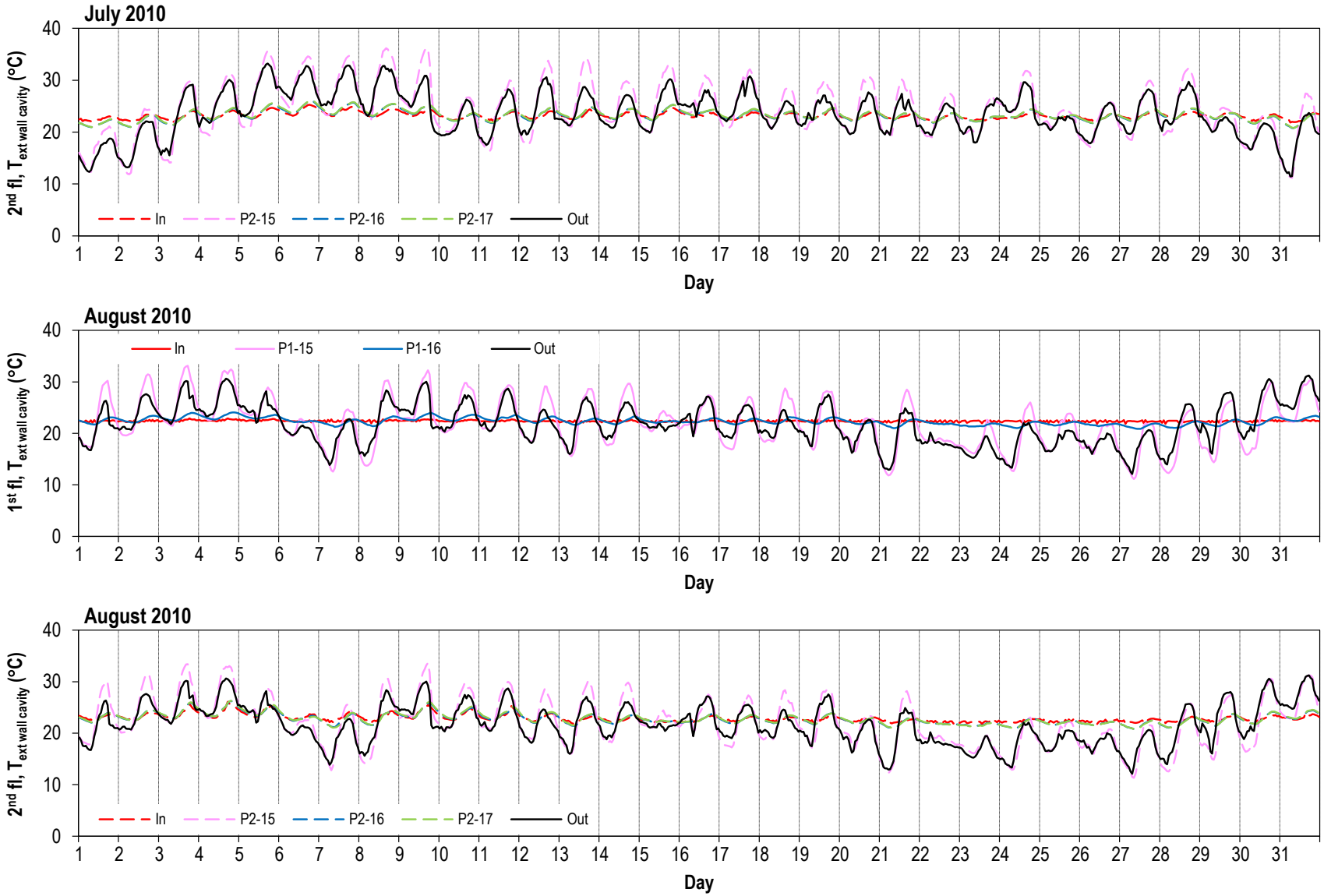

March 2010
1st fl, T ext wall cavity (°C)
In
P1-15
P1-16
Out
Day


March 2010
2nd fl, T ext wall cavity (°C)
In
P2-15
P2-16
P2-17
Out
Day

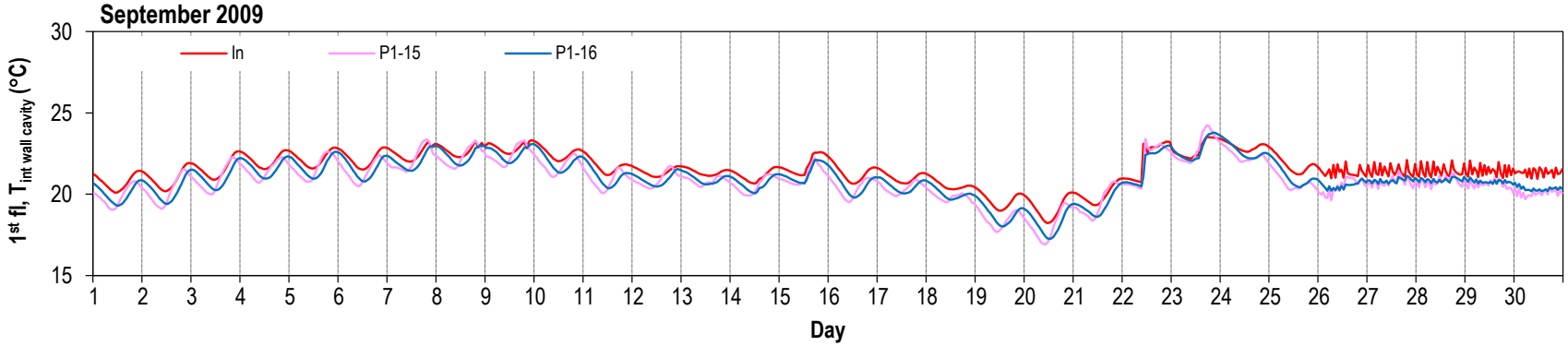

April 2010
1st fl, T ext wall cavity (°C)
In
P1-15
P1-16
Out
Day

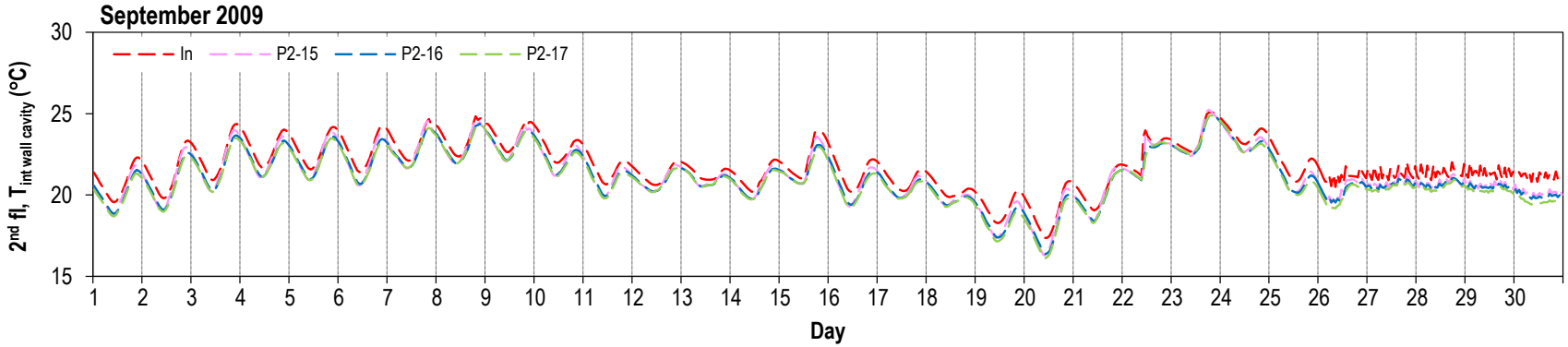

April 2010
In
P2-15
P2-16
P2-17
Out
2nd fl, T ext wall cavity (°C)
Day
May 2010
In
P1-15
P1-16
Out
1st fl, T ext wall cavity (°C)
Day
May 2010
In
P2-15
P2-16
P2-17
Out
2nd fl, T ext wall cavity (°C)
Day

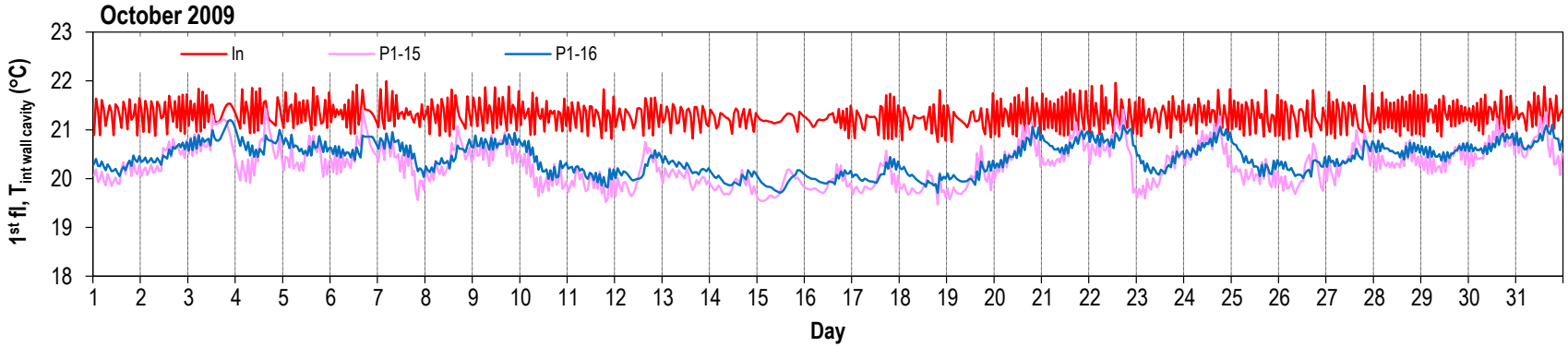

June 2010
In
P1-15
P1-16
Out
1st fl, T ext wall cavity (°C)
Day
June 2010
In
P2-15
P2-16
P2-17
Out
2nd fl, T ext wall cavity (°C)
Day
July 2010
In
P1-15
P1-16
Out
1st fl, T ext wall cavity (°C)
Day

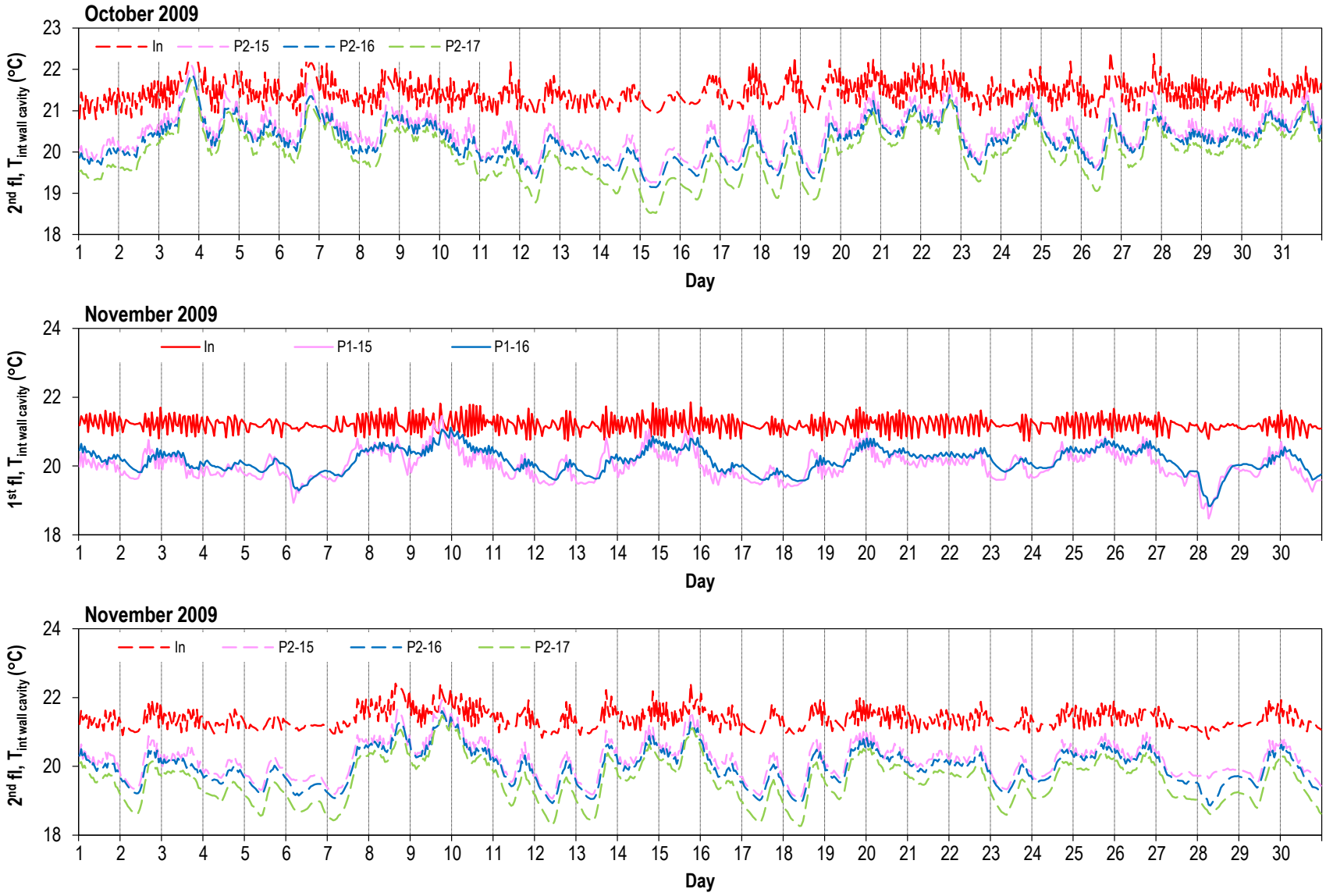

July 2010
2nd fl, T ext wall cavity (°C)
In
P2-15
P2-16
P2-17
Out
Day
August 2010
1st fl, T ext wall cavity (°C)
In
P1-15
P1-16
Out
Day
August 2010
2nd fl, T ext wall cavity (°C)
In
P2-15
P2-16
P2-17
Out
Day

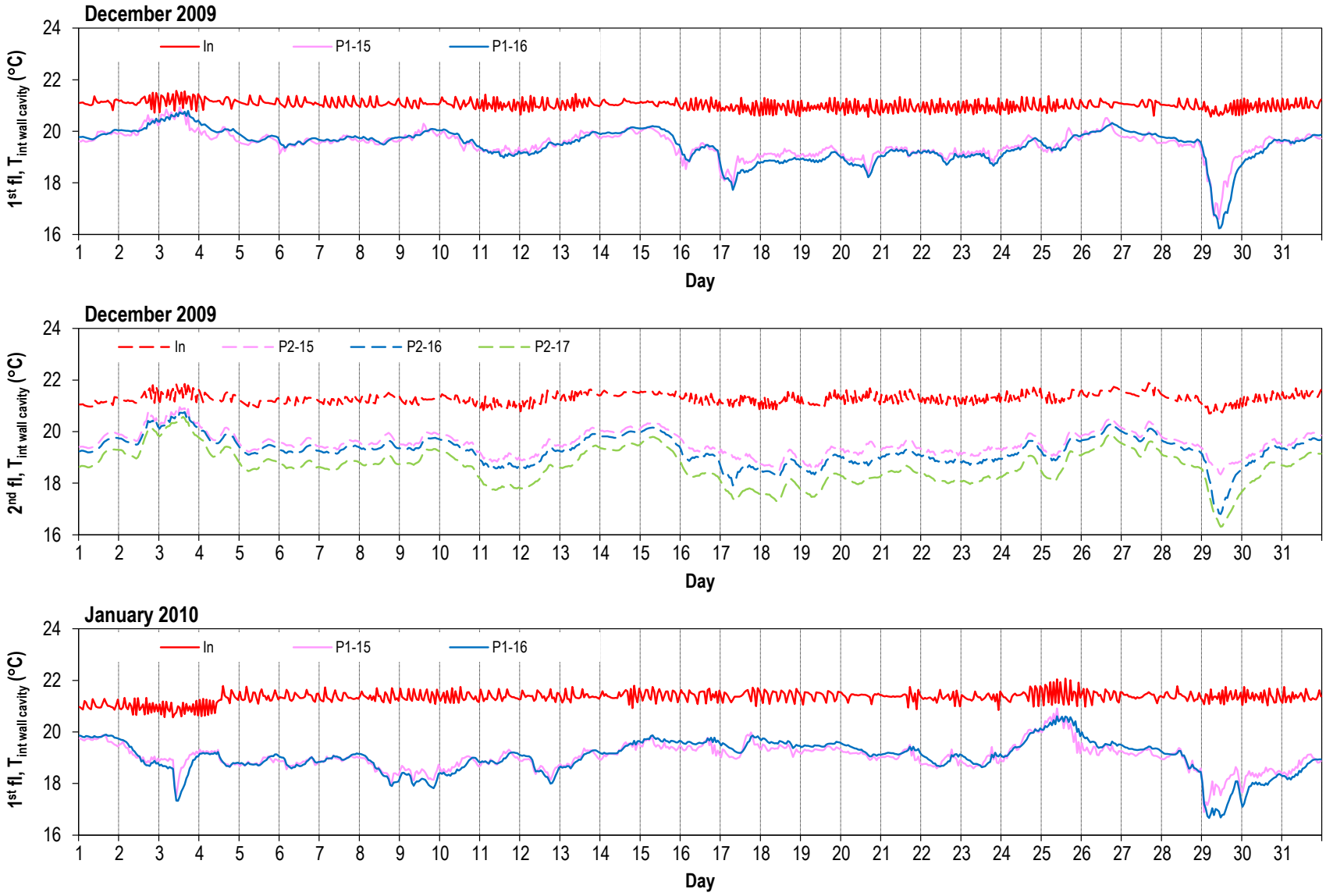
Temperature (°C) at interior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

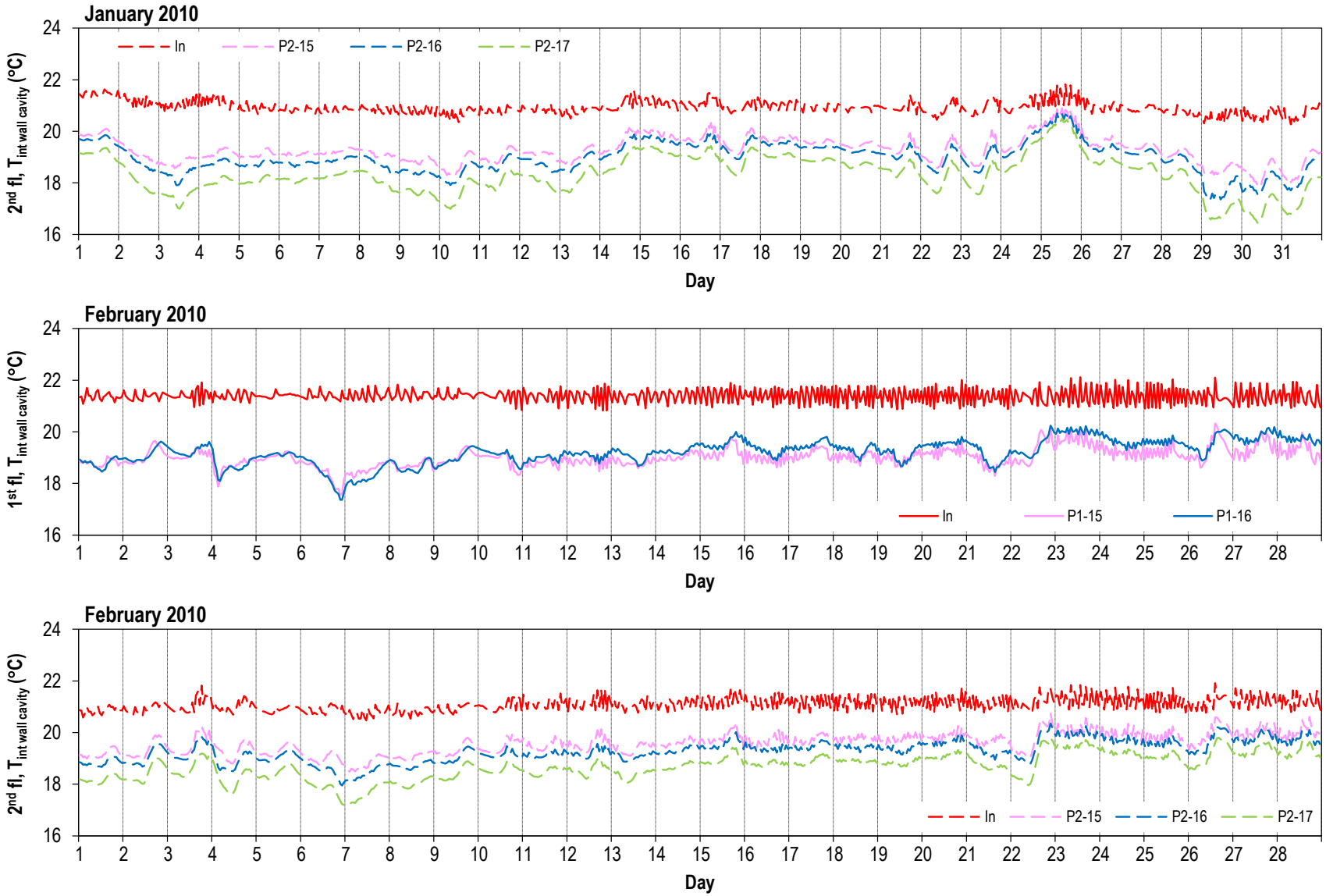


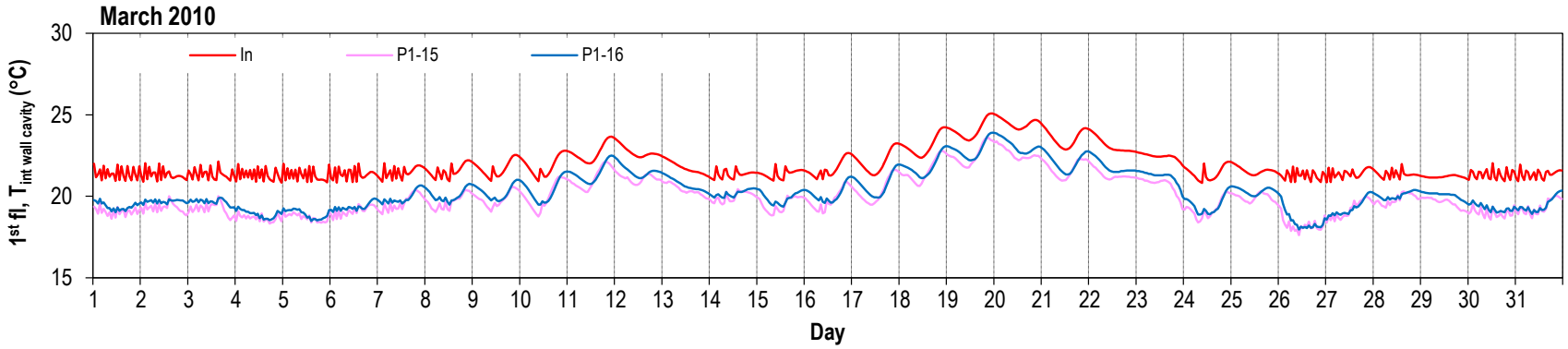



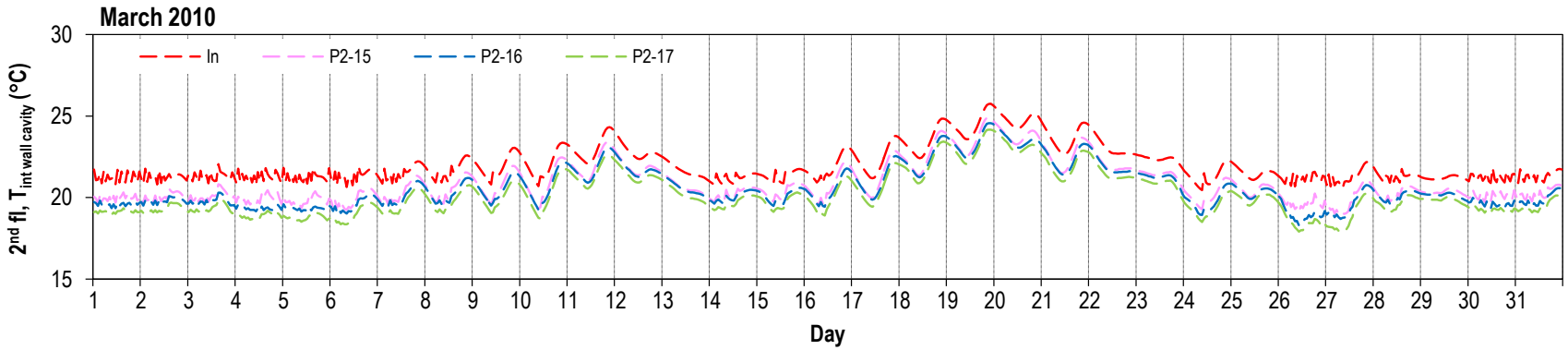



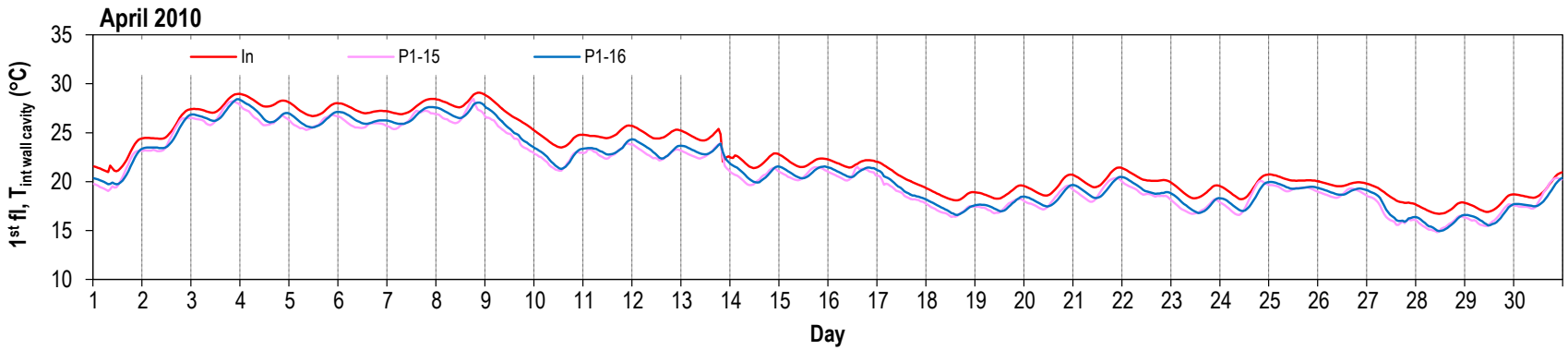

October 2009
In
P2-15
P2-16
P2-17
2nd fl, Tint wall cavity (°C)
Day
November 2009
In
P1-15
P1-16
1st fl, Tint wall cavity (°C)
Day
November 2009
In
P2-15
P2-16
P2-17
2nd fl, Tint wall cavity (°C)
Day

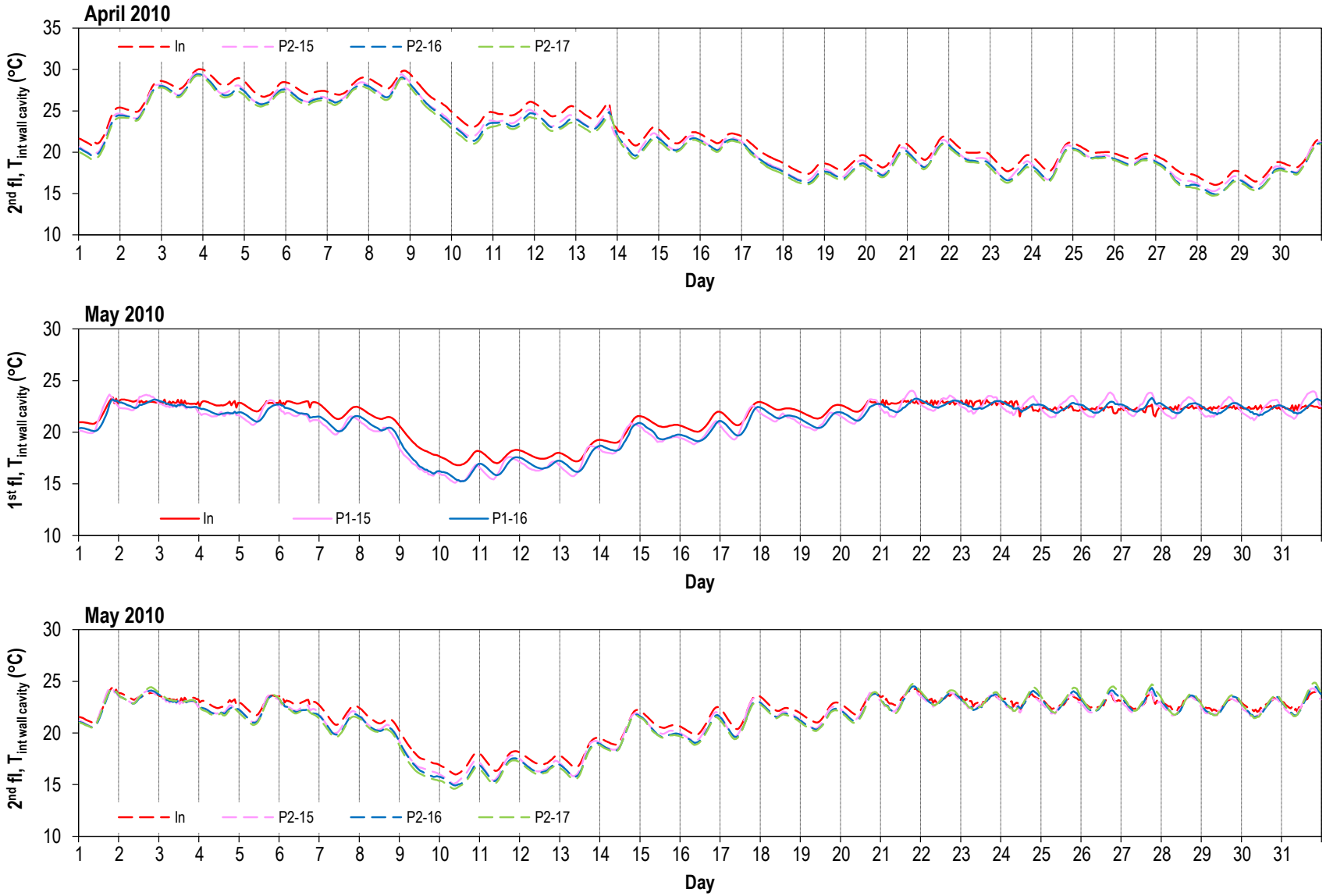

December 2009
In
P1-15
P1-16
1st fl, T int wall cavity (°C)
Day
December 2009
In
P2-15
P2-16
P2-17
2nd fl, T int wall cavity (°C)
Day
January 2010
In
P1-15
P1-16
1st fl, T int wall cavity (°C)
Day

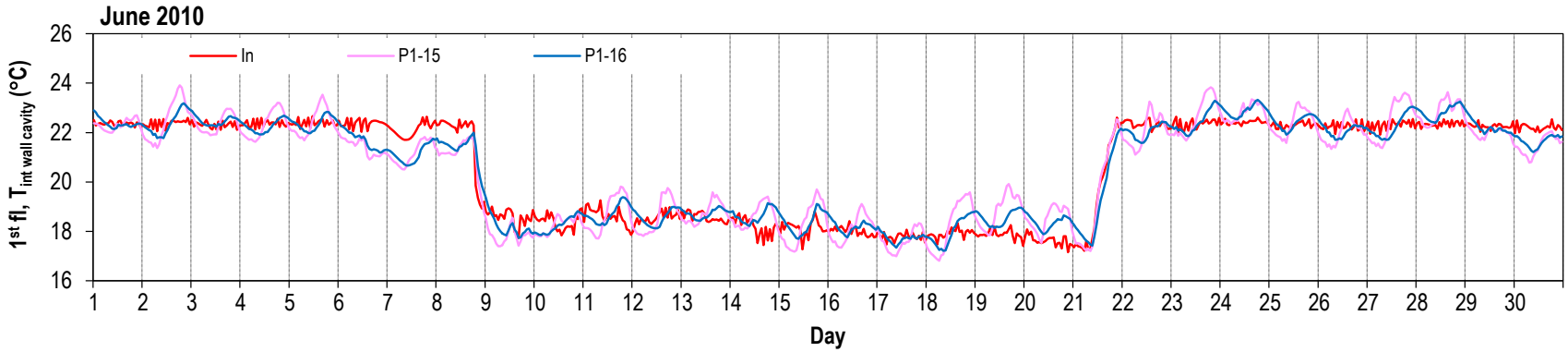

January 2010
In
P2-15
P2-16
P2-17
2nd fl, Tint wall cavity (°C)
Day
February 2010
In
P1-15
P1-16
1st fl, Tint wall cavity (°C)
Day
February 2010
In
P2-15
P2-16
P2-17
2nd fl, Tint wall cavity (°C)
Day

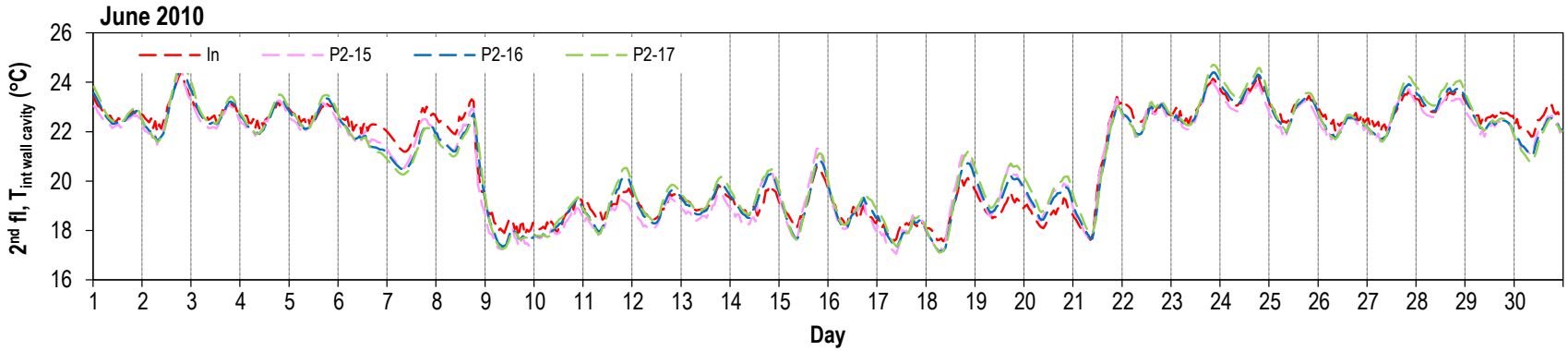

March 2010
In
P1-15
P1-16
1st fl, T int wall cavity (°C)
Day

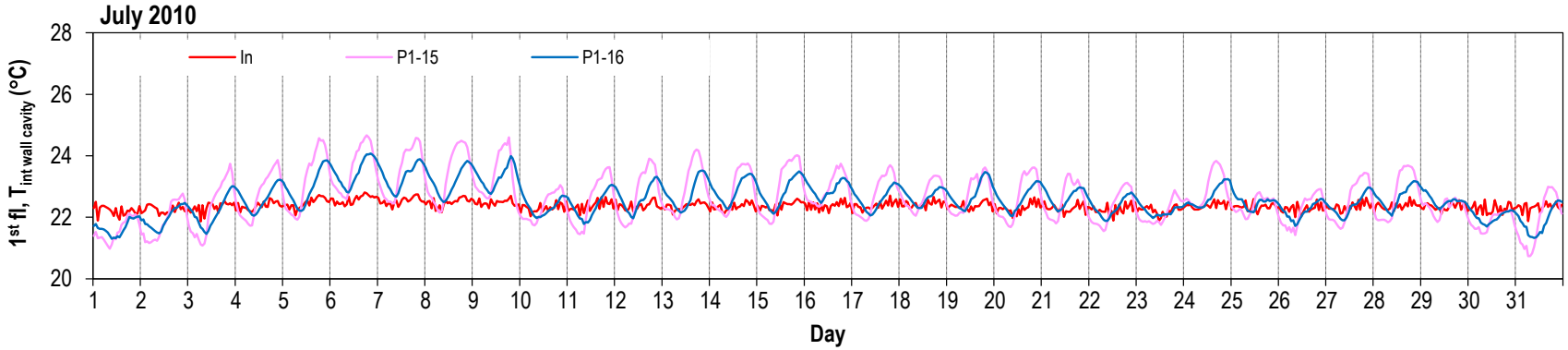

March 2010
In
P2-15
P2-16
P2-17
2nd fl, T int wall cavity (°C)
Day

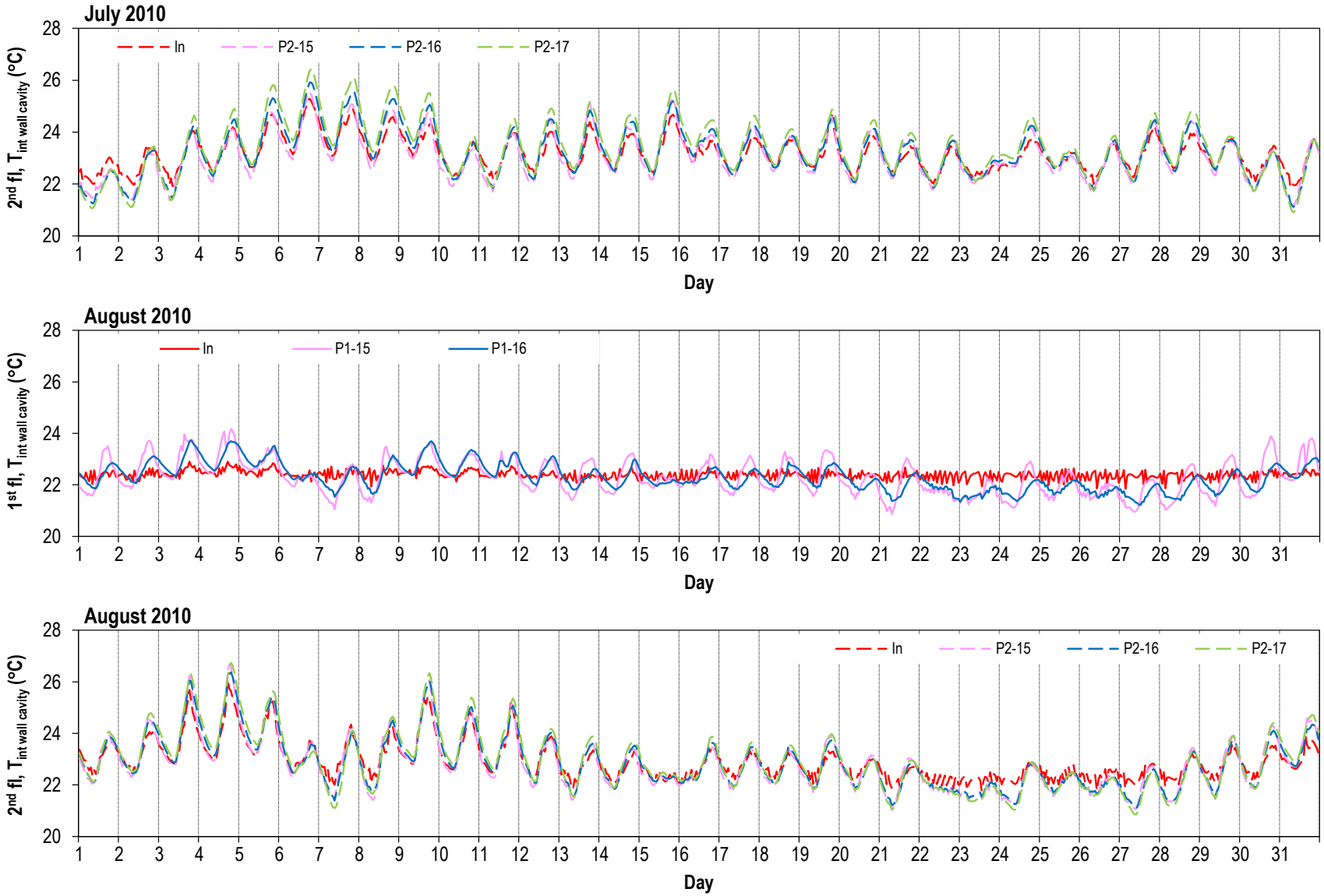

April 2010
In
P1-15
P1-16
1st fl, T int wall cavity (°C)
Day


April 2010
In
P2-15
P2-16
P2-17
2nd fl, T int wall cavity (°C)
Day
May 2010
In
P1-15
P1-16
1st fl, T int wall cavity (°C)
Day
May 2010
In
P2-15
P2-16
P2-17
2nd fl, T int wall cavity (°C)
Day


June 2010
In
P1-15
P1-16
1st fl, T int wall cavity (°C)
Day

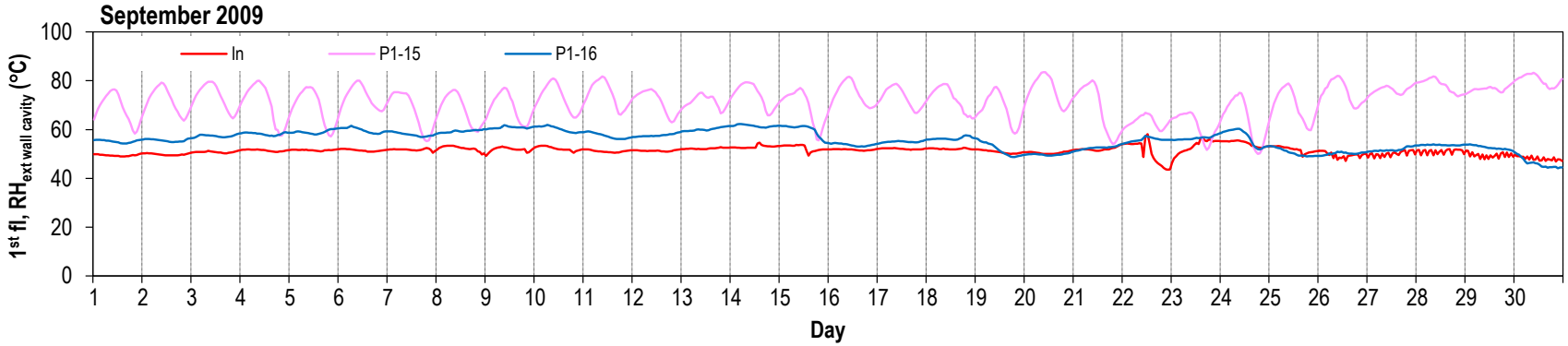

June 2010
In
P2-15
P2-16
P2-17
2nd fl, T int wall cavity (°C)
Day

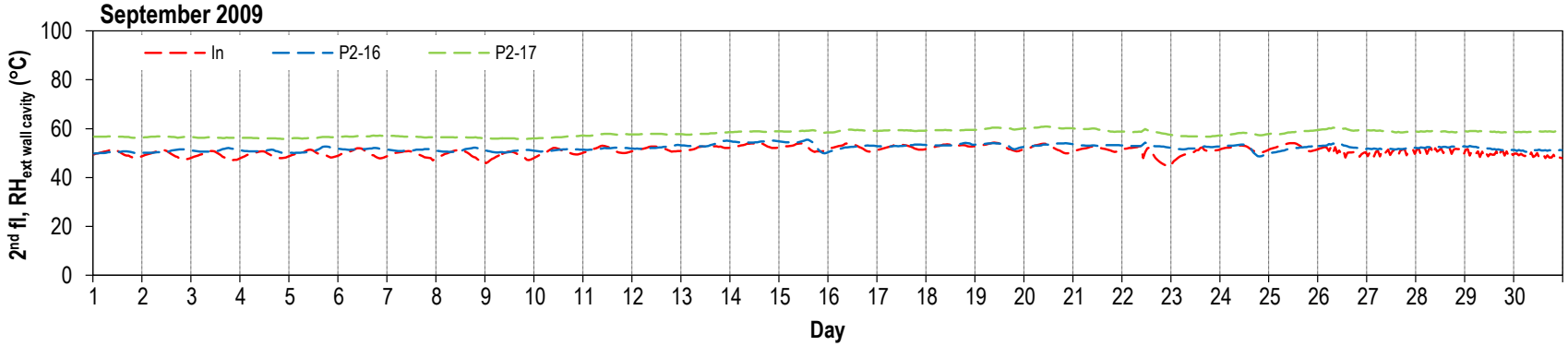

July 2010
In
P1-15
P1-16
1st fl, T int wall cavity (°C)
Day

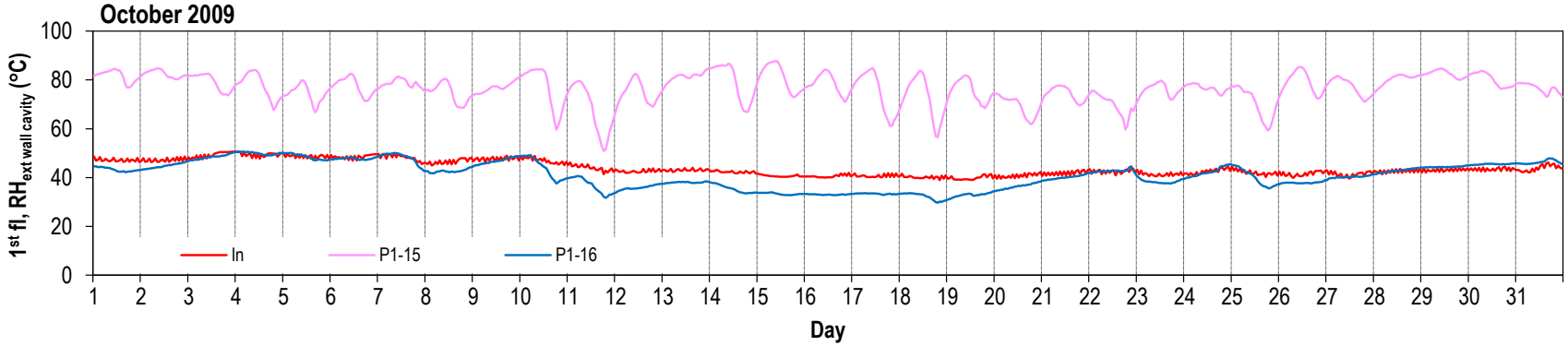

July 2010
In
P2-15
P2-16
P2-17
2nd fl, T int wall cavity (°C)
Day
August 2010
In
P1-15
P1-16
1st fl, T int wall cavity (°C)
Day
August 2010
In
P2-15
P2-16
P2-17
2nd fl, T int wall cavity (°C)
Day

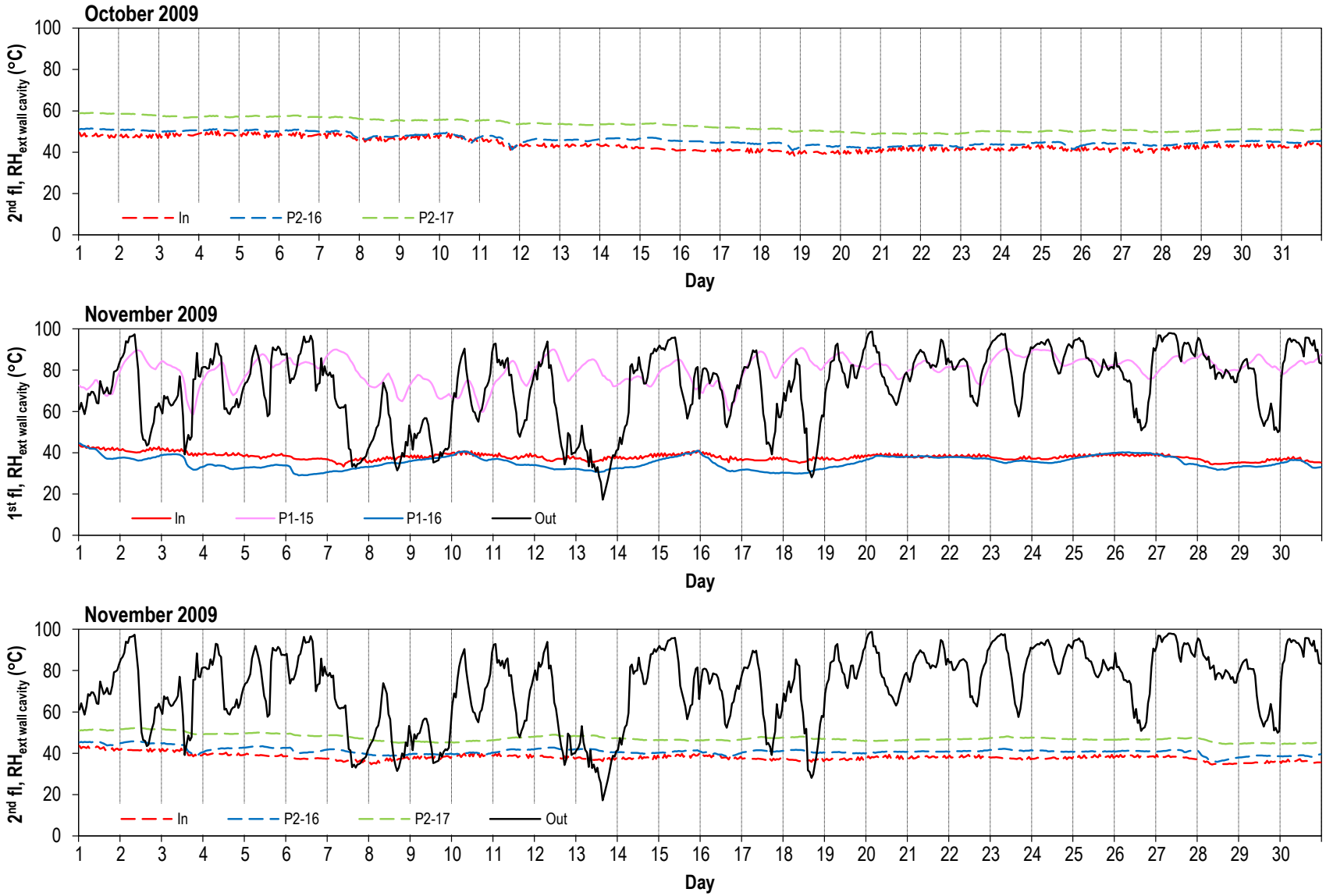
Relative humidity (%) at exterior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

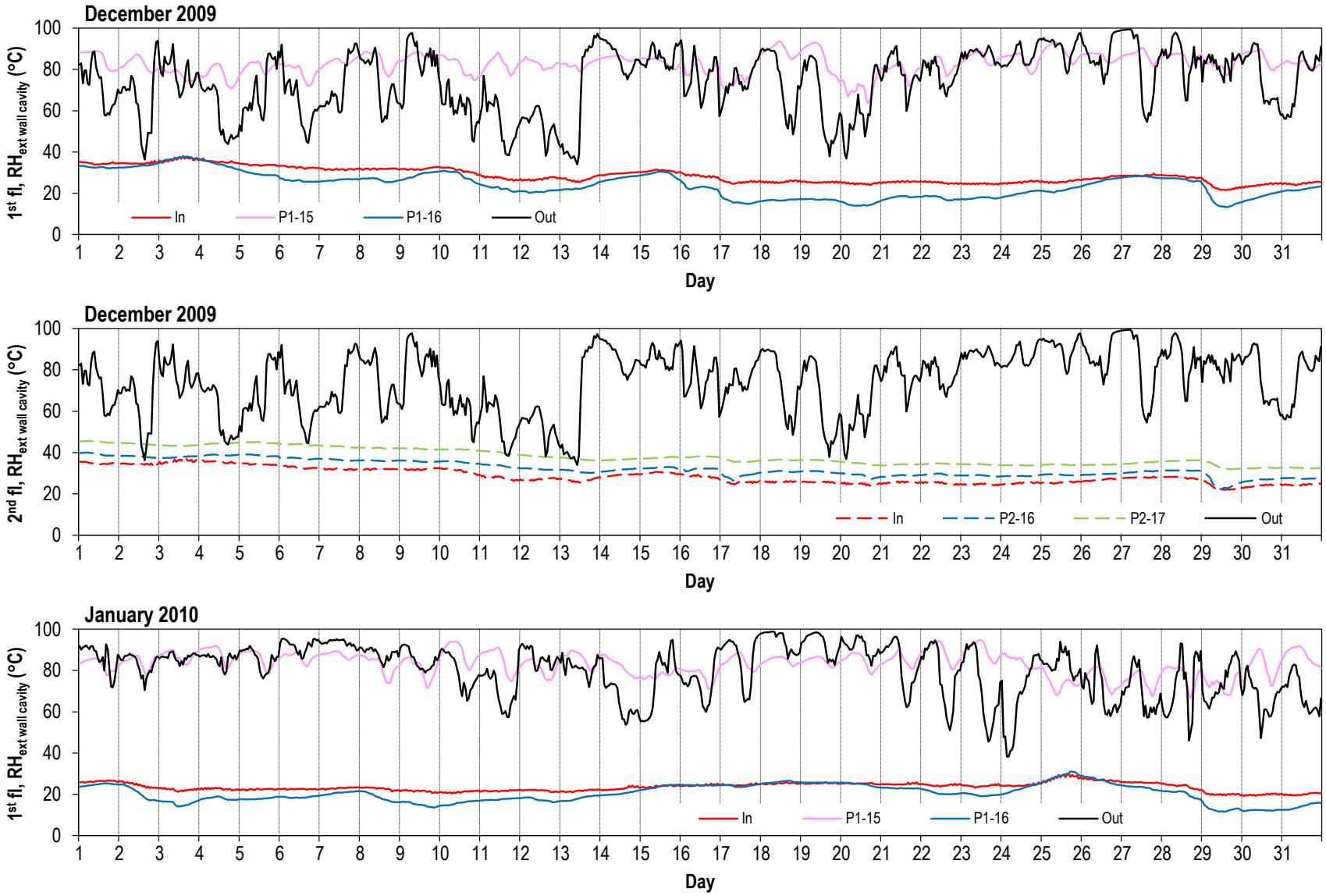
Data from panel P2-15 is not shown because of equipment malfunction.

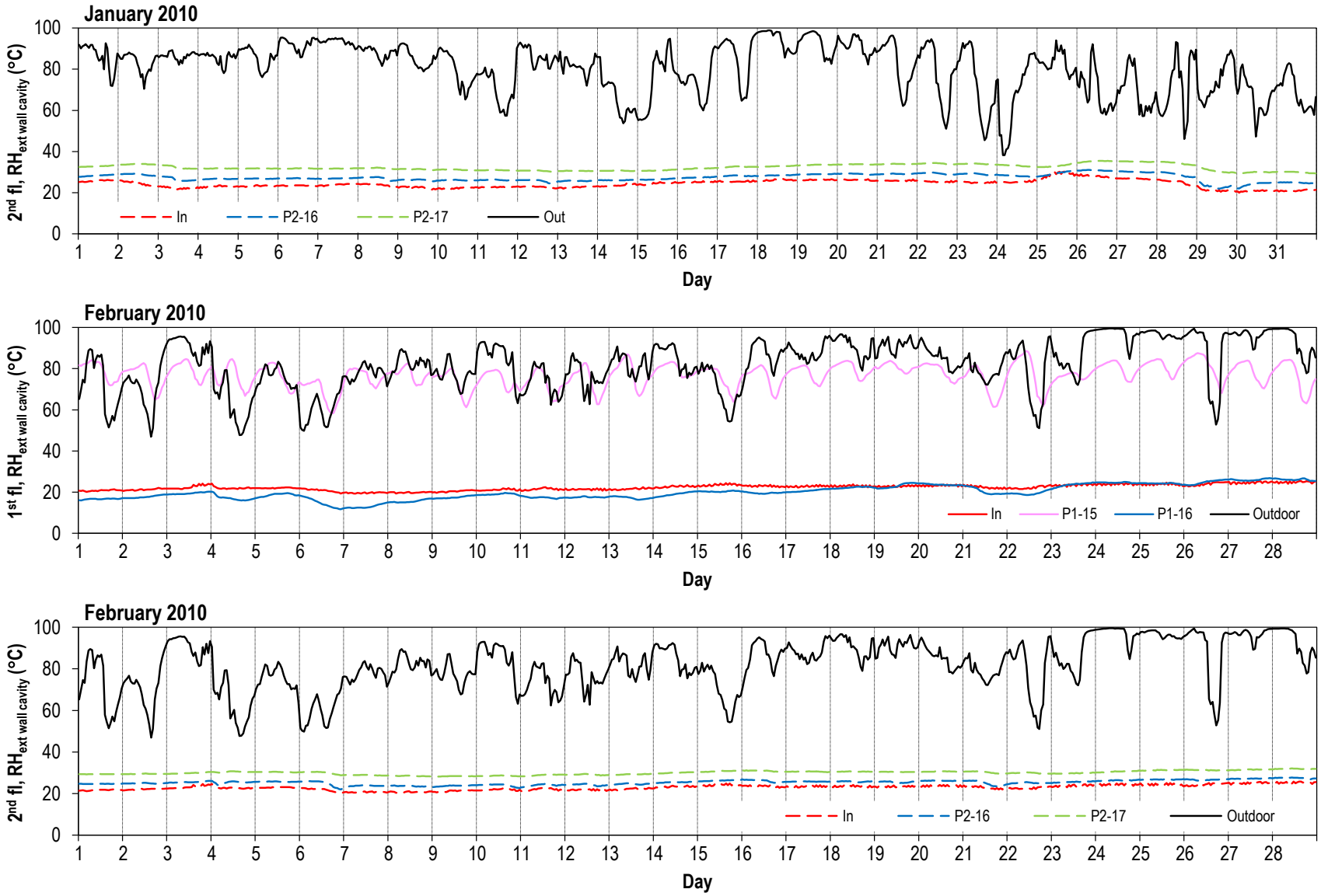


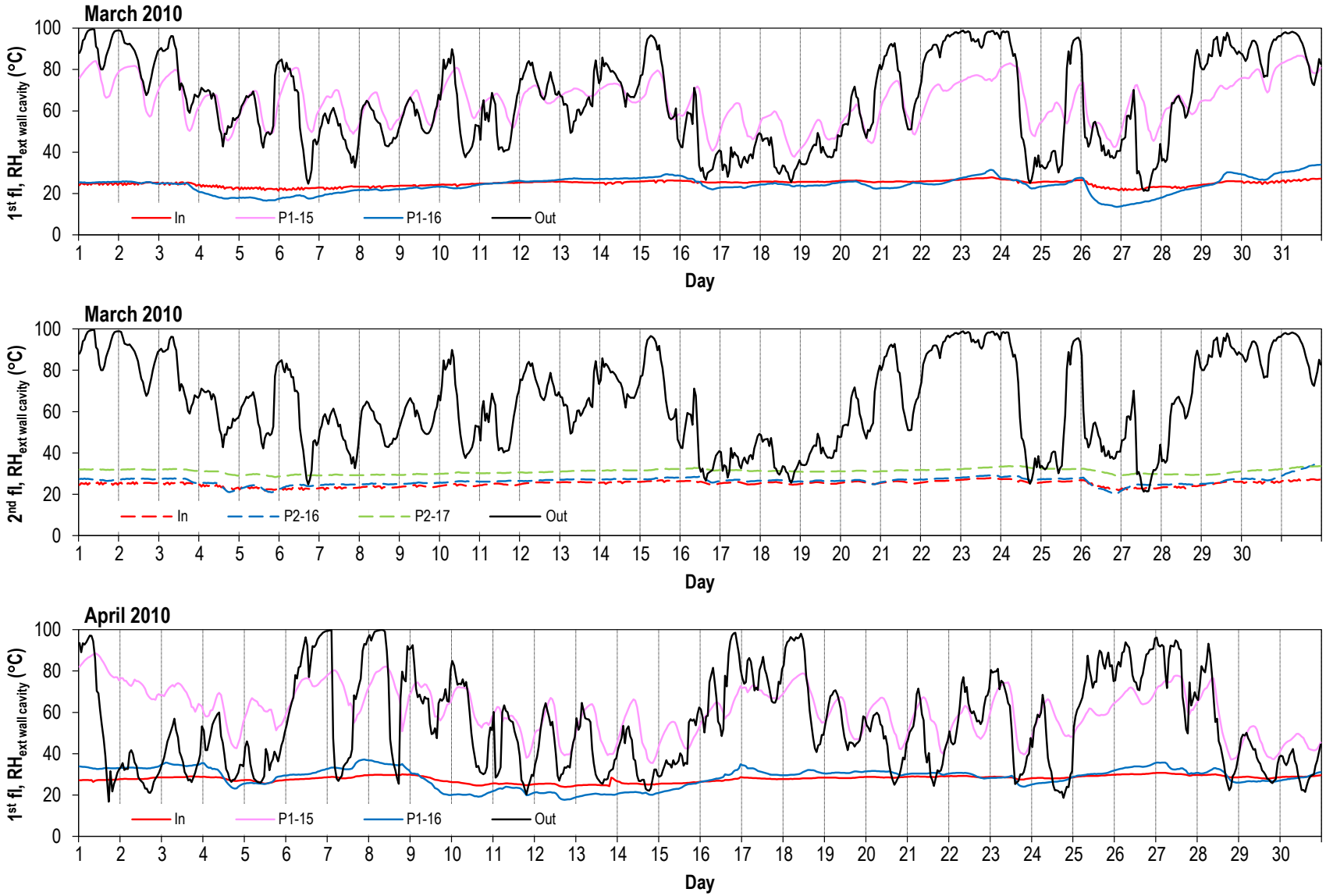



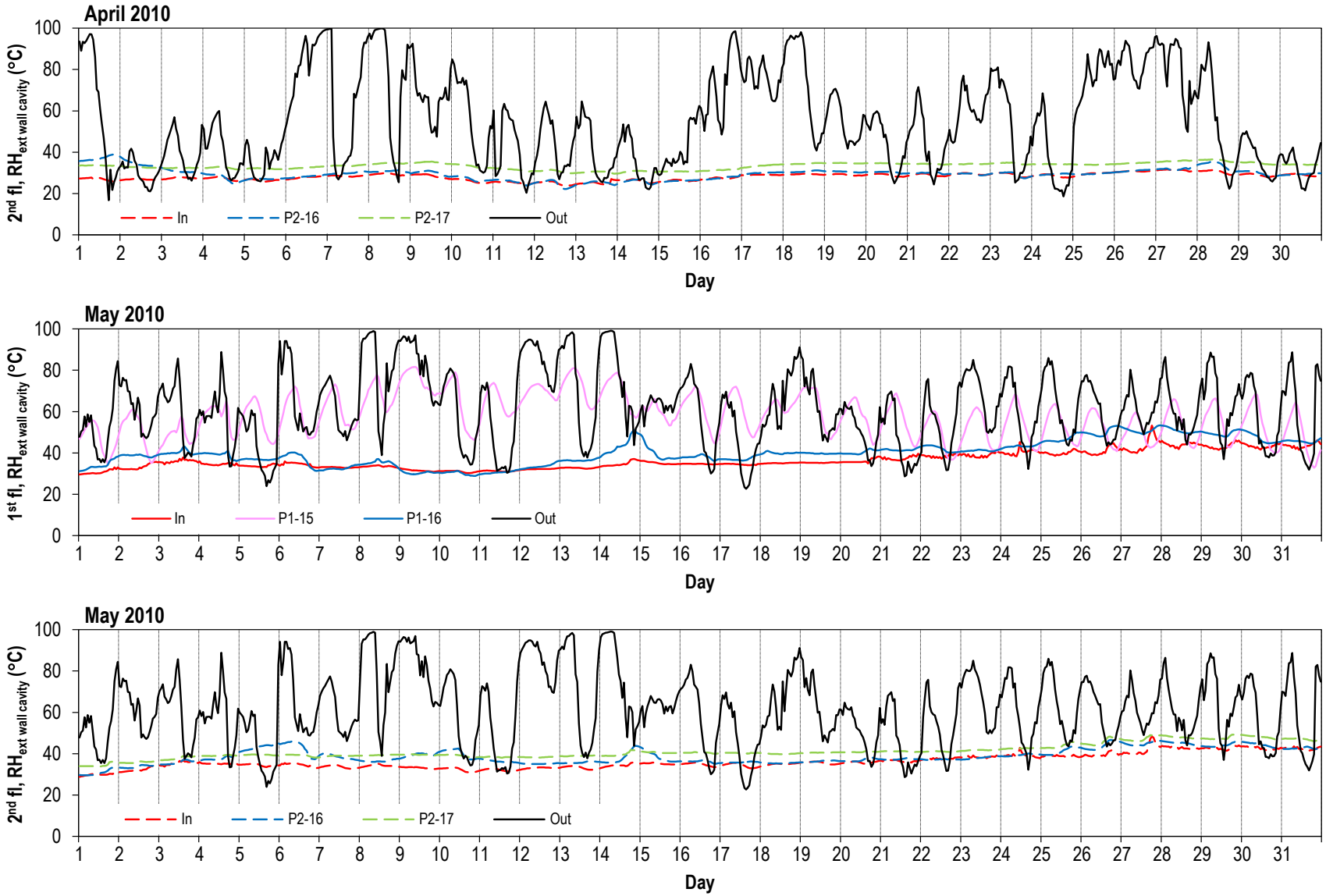



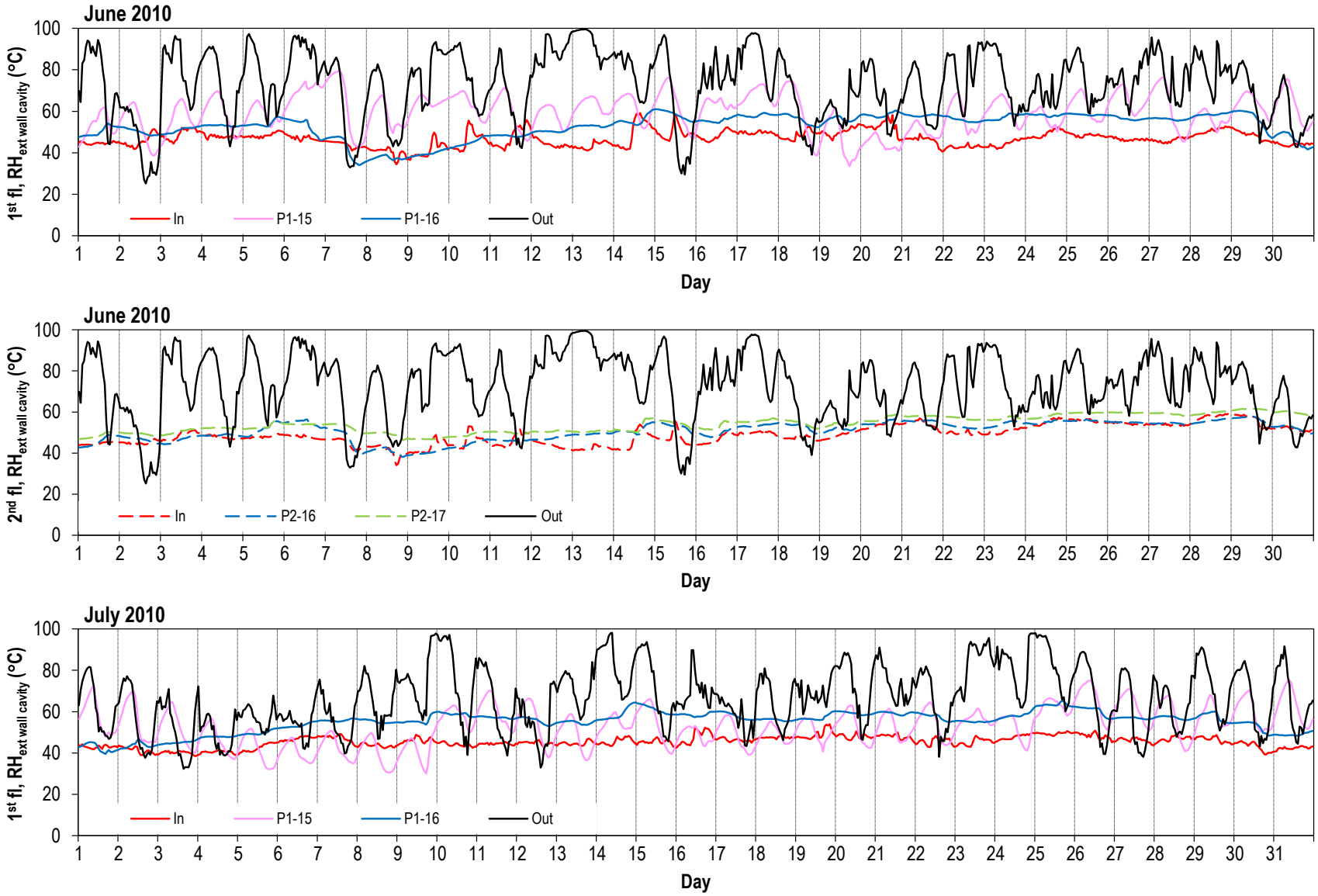

October 2009
2nd fl, RHext wall cavity (°C)
In
P2-16
P2-17
Day
November 2009
1st fl, RHext wall cavity (°C)
In
P1-15
P1-16
Out
Day
November 2009
2nd fl, RHext wall cavity (°C)
In
P2-16
P2-17
Out
Day

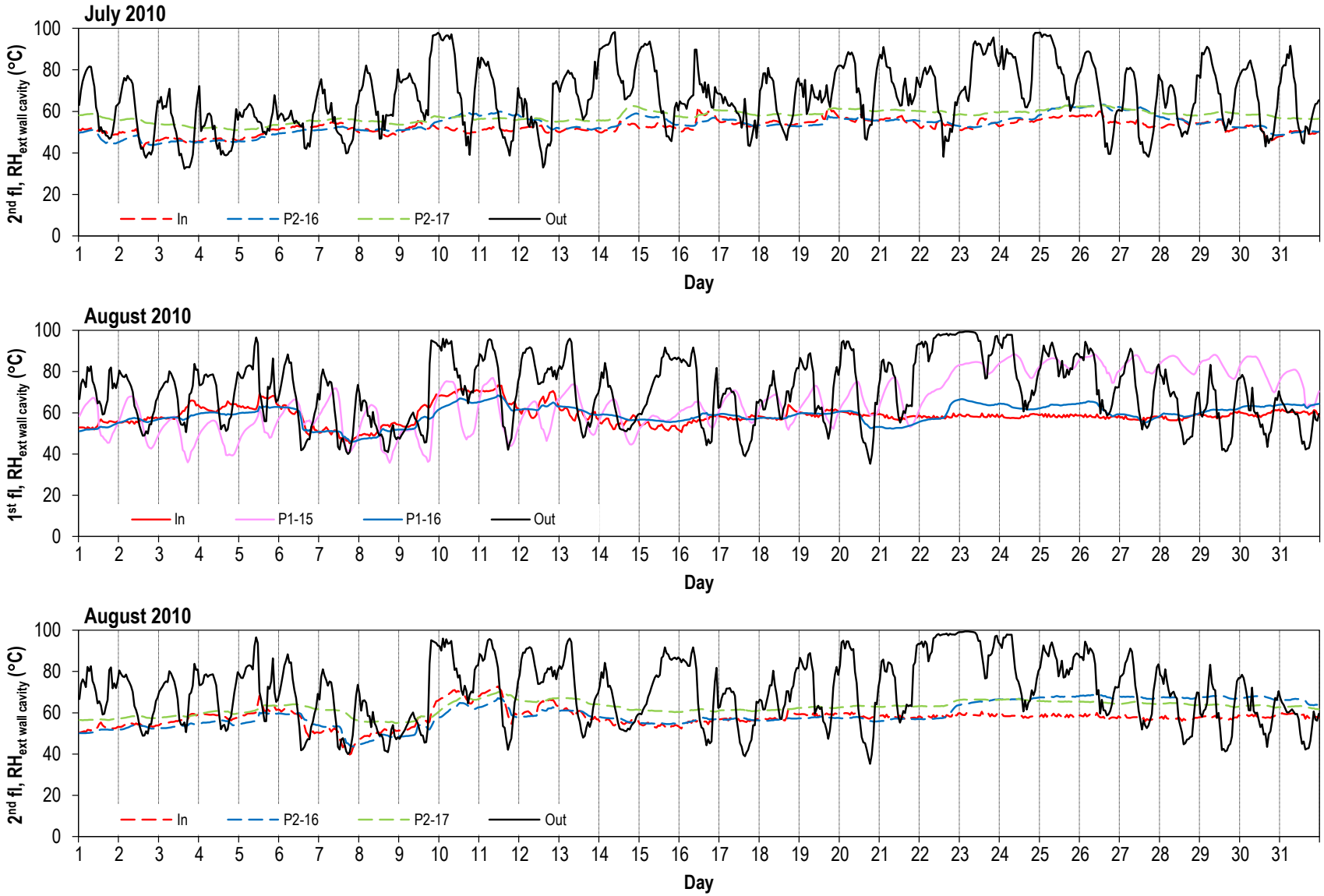

December 2009
1st fl, RHext wall cavity (°C)
In
P1-15
P1-16
Out
Day
December 2009
2nd fl, RHext wall cavity (°C)
In
P2-16
P2-17
Out
Day
January 2010
1st fl, RHext wall cavity (°C)
In
P1-15
P1-16
Out
Day


January 2010
2nd fl, RHext wall cavity (°C)
In
P2-16
P2-17
Out
Day
February 2010
1st fl, RHext wall cavity (°C)
In
P1-15
P1-16
Outdoor
Day
February 2010
2nd fl, RHext wall cavity (°C)
In
P2-16
P2-17
Outdoor
Day


March 2010
1st fl, RHext wall cavity (°C)
In
P1-15
P1-16
Out
Day
March 2010
2nd fl, RHext wall cavity (°C)
In
P2-16
P2-17
Out
Day
April 2010
1st fl, RHext wall cavity (°C)
In
P1-15
P1-16
Out
Day

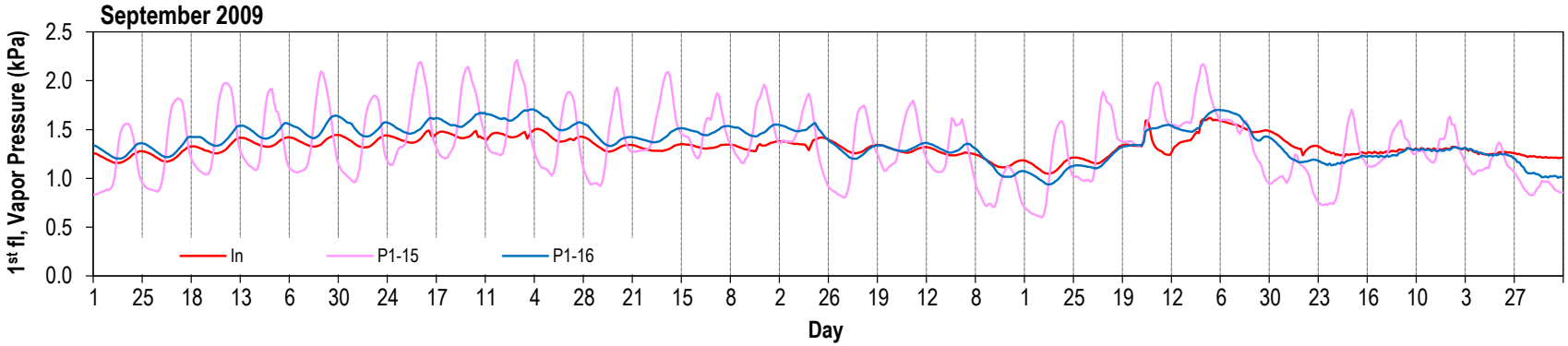

April 2010
2nd fl, RHext wall cavity (°C)
In
P2-16
P2-17
Out
Day
May 2010
1st fl, RHext wall cavity (°C)
In
P1-15
P1-16
Out
Day
May 2010
2nd fl, RHext wall cavity (°C)
In
P2-16
P2-17
Out
Day

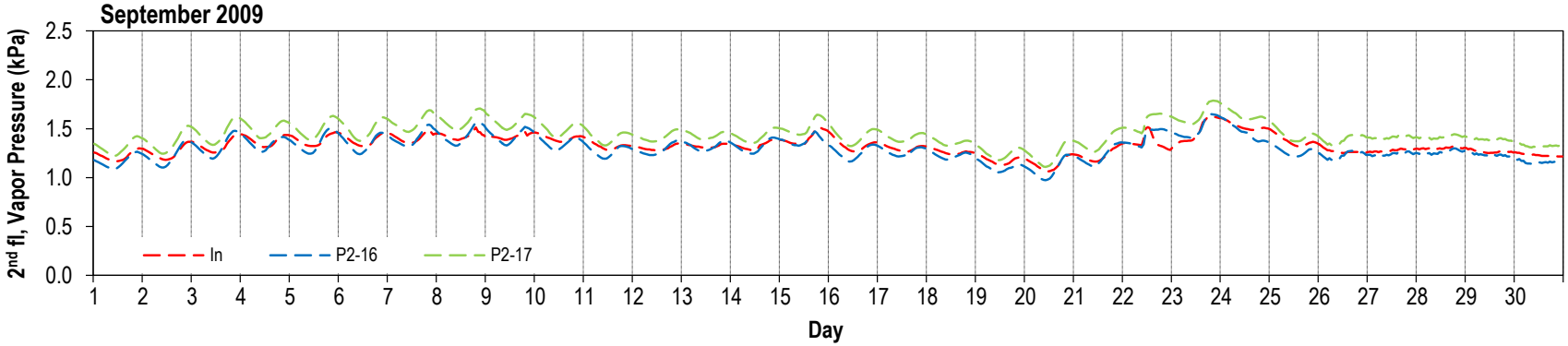

June 2010
1st fl, RHext wall cavity (°C)
In
P1-15
P1-16
Out
Day
June 2010
2nd fl, RHext wall cavity (°C)
In
P2-16
P2-17
Out
Day
July 2010
1st fl, RHext wall cavity (°C)
In
P1-15
P1-16
Out
Day

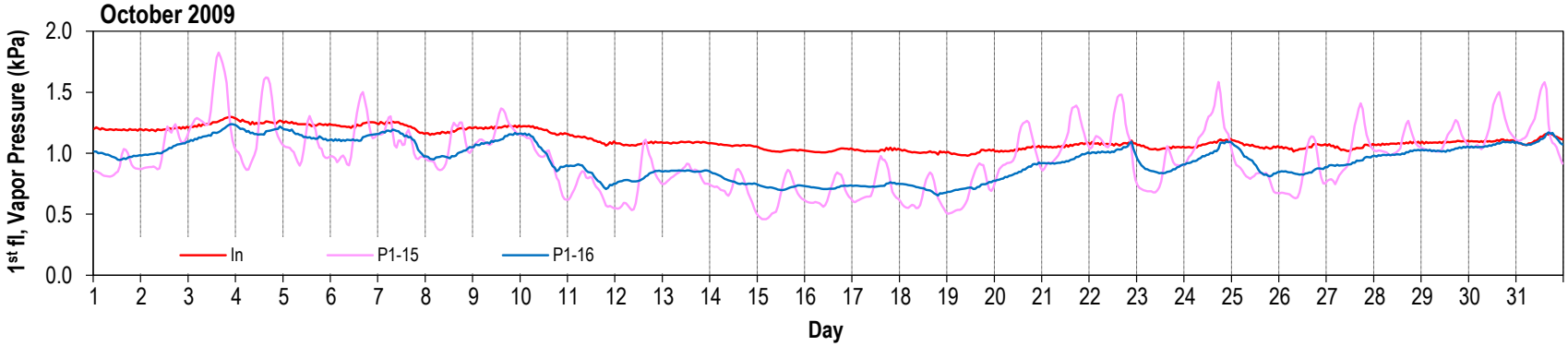

July 2010
2nd fl, RHext wall cavity (°C)
In
P2-16
P2-17
Out
Day
August 2010
1st fl, RHext wall cavity (°C)
In
P1-15
P1-16
Out
Day
August 2010
2nd fl, RHext wall cavity (°C)
In
P2-16
P2-17
Out
Day

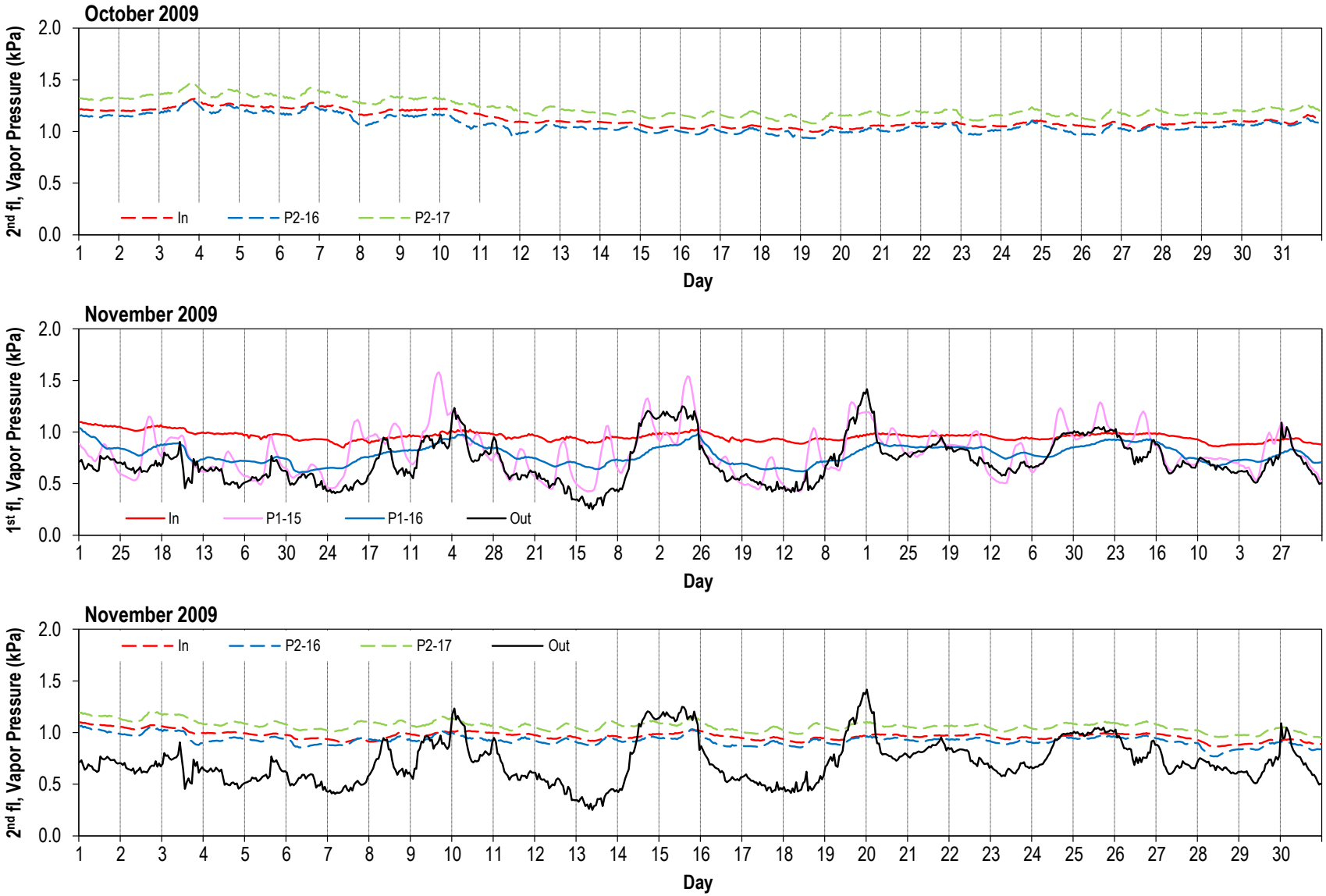
Water vapor pressure (kPa) at exterior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

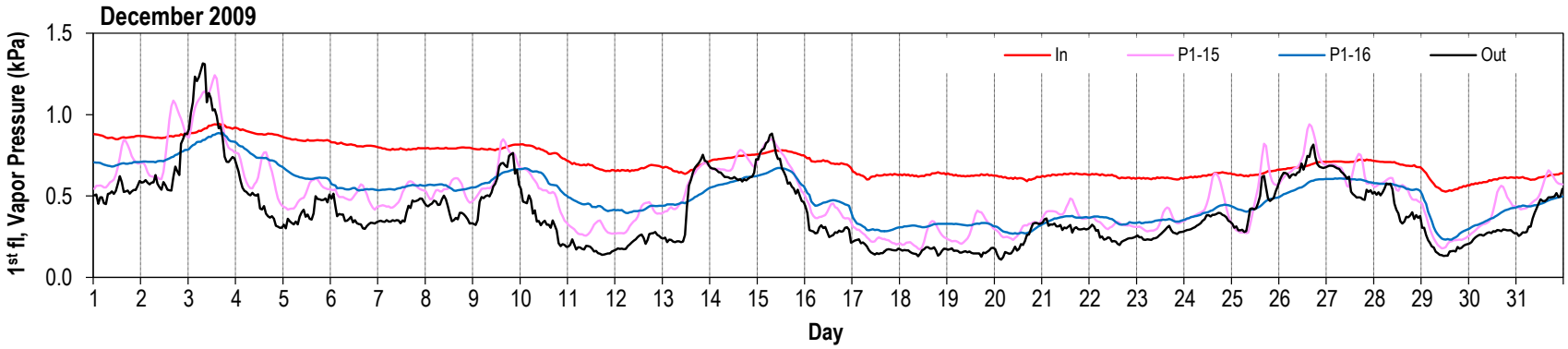
Data from panel P2-15 is not shown because of equipment malfunction.

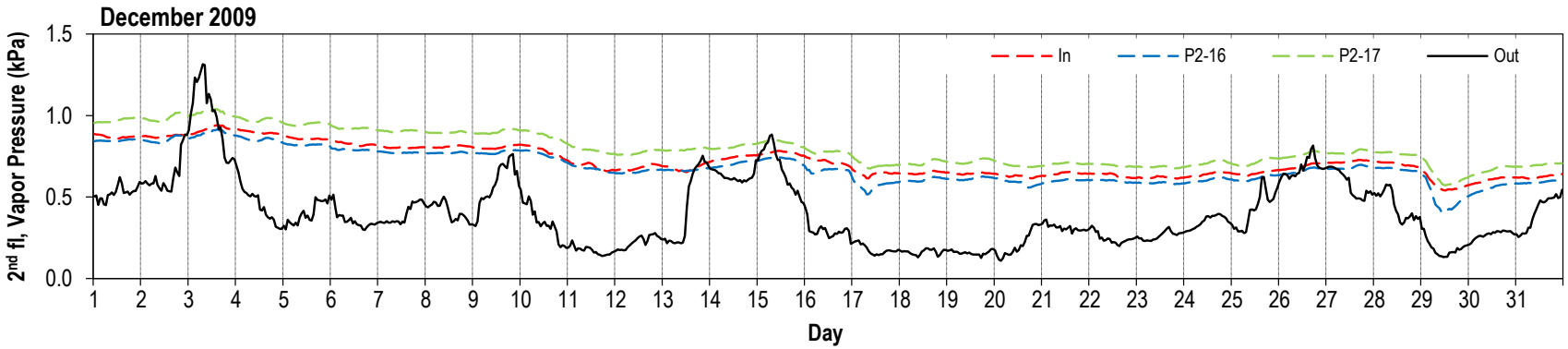


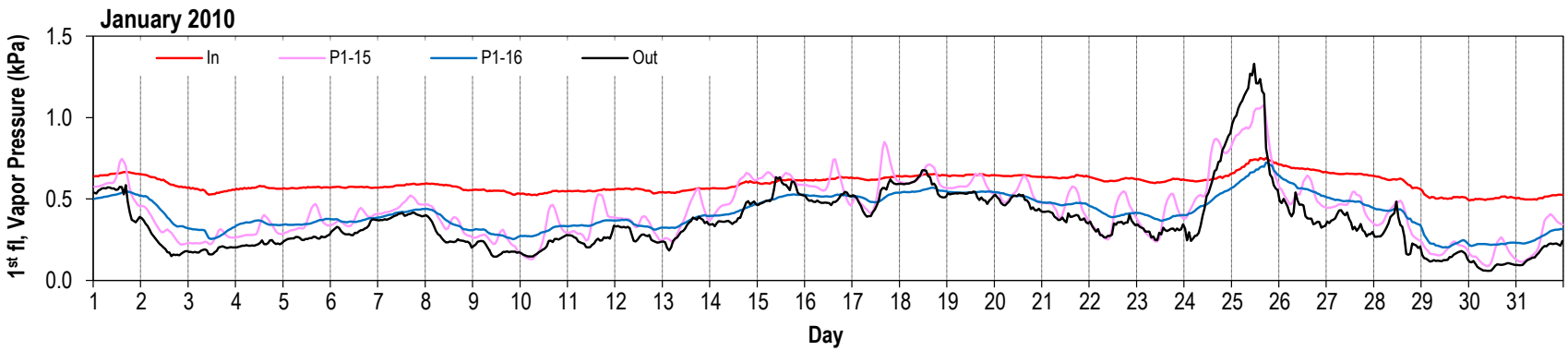



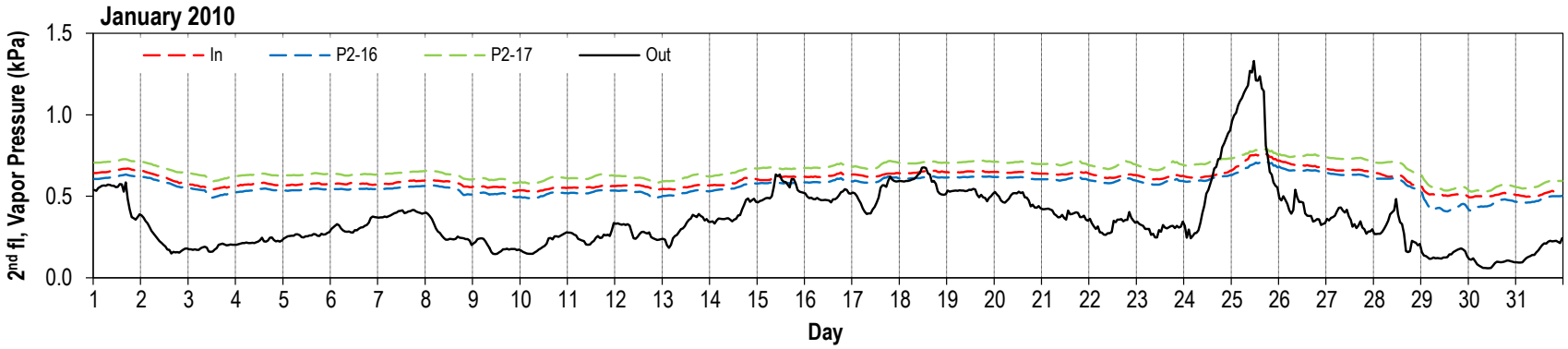



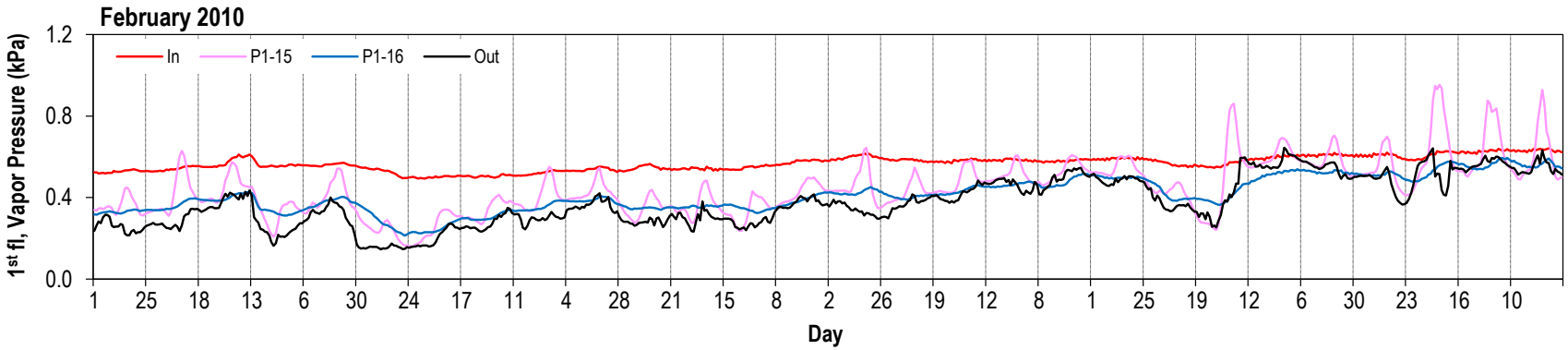

October 2009
2nd fl, Vapor Pressure (kPa)
2.0
1.5
1.0
0.5
0.0
In
P2-16
P2-17
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
November 2009
1st fl, Vapor Pressure (kPa)
2.0
1.5
1.0
0.5
0.0
In
P1-15
P1-16
Out
1 25 18 13 6 30 24 17 11 4 28 21 15 8 2 26 19 12 8 1 25 19 12 6 30 23 16 10 3 27
Day
November 2009
2nd fl, Vapor Pressure (kPa)
2.0
1.5
1.0
0.5
0.0
In
P2-16
P2-17
Out
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day

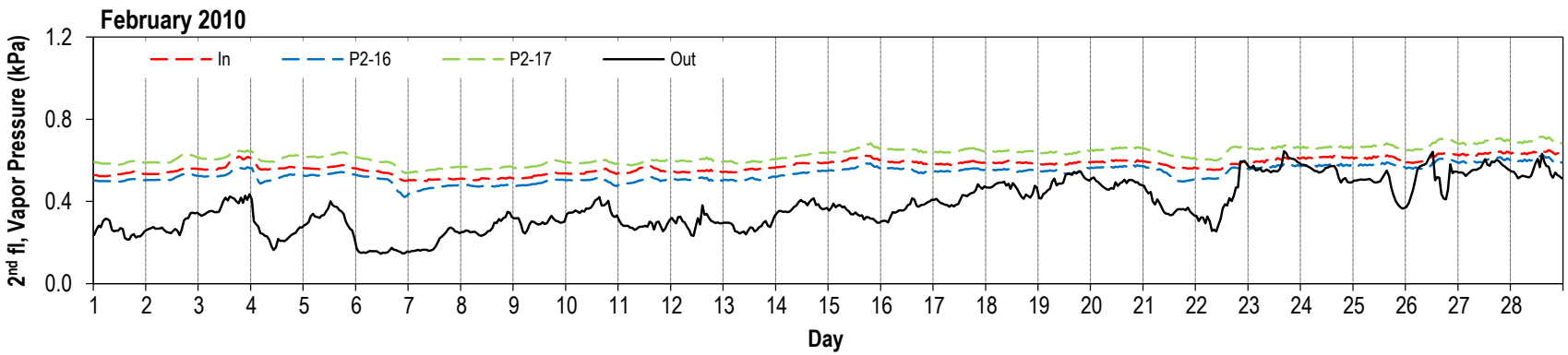

December 2009
1st fl, Vapor Pressure (kPa)
In
P1-15
P1-16
Out
Day

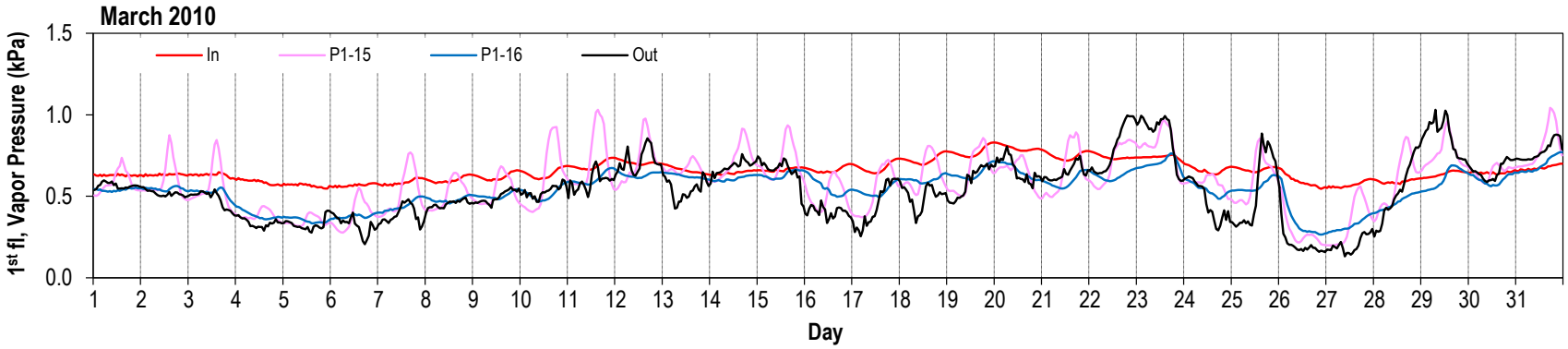

December 2009
2nd fl, Vapor Pressure (kPa)
In
P2-16
P2-17
Out
Day

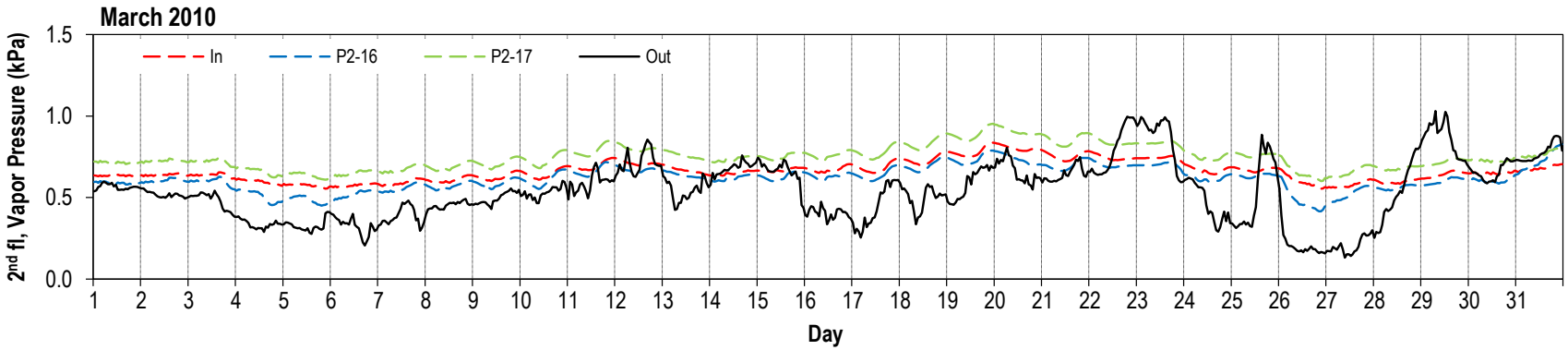

January 2010
1st fl, Vapor Pressure (kPa)
In
P1-15
P1-16
Out
Day

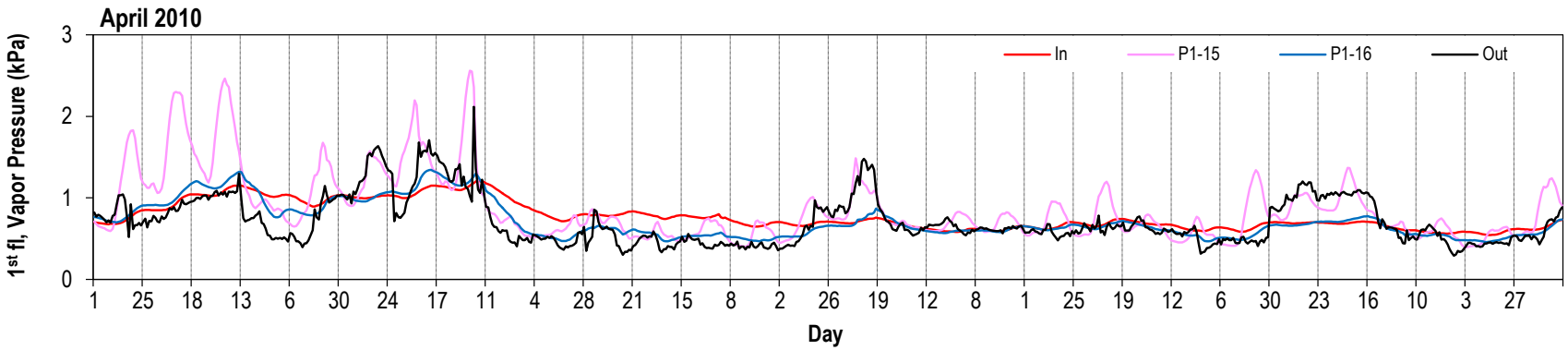

January 2010
In
P2-16
P2-17
Out
2nd fl, Vapor Pressure (kPa)
1.5
1.0
0.5
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

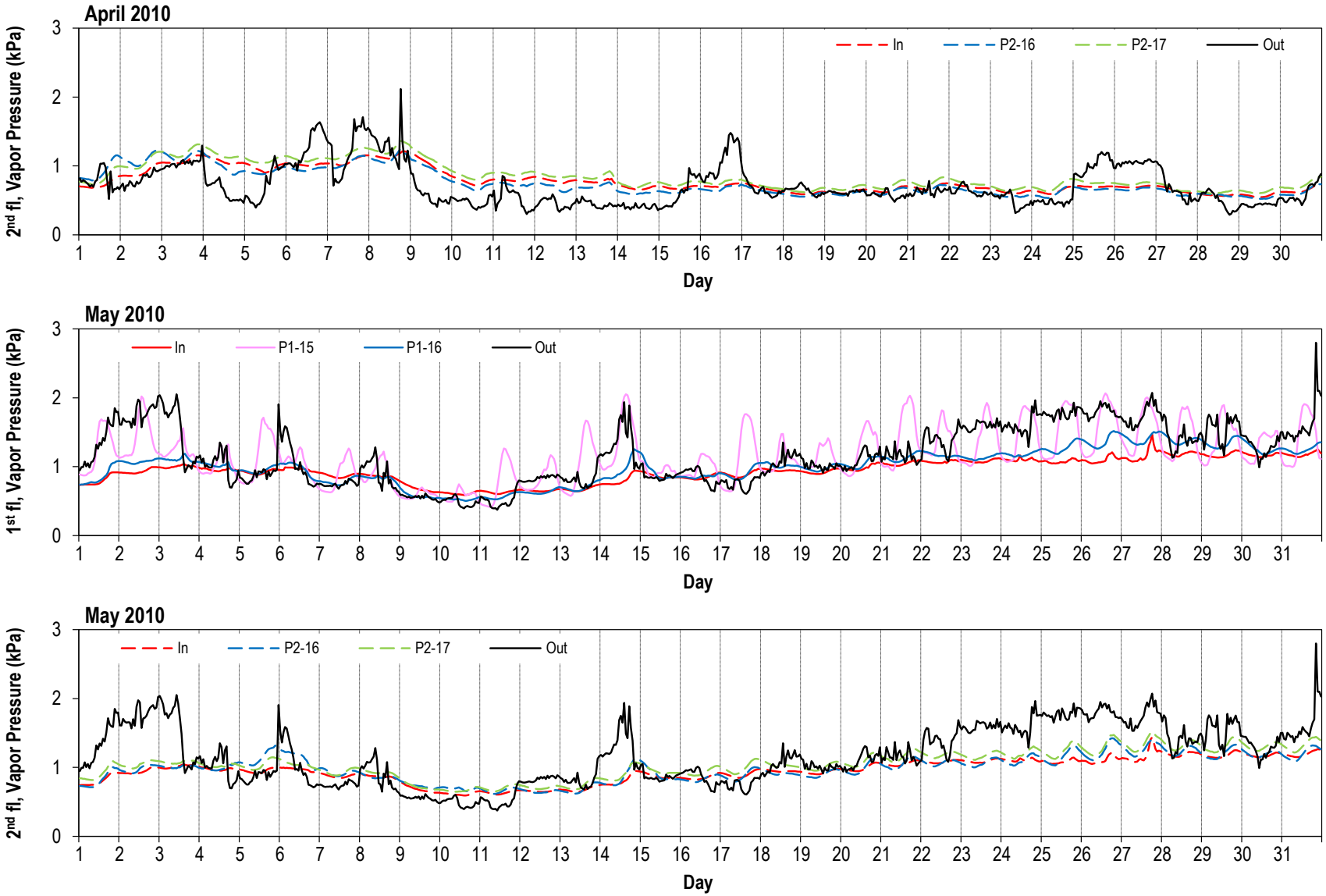

February 2010
In
P1-15
P1-16
Out
1st fl, Vapor Pressure (kPa)
1.2
0.8
0.4
0.0
1 25 18 13 6 30 24 17 11 4 28 21 15 8 2 26 19 12 8 1 25 19 12 6 30 23 16 10
Day

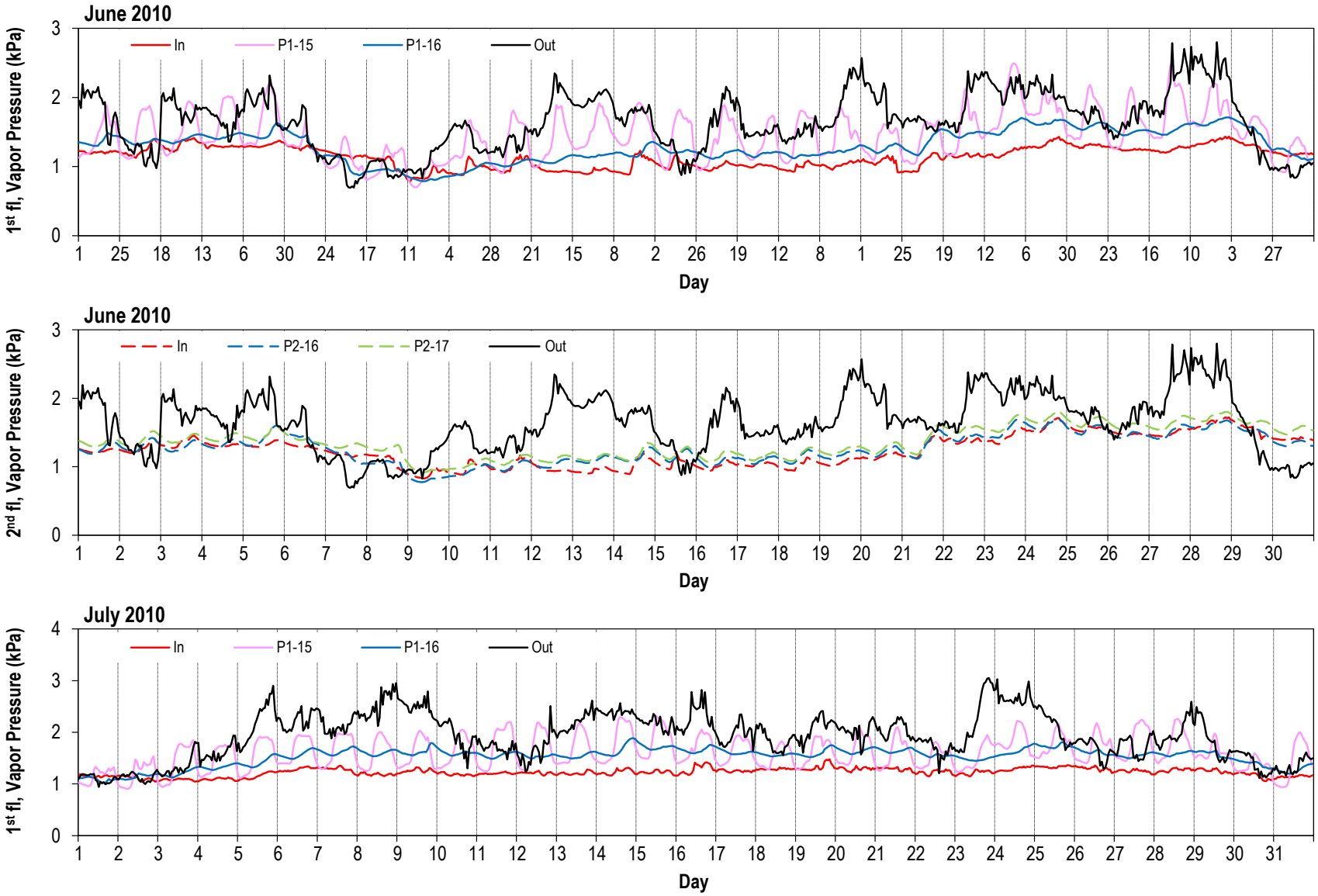

February 2010
In
P2-16
P2-17
Out
2nd fl, Vapor Pressure (kPa)
1.2
0.8
0.4
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day

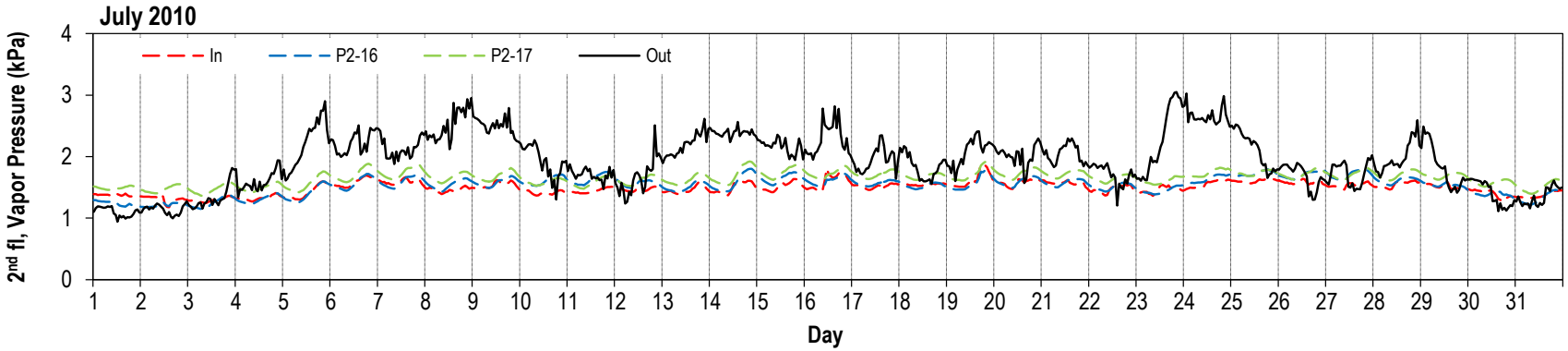

March 2010
In
P1-15
P1-16
Out
1st fl, Vapor Pressure (kPa)
Day

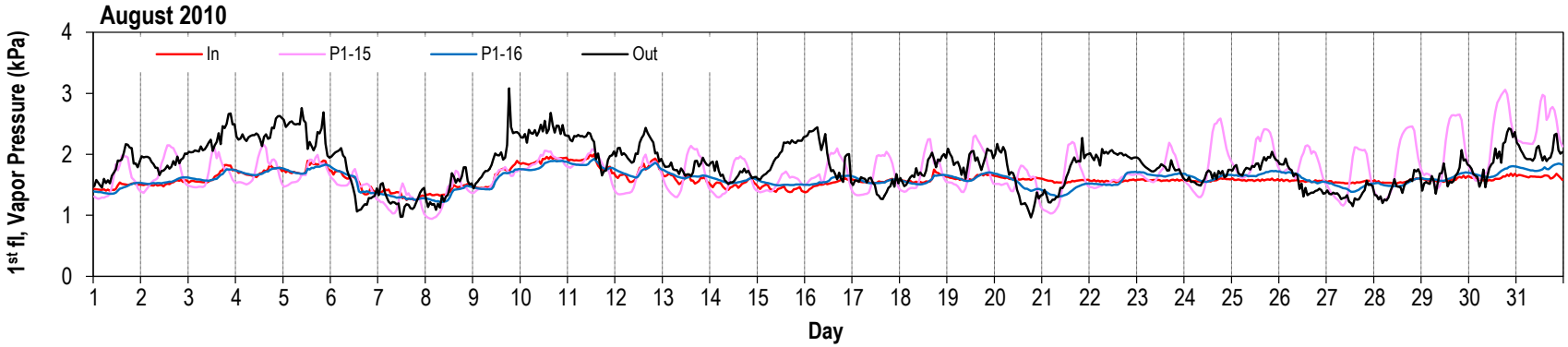

March 2010
In
P2-16
P2-17
Out
2nd fl, Vapor Pressure (kPa)
Day

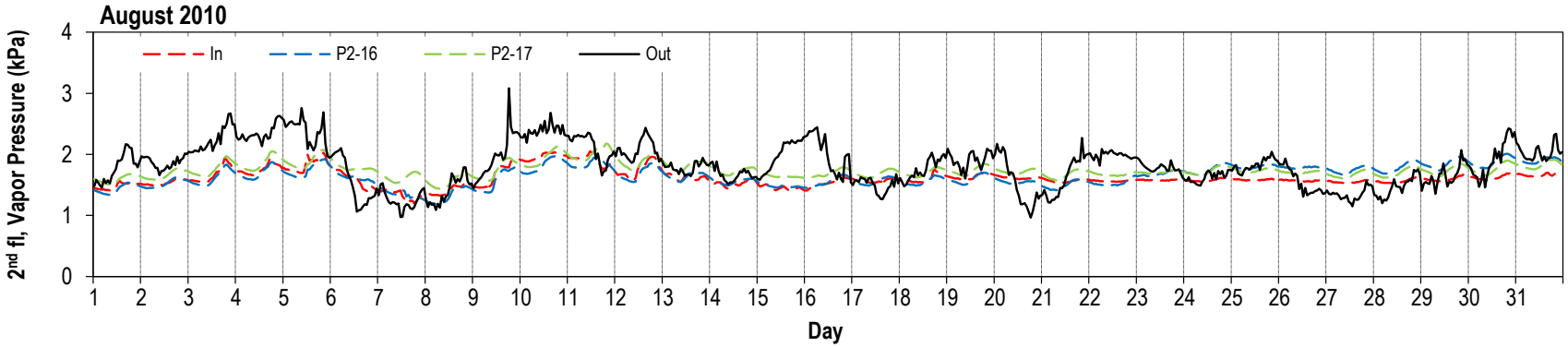

April 2010
In
P1-15
P1-16
Out
1st fl, Vapor Pressure (kPa)
Day


April 2010
2nd fl, Vapor Pressure (kPa)
In
P2-16
P2-17
Out
Day
May 2010
1st fl, Vapor Pressure (kPa)
In
P1-15
P1-16
Out
Day
May 2010
2nd fl, Vapor Pressure (kPa)
In
P2-16
P2-17
Out
Day

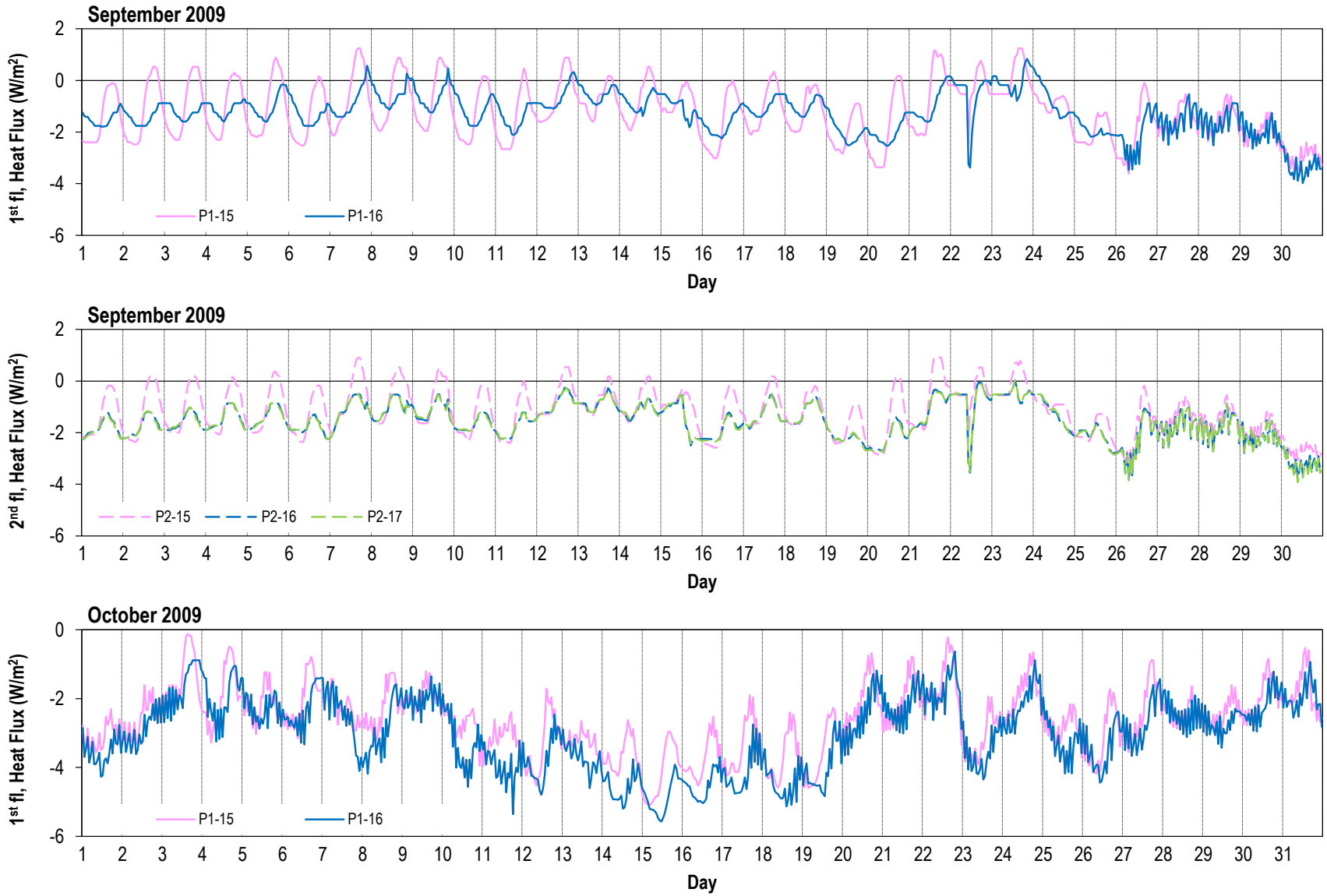

June 2010
In
P1-15
P1-16
Out
1st fl, Vapor Pressure (kPa)
Day
June 2010
In
P2-16
P2-17
Out
2nd fl, Vapor Pressure (kPa)
Day
July 2010
In
P1-15
P1-16
Out
1st fl, Vapor Pressure (kPa)
Day

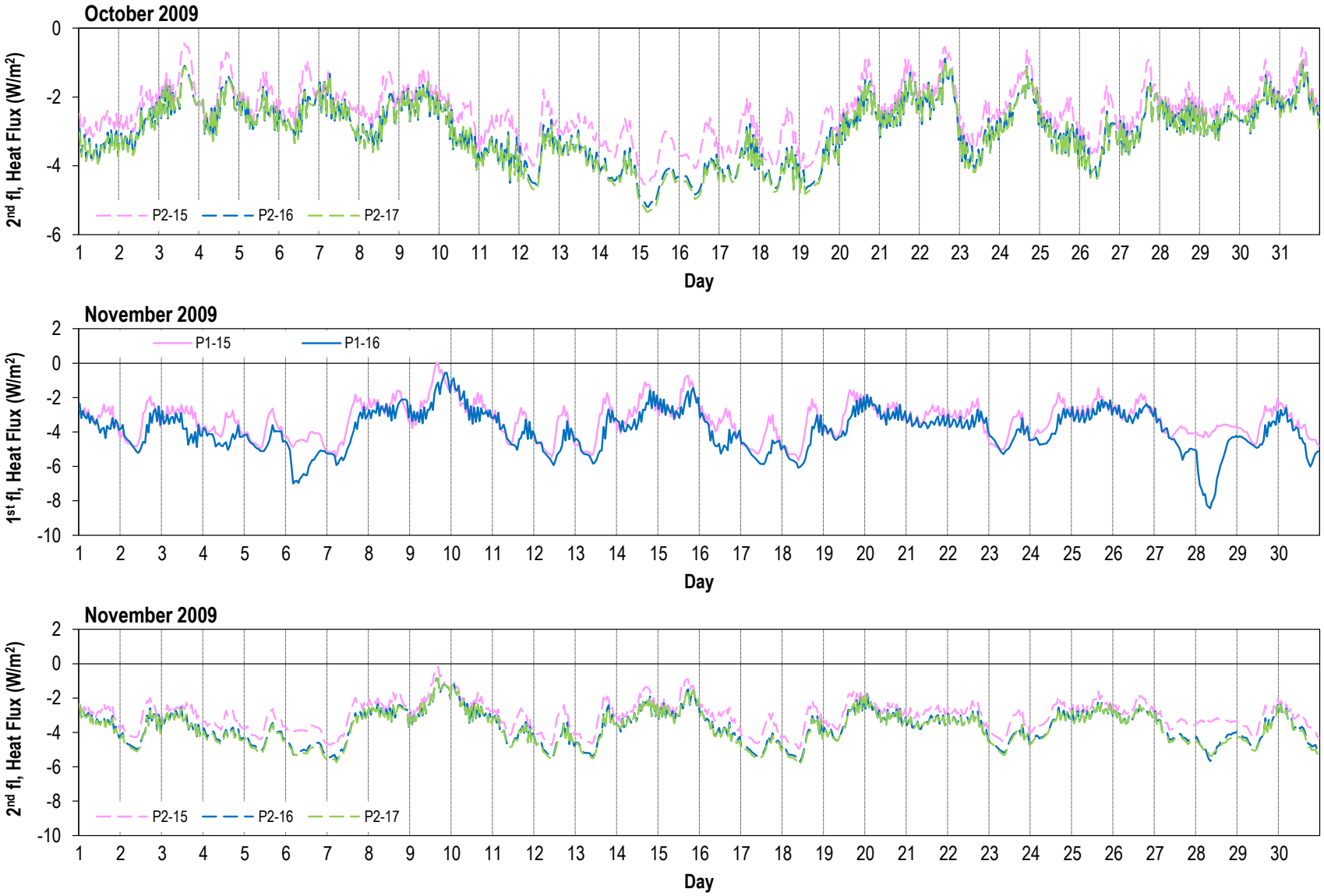

July 2010
In
P2-16
P2-17
Out
2nd fl, Vapor Pressure (kPa)
Day

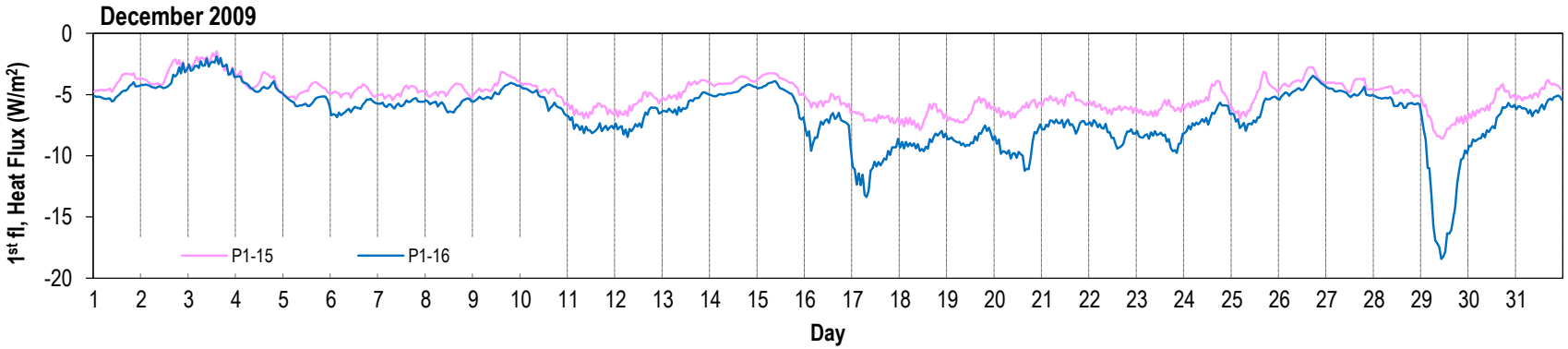

August 2010
In
P1-15
P1-16
Out
1st fl, Vapor Pressure (kPa)
Day

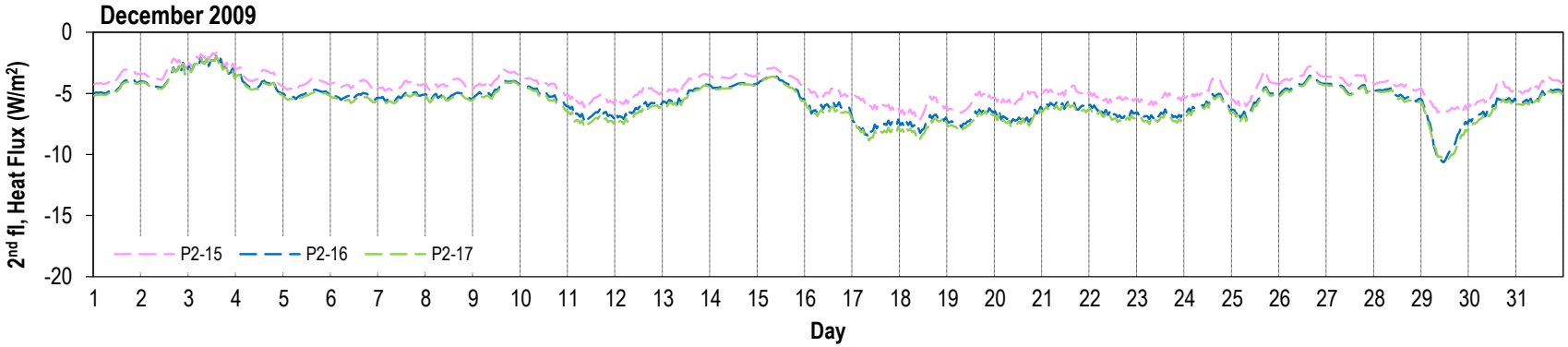

August 2010
In
P2-16
P2-17
Out
2nd fl, Vapor Pressure (kPa)
Day

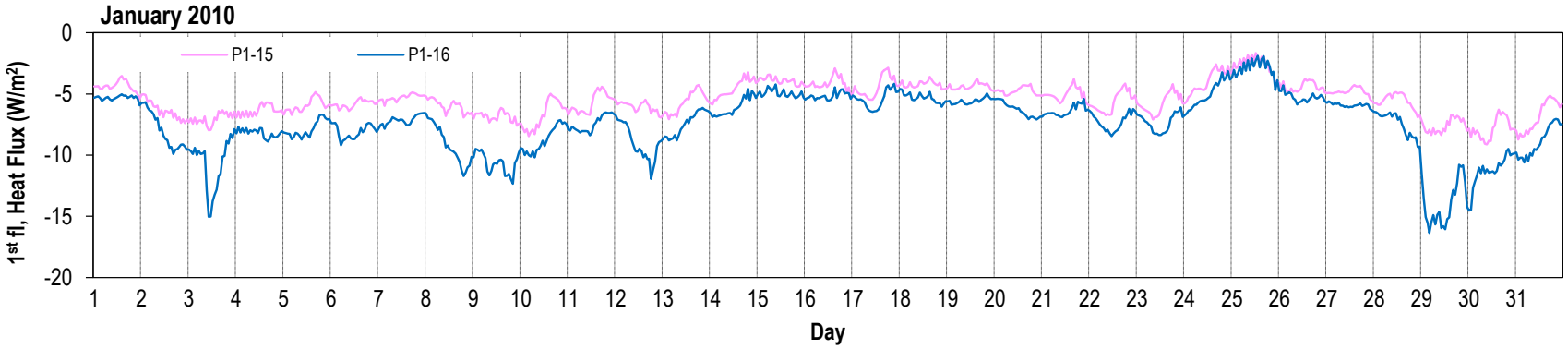
Heat flux (W/m$^2$) thru interior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

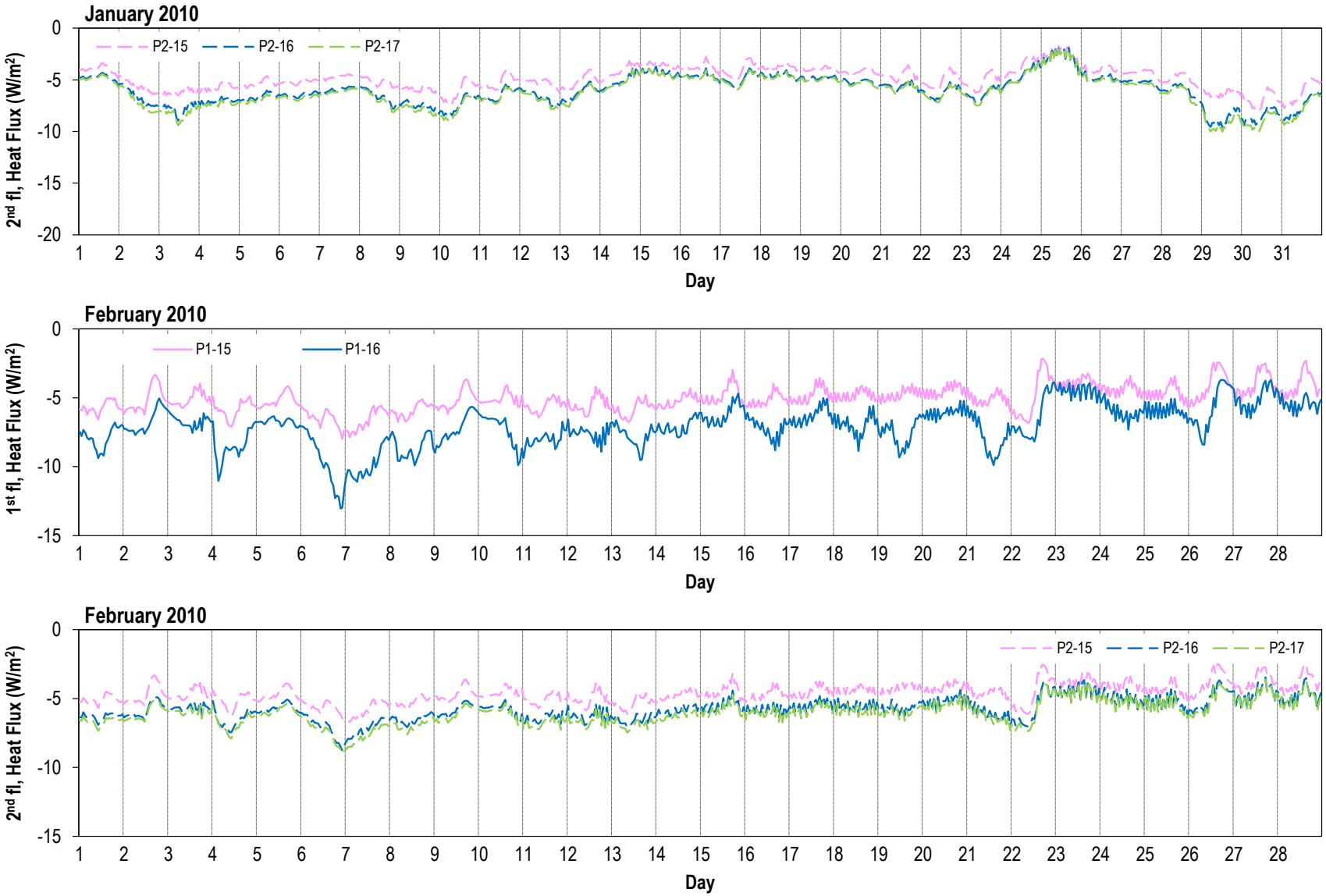


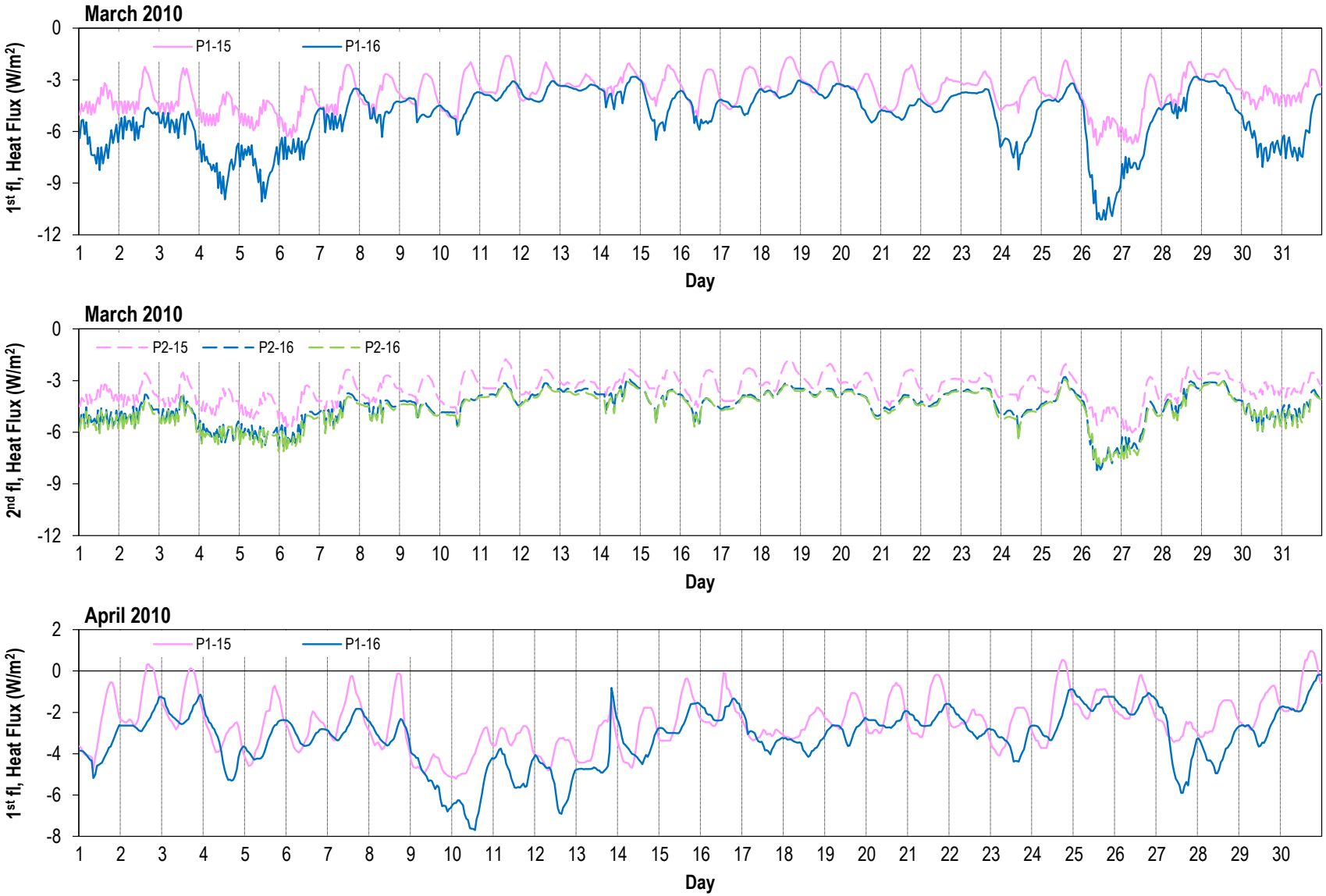

October 2009
2nd fl, Heat Flux (W/m2)
P2-15
P2-16
P2-17
Day
November 2009
1st fl, Heat Flux (W/m2)
P1-15
P1-16
Day
November 2009
2nd fl, Heat Flux (W/m2)
P2-15
P2-16
P2-17
Day

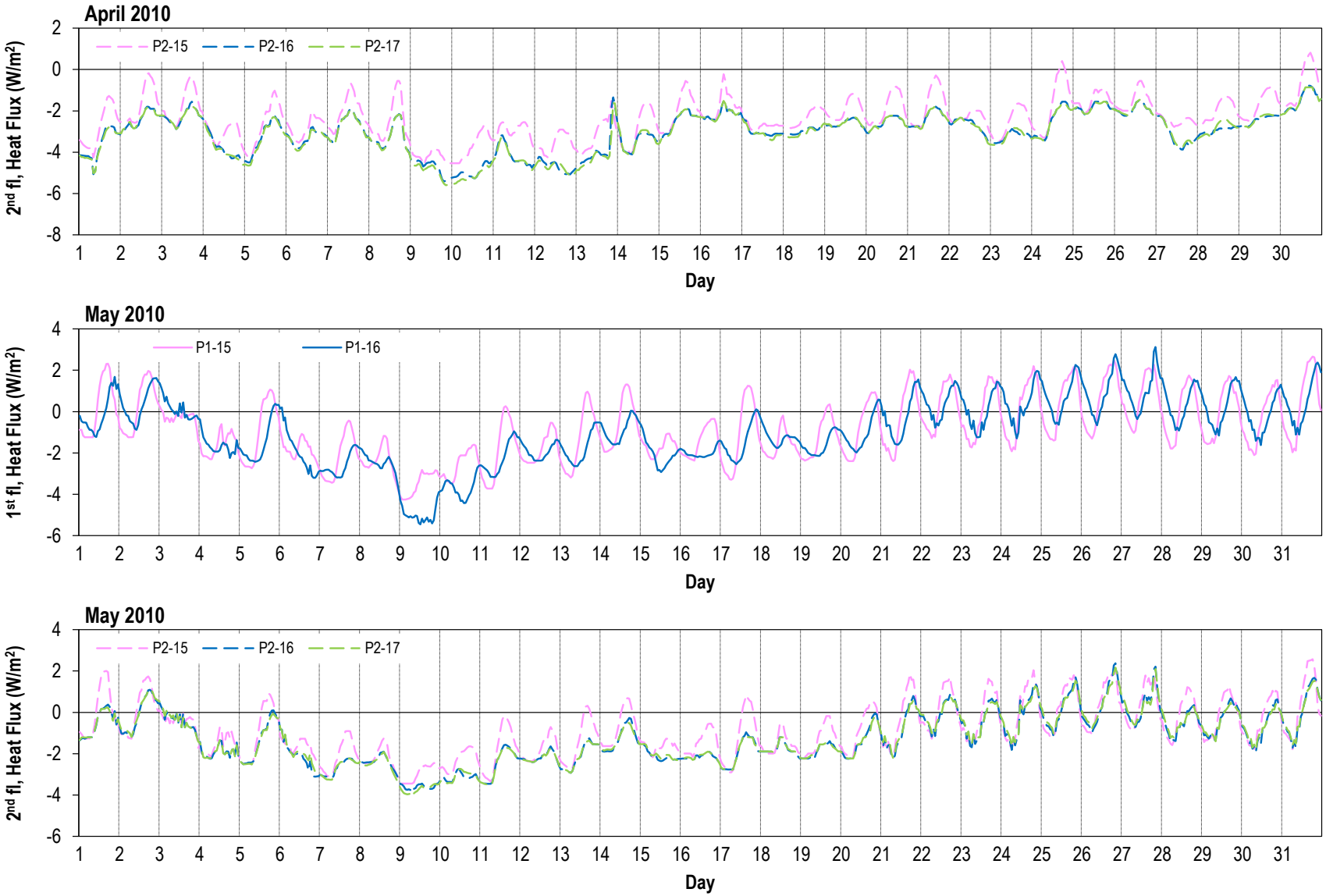

December 2009
1st fl, Heat Flux (W/m2)
0
-5
-10
-15
-20
P1-15
P1-16
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

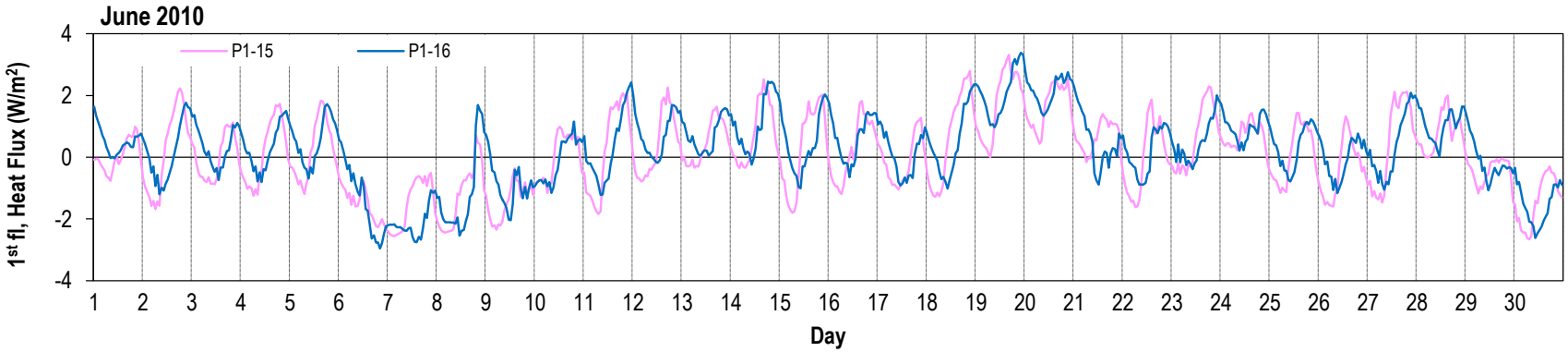

December 2009
2nd fl, Heat Flux (W/m2)
0
-5
-10
-15
-20
P2-15
P2-16
P2-17
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

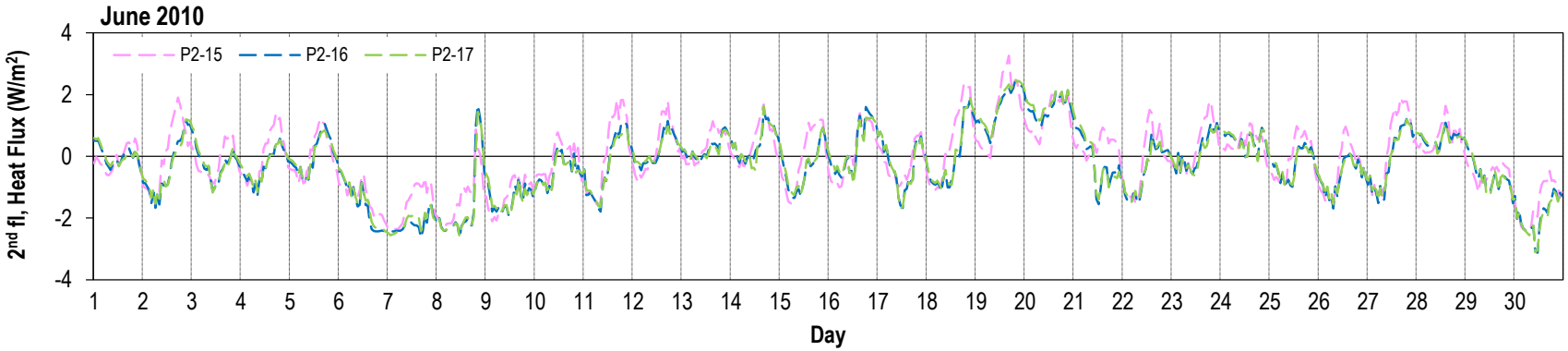

January 2010
1st fl, Heat Flux (W/m2)
0
-5
-10
-15
-20
P1-15
P1-16
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

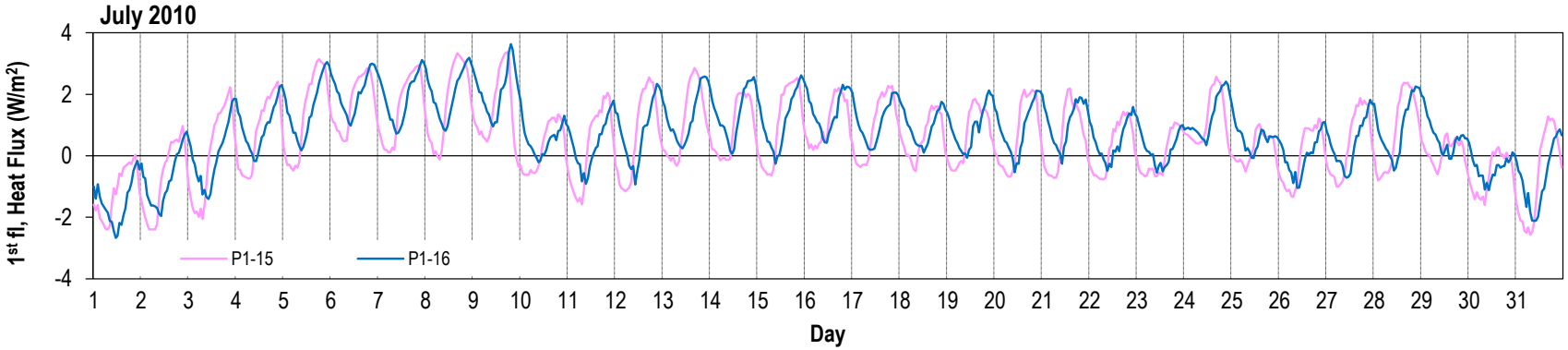

January 2010
P2-15
P2-16
P2-17
2nd fl, Heat Flux (W/m2)
Day
February 2010
P1-15
P1-16
1st fl, Heat Flux (W/m2)
Day
February 2010
P2-15
P2-16
P2-17
2nd fl, Heat Flux (W/m2)
Day

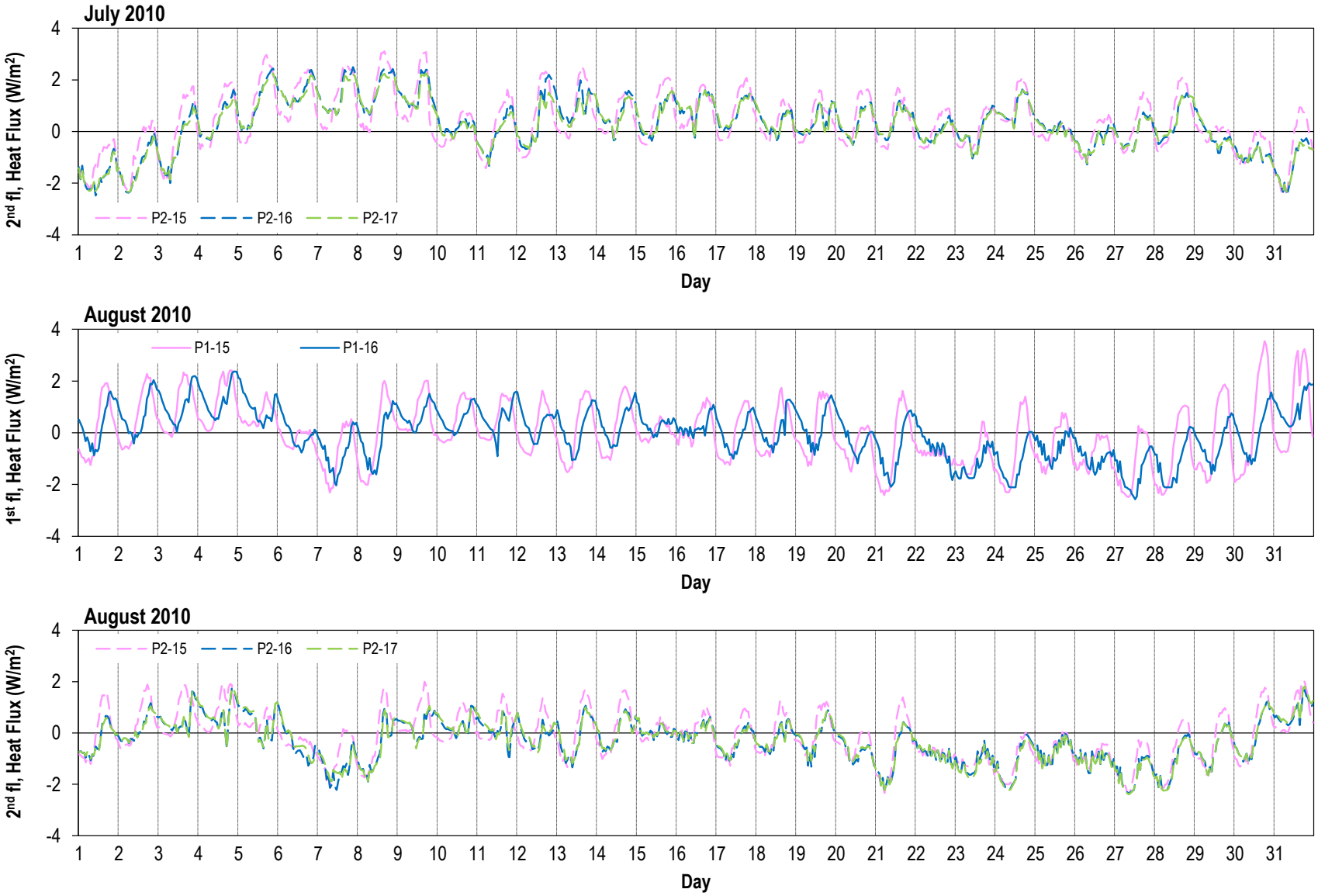

March 2010
P1-15
P1-16
1st fl, Heat Flux (W/m2)
Day
March 2010
P2-15
P2-16
P2-16
2nd fl, Heat Flux (W/m2)
Day
April 2010
P1-15
P1-16
1st fl, Heat Flux (W/m2)
Day


April 2010
P2-15
P2-16
P2-17
2nd fl, Heat Flux (W/m2)
Day
May 2010
P1-15
P1-16
1st fl, Heat Flux (W/m2)
Day
May 2010
P2-15
P2-16
P2-17
2nd fl, Heat Flux (W/m2)
Day

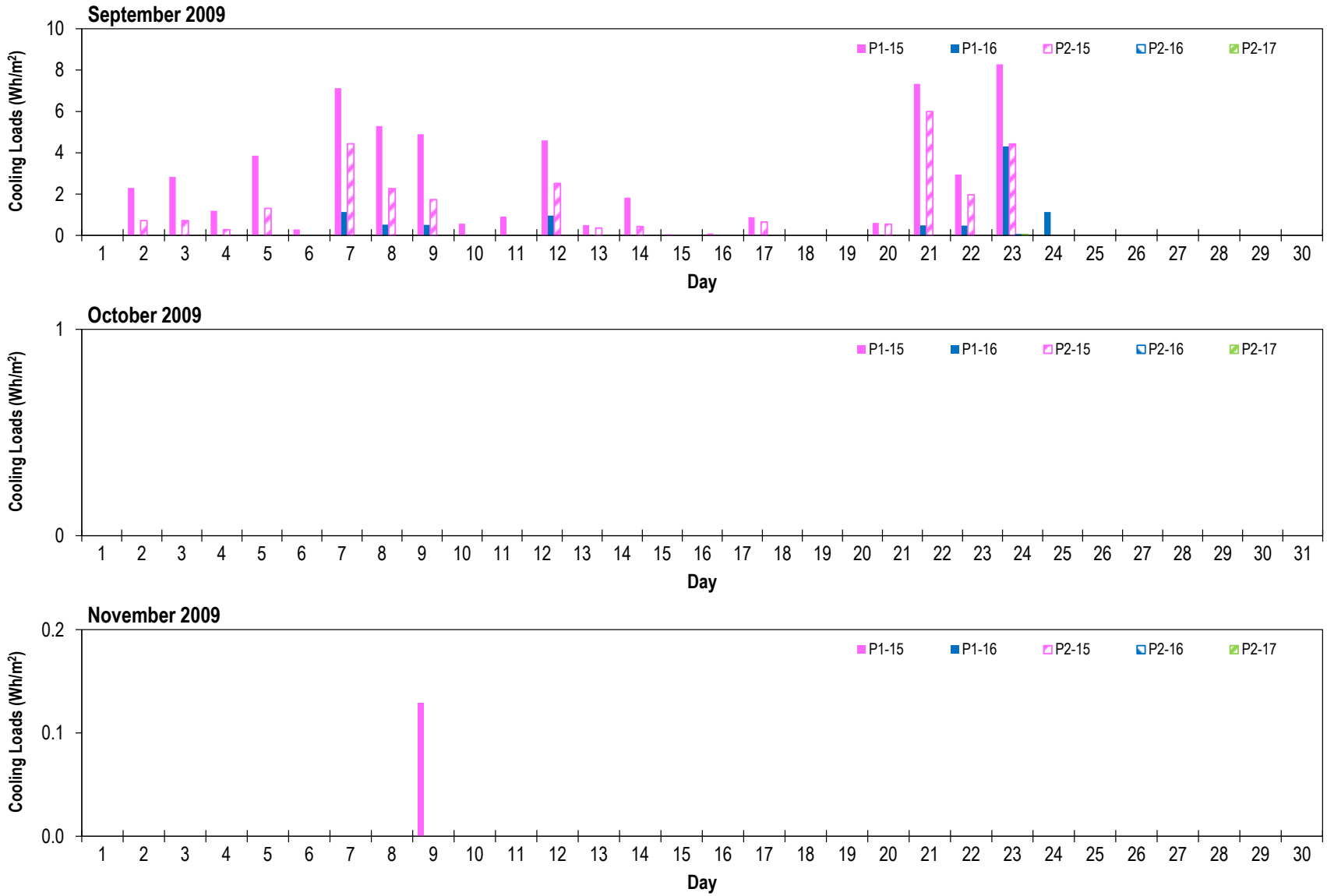

June 2010
P1-15
P1-16
1st fl, Heat Flux (W/m2)
Day

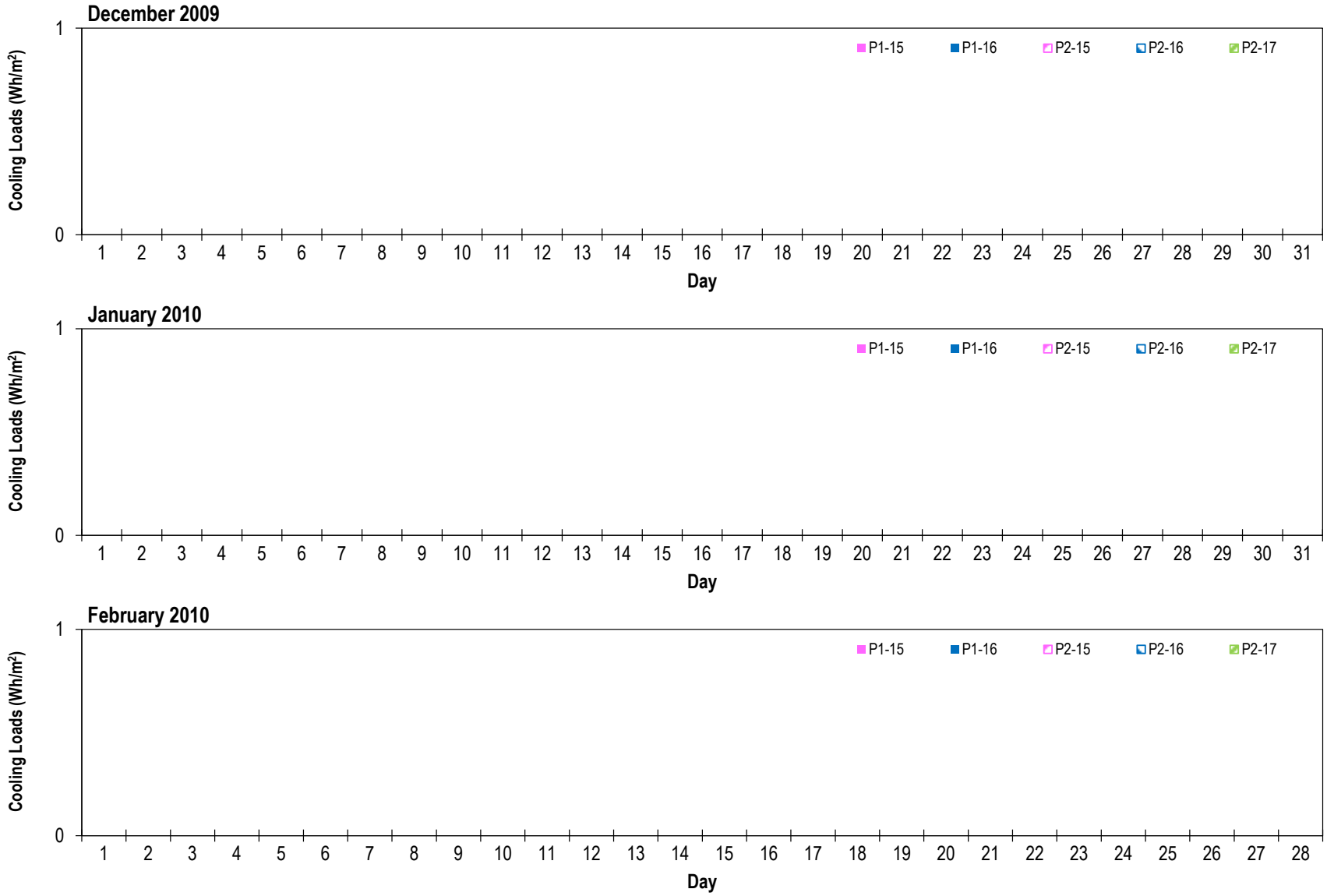

June 2010
P2-15
P2-16
P2-17
2nd fl, Heat Flux (W/m2)
Day

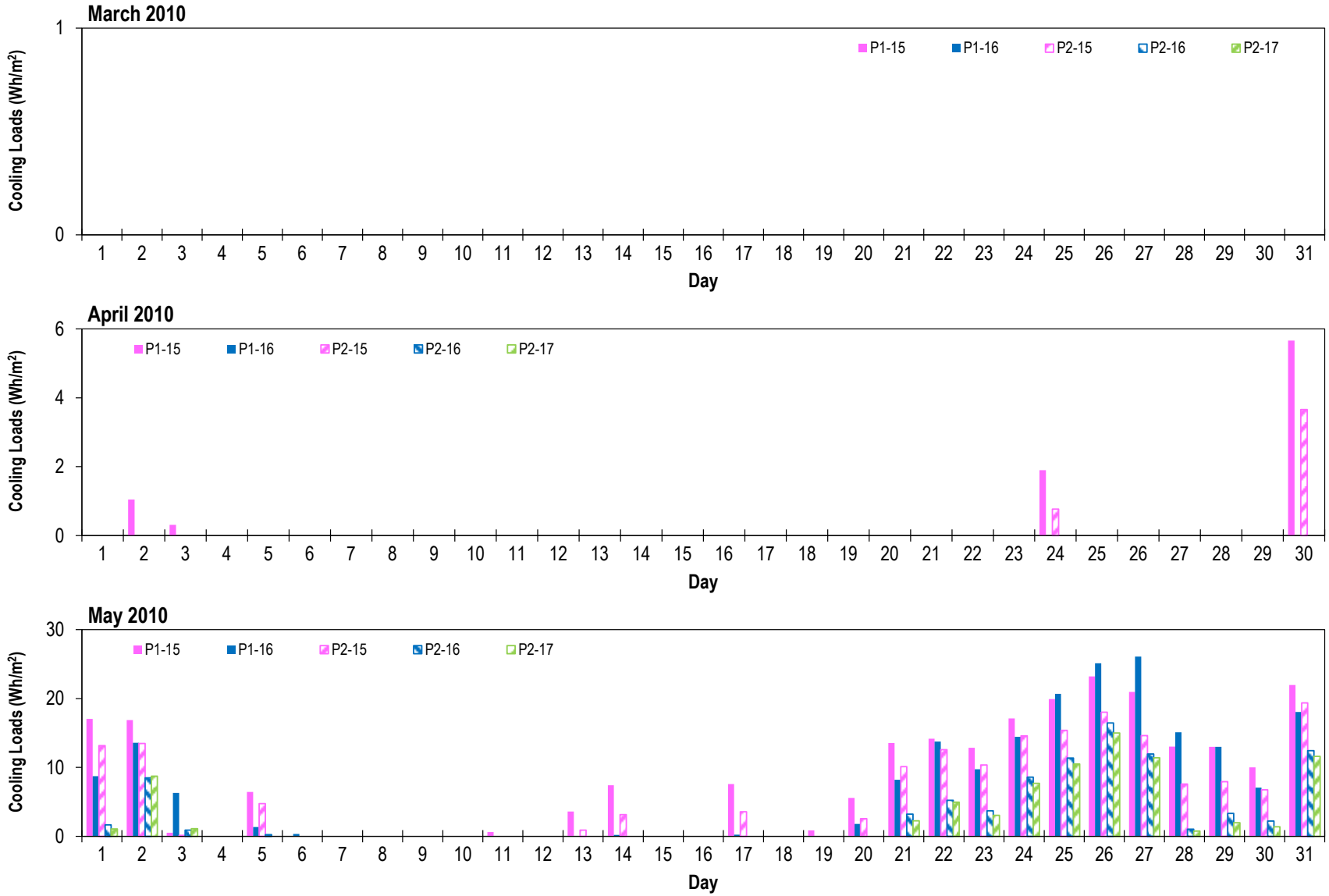

July 2010
P1-15
P1-16
1st fl, Heat Flux (W/m2)
Day

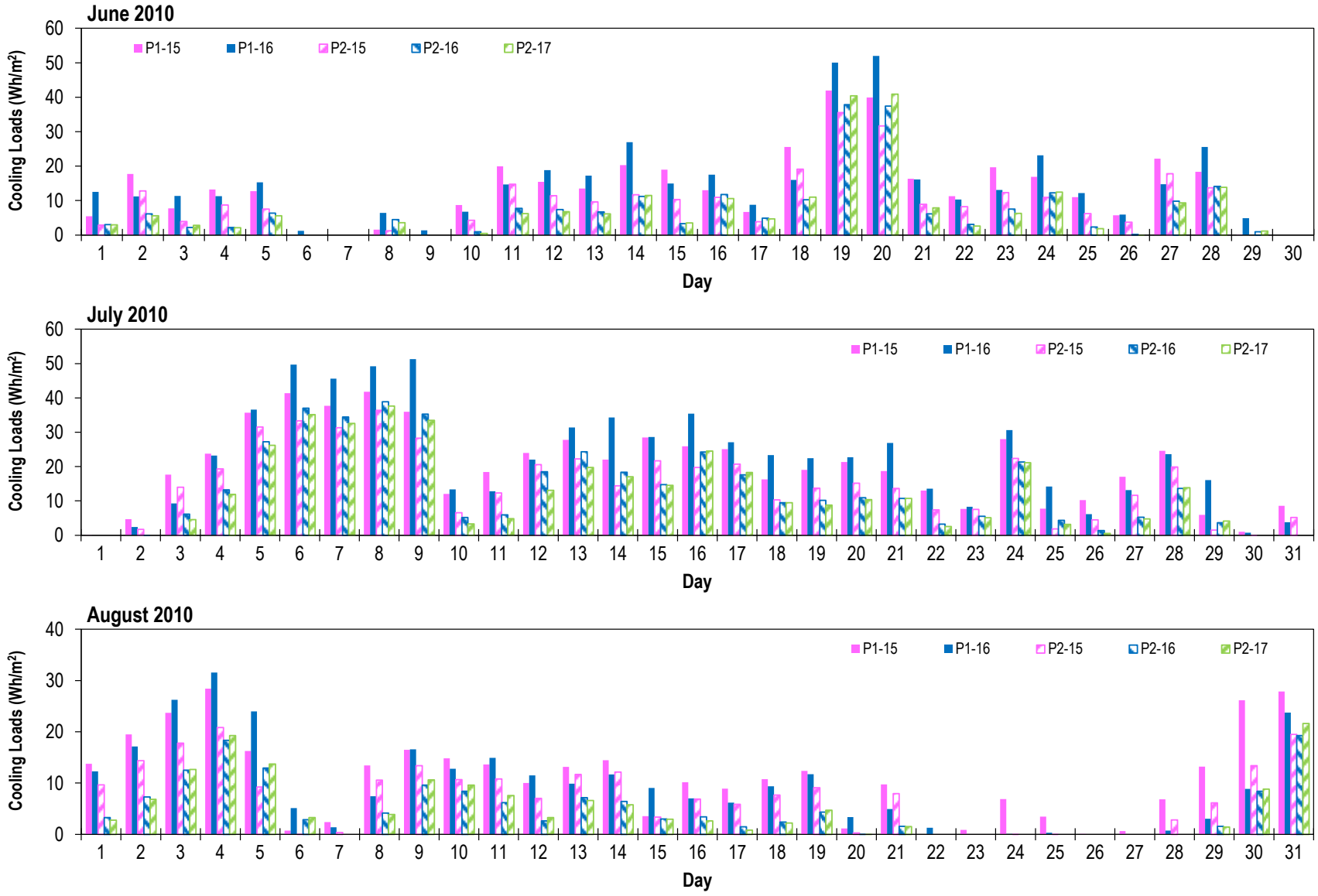

July 2010
2nd fl, Heat Flux (W/m2)
P2-15
P2-16
P2-17
Day
August 2010
1st fl, Heat Flux (W/m2)
P1-15
P1-16
Day
August 2010
2nd fl, Heat Flux (W/m2)
P2-15
P2-16
P2-17
Day

Cooling loads (Wh/m$^2$). Refer to Figures 25 thru 28 for sensor location.

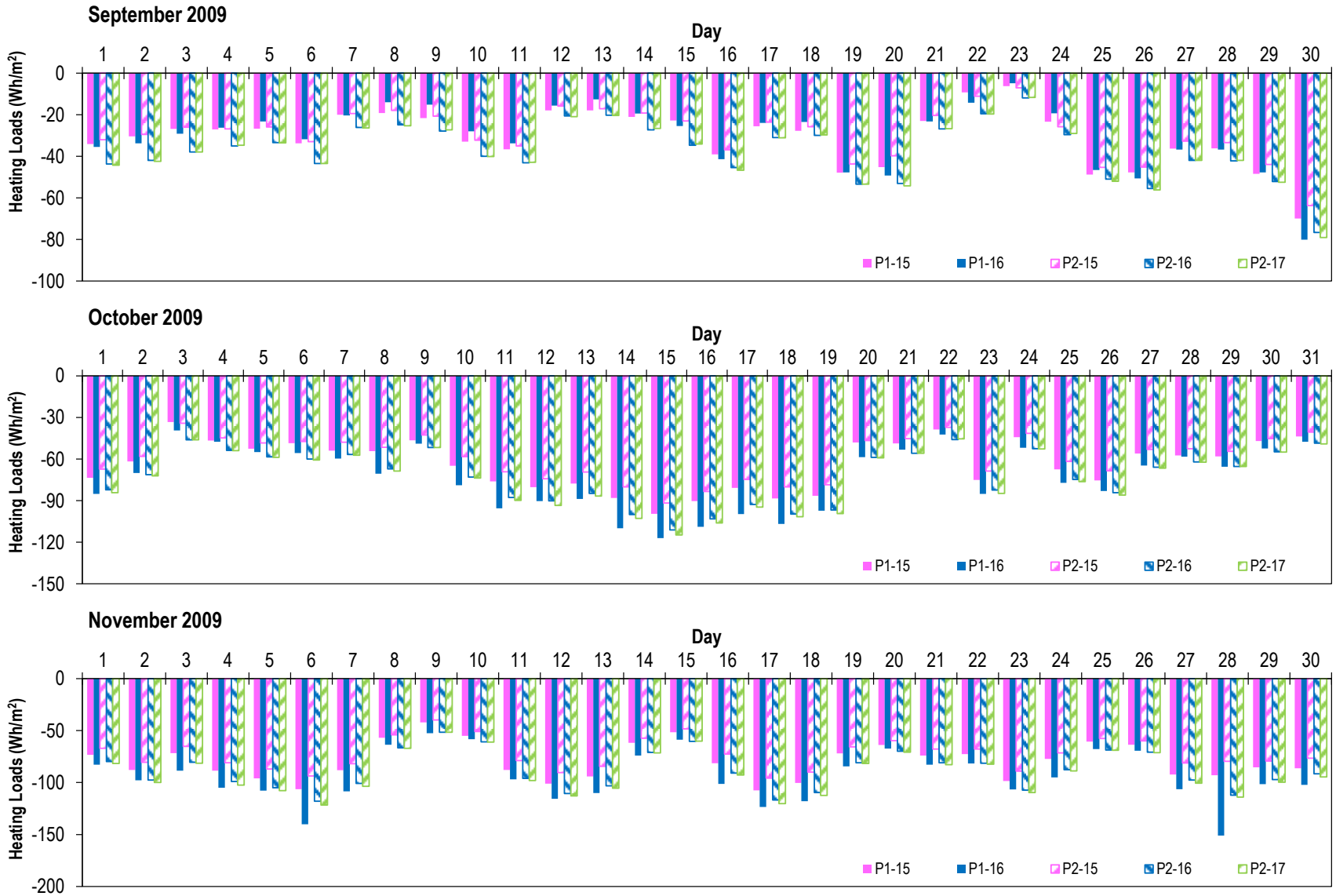


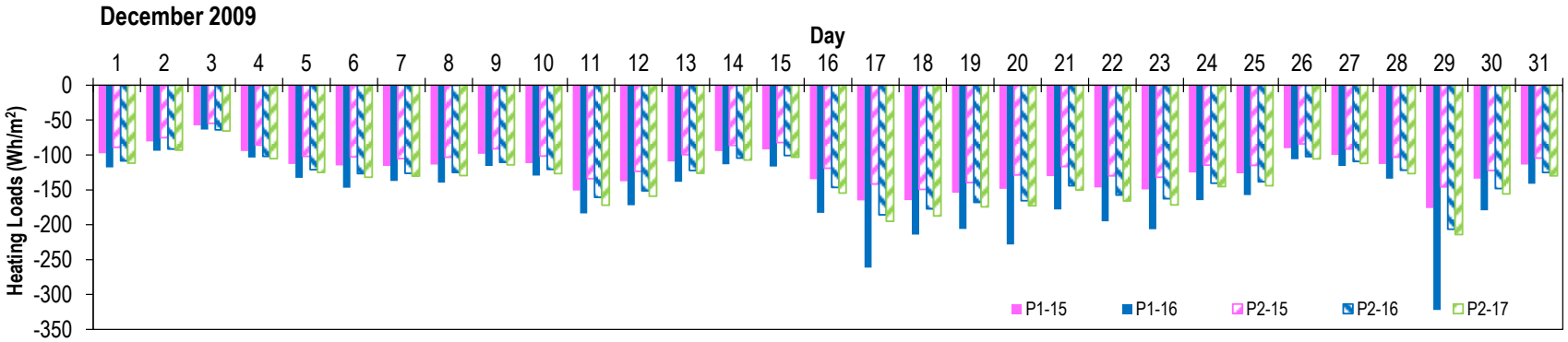

December 2009
January 2010
February 2010
Cooling Loads (Wh/m²)
Day
P1-15
P1-16
P2-15
P2-16
P2-17
0
1

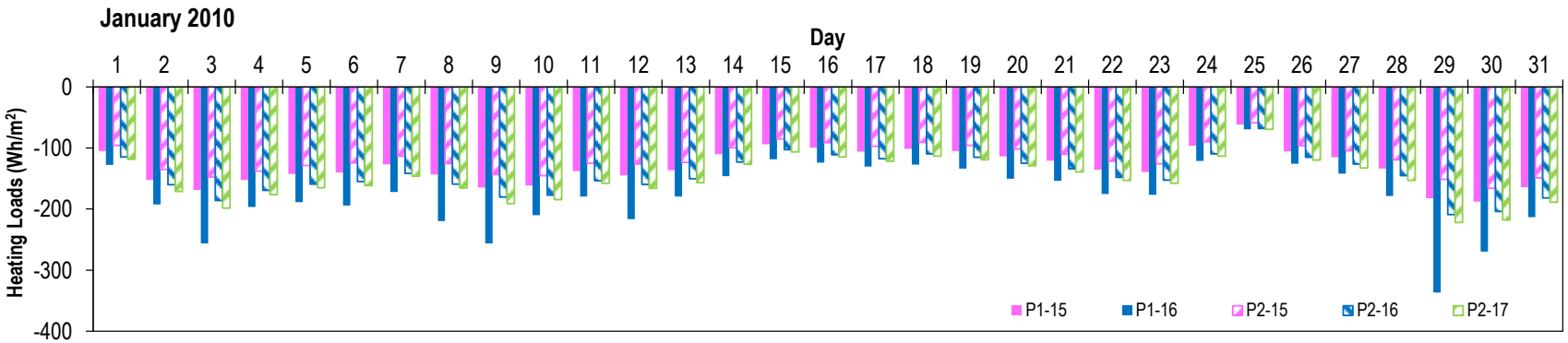

March 2010
Cooling Loads (Wh/m²)
P1-15
P1-16
P2-15
P2-16
P2-17
Day
April 2010
Cooling Loads (Wh/m²)
P1-15
P1-16
P2-15
P2-16
P2-17
Day
May 2010
Cooling Loads (Wh/m²)
P1-15
P1-16
P2-15
P2-16
P2-17
Day

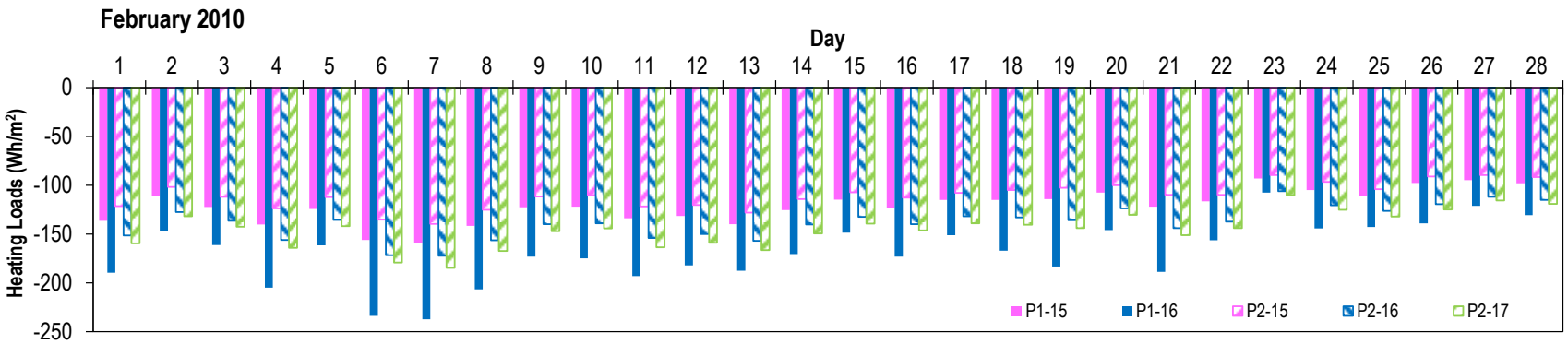

June 2010
P1-15
P1-16
P2-15
P2-16
P2-17
Cooling Loads (Wh/m²)
Day
July 2010
P1-15
P1-16
P2-15
P2-16
P2-17
Cooling Loads (Wh/m²)
Day
August 2010
P1-15
P1-16
P2-15
P2-16
P2-17
Cooling Loads (Wh/m²)
Day

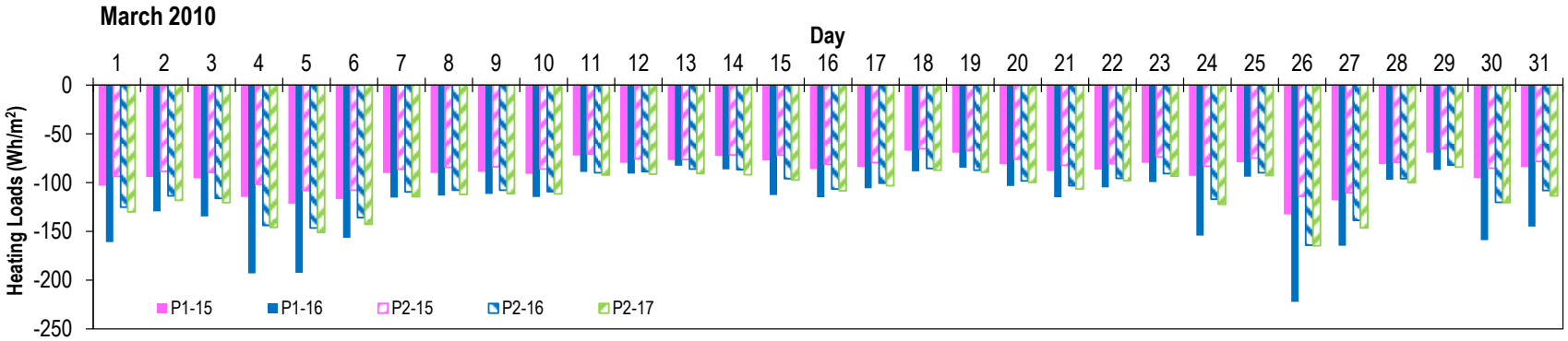
Heating loads (Wh/m$^2$). Refer to Figures 25 thru 28 for sensor location.

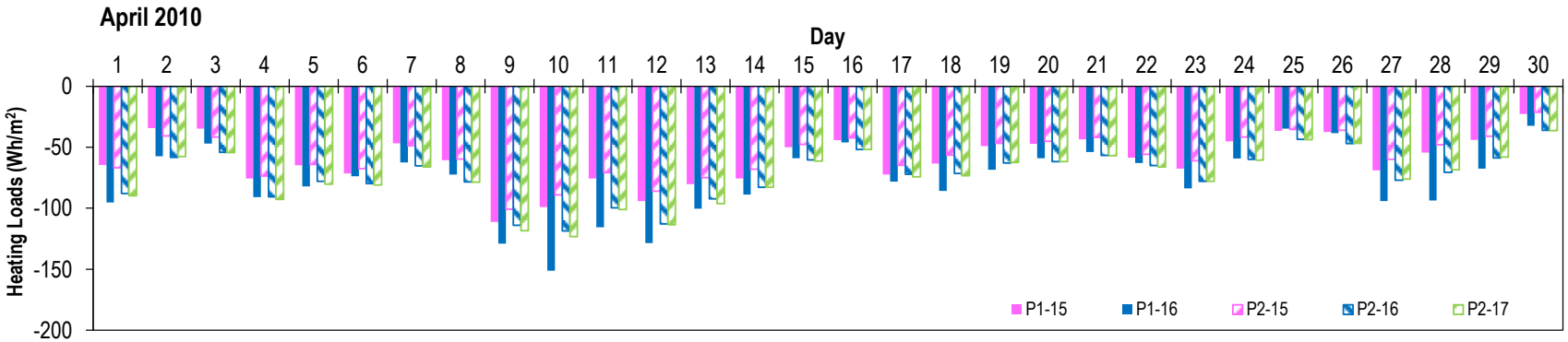


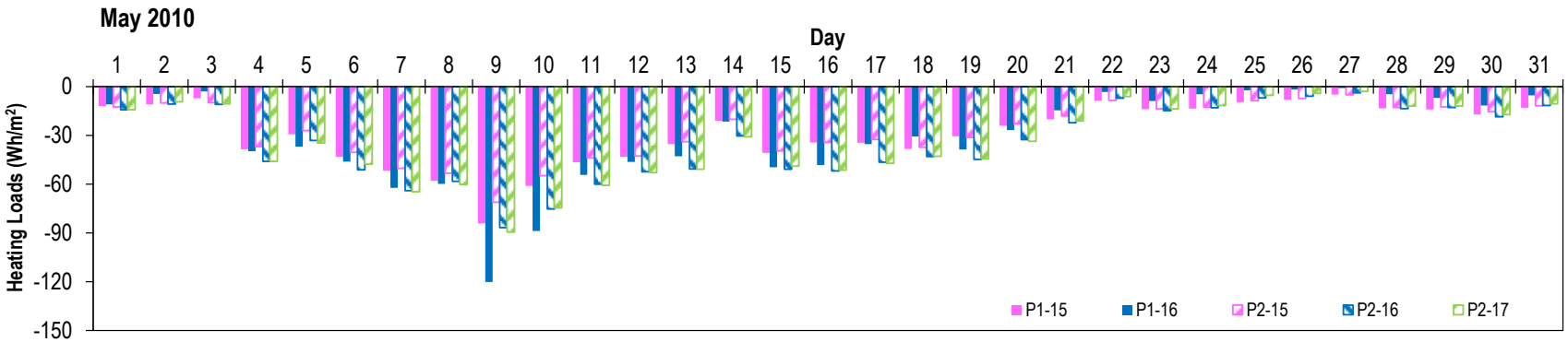

December 2009
Day
Heating Loads (Wh/m²)
P1-15
P1-16
P2-15
P2-16
P2-17

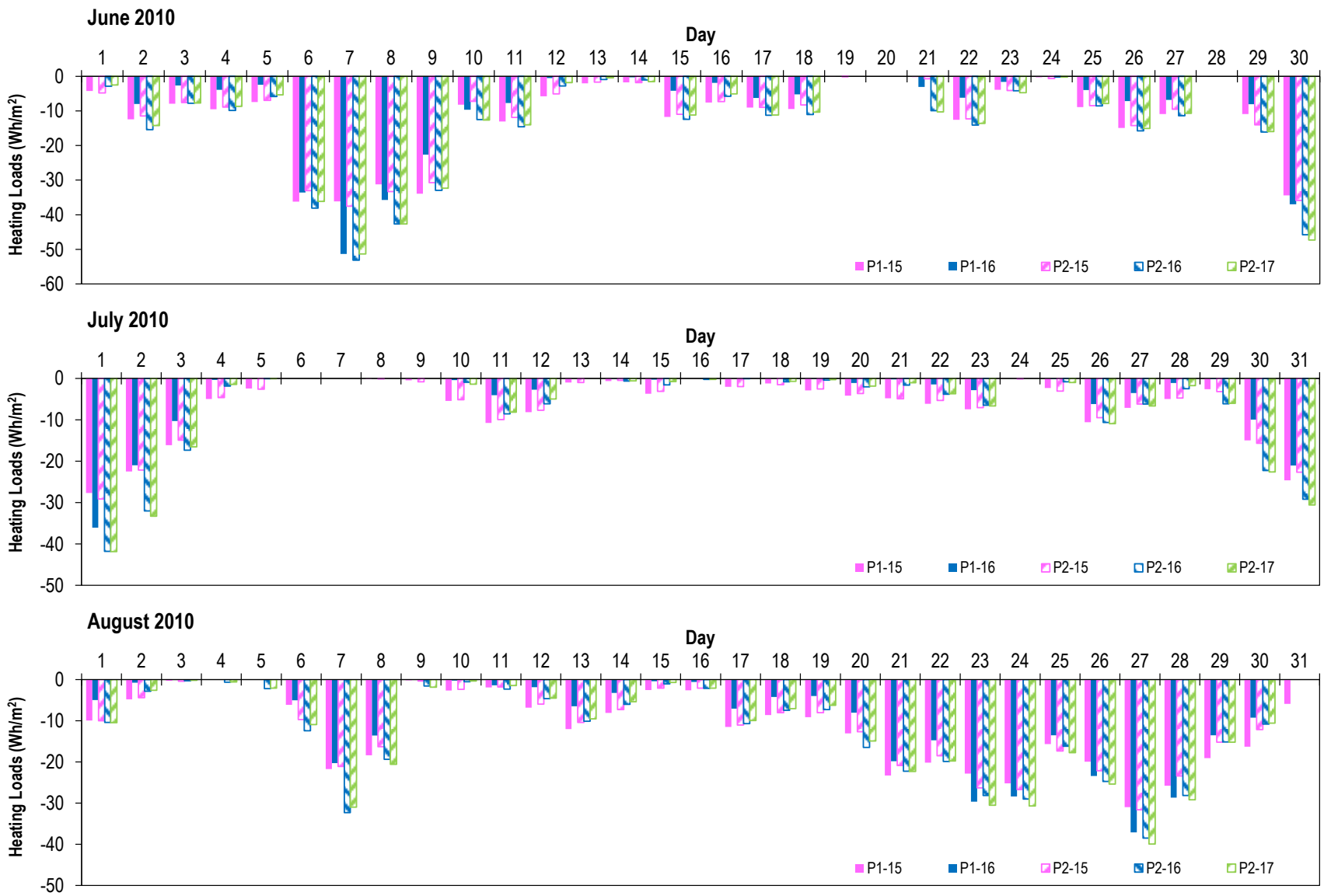

January 2010
Day
Heating Loads (Wh/m²)
P1-15
P1-16
P2-15
P2-16
P2-17


February 2010
Day
Heating Loads (Wh/m²)
P1-15
P1-16
P2-15
P2-16
P2-17


March 2010
Day
Heating Loads (Wh/m²)
P1-15
P1-16
P2-15
P2-16
P2-17

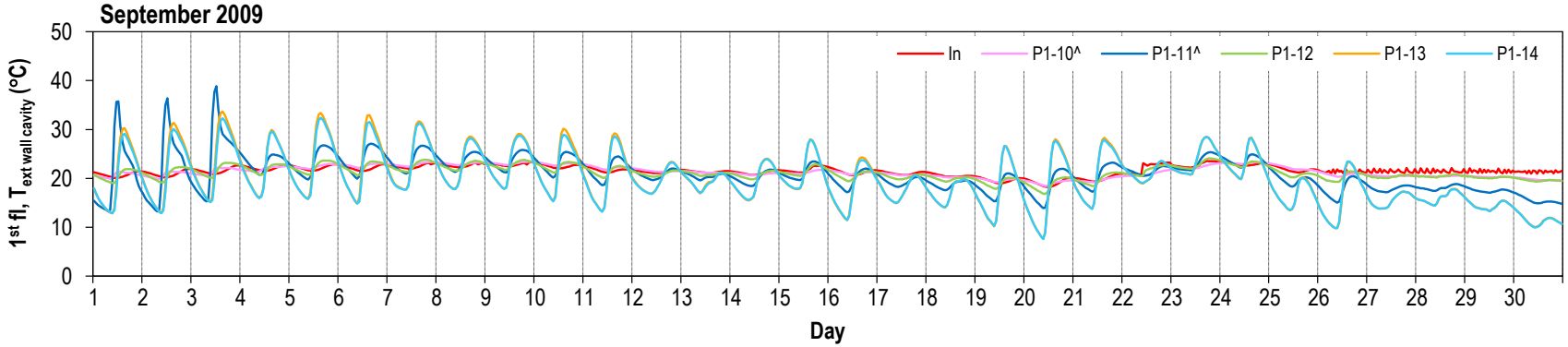

April 2010
Day
Heating Loads (Wh/m²)
P1-15
P1-16
P2-15
P2-16
P2-17

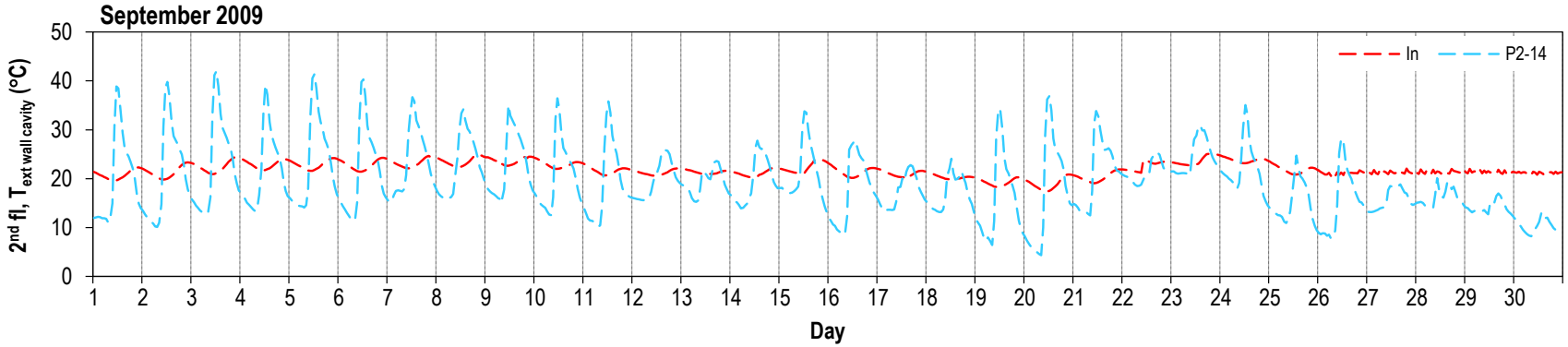

May 2010
Day
Heating Loads (Wh/m²)
P1-15
P1-16
P2-15
P2-16
P2-17

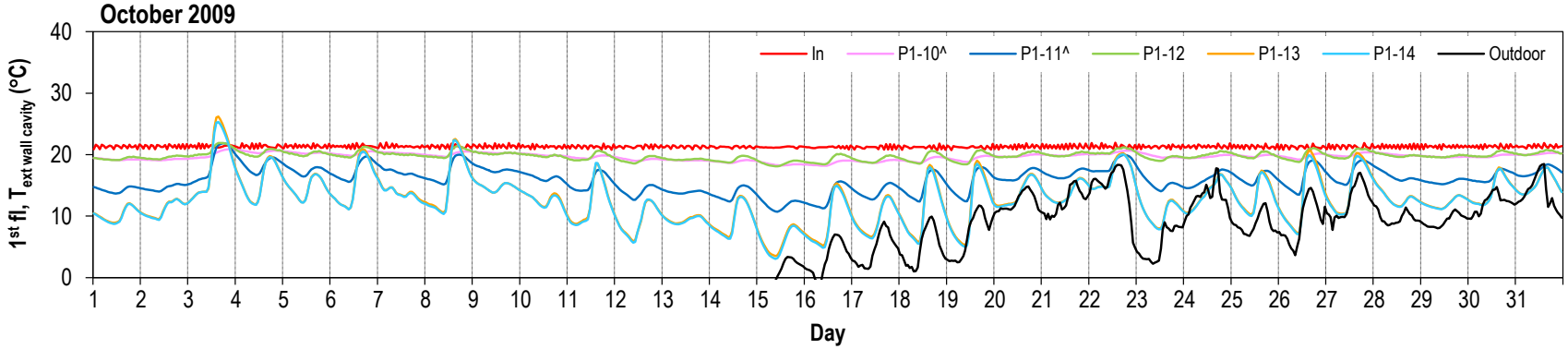

June 2010
Day
Heating Loads (Wh/m²)
P1-15
P1-16
P2-15
P2-16
P2-17
July 2010
Day
Heating Loads (Wh/m²)
P1-15
P1-16
P2-15
P2-16
P2-17
August 2010
Day
Heating Loads (Wh/m²)
P1-15
P1-16
P2-15
P2-16
P2-17

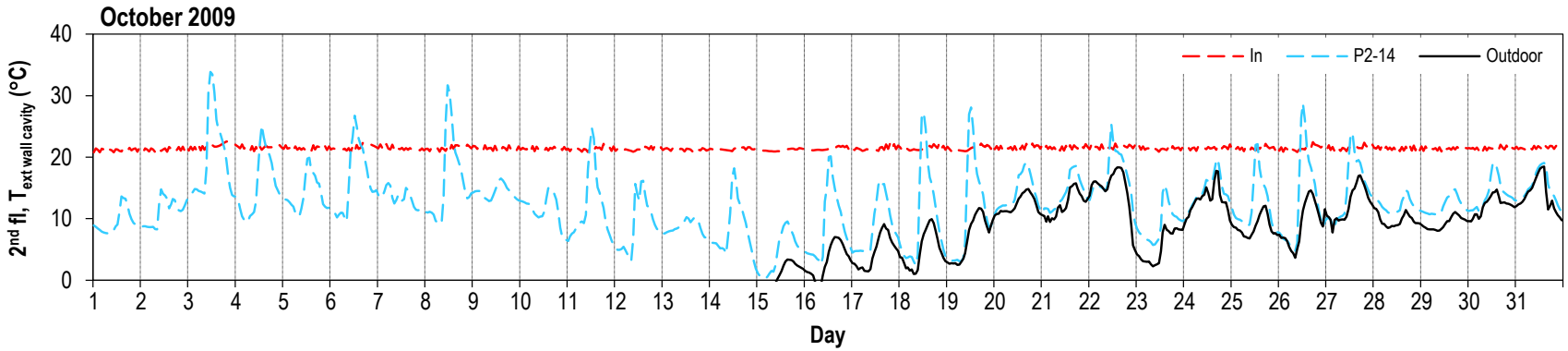
# Appendix B: East Panels

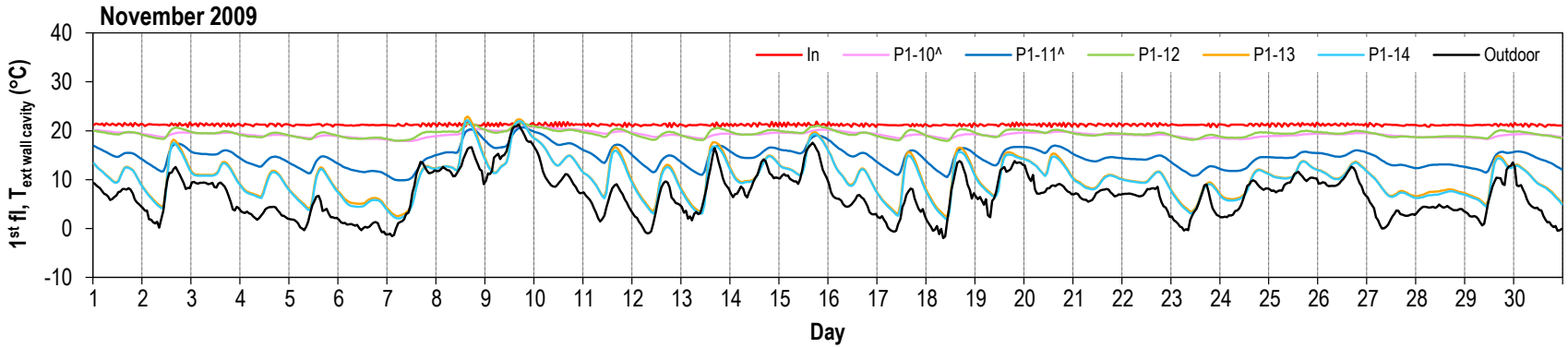
Temperature (°C) at exterior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

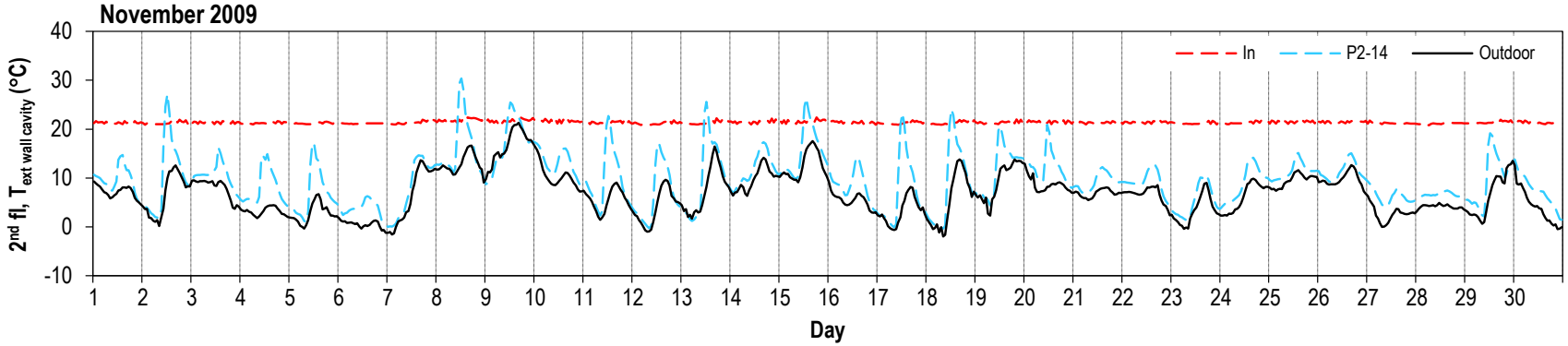


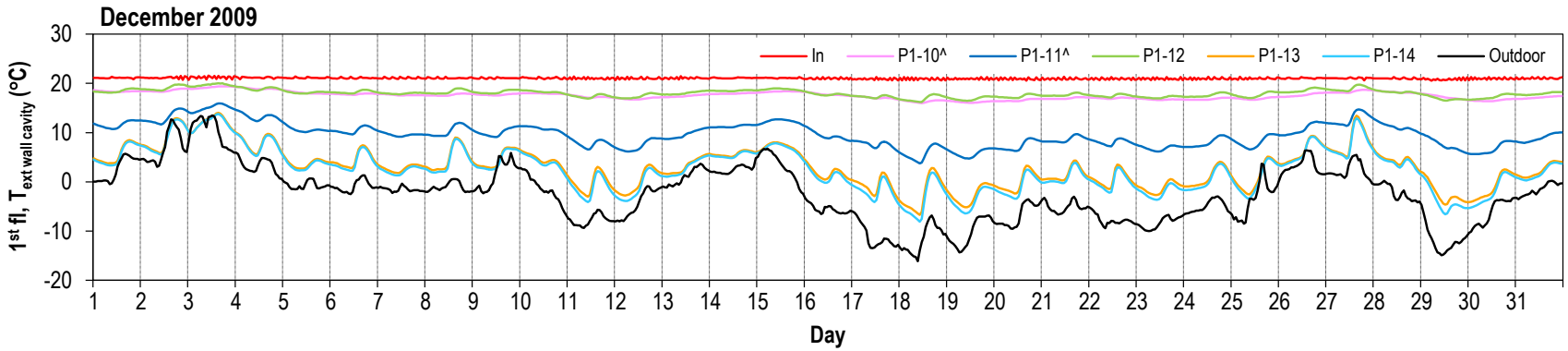



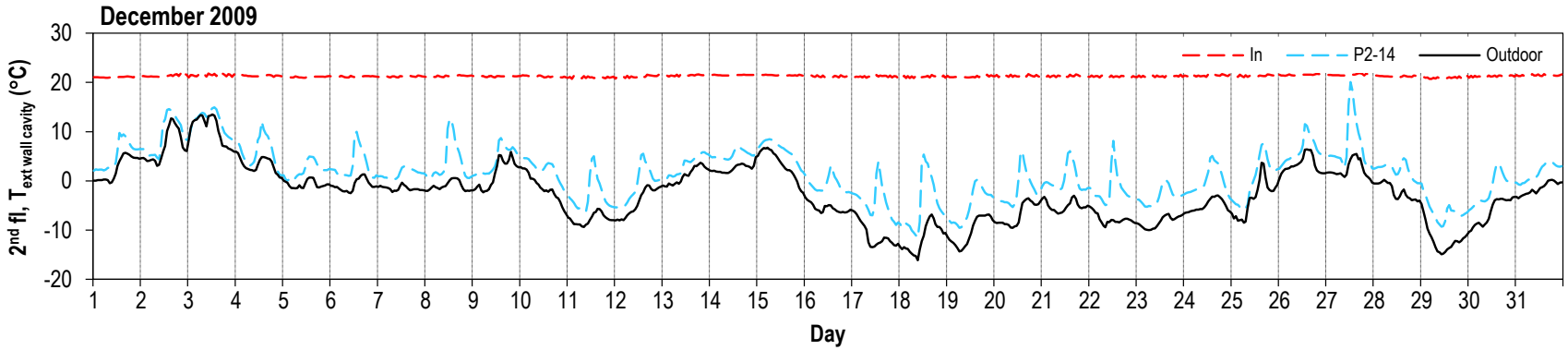



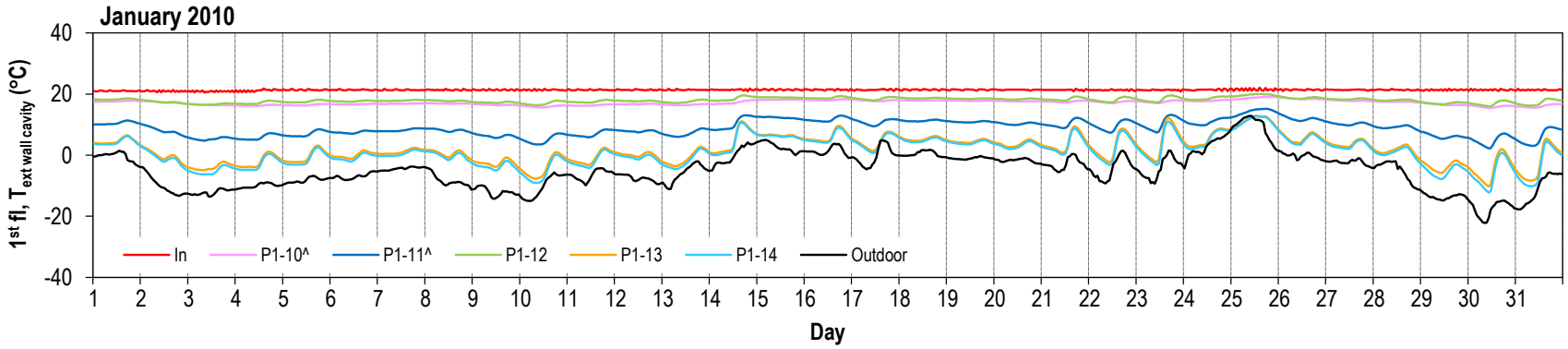

October 2009
2nd fl, T ext wall cavity (°C)
In
P2-14
Outdoor
Day

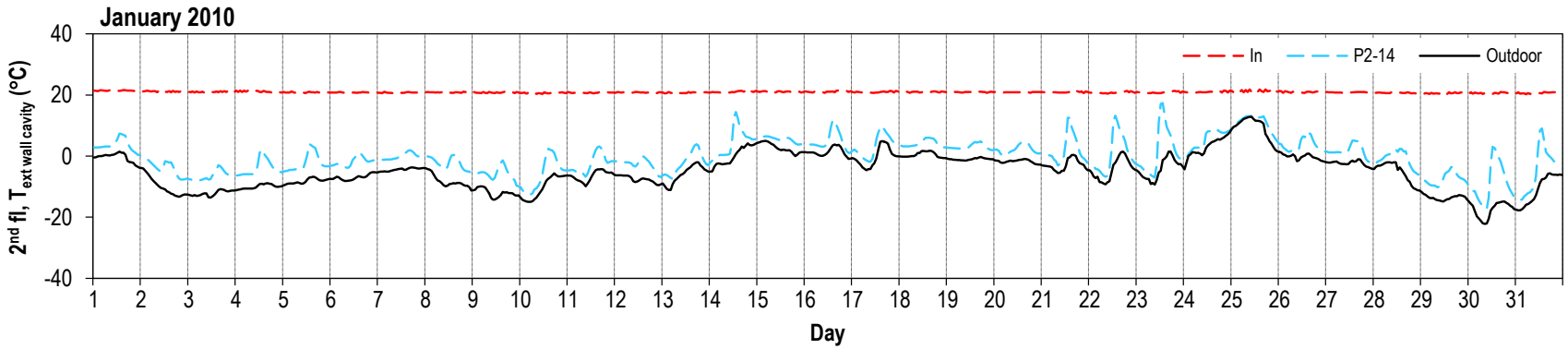

November 2009
1st fl, T ext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day

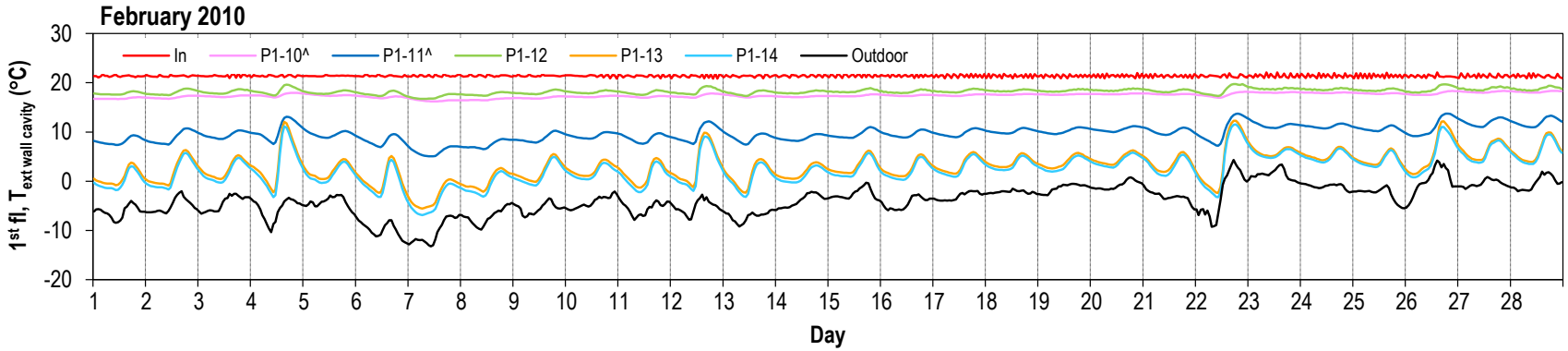

November 2009
2nd fl, T ext wall cavity (°C)
In
P2-14
Outdoor
Day

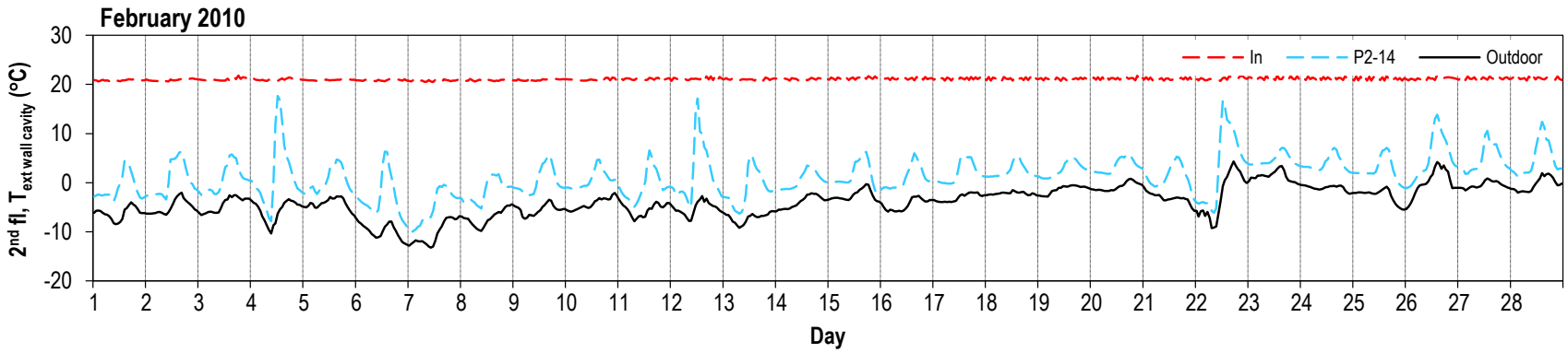

December 2009
1st fl, T ext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day

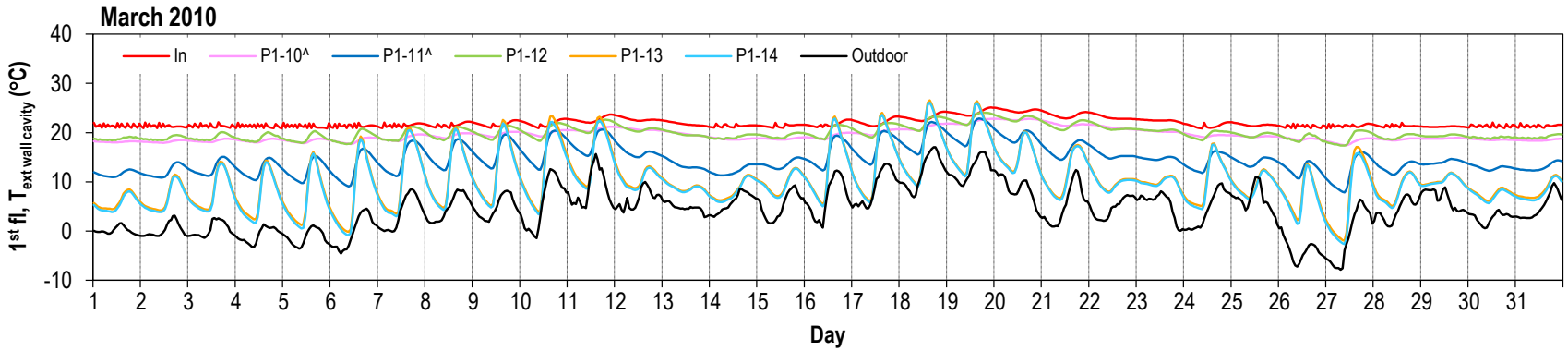

December 2009
2nd fl, T ext wall cavity (°C)
In
P2-14
Outdoor
Day

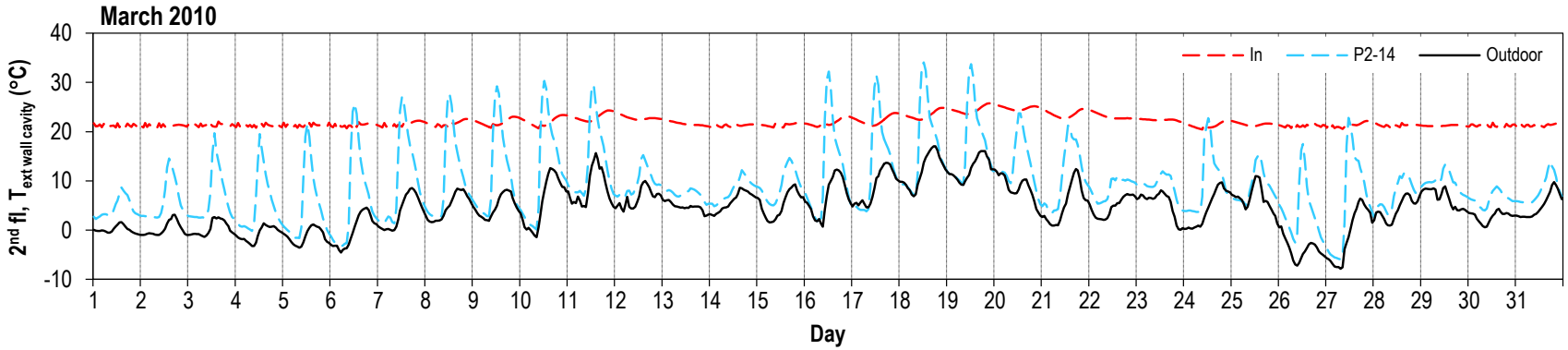

January 2010
1st fl, T ext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day

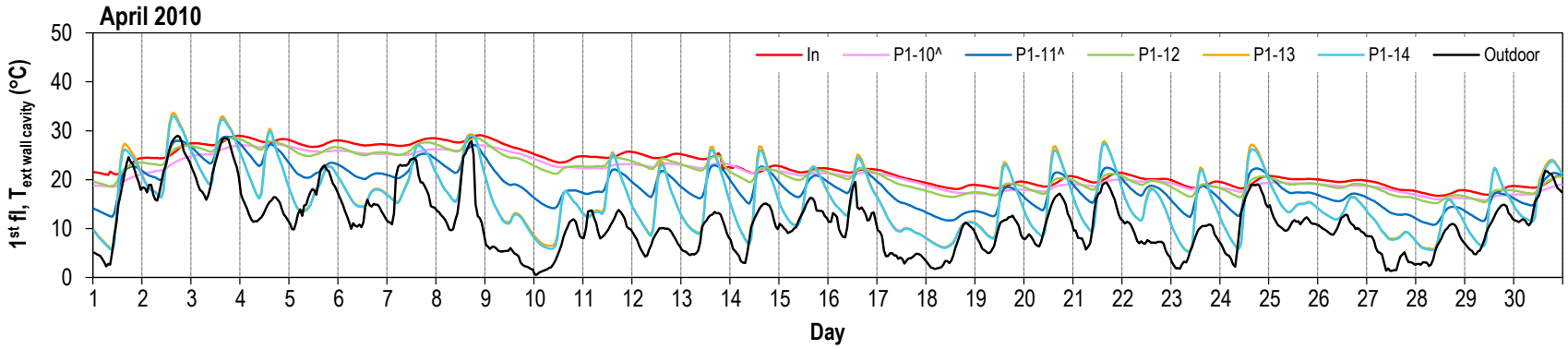

January 2010
In
P2-14
Outdoor
2nd fl, T ext wall cavity (°C)
Day

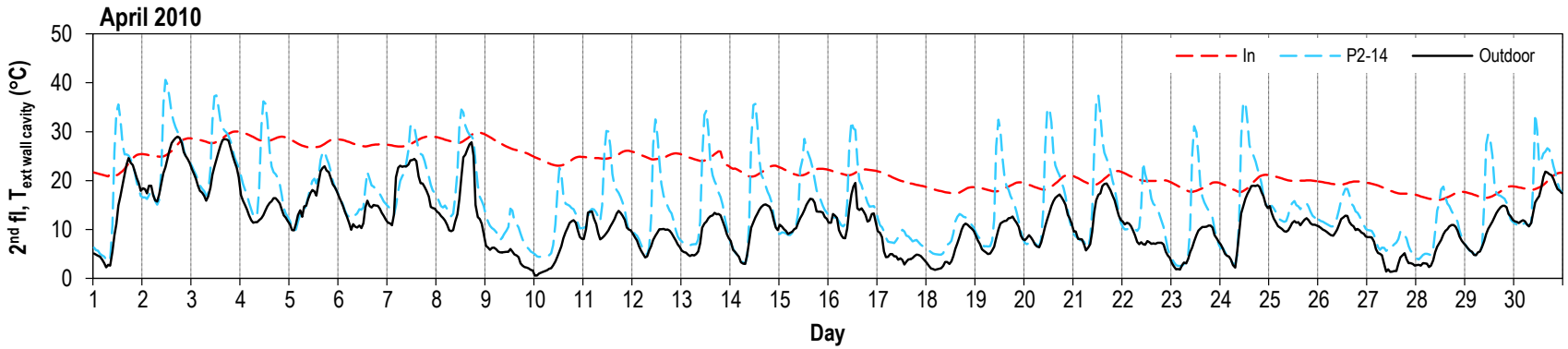

February 2010
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
1st fl, T ext wall cavity (°C)
Day

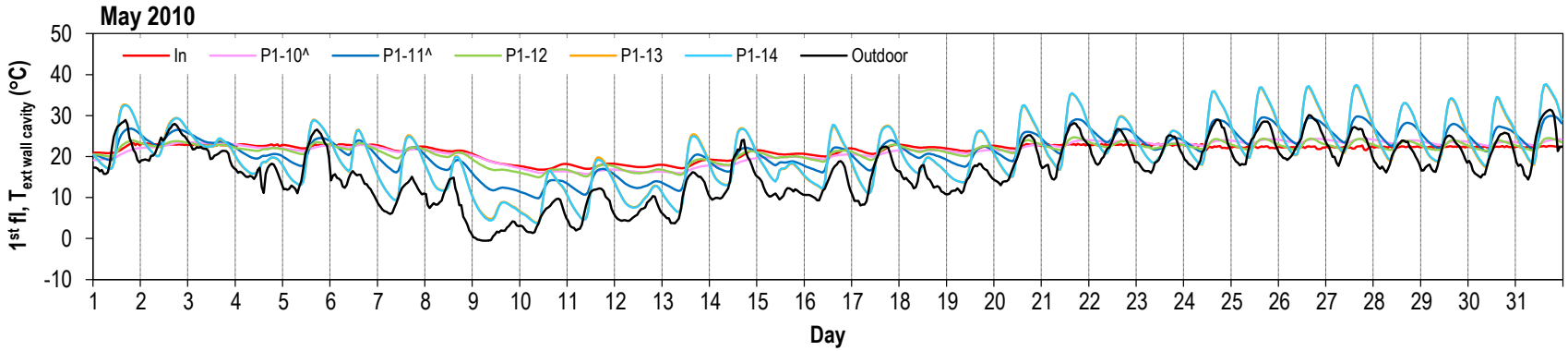

February 2010
In
P2-14
Outdoor
2nd fl, T ext wall cavity (°C)
Day

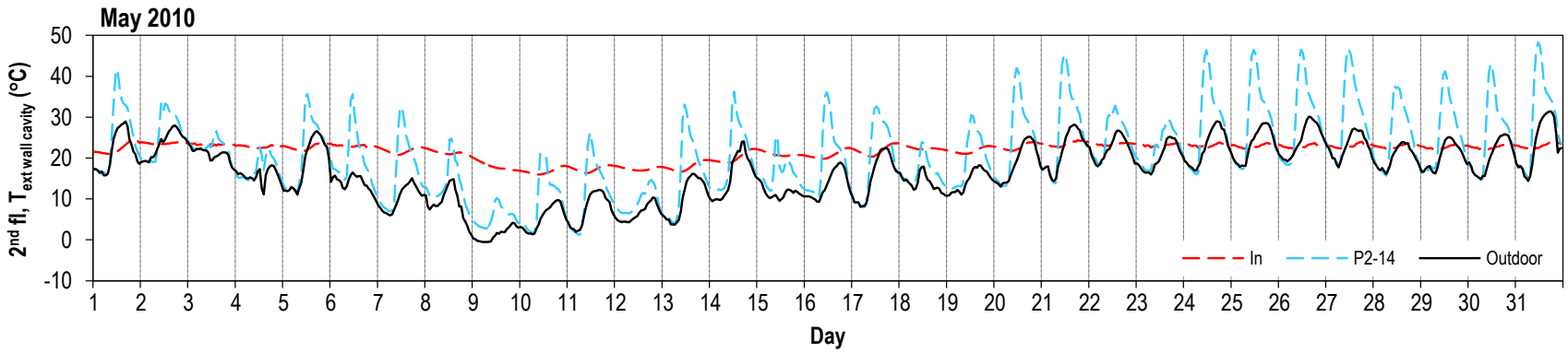

March 2010
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
1st fl, T ext wall cavity (°C)
Day

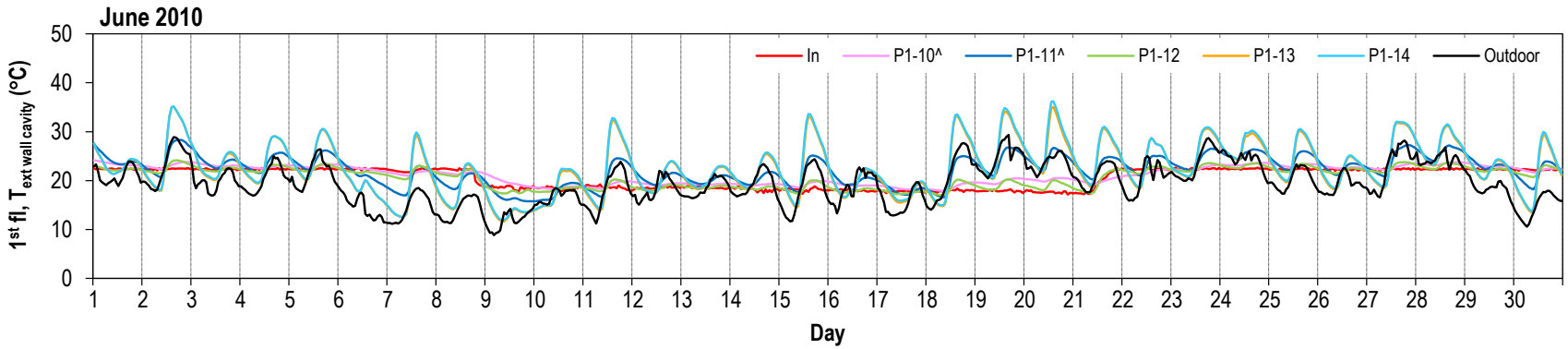

March 2010
In
P2-14
Outdoor
2nd fl, T ext wall cavity (°C)
Day

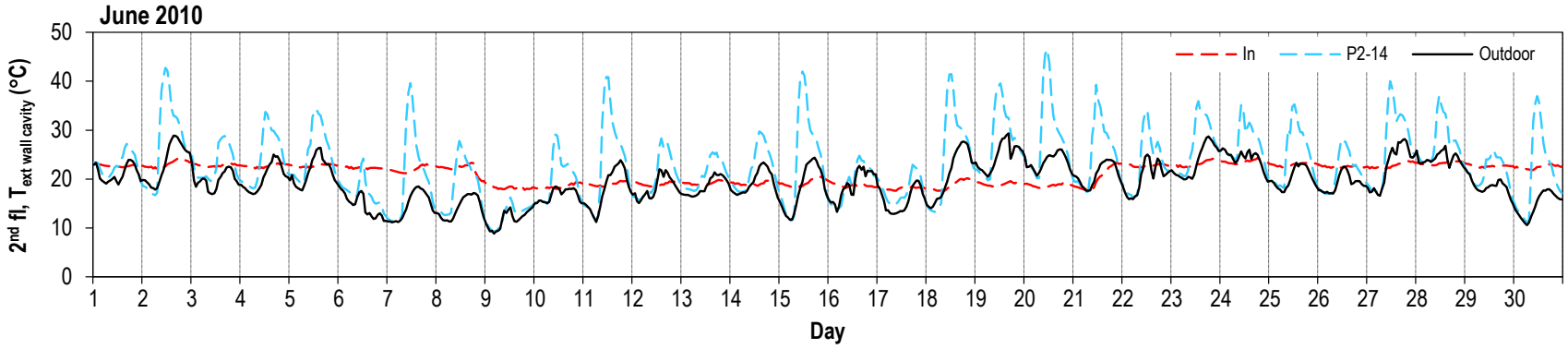

April 2010
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
1st fl, T ext wall cavity (°C)
Day

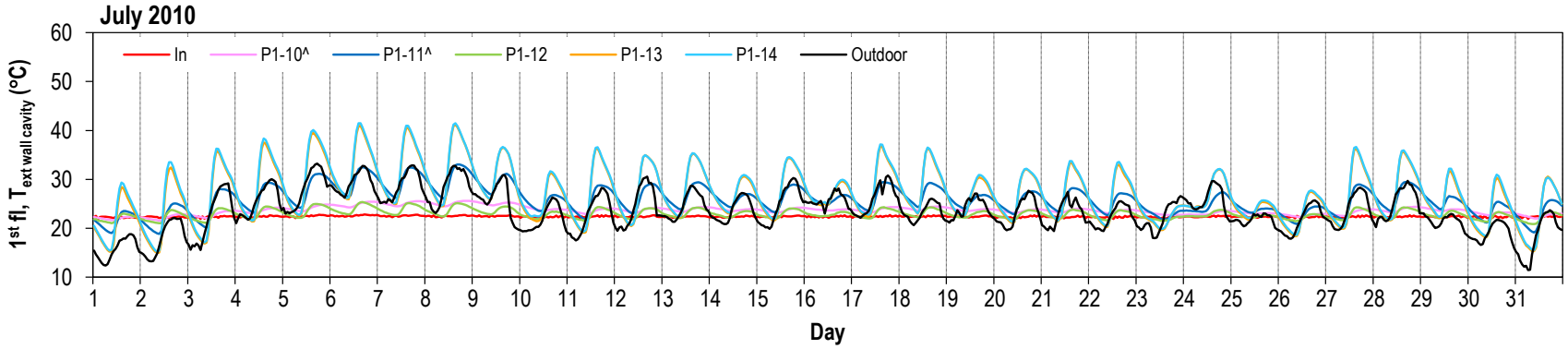

April 2010
2nd fl, T ext wall cavity (°C)
Day
In
P2-14
Outdoor

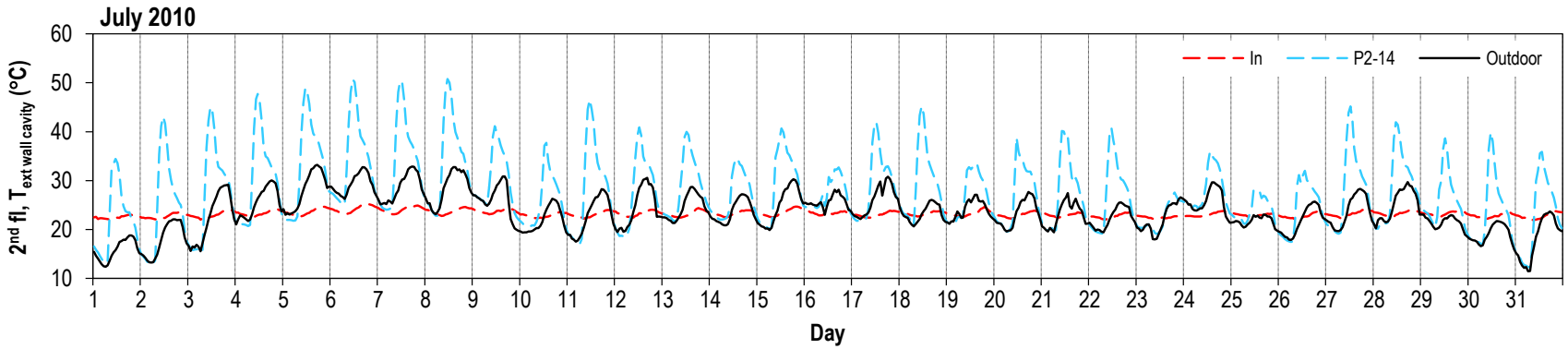

May 2010
1st fl, T ext wall cavity (°C)
Day
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor

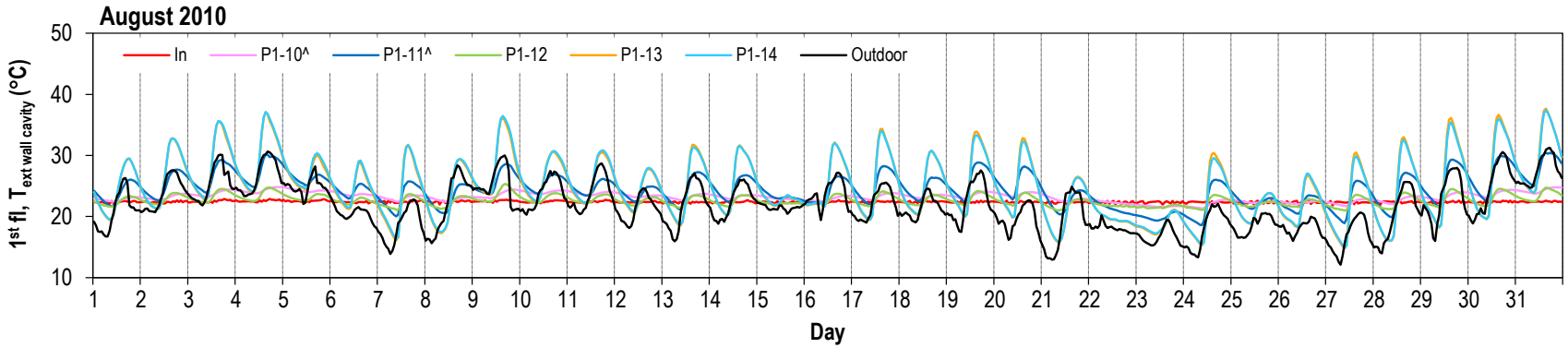

May 2010
2nd fl, T ext wall cavity (°C)
Day
In
P2-14
Outdoor

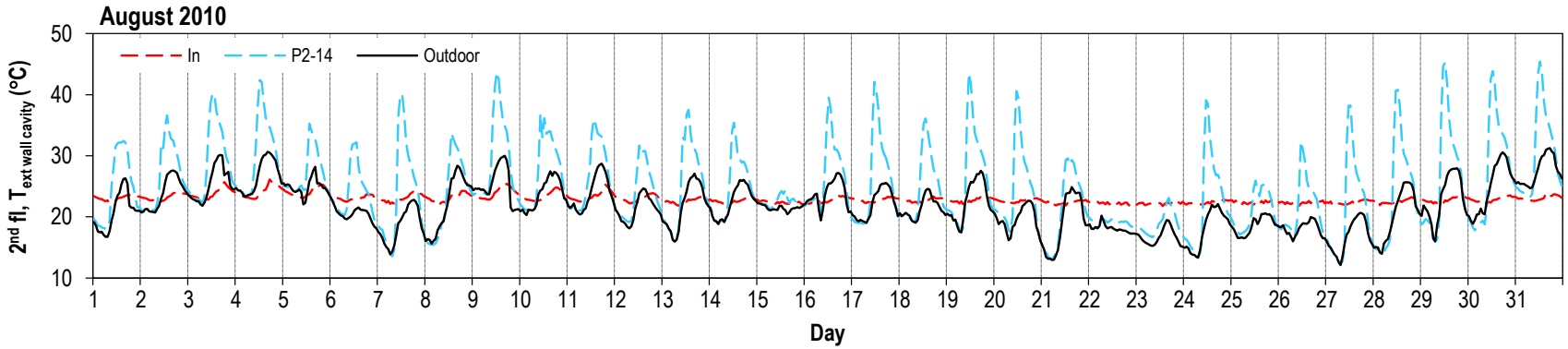

June 2010
1st fl, T ext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day


June 2010
2nd fl, T ext wall cavity (°C)
In
P2-14
Outdoor
Day

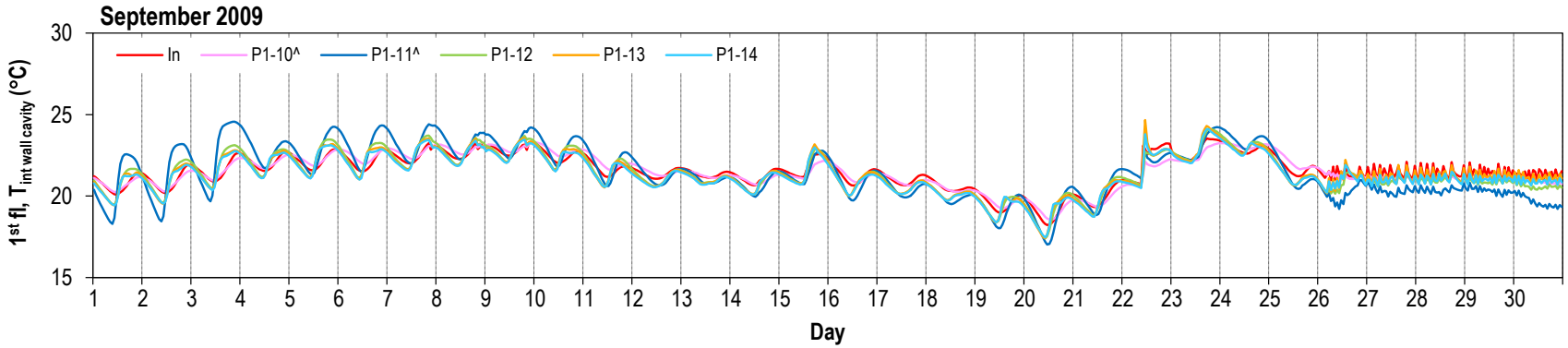

July 2010
1st fl, T ext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day

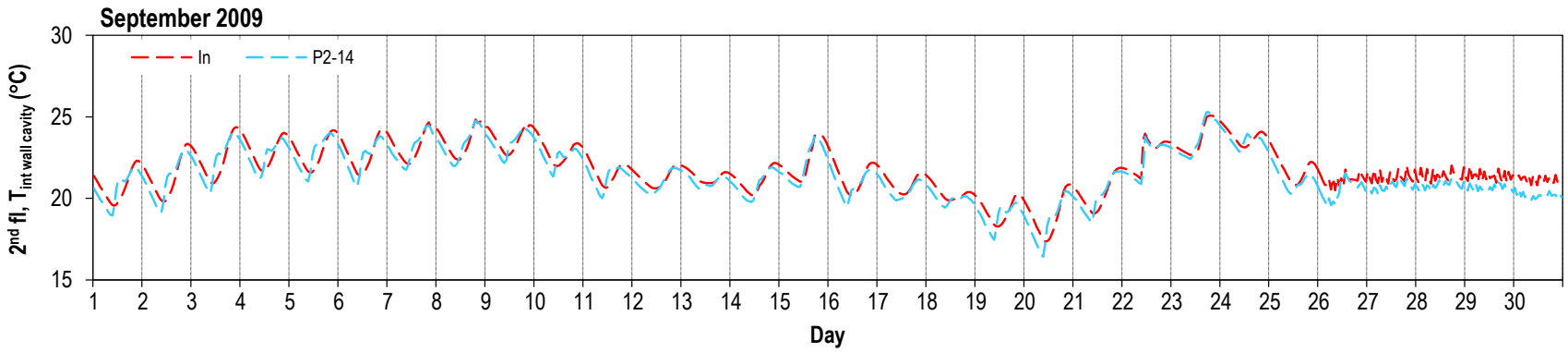

July 2010
2nd fl, T ext wall cavity (°C)
In
P2-14
Outdoor
Day

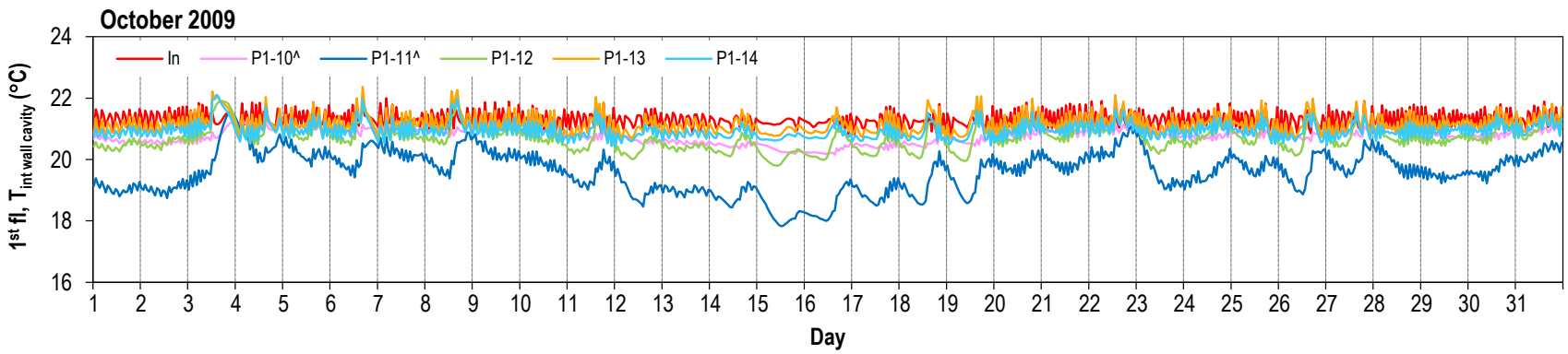

August 2010
1st fl, T ext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day

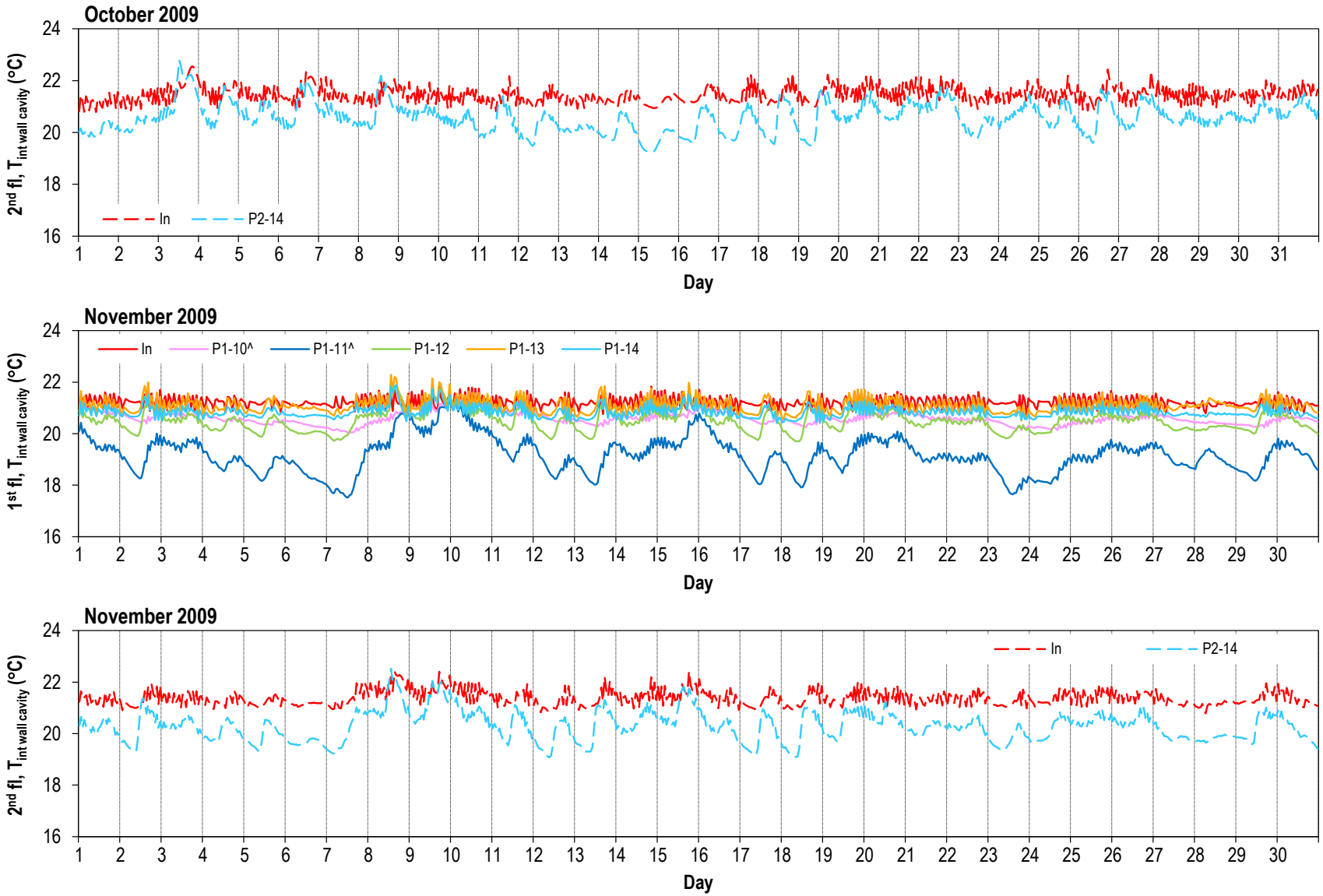

August 2010
2nd fl, T ext wall cavity (°C)
In
P2-14
Outdoor
Day

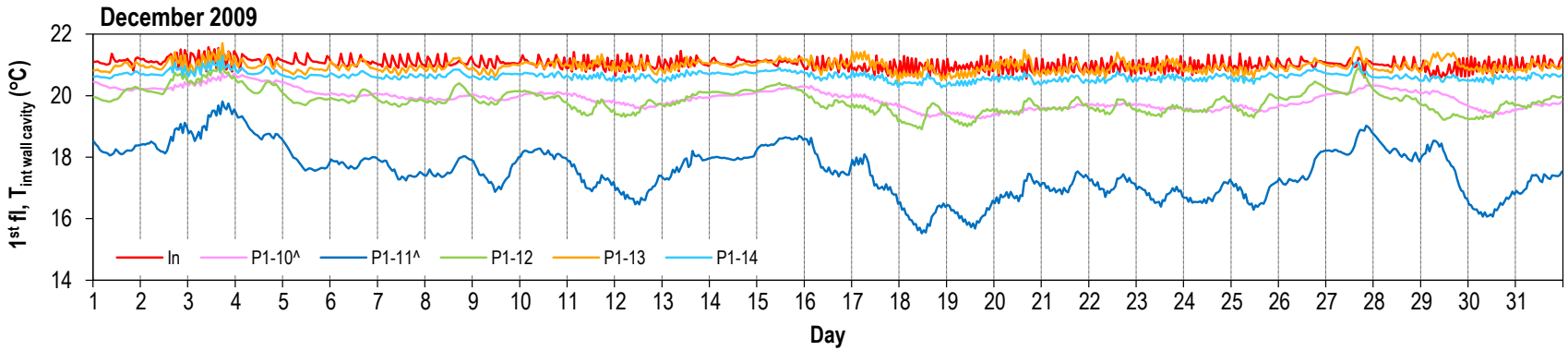
Temperature (°C) at interior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

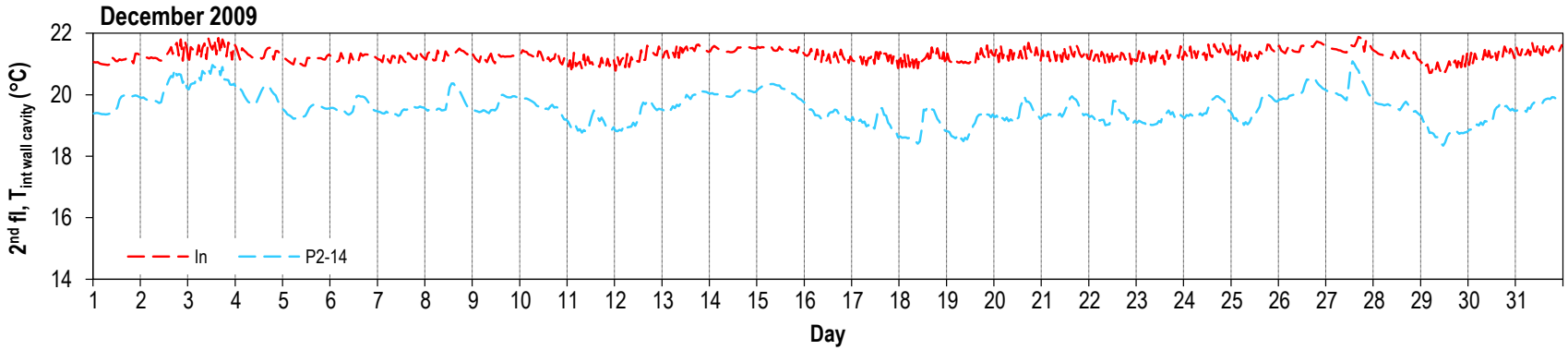


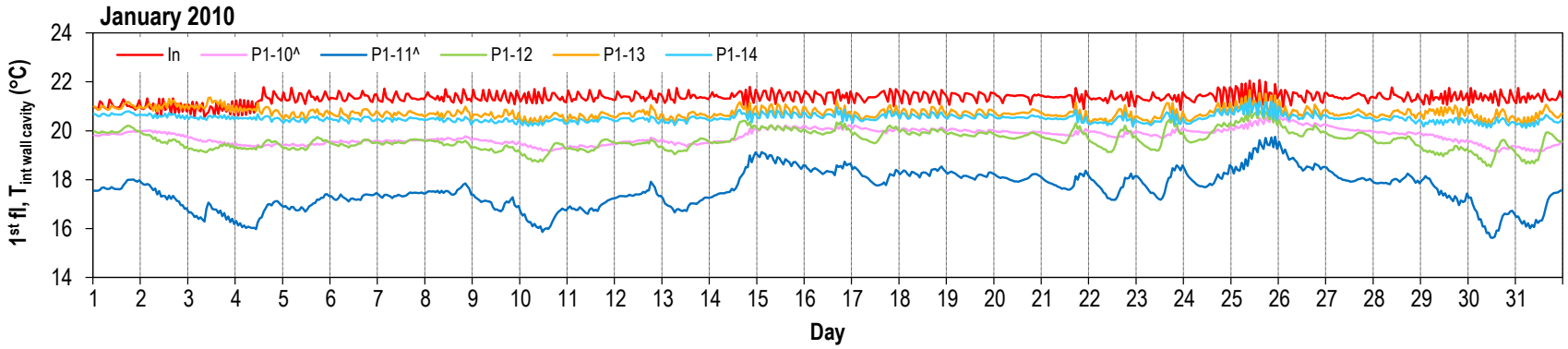



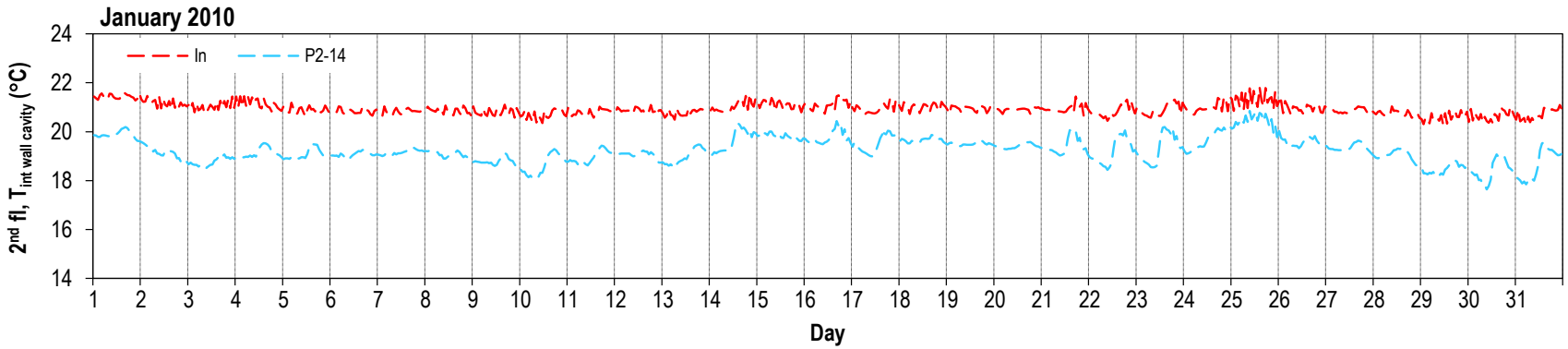



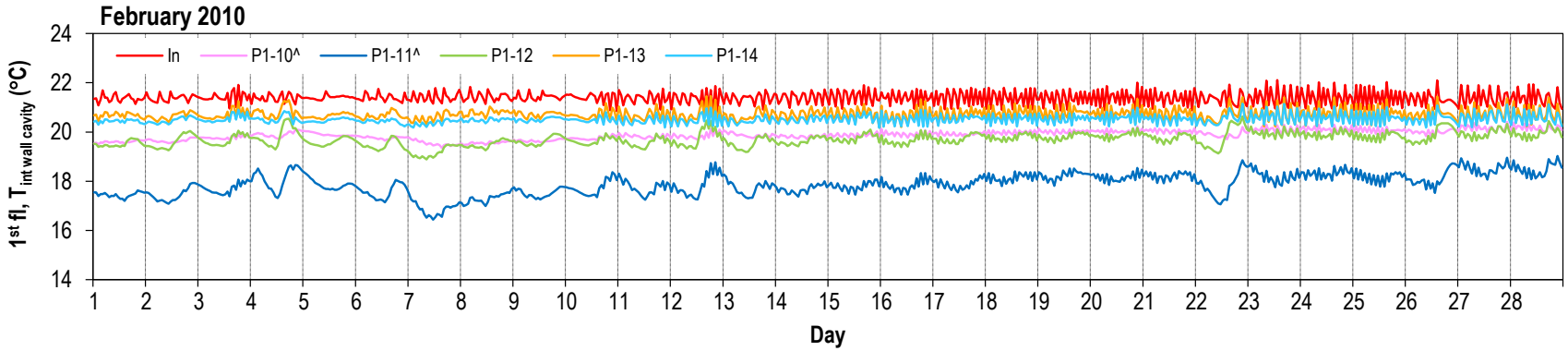

October 2009
2nd fl, T int wall cavity (°C)
In
P2-14
Day
November 2009
1st fl, T int wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Day
November 2009
2nd fl, T int wall cavity (°C)
In
P2-14
Day

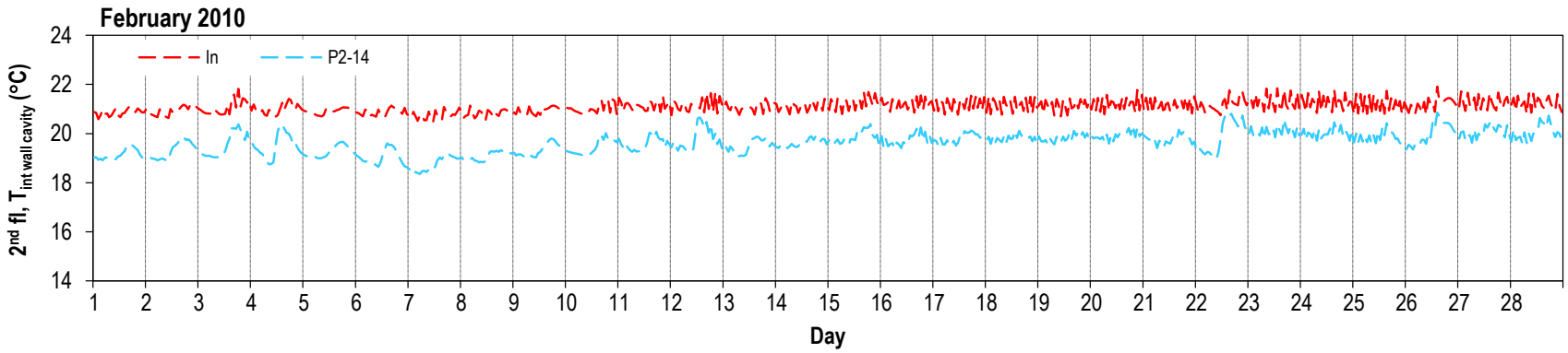

December 2009
1st fl, T int wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Day

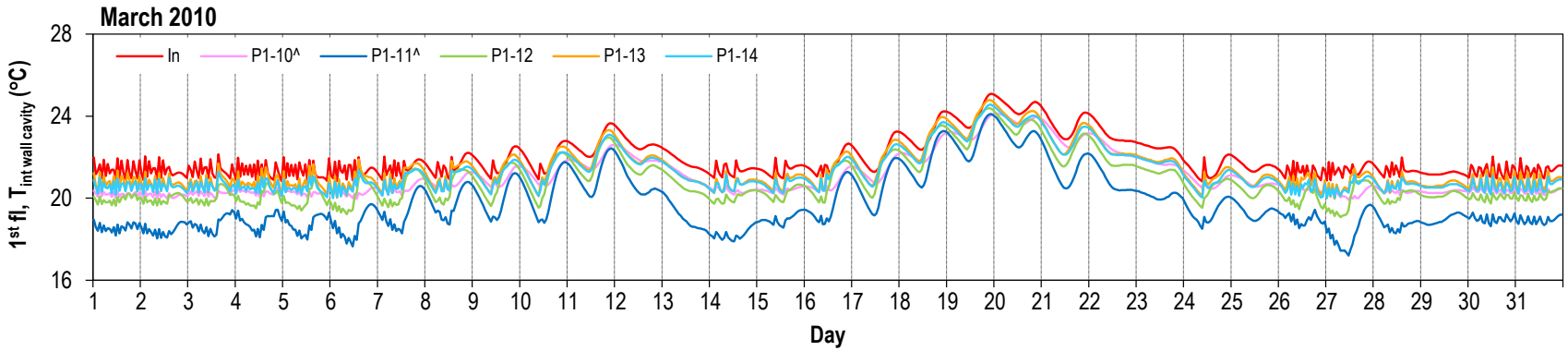

December 2009
2nd fl, T int wall cavity (°C)
In
P2-14
Day

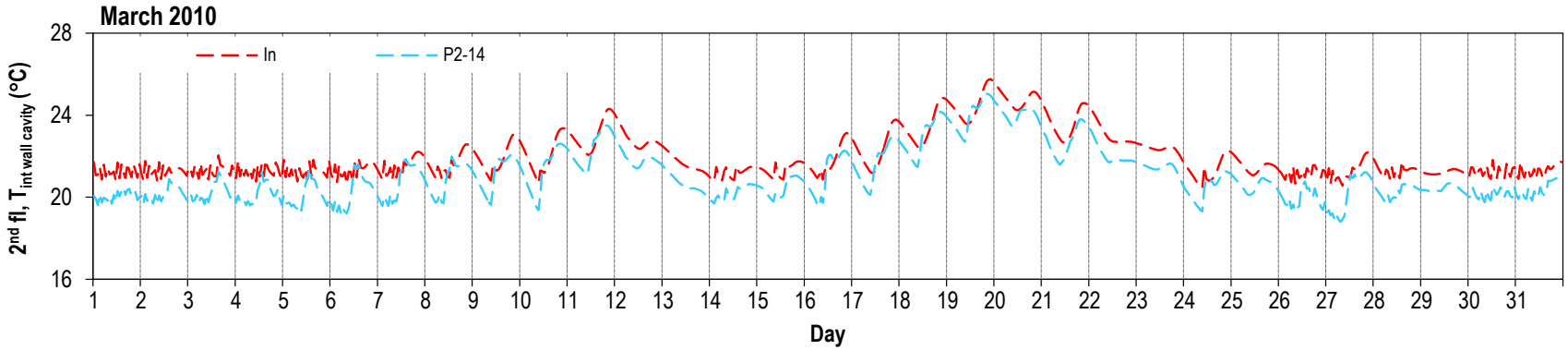

January 2010
1st fl, T int wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Day

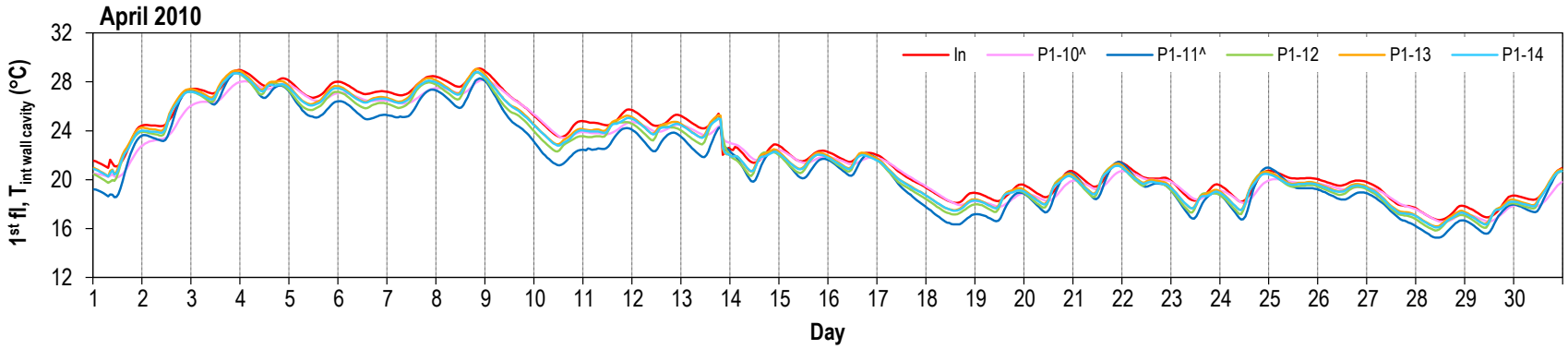

January 2010
In
P2-14
2nd fl, T int wall cavity (°C)
Day

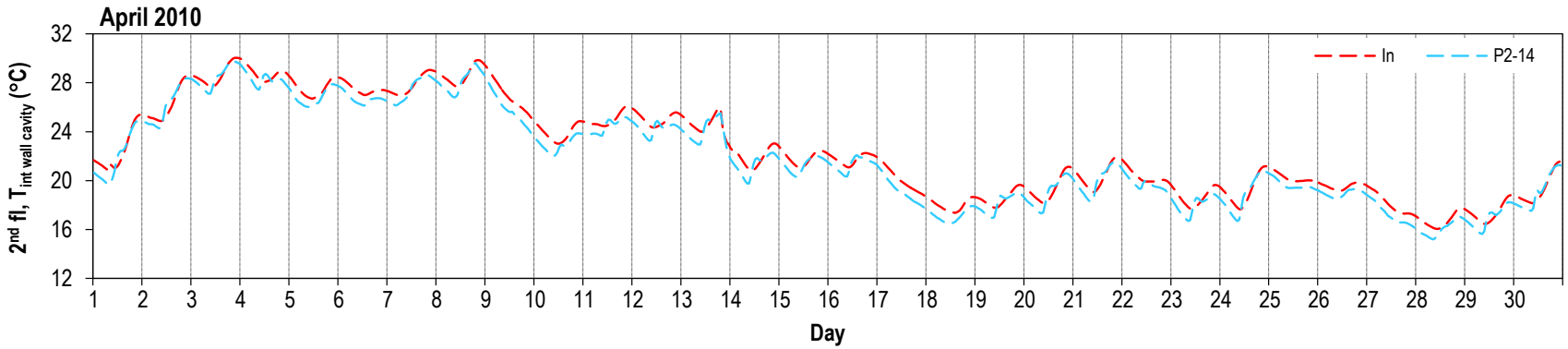

February 2010
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
1st fl, T int wall cavity (°C)
Day

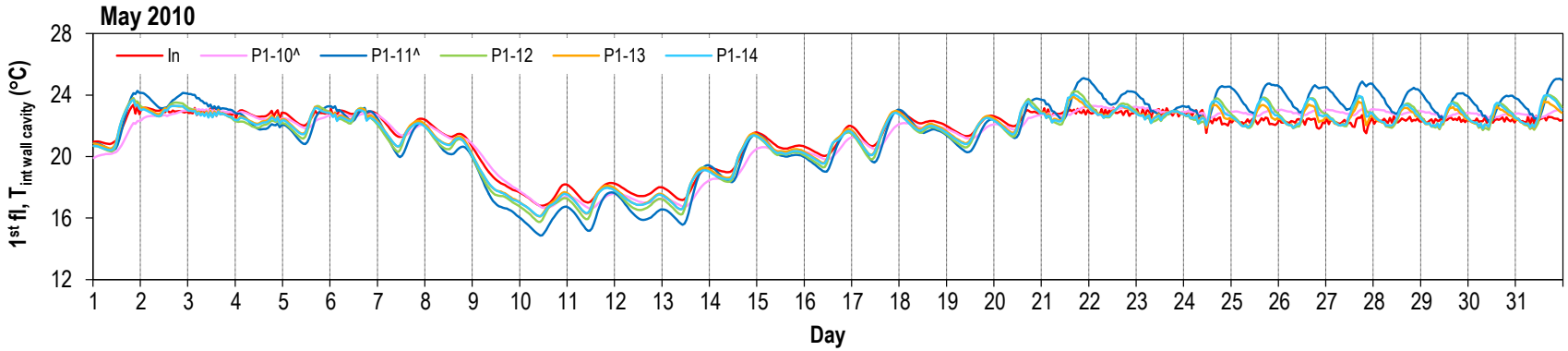

February 2010
In
P2-14
2nd fl, T int wall cavity (°C)
Day

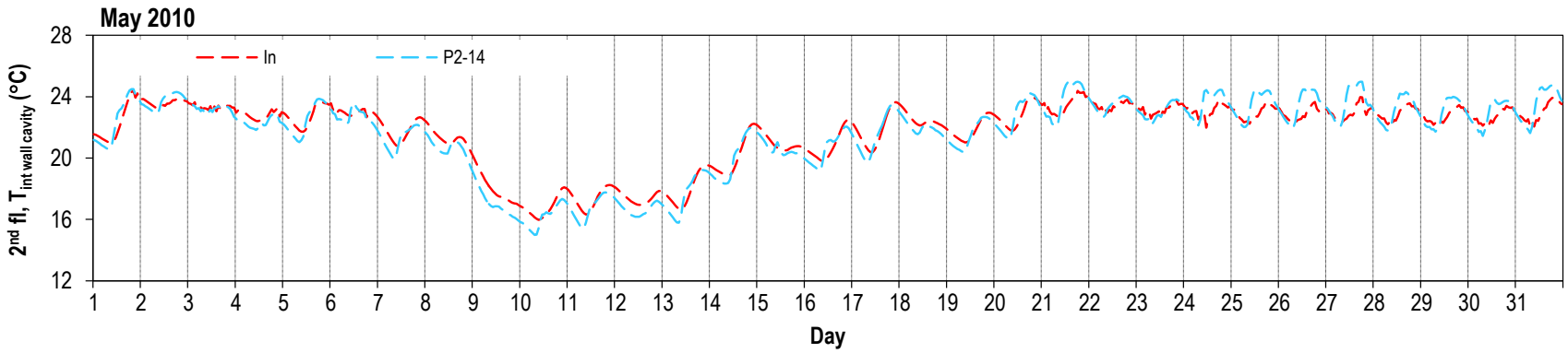

March 2010
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
1st fl, T int wall cavity (°C)
Day

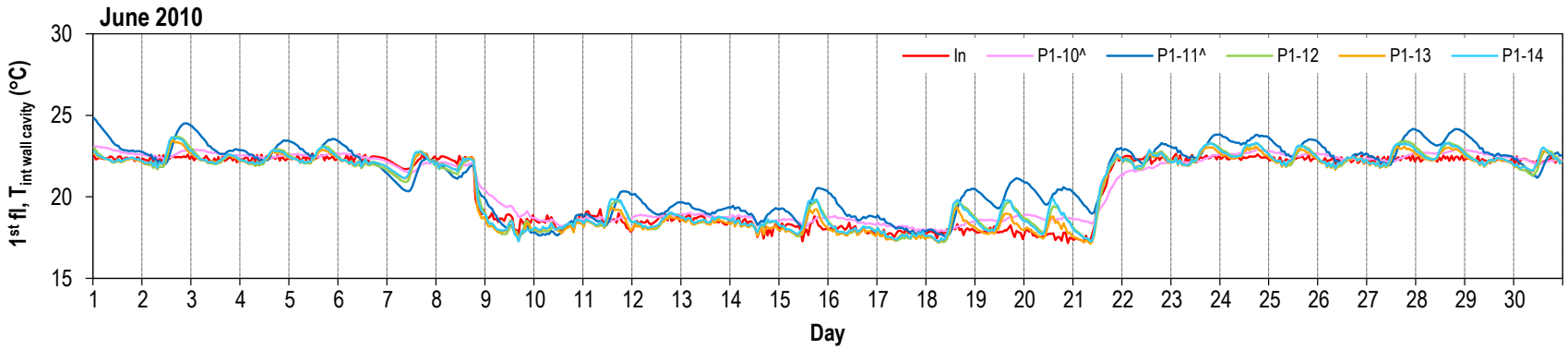

March 2010
In
P2-14
2nd fl, T int wall cavity (°C)
Day

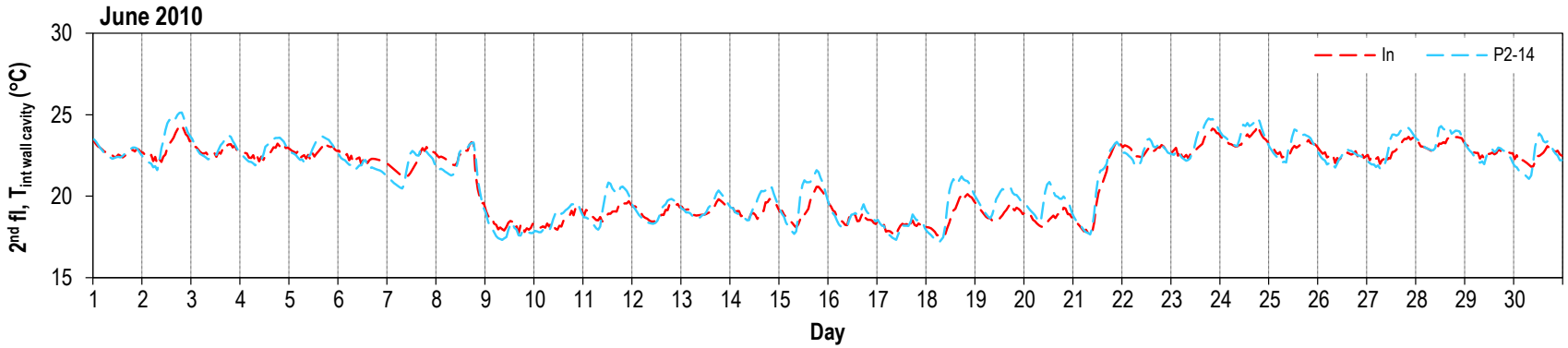

April 2010
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
1st fl, T int wall cavity (°C)
Day

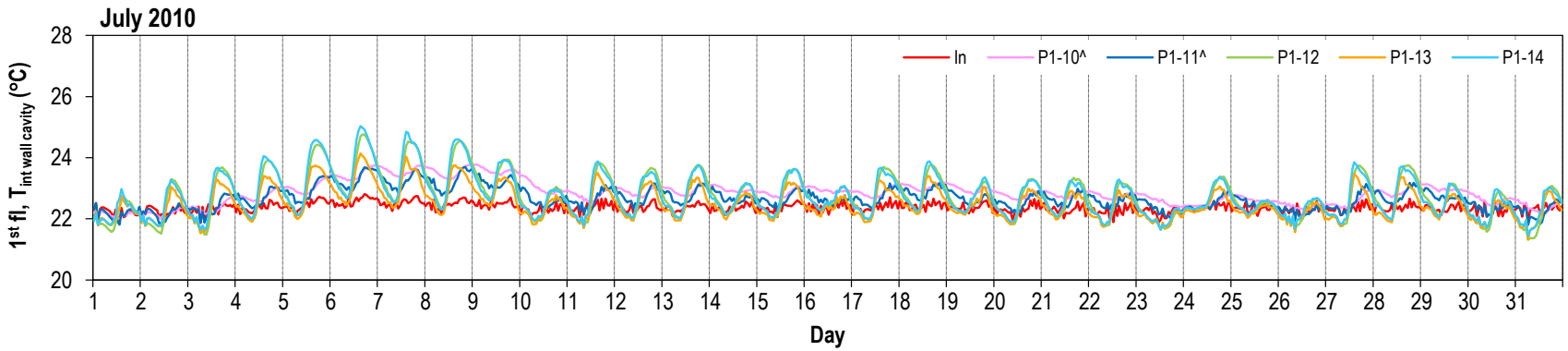

April 2010
2nd fl, T int wall cavity (°C)
In
P2-14
Day

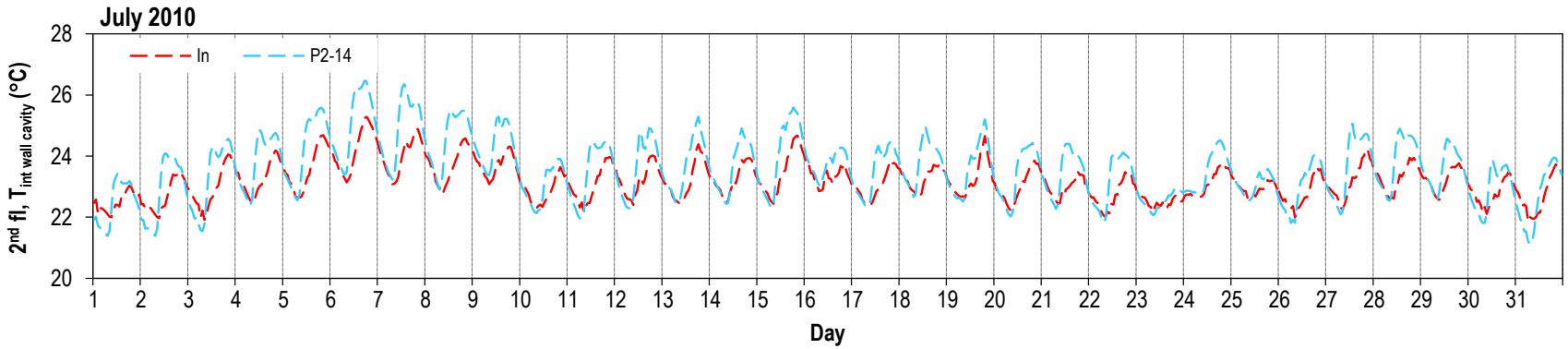

May 2010
1st fl, T int wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Day

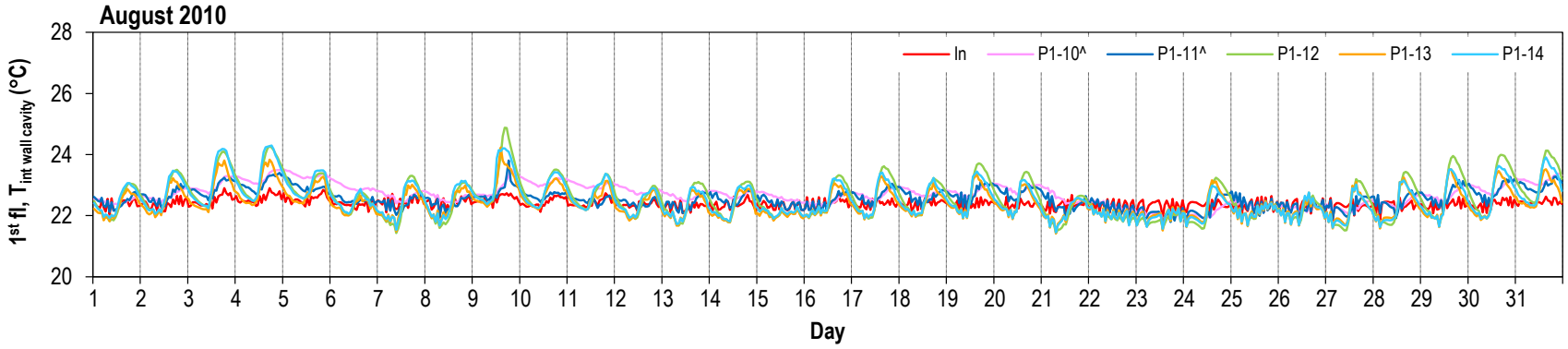

May 2010
2nd fl, T int wall cavity (°C)
In
P2-14
Day

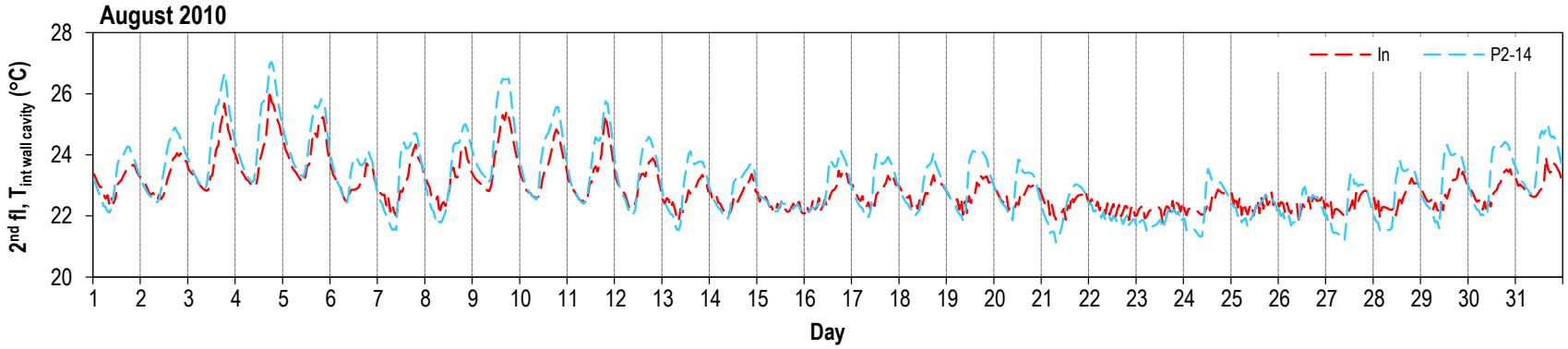

June 2010
1st fl, T int wall cavity (°C)
Day
In
P1-10^
P1-11^
P1-12
P1-13
P1-14


June 2010
2nd fl, T int wall cavity (°C)
Day
In
P2-14

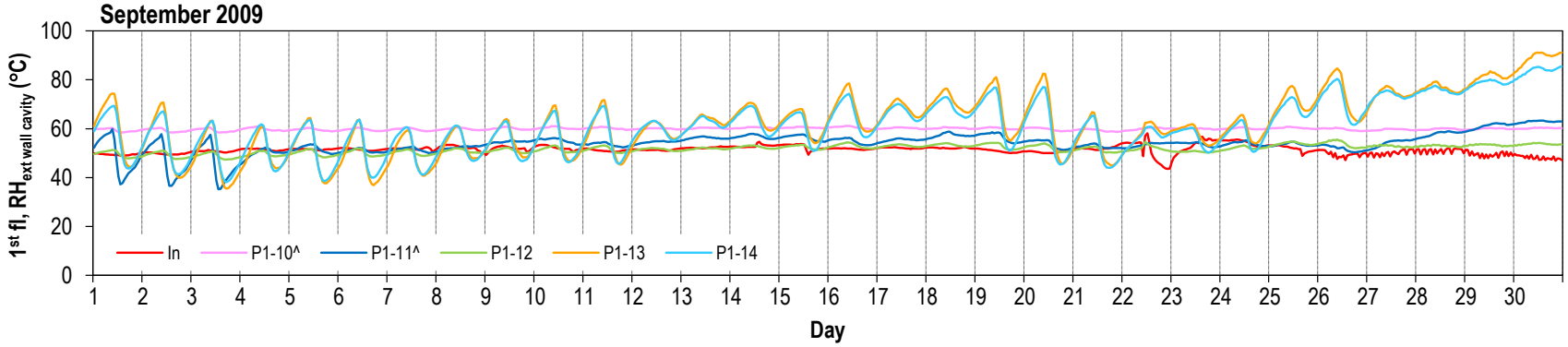

July 2010
1st fl, T int wall cavity (°C)
Day
In
P1-10^
P1-11^
P1-12
P1-13
P1-14

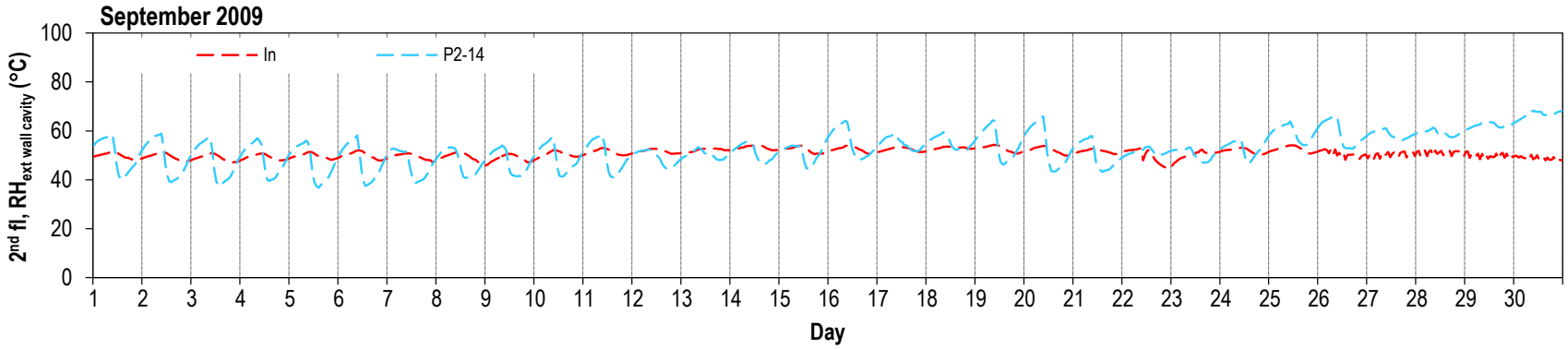

July 2010
In
P2-14
2nd fl, T int wall cavity (°C)
Day

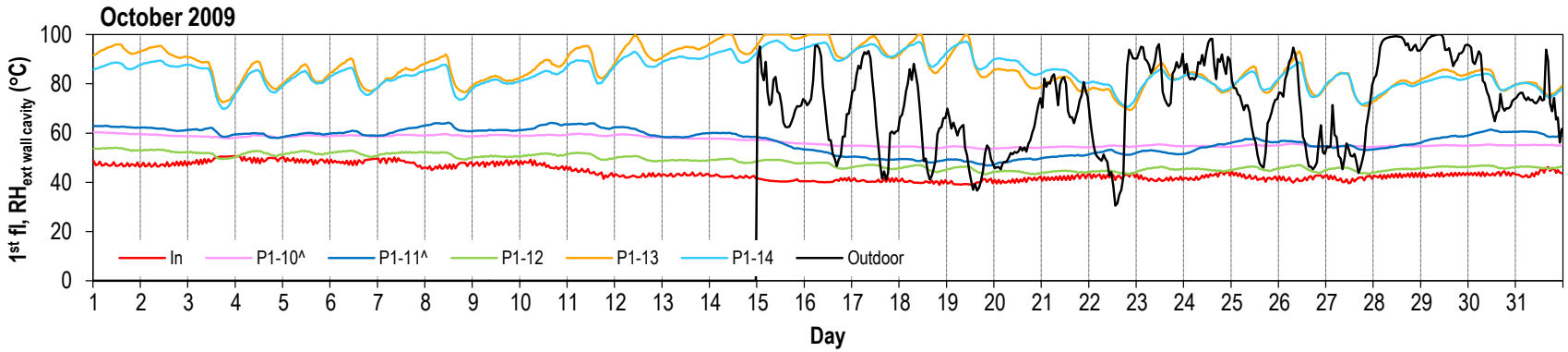

August 2010
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
1st fl, T int wall cavity (°C)
Day

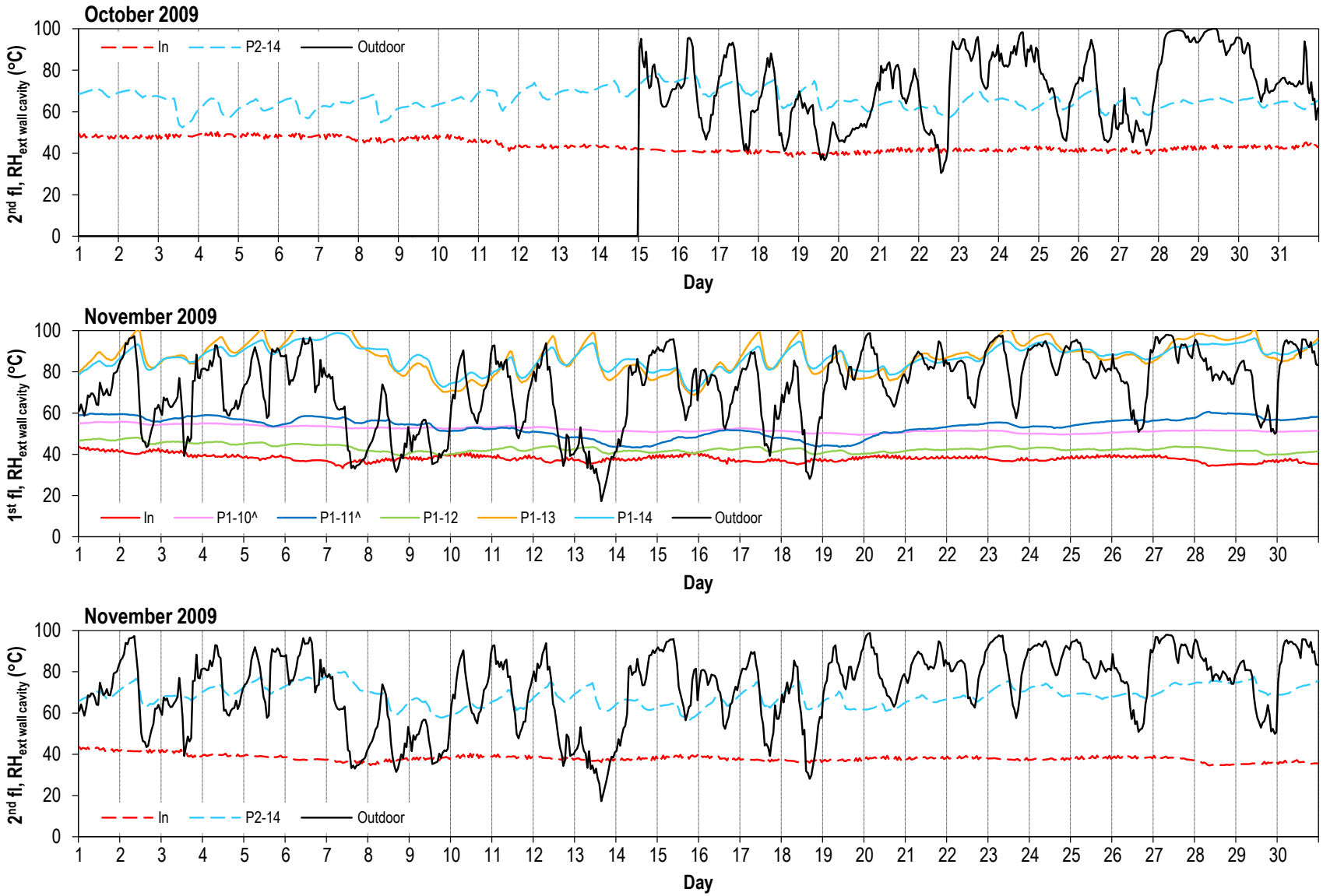

August 2010
In
P2-14
2nd fl, T int wall cavity (°C)
Day

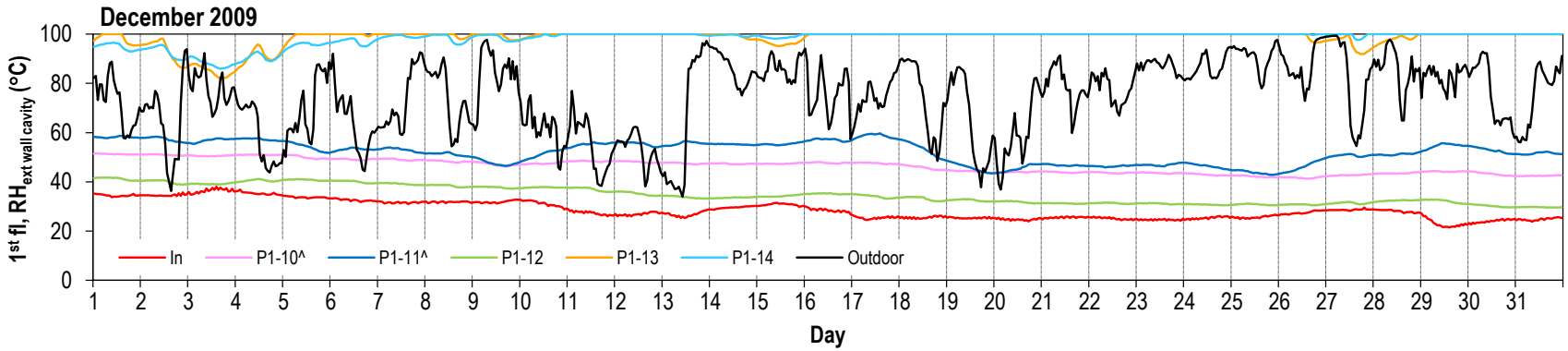
Relative humidity (%) at exterior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

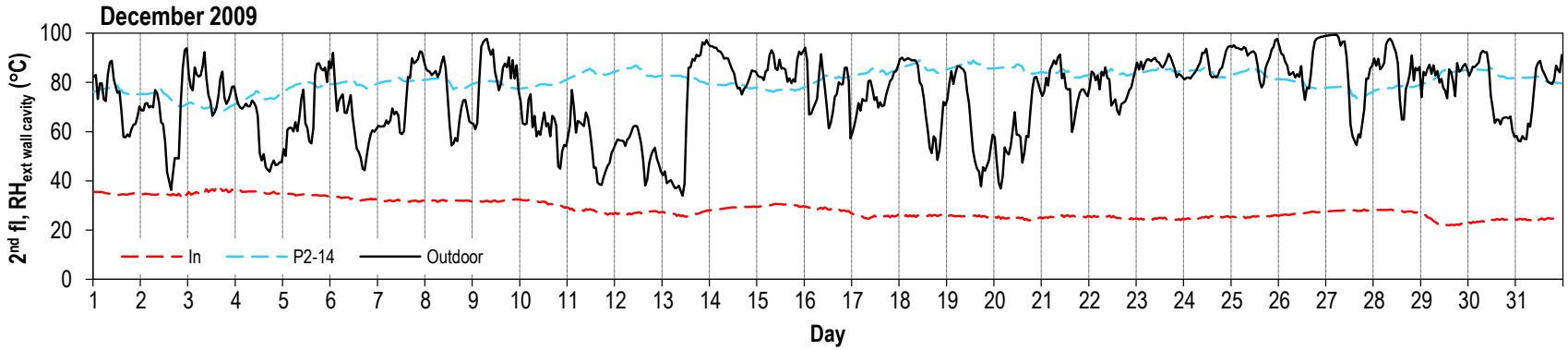


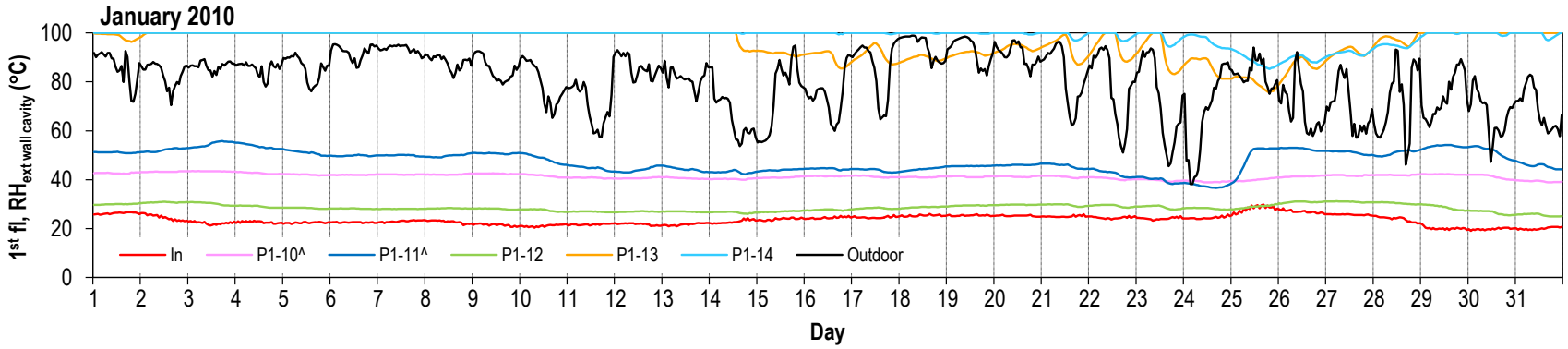



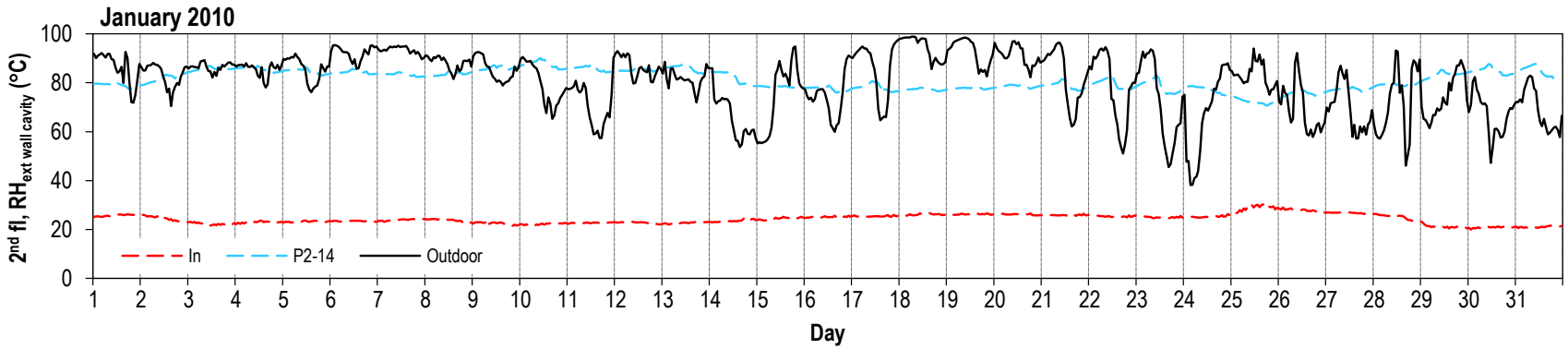



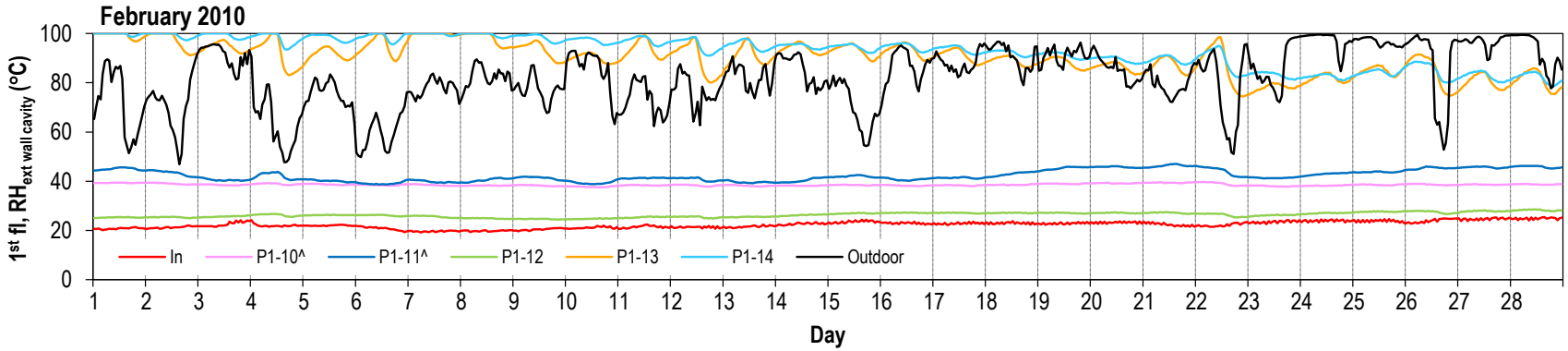

October 2009
In
P2-14
Outdoor
2nd fl, RHext wall cavity (°C)
Day
November 2009
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
1st fl, RHext wall cavity (°C)
Day
November 2009
In
P2-14
Outdoor
2nd fl, RHext wall cavity (°C)
Day

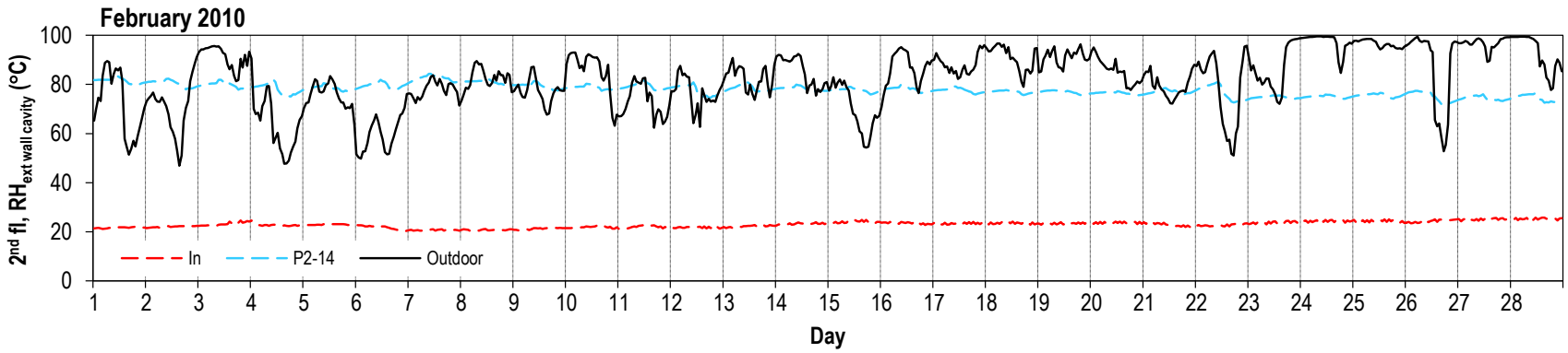

December 2009
1st fl, RHext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day

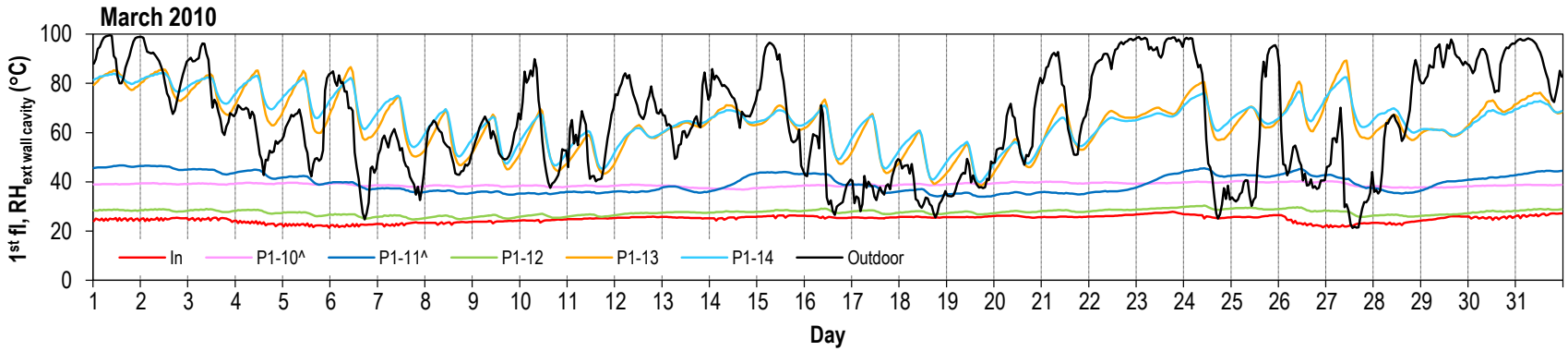

December 2009
2nd fl, RHext wall cavity (°C)
In
P2-14
Outdoor
Day

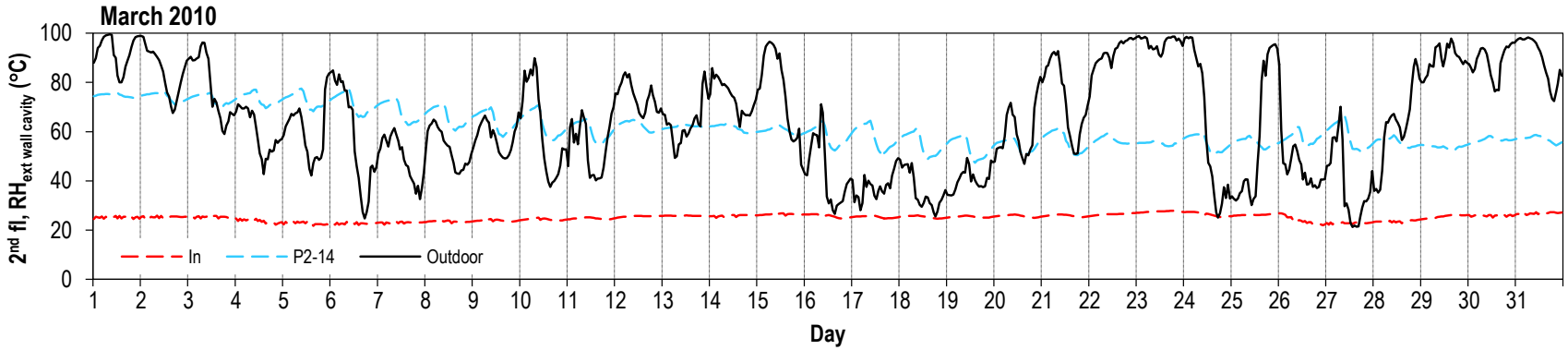

January 2010
1st fl, RHext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day

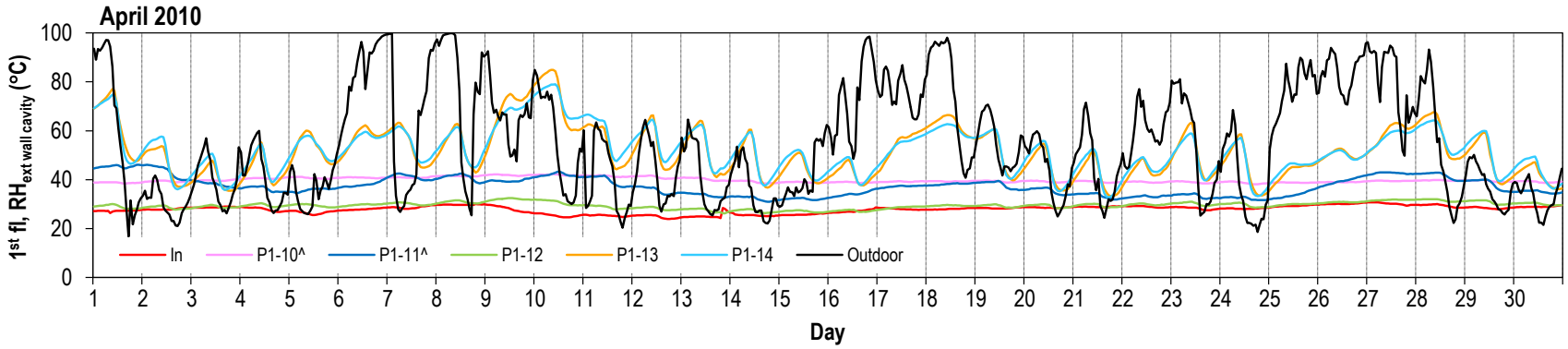

January 2010
2nd fl, RHext wall cavity (°C)
In
P2-14
Outdoor
Day

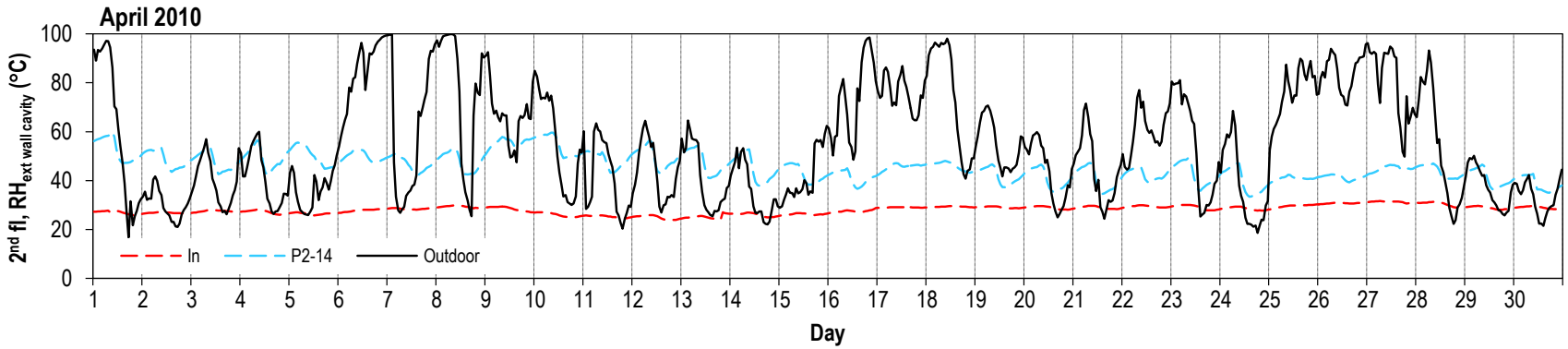

February 2010
1st fl, RHext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day

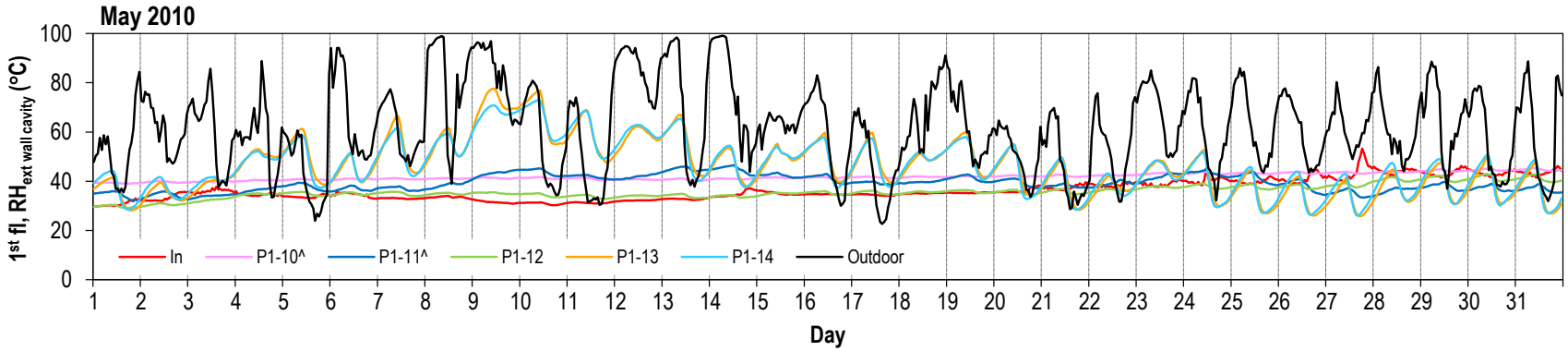

February 2010
2nd fl, RHext wall cavity (°C)
In
P2-14
Outdoor
Day

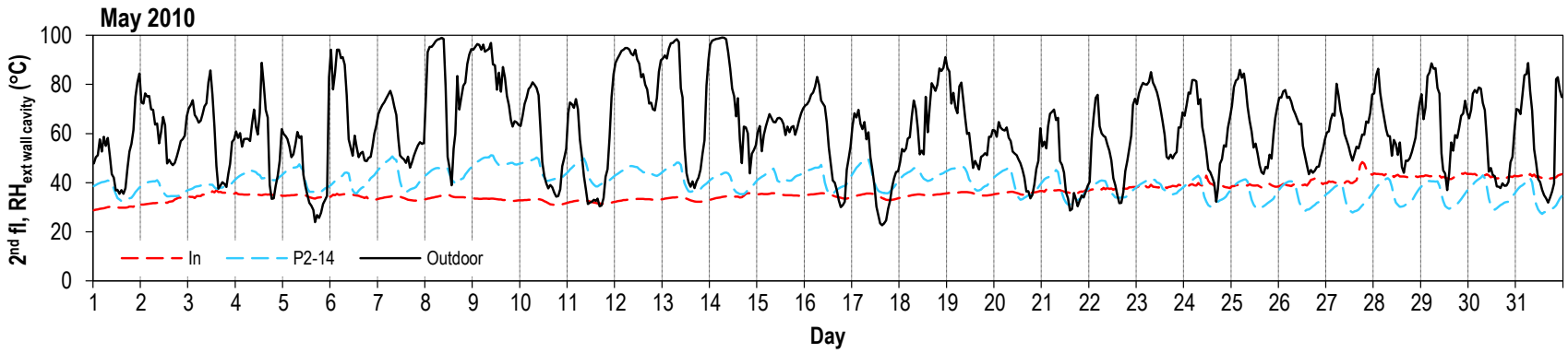

March 2010
1st fl, RHext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day

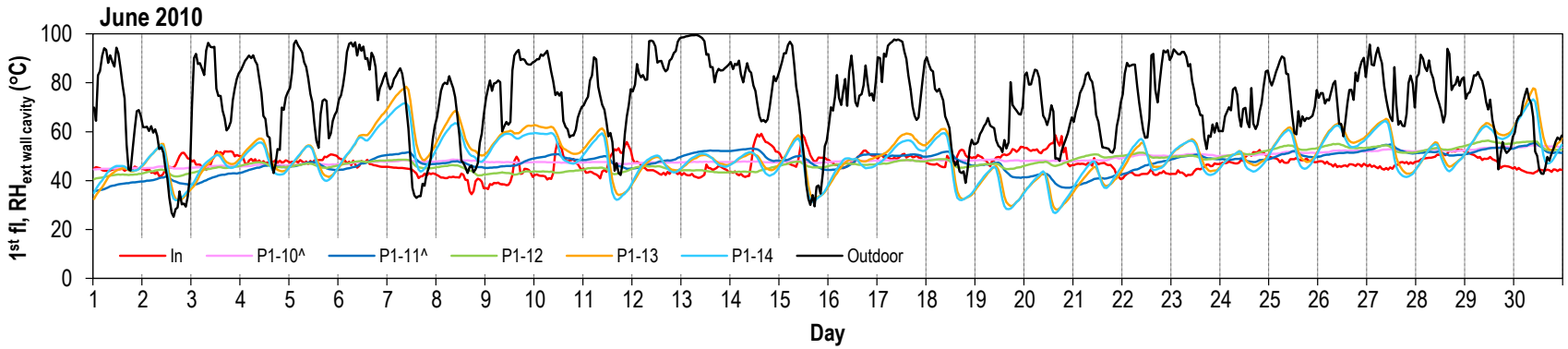

March 2010
2nd fl, RHext wall cavity (°C)
In
P2-14
Outdoor
Day

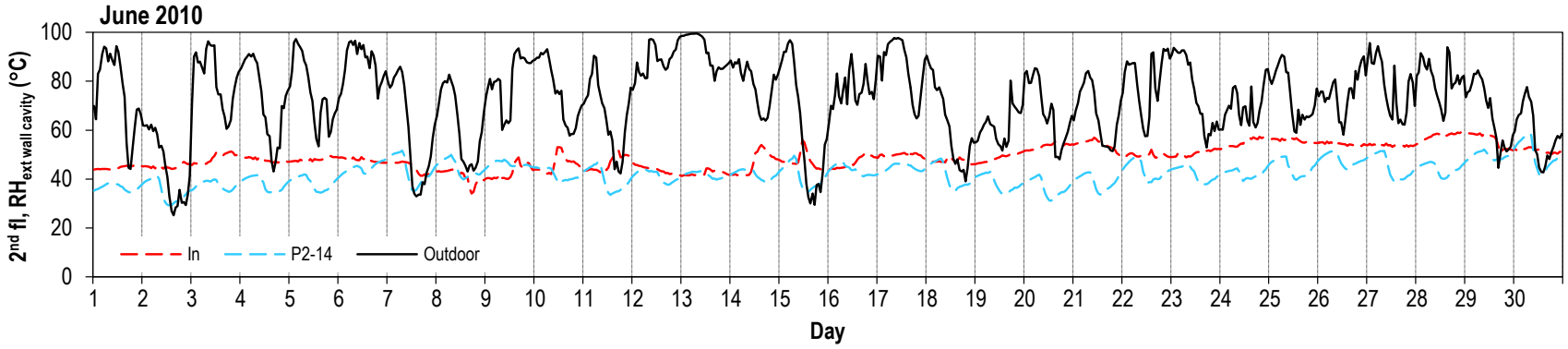

April 2010
1st fl, RHext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day

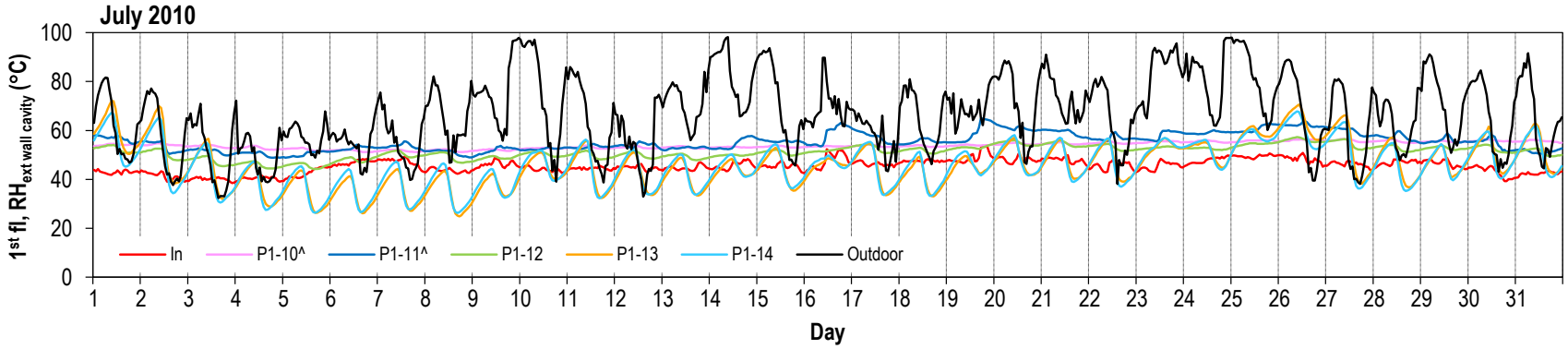

April 2010
2nd fl, RHext wall cavity (°C)
In
P2-14
Outdoor
Day

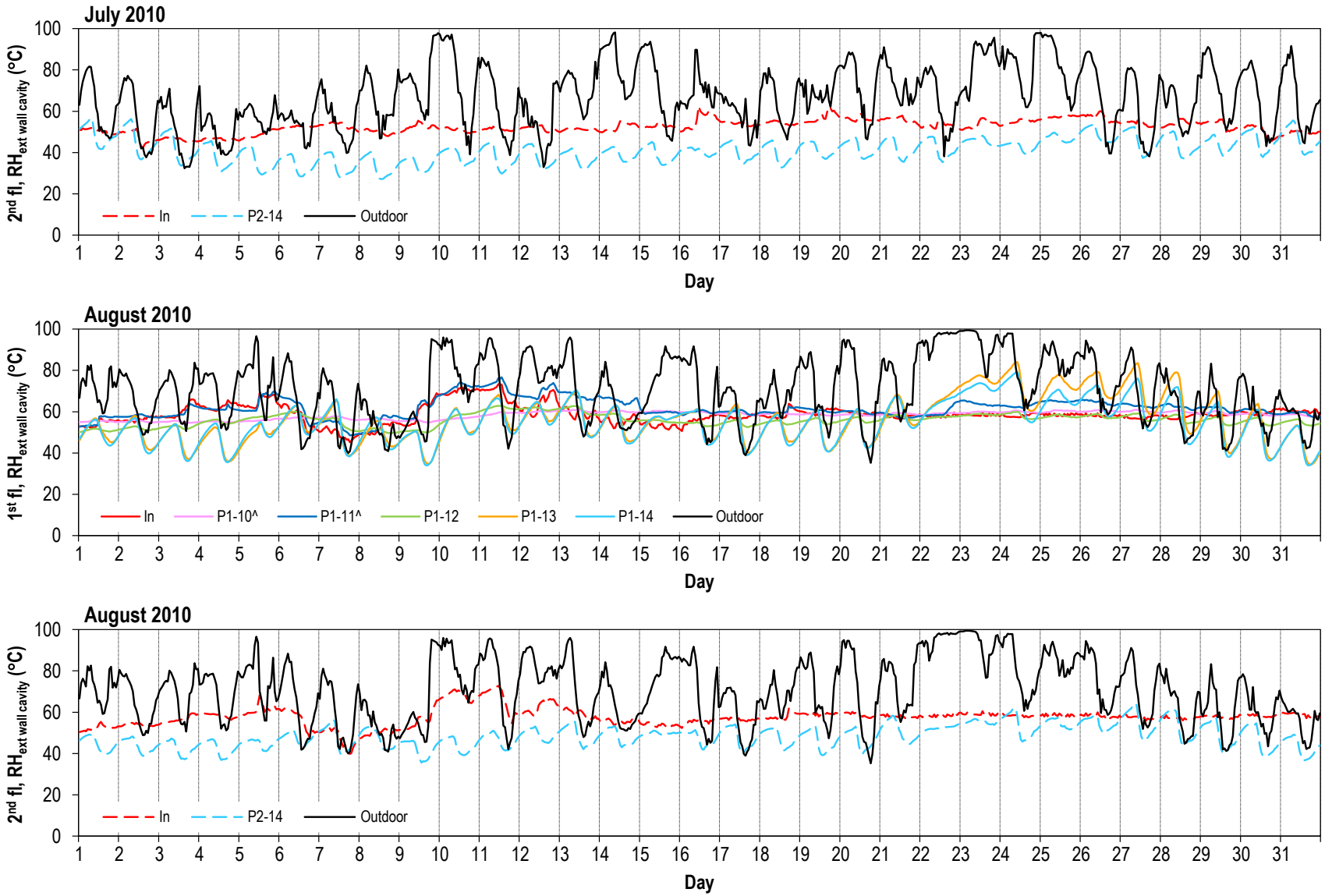

May 2010
1st fl, RHext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day


May 2010
2nd fl, RHext wall cavity (°C)
In
P2-14
Outdoor
Day

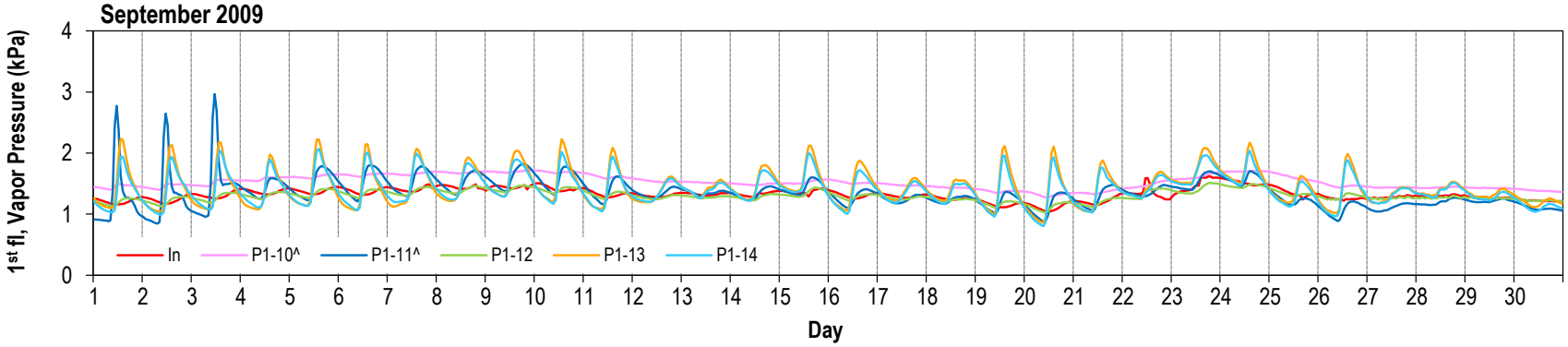

June 2010
1st fl, RHext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day

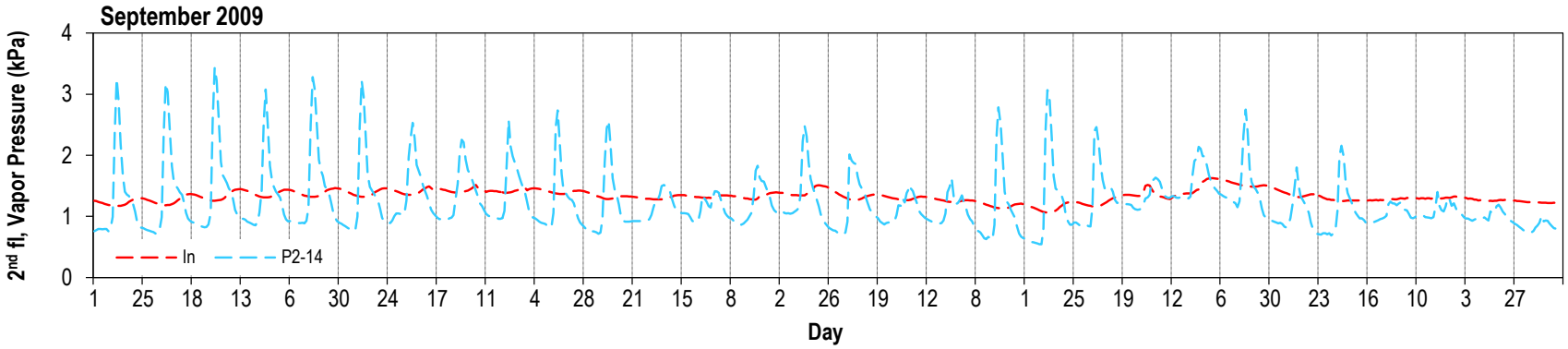

June 2010
2nd fl, RHext wall cavity (°C)
In
P2-14
Outdoor
Day

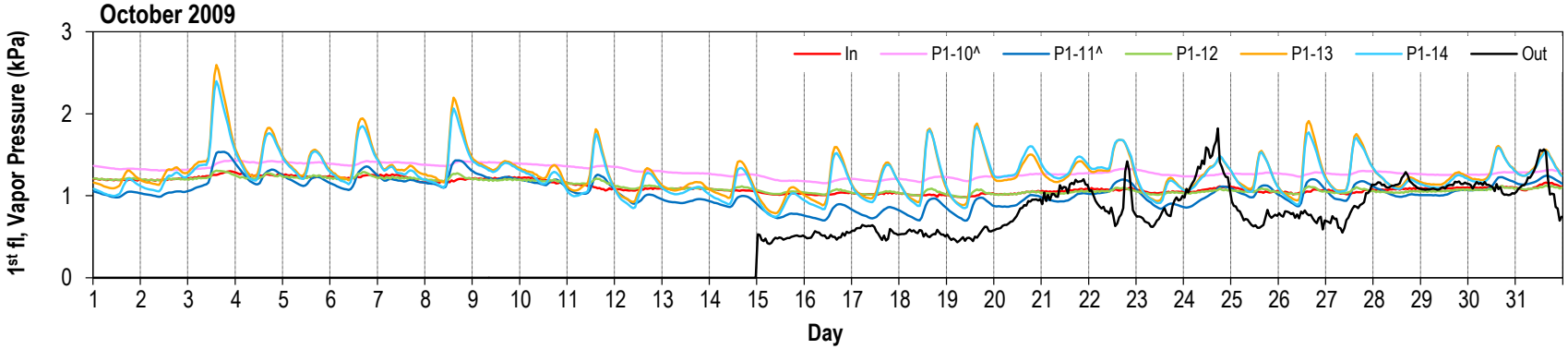

July 2010
1st fl, RHext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day

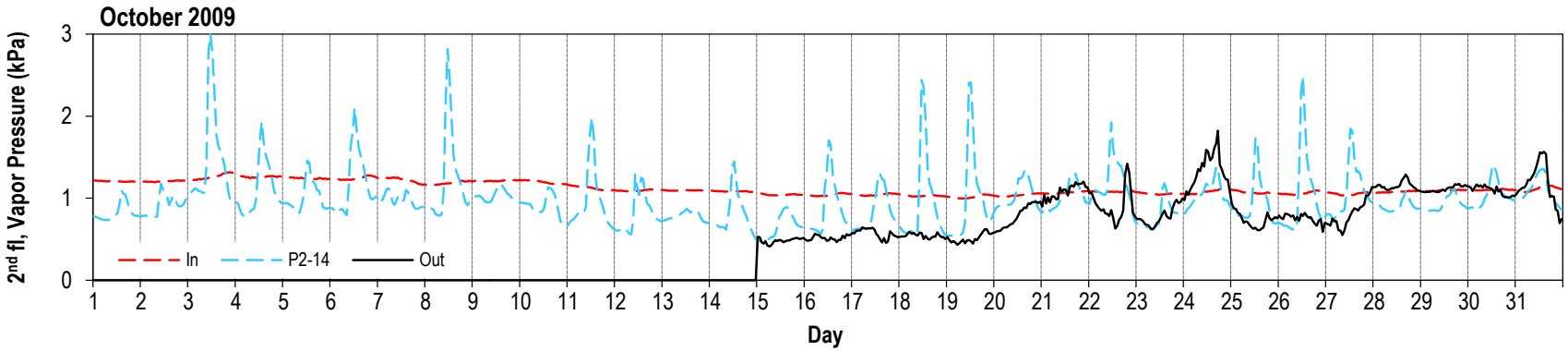

July 2010
2nd fl, RHext wall cavity (°C)
In
P2-14
Outdoor
Day
August 2010
1st fl, RHext wall cavity (°C)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Outdoor
Day
August 2010
2nd fl, RHext wall cavity (°C)
In
P2-14
Outdoor
Day

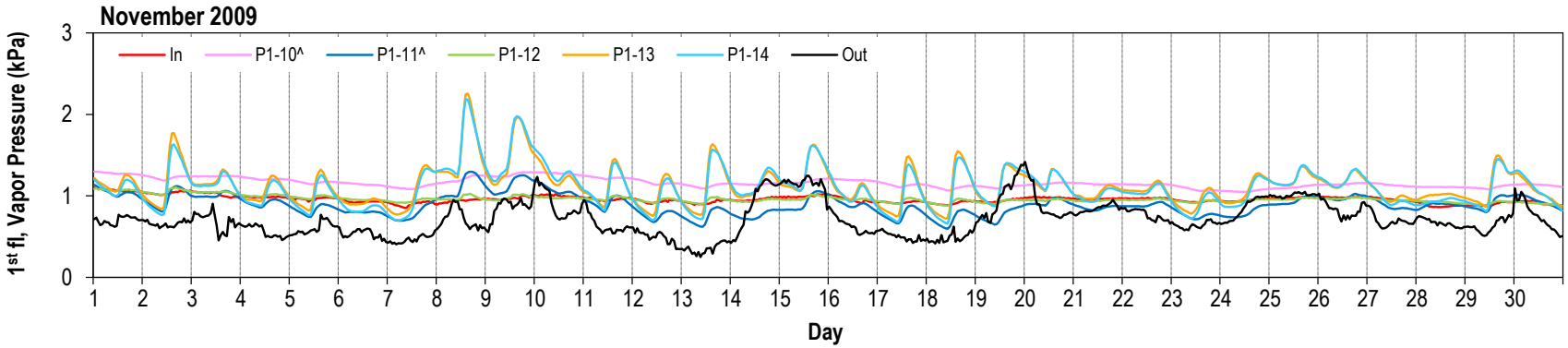
Water vapor pressure (kPa) at exterior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

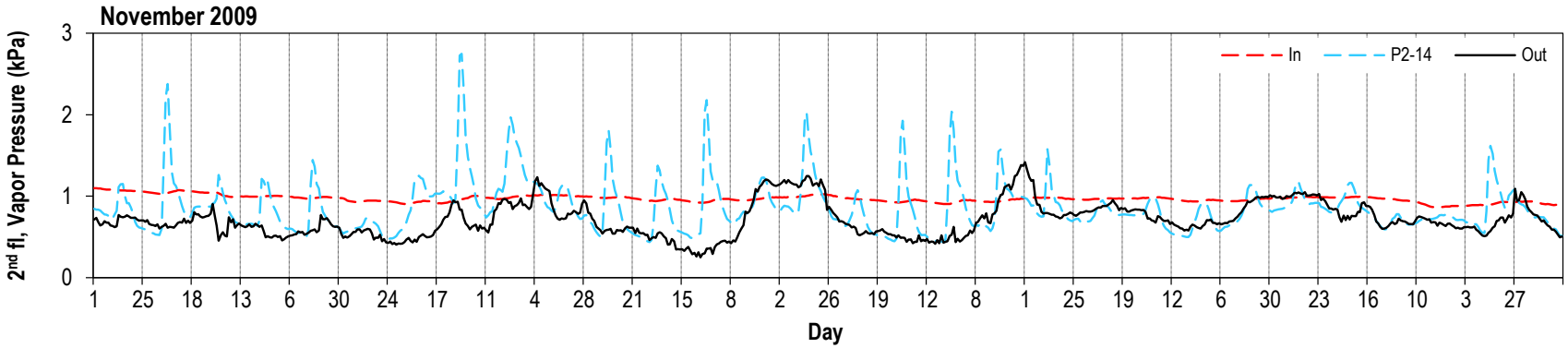


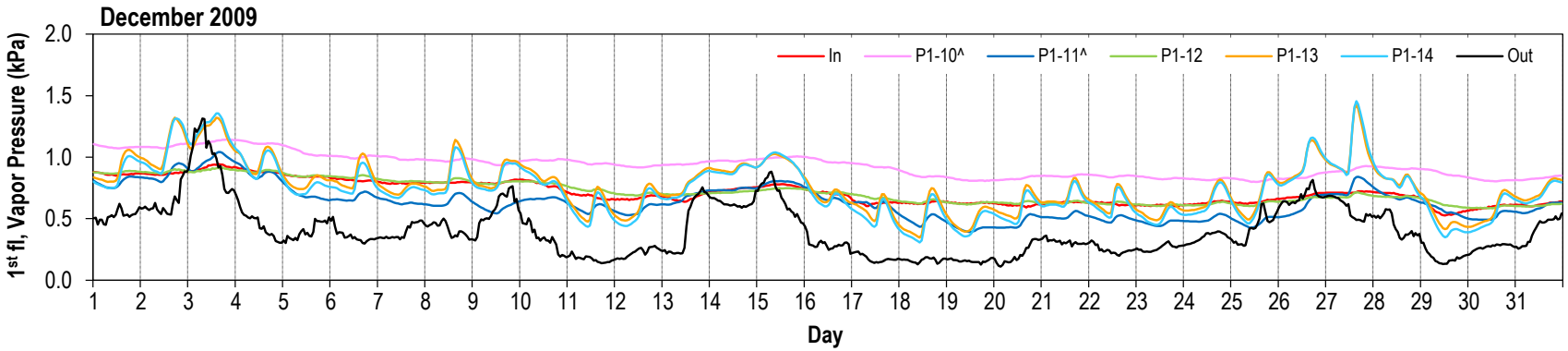



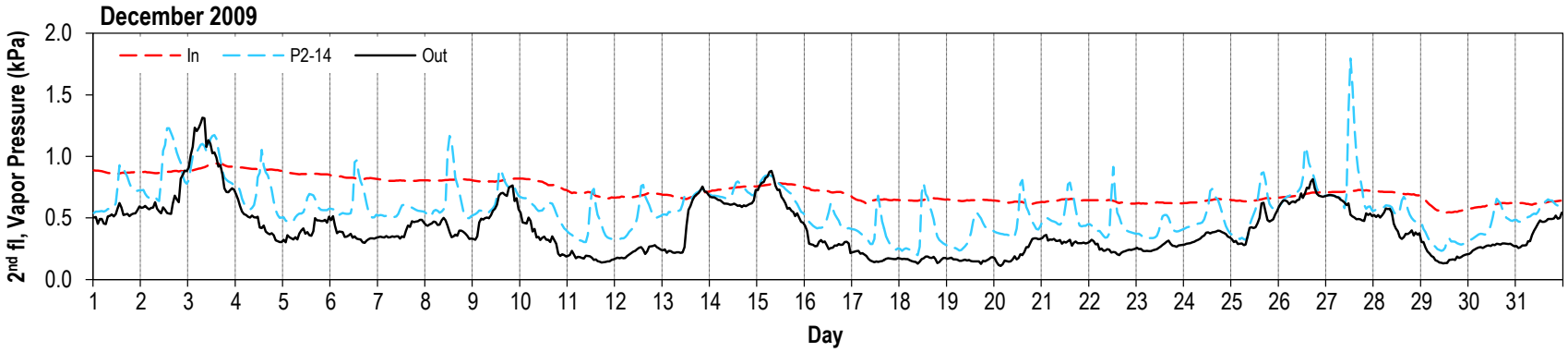



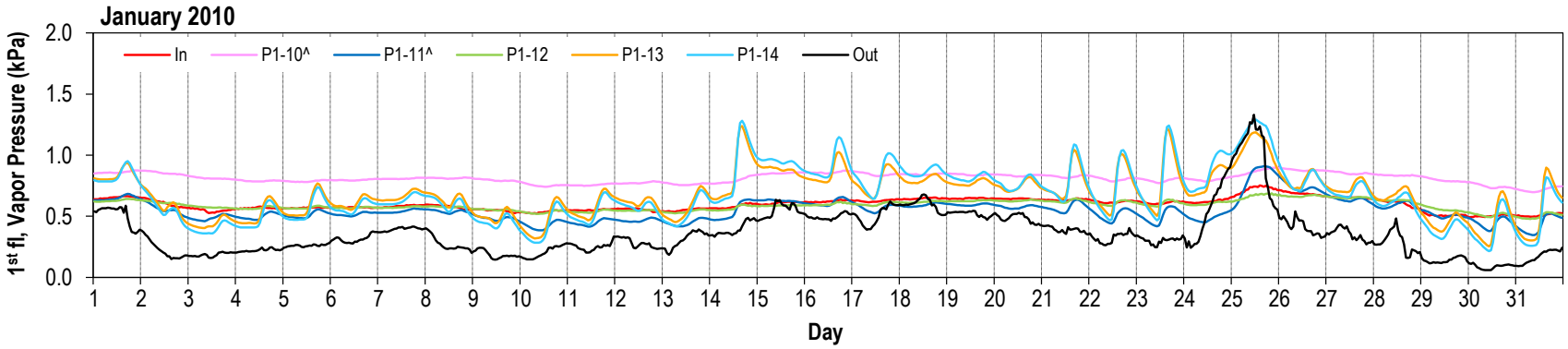

October 2009
2nd fl, Vapor Pressure (kPa)
In
P2-14
Out
Day

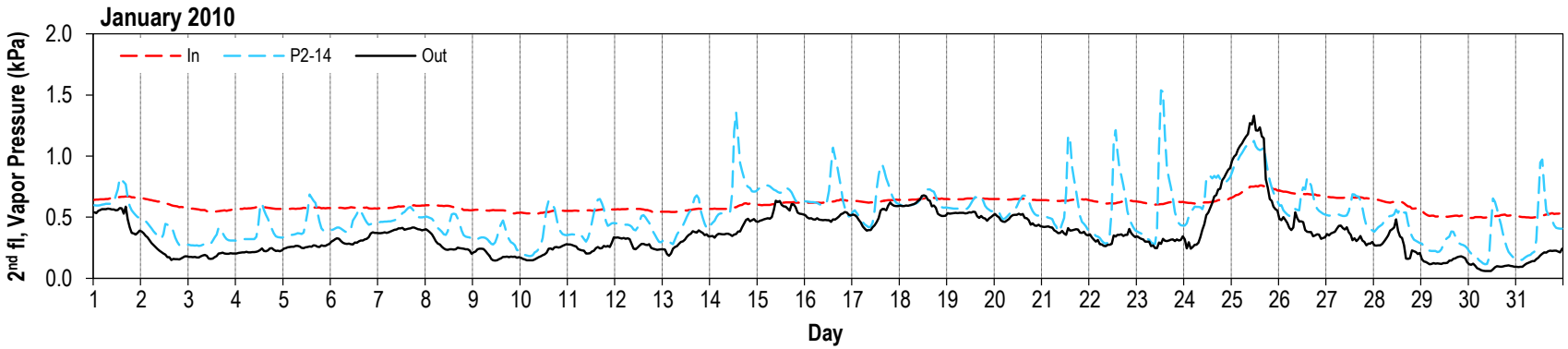

November 2009
1st fl, Vapor Pressure (kPa)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Out
Day

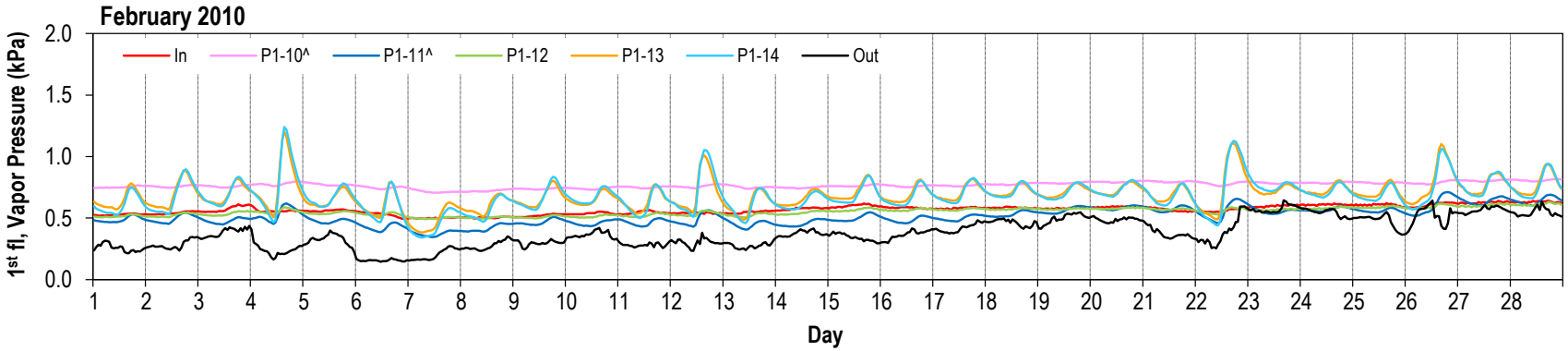

November 2009
2nd fl, Vapor Pressure (kPa)
In
P2-14
Out
Day

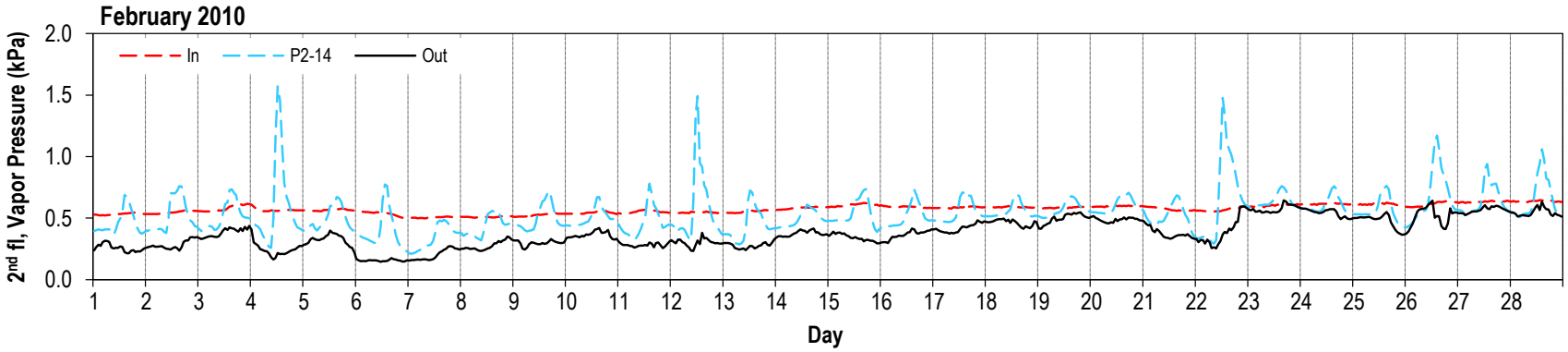

December 2009
1st fl, Vapor Pressure (kPa)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Out
Day

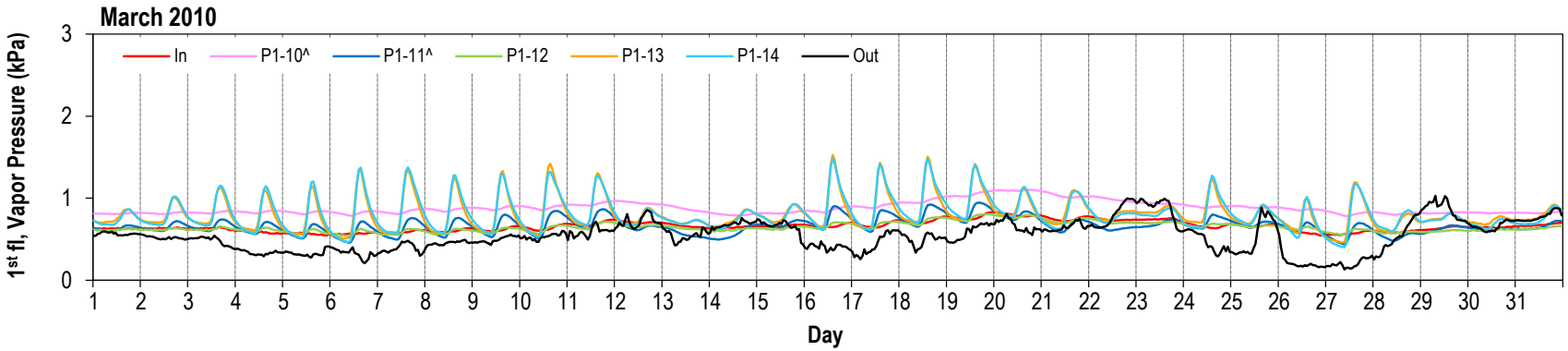

December 2009
2nd fl, Vapor Pressure (kPa)
In
P2-14
Out
Day

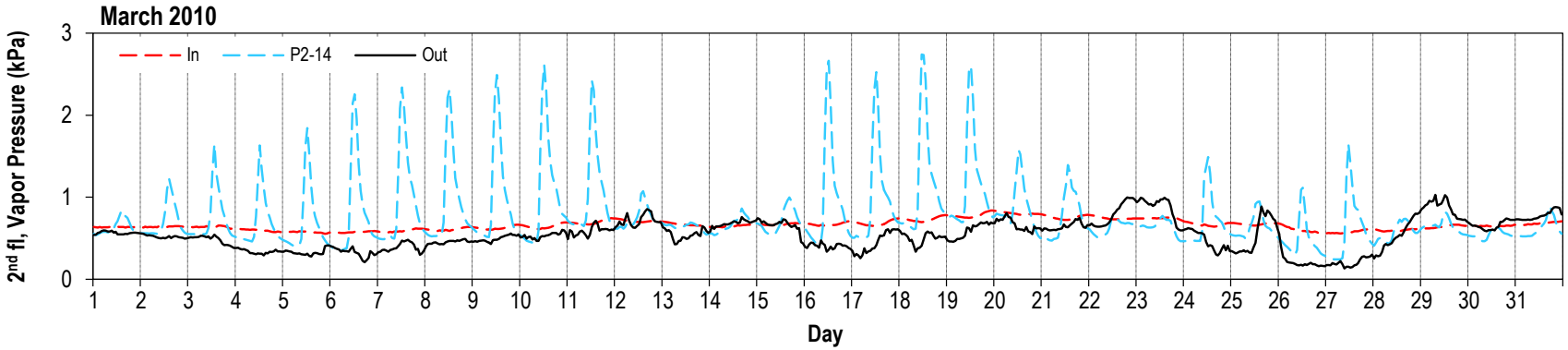

January 2010
1st fl, Vapor Pressure (kPa)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Out
Day

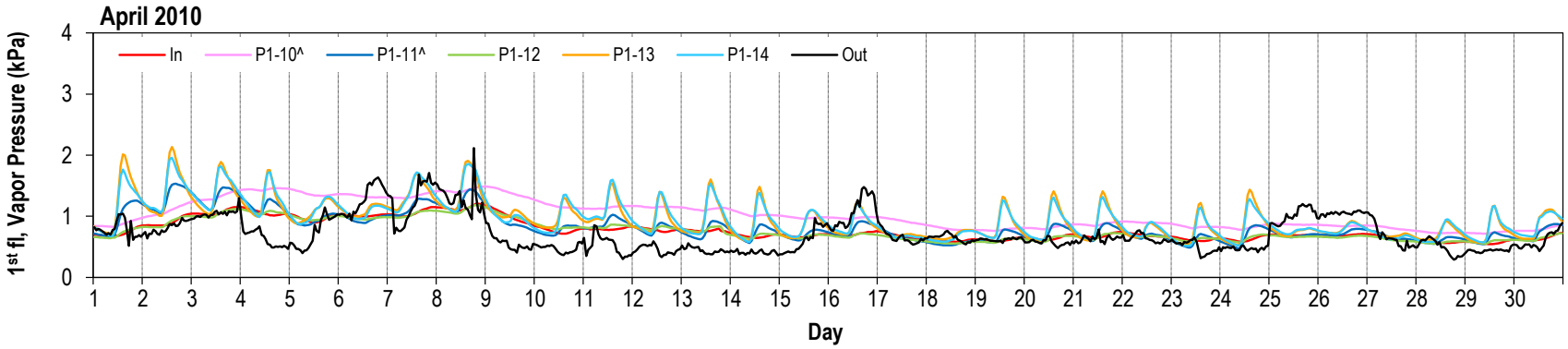

January 2010
In
P2-14
Out
2nd fl, Vapor Pressure (kPa)
Day

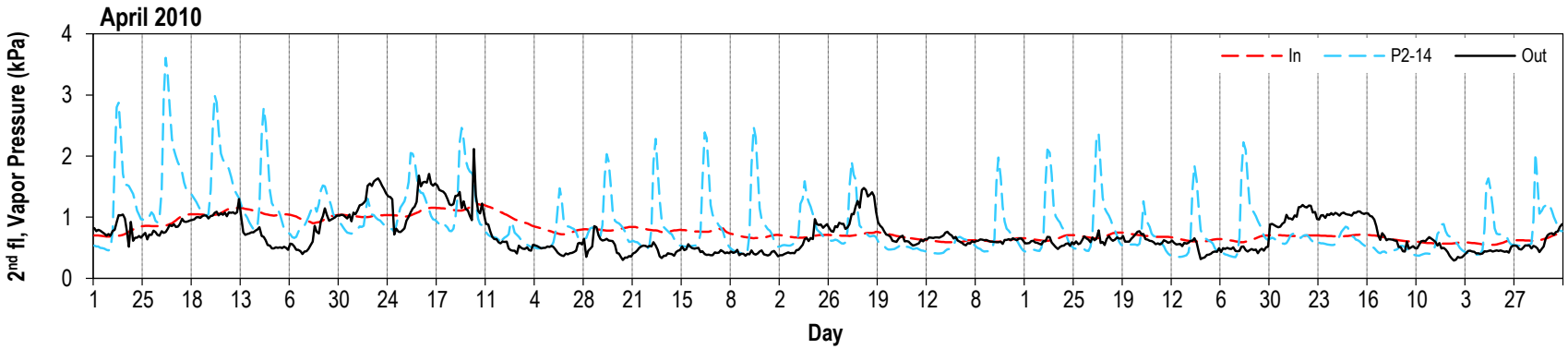

February 2010
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Out
1st fl, Vapor Pressure (kPa)
Day

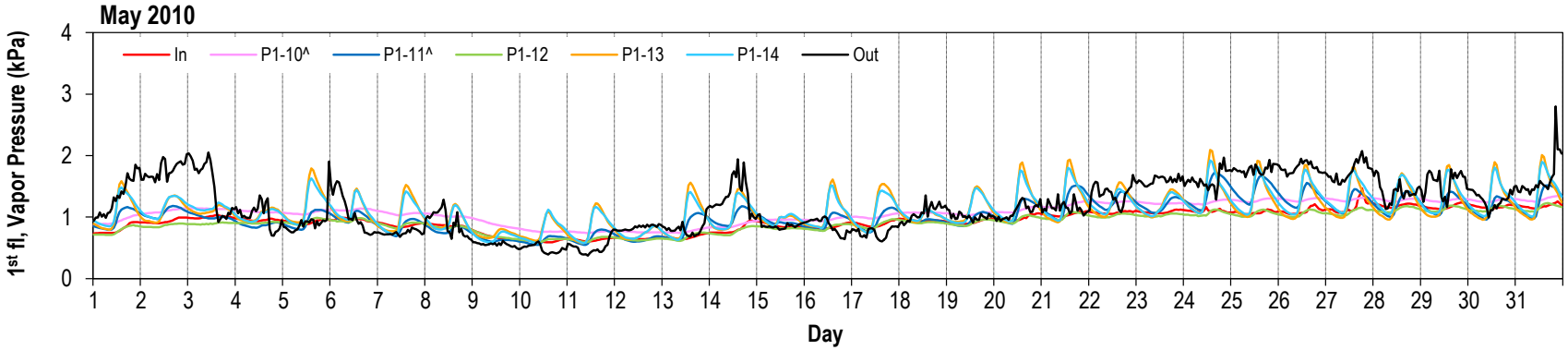

February 2010
In
P2-14
Out
2nd fl, Vapor Pressure (kPa)
Day

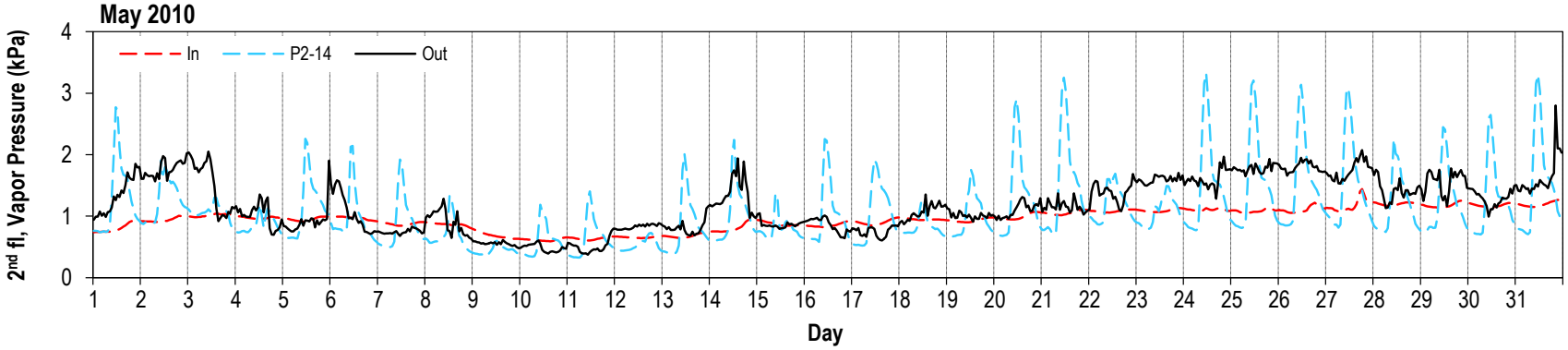

March 2010
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Out
1st fl, Vapor Pressure (kPa)
Day

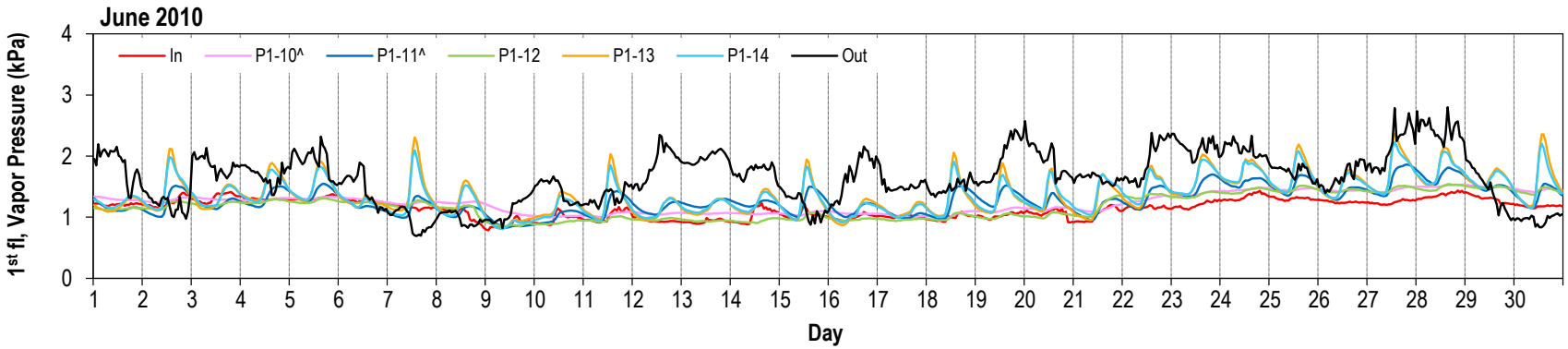

March 2010
In
P2-14
Out
2nd fl, Vapor Pressure (kPa)
Day

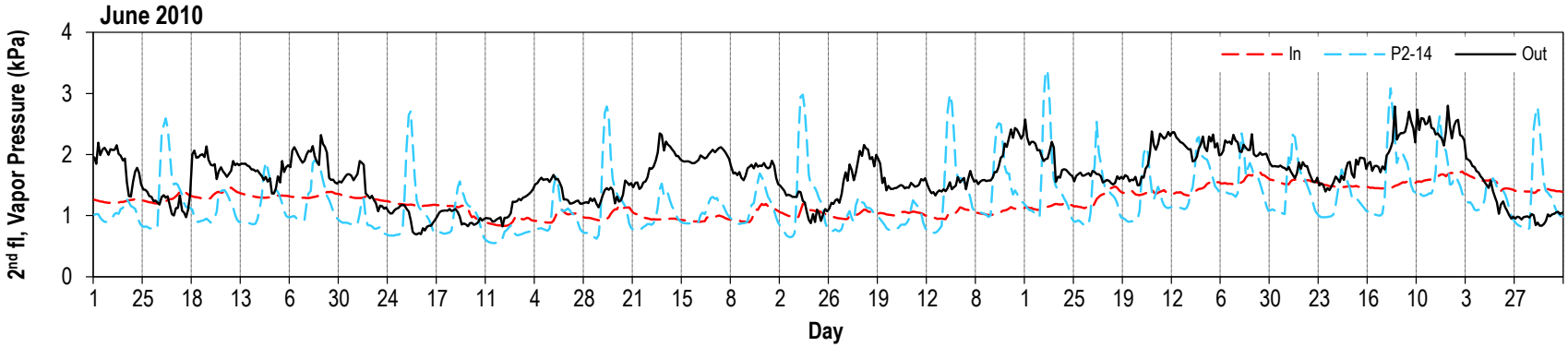

April 2010
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Out
1st fl, Vapor Pressure (kPa)
Day

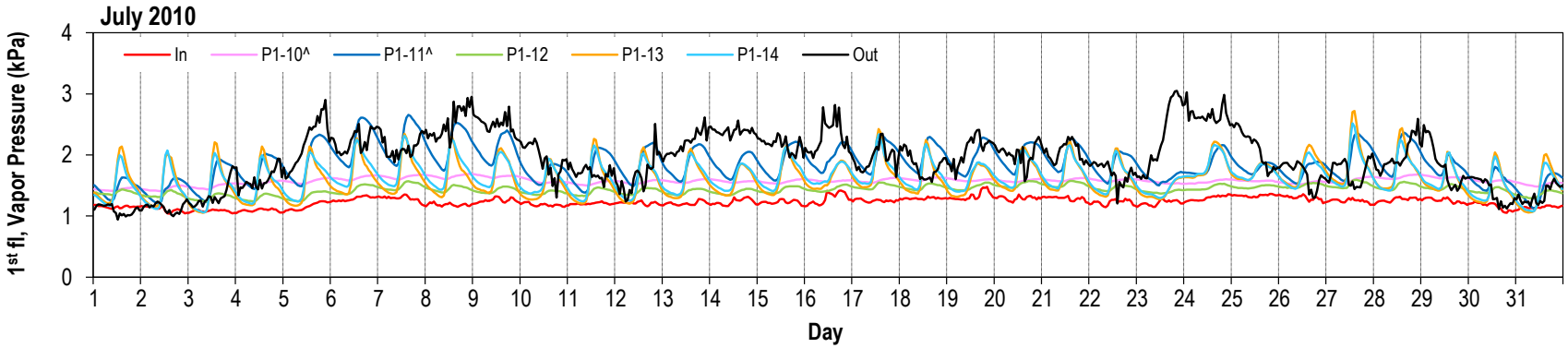

April 2010
2nd fl, Vapor Pressure (kPa)
In
P2-14
Out
Day

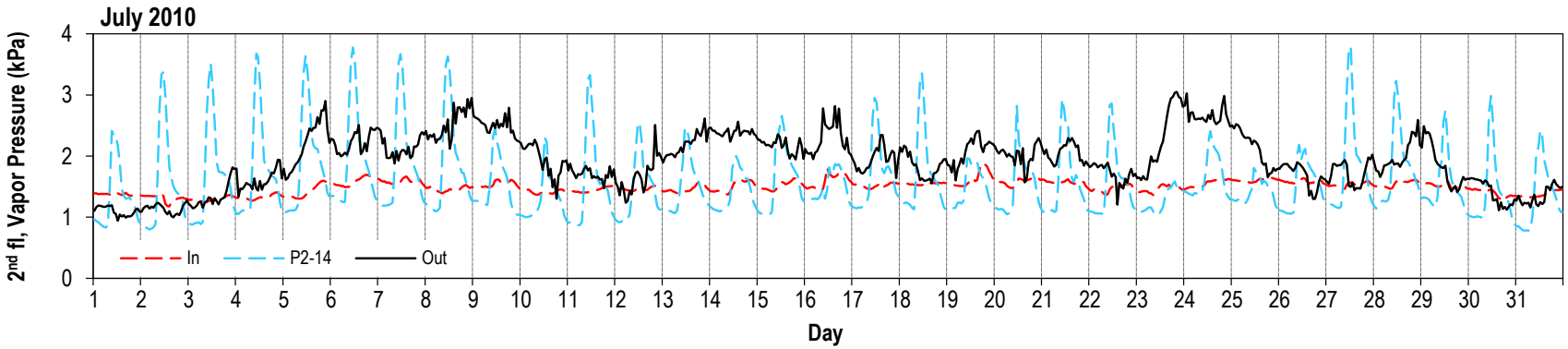

May 2010
1st fl, Vapor Pressure (kPa)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Out
Day

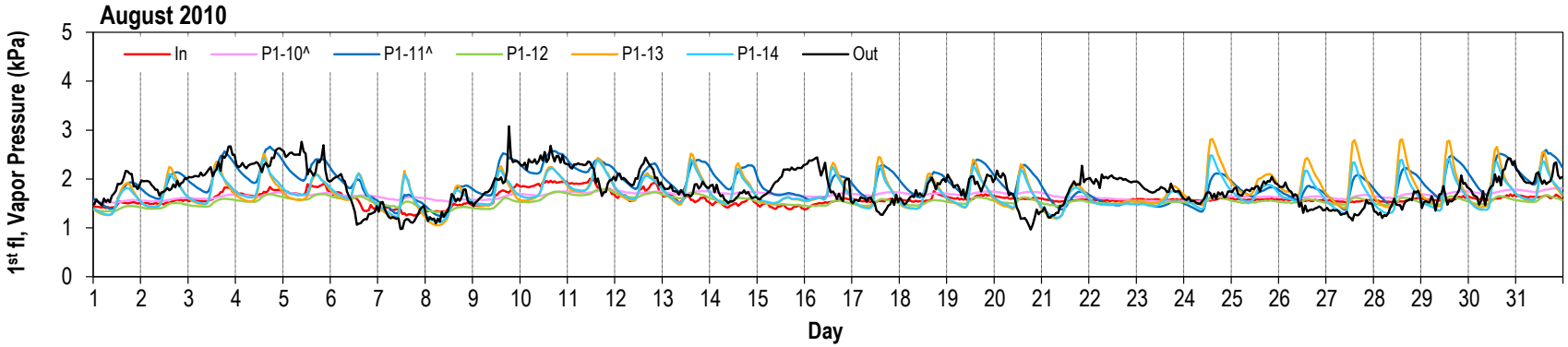

May 2010
2nd fl, Vapor Pressure (kPa)
In
P2-14
Out
Day

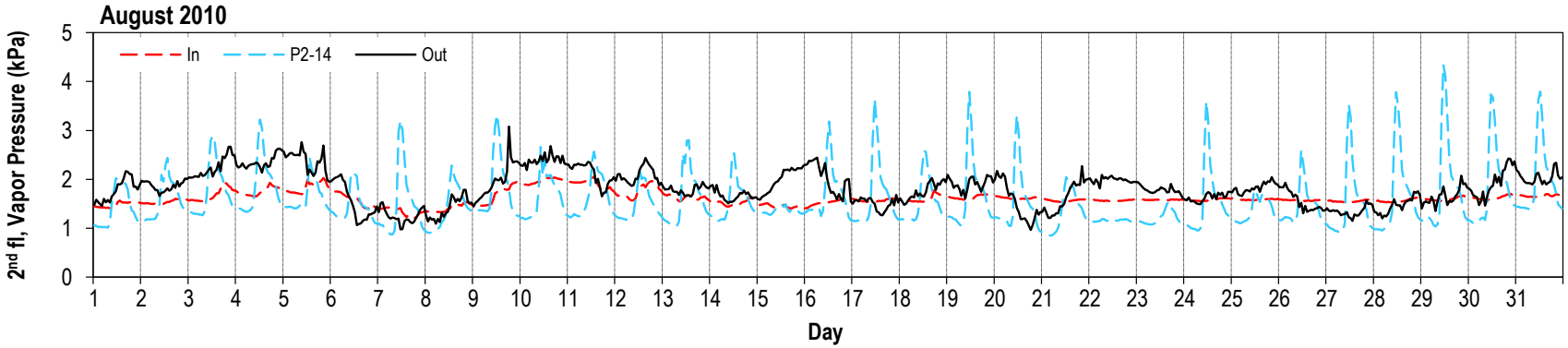

June 2010
1st fl, Vapor Pressure (kPa)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Out
Day


June 2010
2nd fl, Vapor Pressure (kPa)
In
P2-14
Out
Day

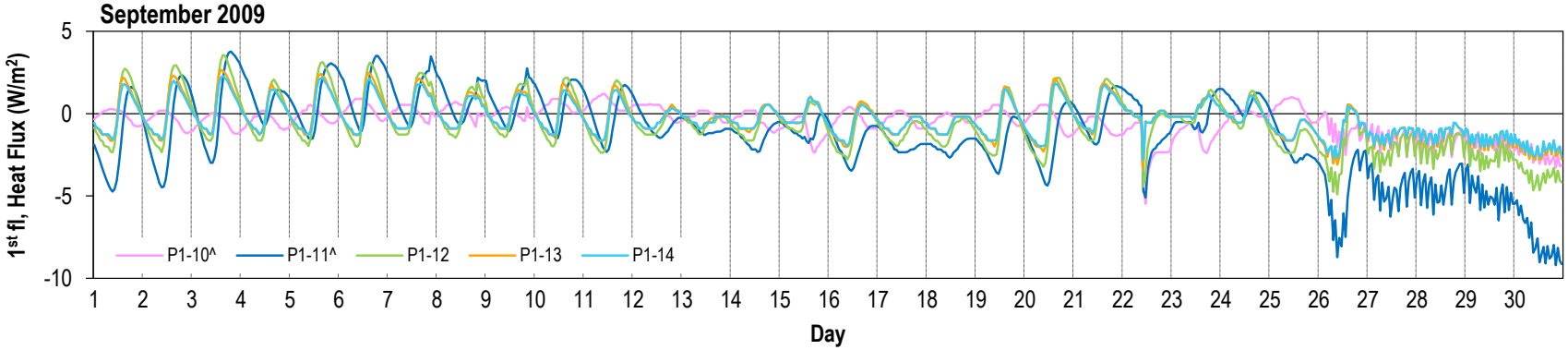

July 2010
1st fl, Vapor Pressure (kPa)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Out
Day

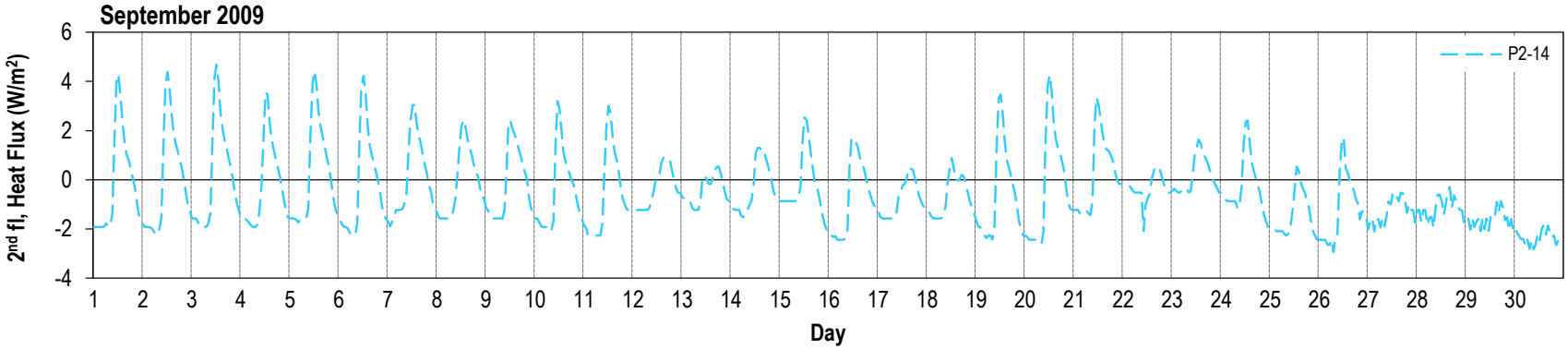

July 2010
2nd fl, Vapor Pressure (kPa)
In
P2-14
Out
Day

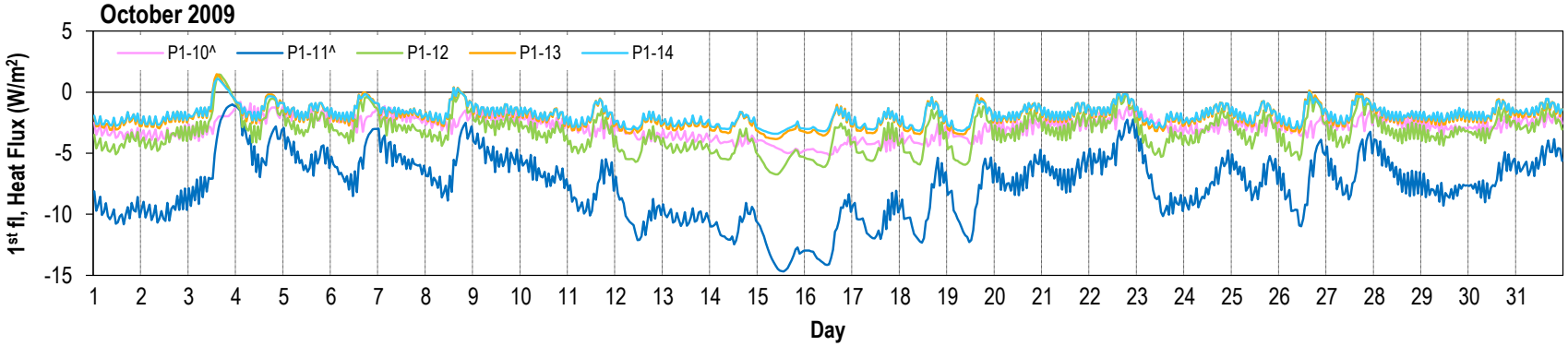

August 2010
1st fl, Vapor Pressure (kPa)
In
P1-10^
P1-11^
P1-12
P1-13
P1-14
Out
Day

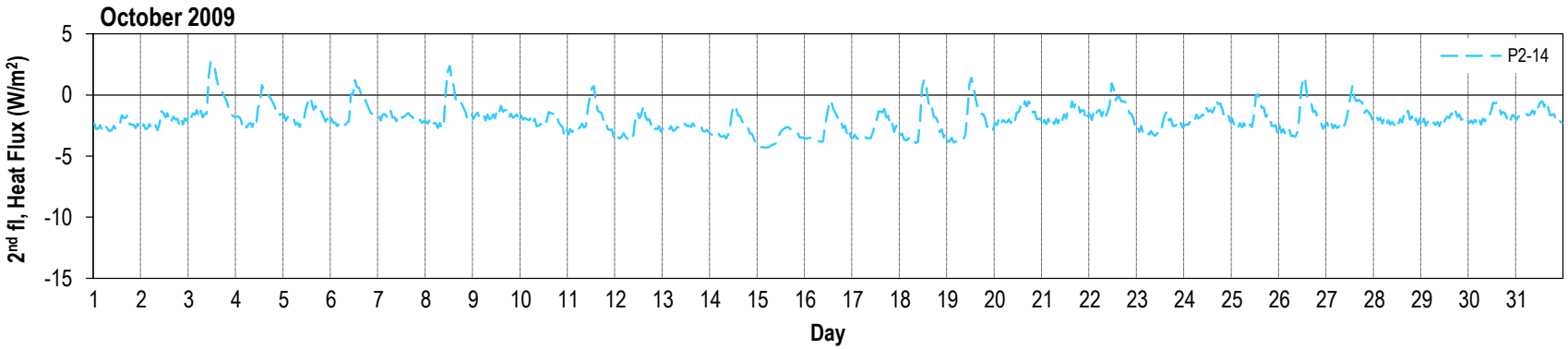

August 2010
2nd fl, Vapor Pressure (kPa)
In
P2-14
Out
Day

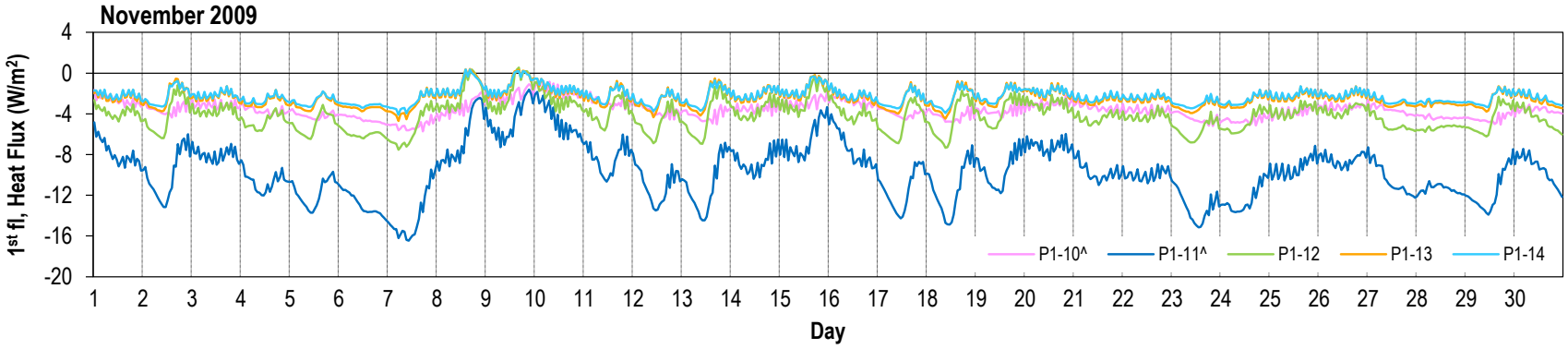
Heat flux (W/m$^2$) thru interior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

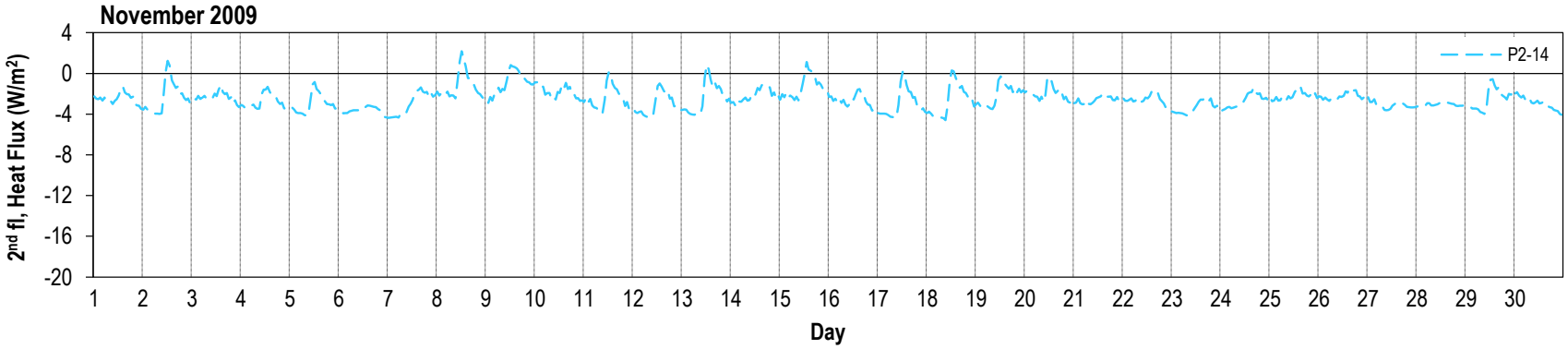


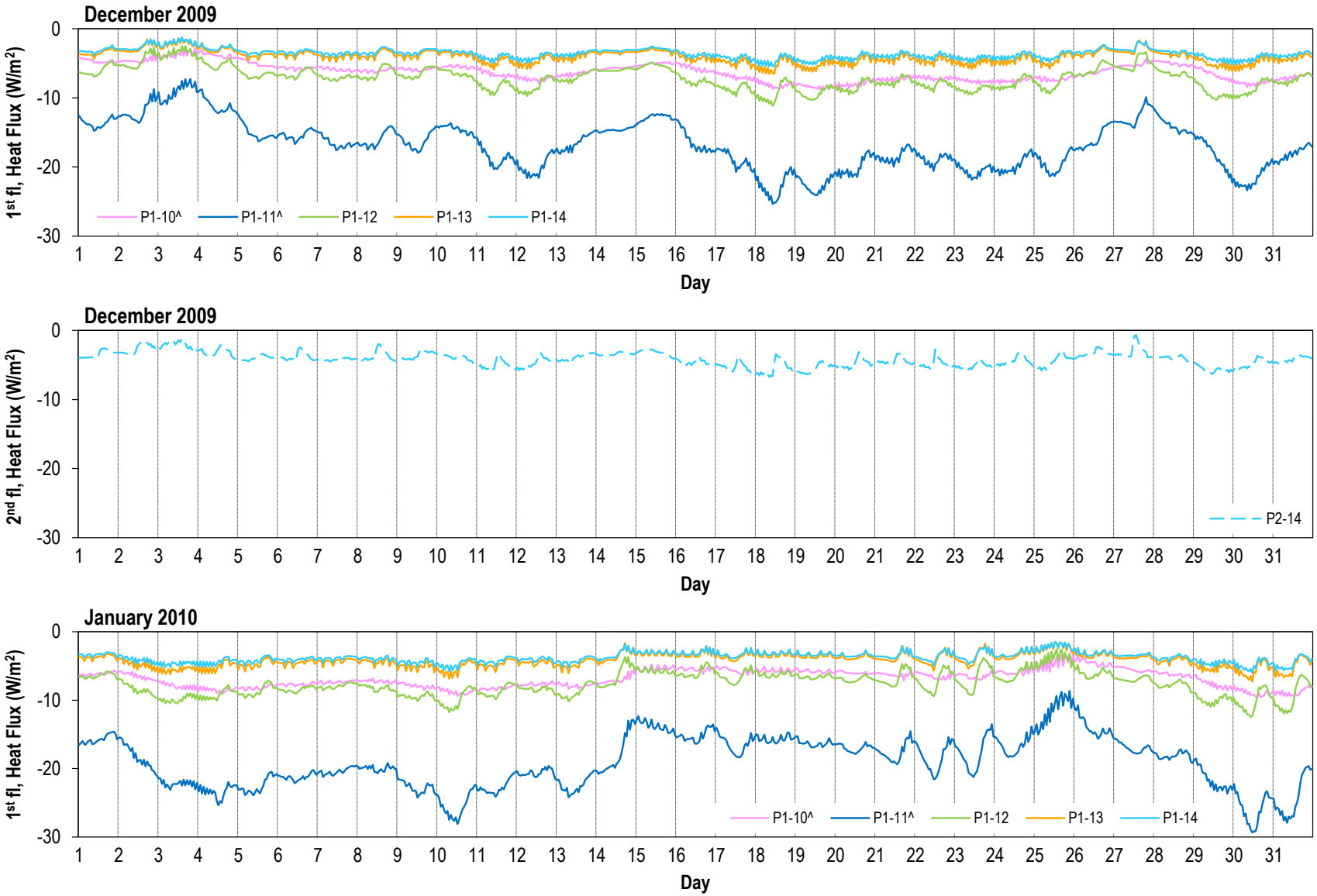



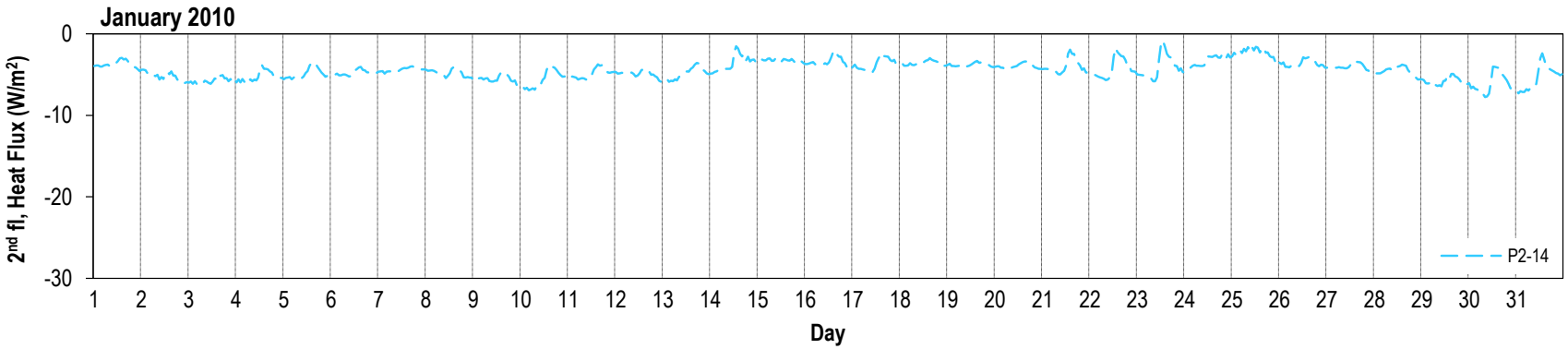



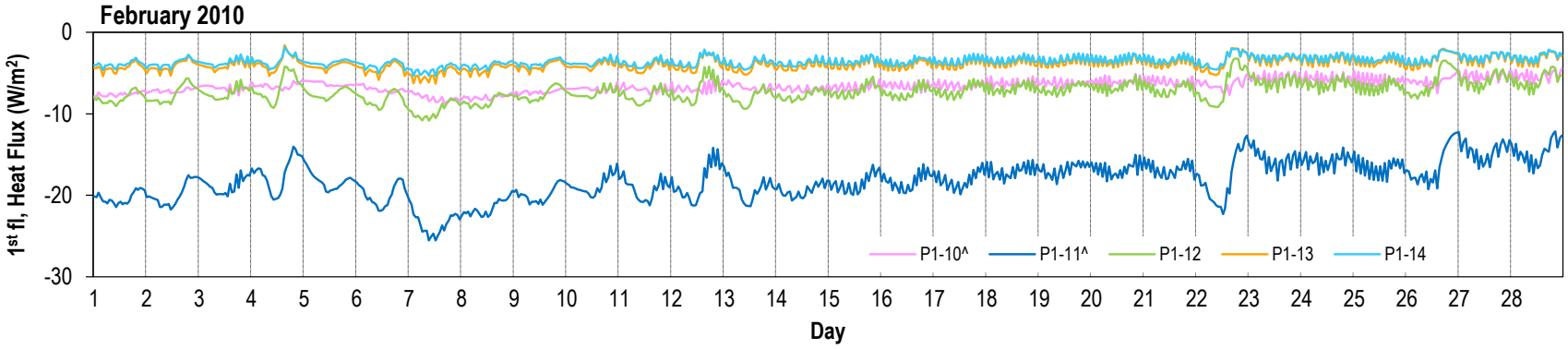

October 2009
2nd fl, Heat Flux (W/m2)
5
0
-5
-10
-15
P2-14
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

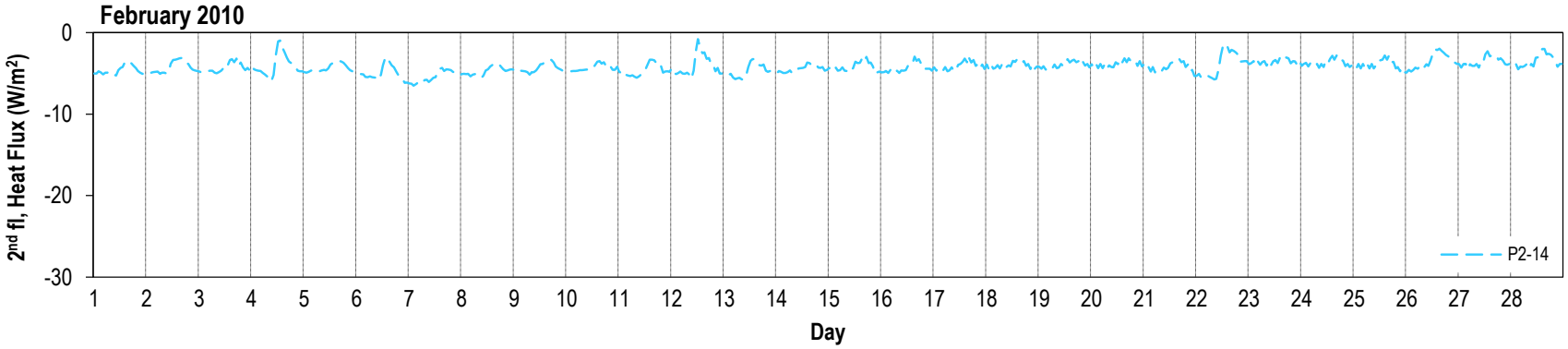

November 2009
1st fl, Heat Flux (W/m2)
4
0
-4
-8
-12
-16
-20
P1-10^
P1-11^
P1-12
P1-13
P1-14
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day

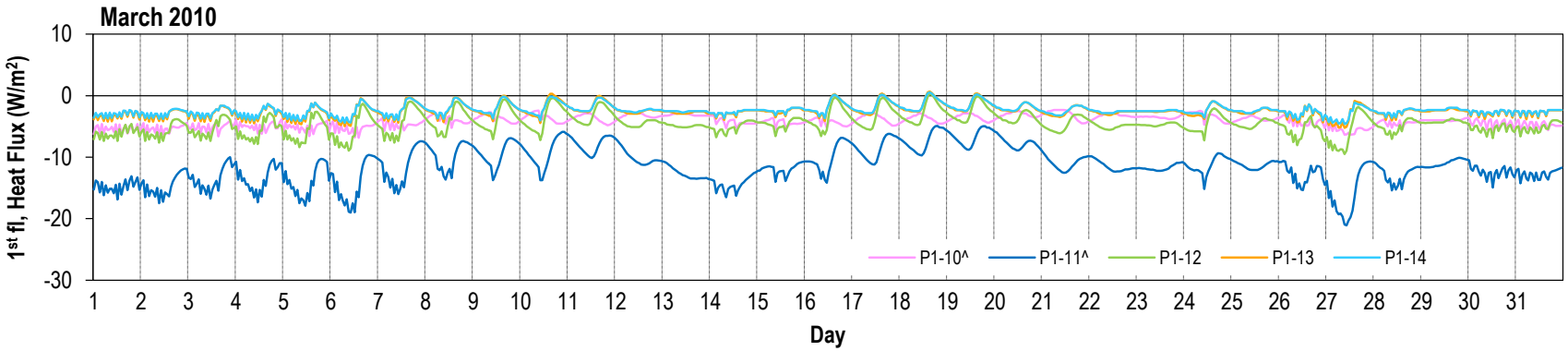

November 2009
2nd fl, Heat Flux (W/m2)
4
0
-4
-8
-12
-16
-20
P2-14
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day

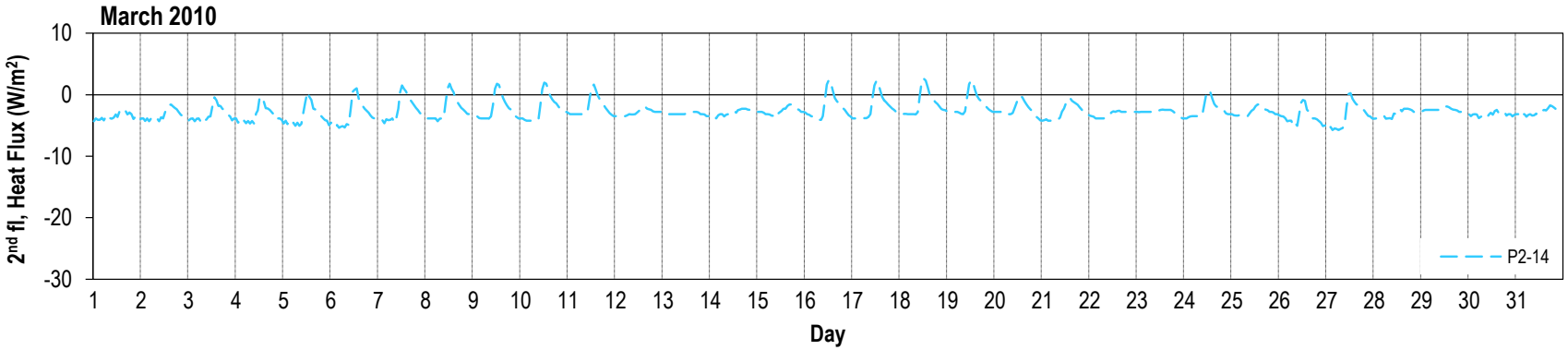

December 2009
1st fl, Heat Flux (W/m2)
0
-10
-20
-30
P1-10^
P1-11^
P1-12
P1-13
P1-14
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
December 2009
2nd fl, Heat Flux (W/m2)
0
-10
-20
-30
P2-14
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
January 2010
1st fl, Heat Flux (W/m2)
0
-10
-20
-30
P1-10^
P1-11^
P1-12
P1-13
P1-14
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

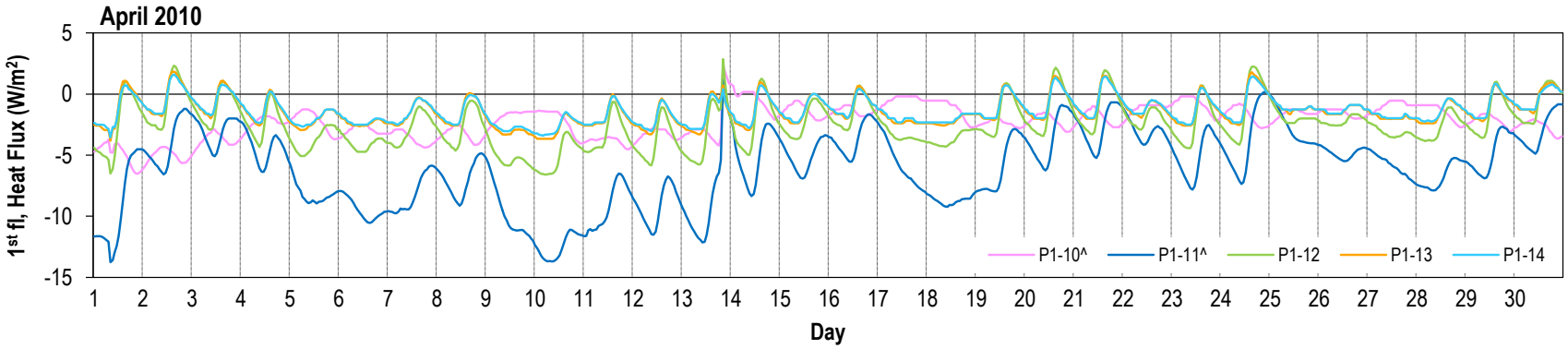

January 2010
2nd fl, Heat Flux (W/m2)
0
-10
-20
-30
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
P2-14

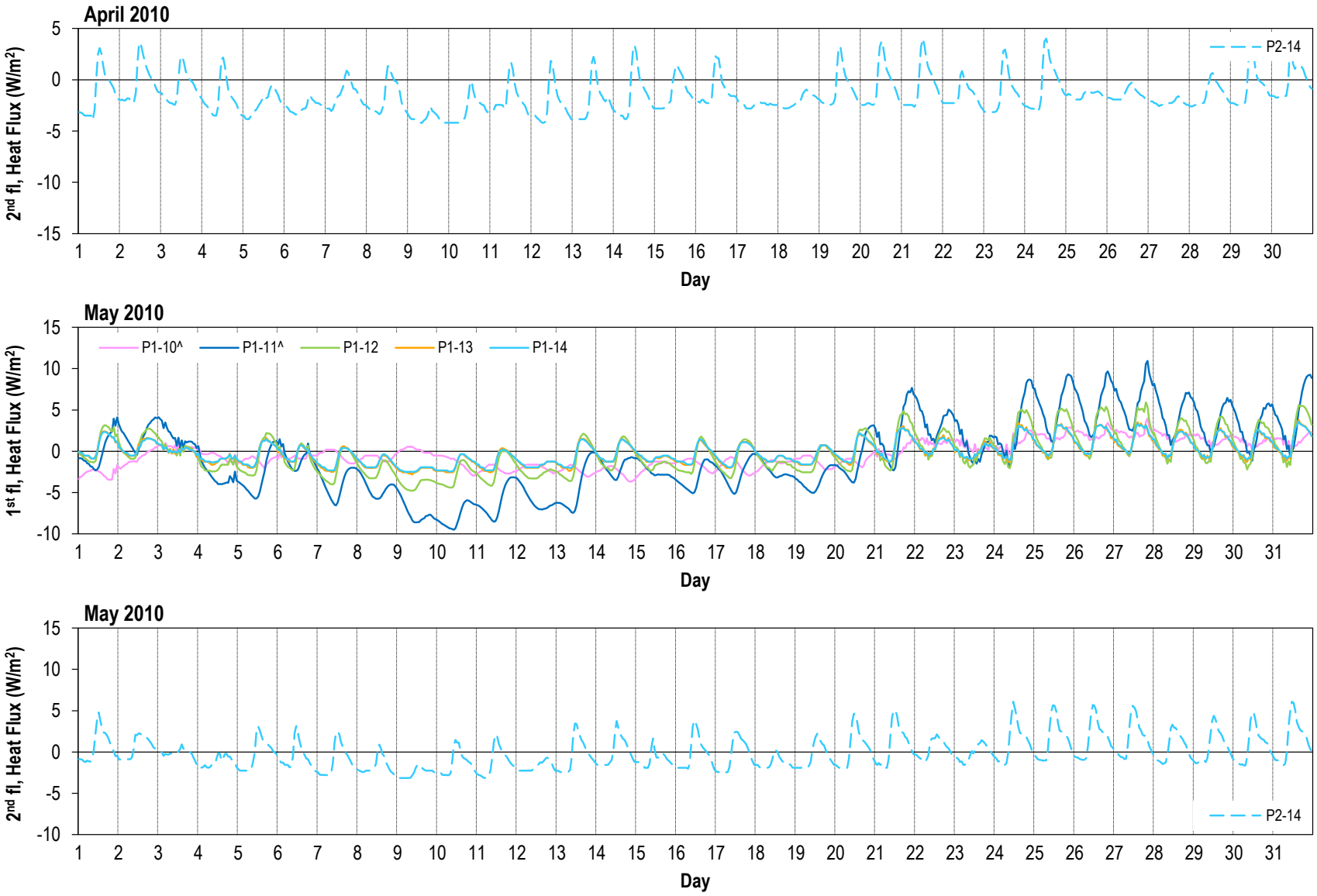

February 2010
1st fl, Heat Flux (W/m2)
0
-10
-20
-30
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day
P1-10^
P1-11^
P1-12
P1-13
P1-14

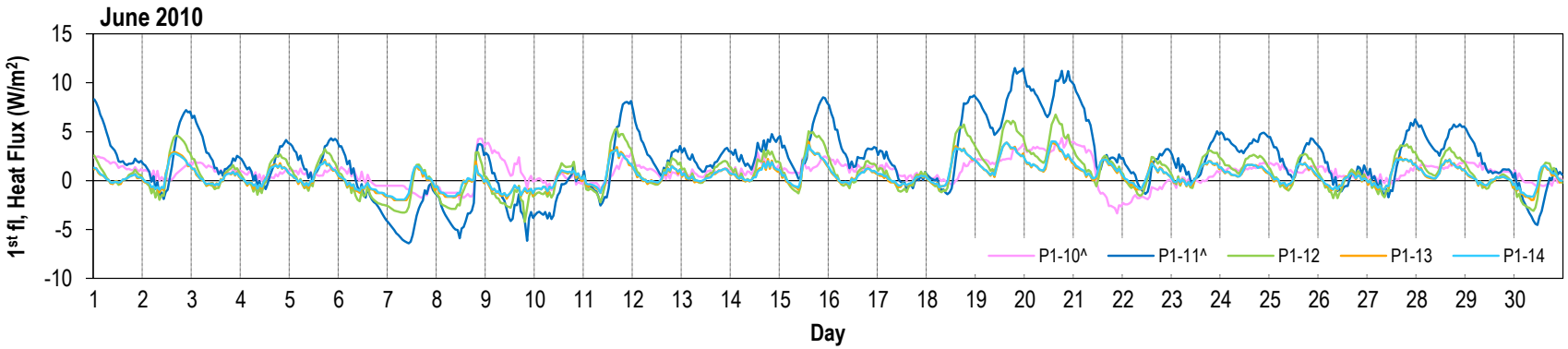

February 2010
2nd fl, Heat Flux (W/m2)
0
-10
-20
-30
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day
P2-14

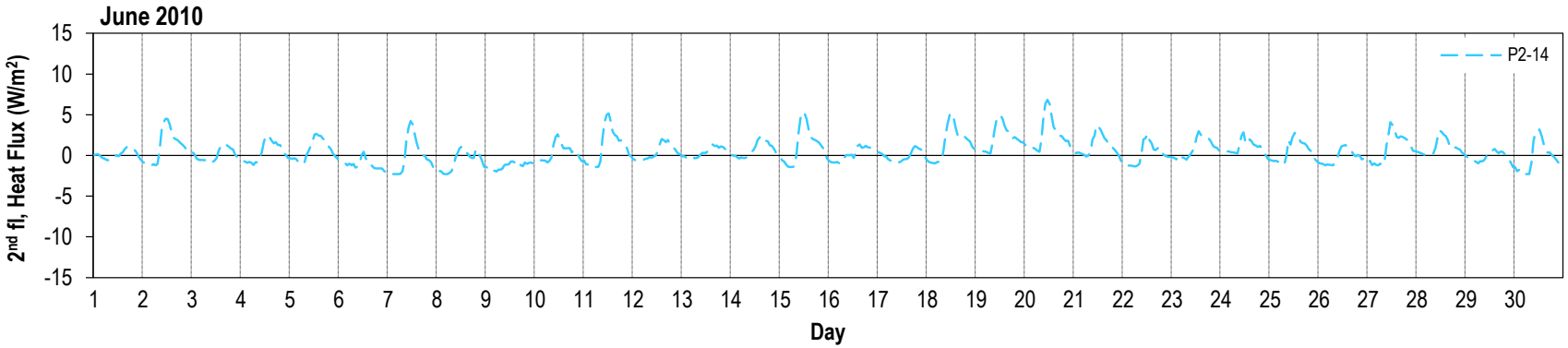

March 2010
1st fl, Heat Flux (W/m2)
10
0
-10
-20
-30
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
P1-10^
P1-11^
P1-12
P1-13
P1-14

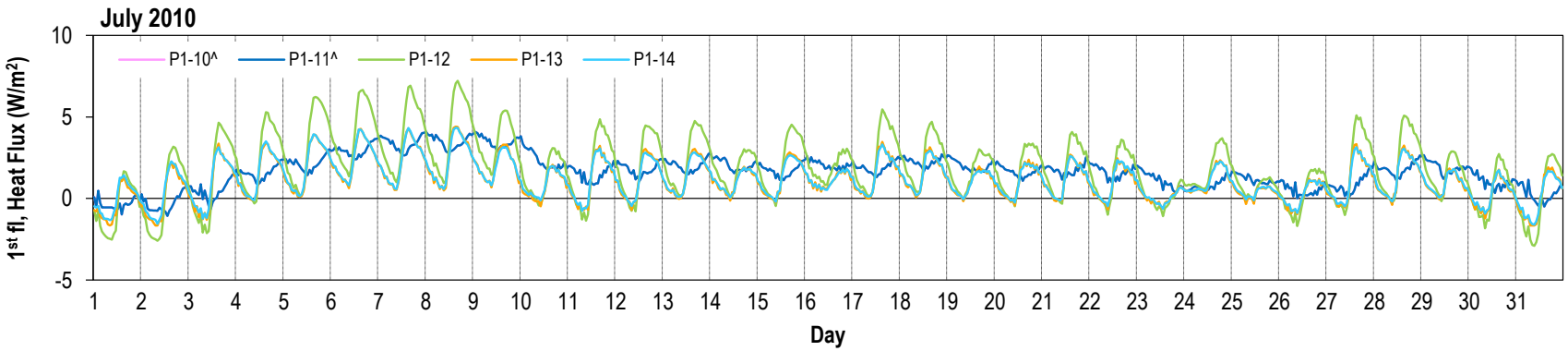

March 2010
2nd fl, Heat Flux (W/m2)
10
0
-10
-20
-30
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
P2-14

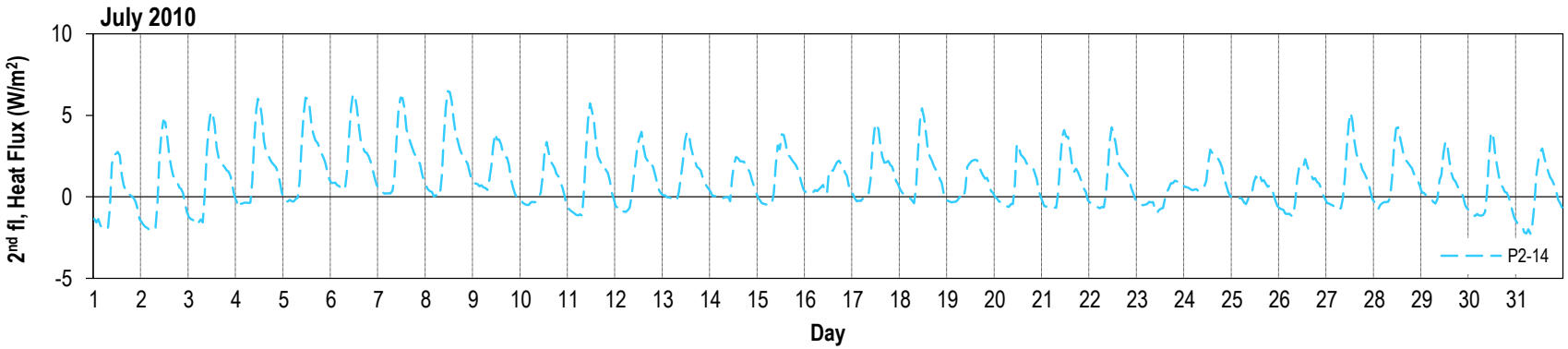

April 2010
1st fl, Heat Flux (W/m2)
5
0
-5
-10
-15
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day
P1-10^
P1-11^
P1-12
P1-13
P1-14

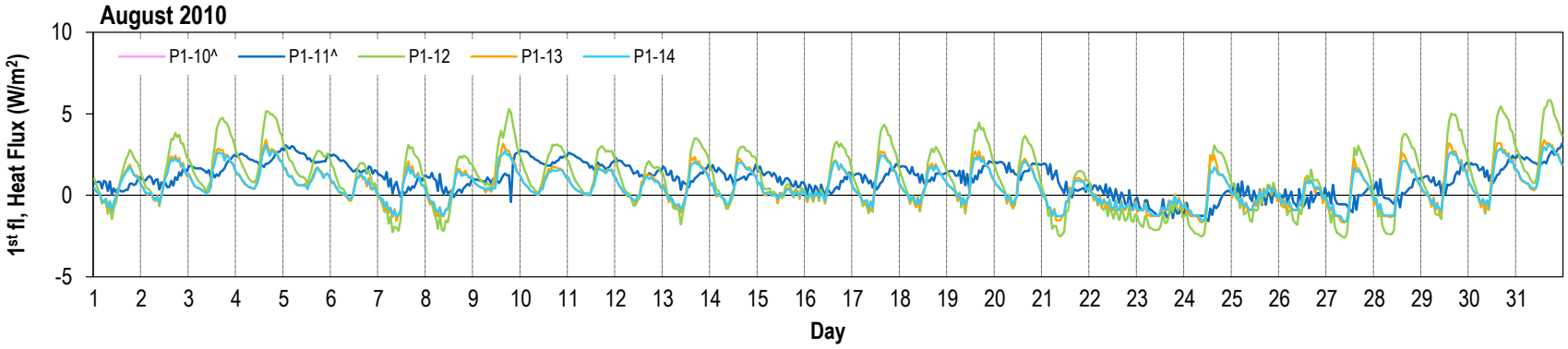

April 2010
2nd fl, Heat Flux (W/m2)
P2-14
Day
May 2010
1st fl, Heat Flux (W/m2)
P1-10^
P1-11^
P1-12
P1-13
P1-14
Day
May 2010
2nd fl, Heat Flux (W/m2)
P2-14
Day

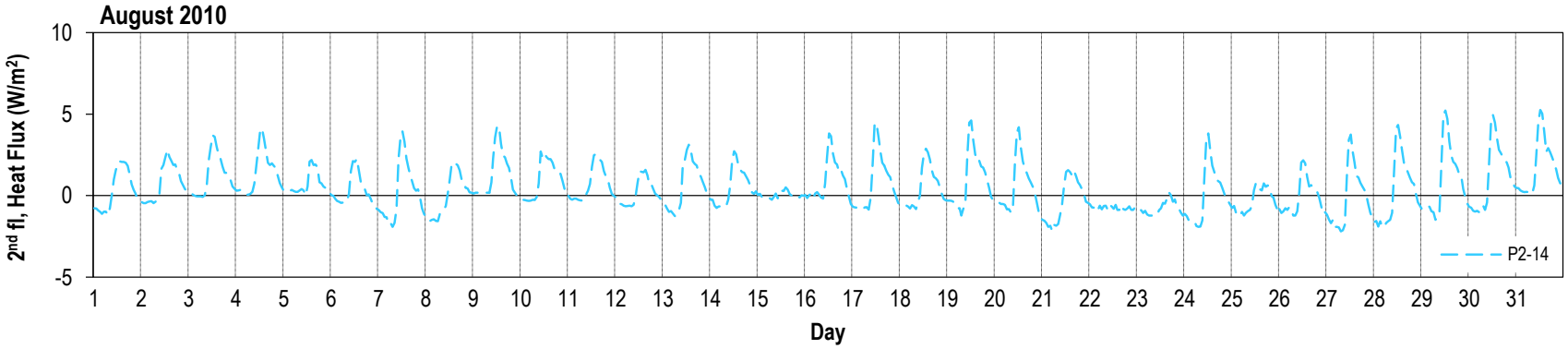

June 2010
1st fl, Heat Flux (W/m2)
P1-10^
P1-11^
P1-12
P1-13
P1-14
Day


June 2010
2nd fl, Heat Flux (W/m2)
P2-14
Day

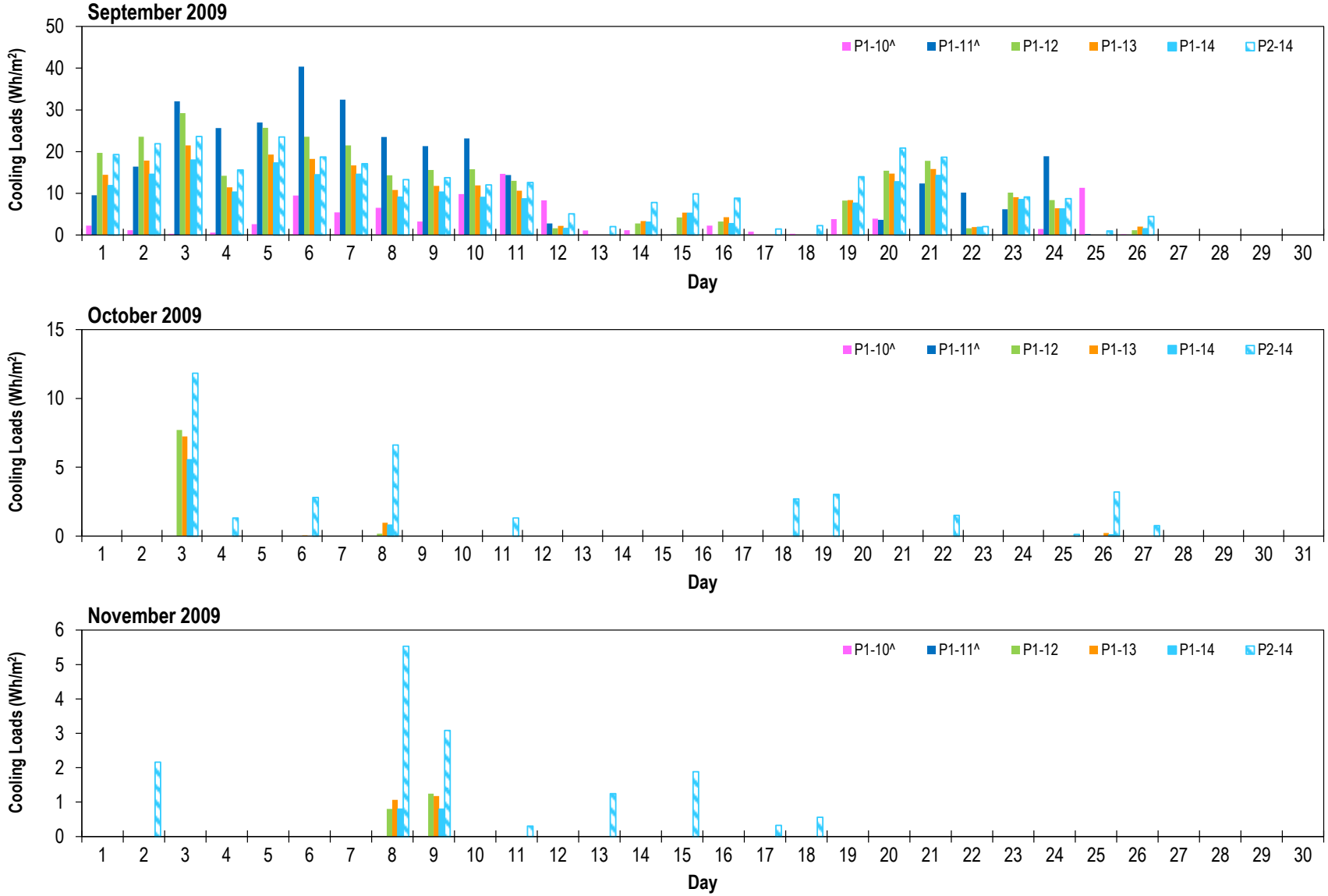

July 2010
1st fl, Heat Flux (W/m2)
P1-10^
P1-11^
P1-12
P1-13
P1-14
Day

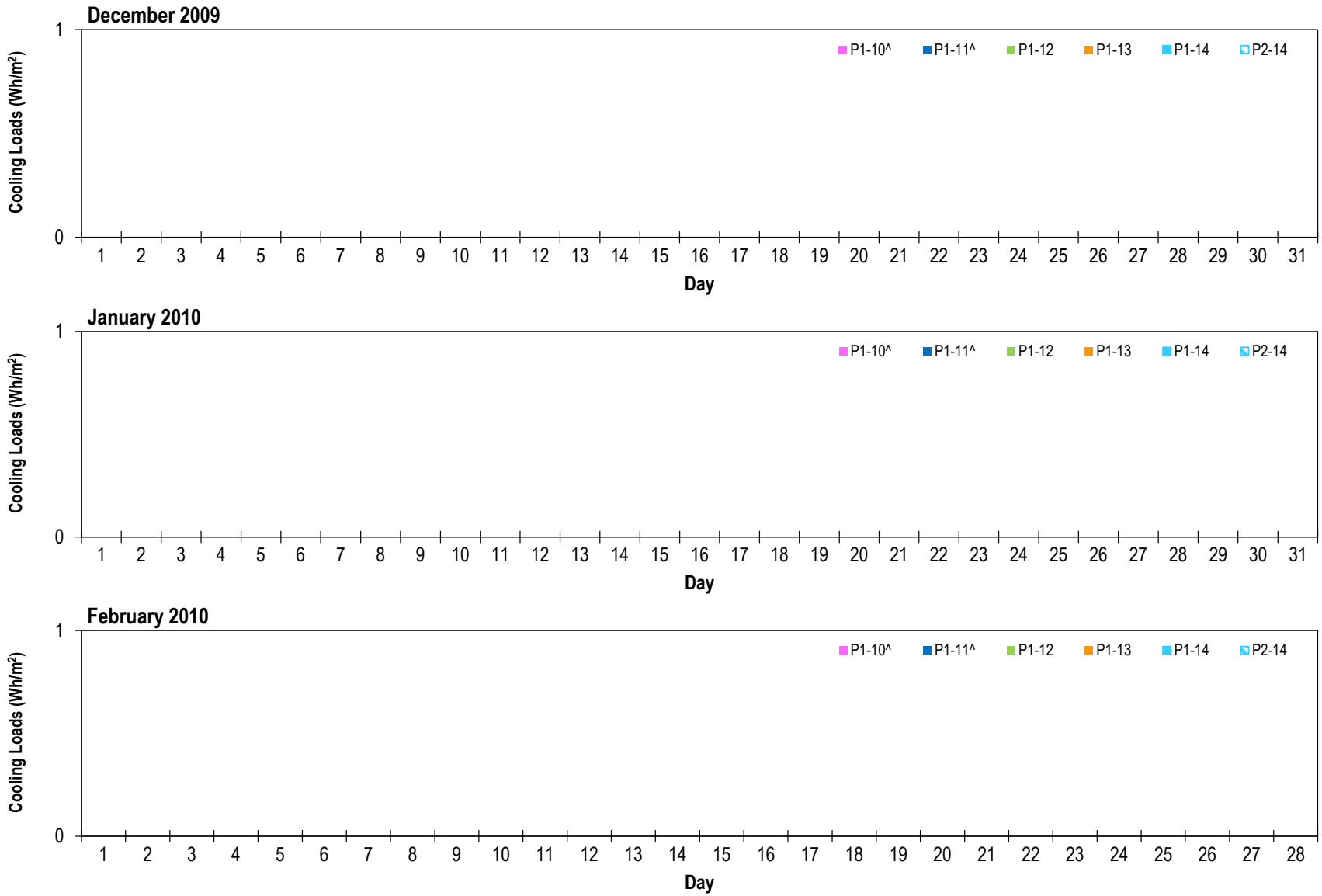

July 2010
2nd fl, Heat Flux (W/m2)
10
5
0
-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
P2-14

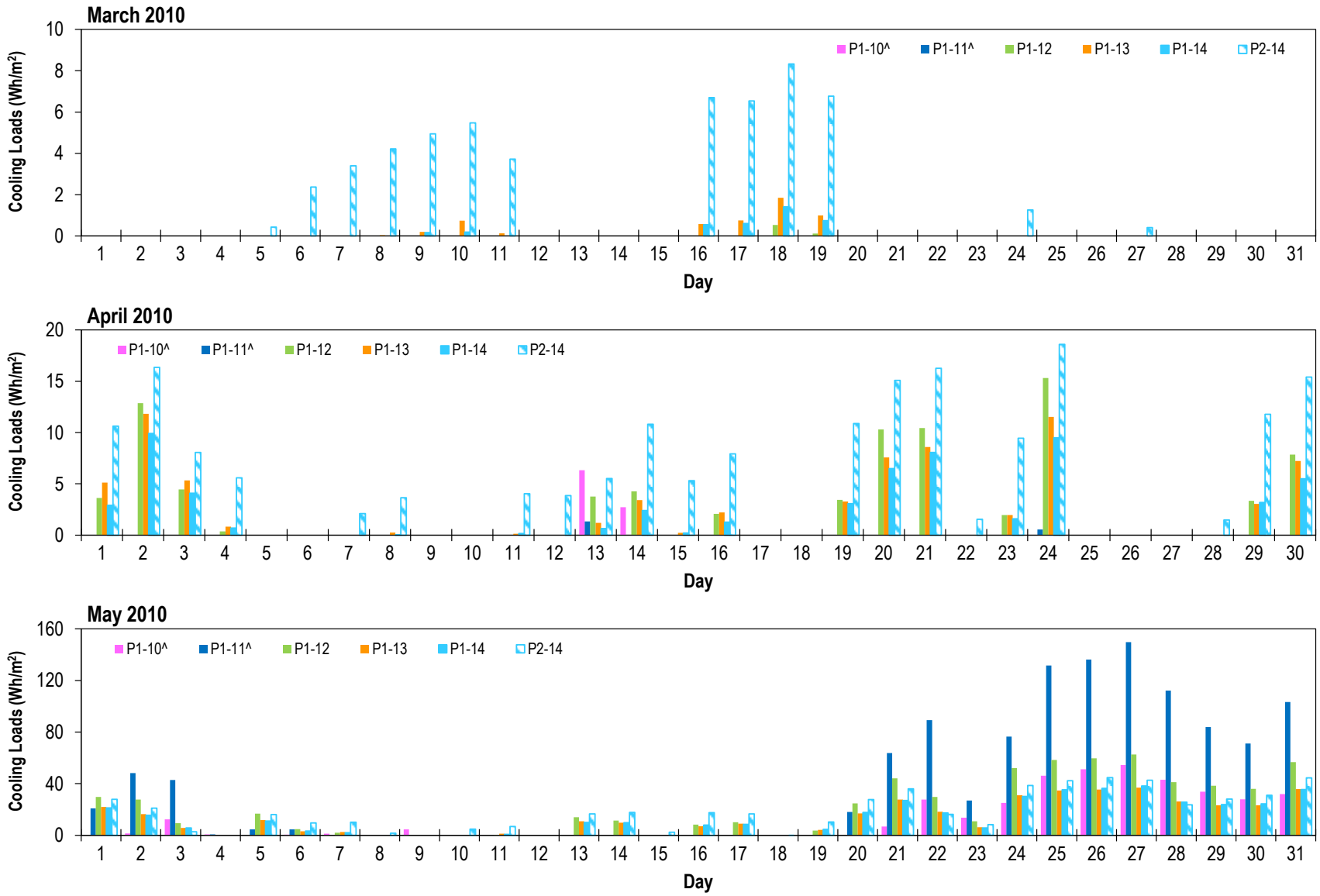

August 2010
1st fl, Heat Flux (W/m2)
10
5
0
-5
P1-10^
P1-11^
P1-12
P1-13
P1-14
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

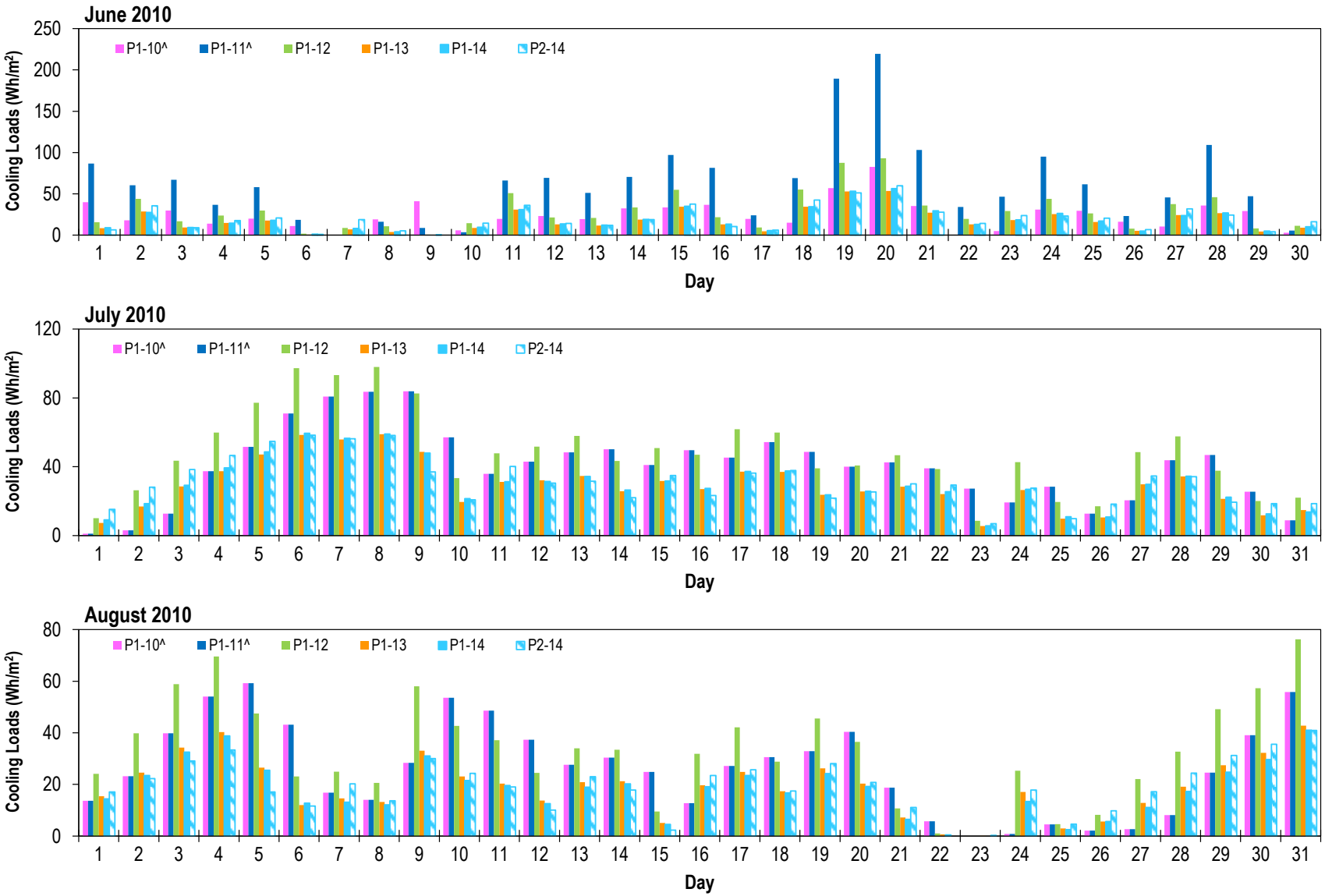

August 2010
2nd fl, Heat Flux (W/m2)
10
5
0
-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
P2-14

Cooling loads (Wh/m$^2$). Refer to Figures 25 thru 28 for sensor location.

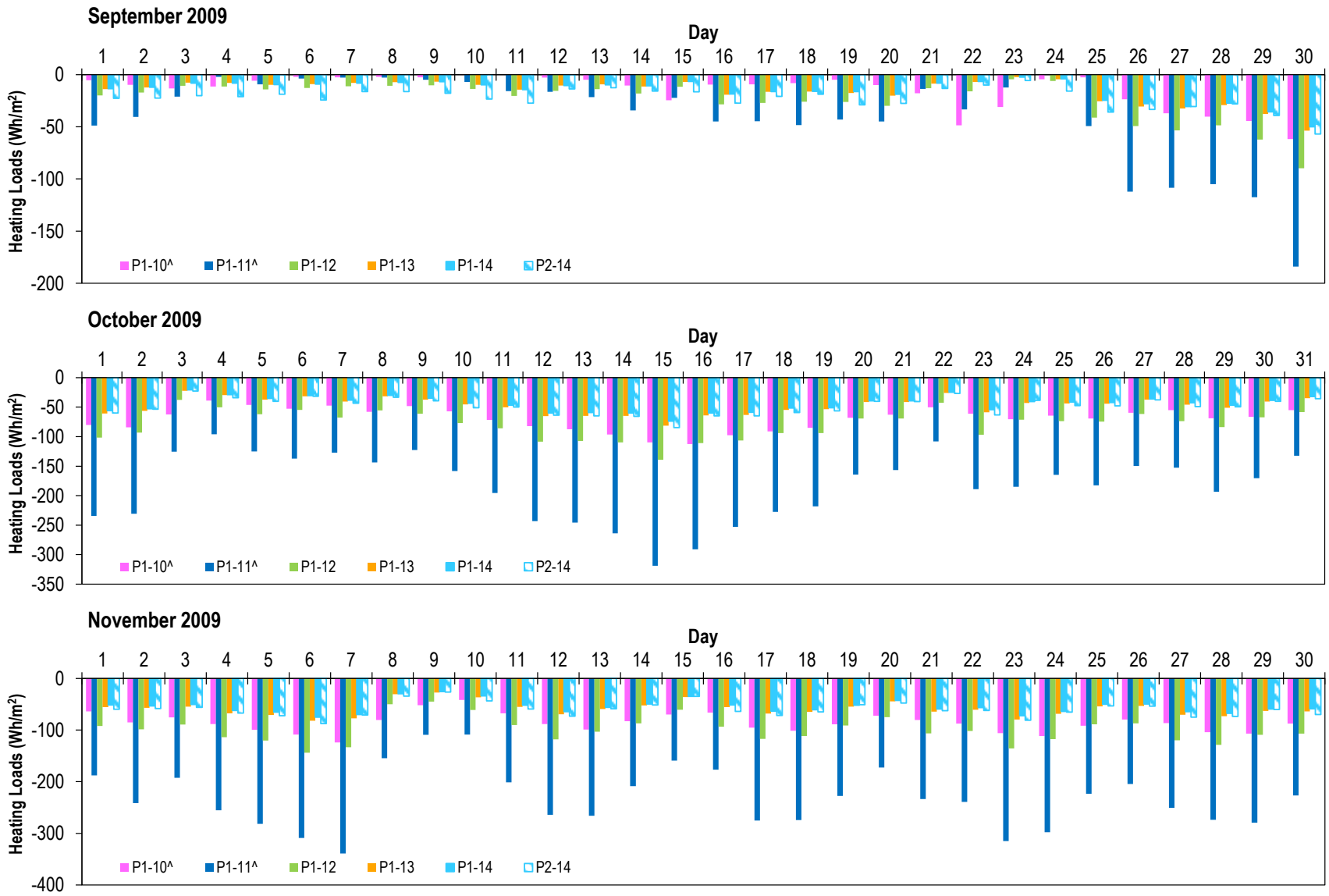


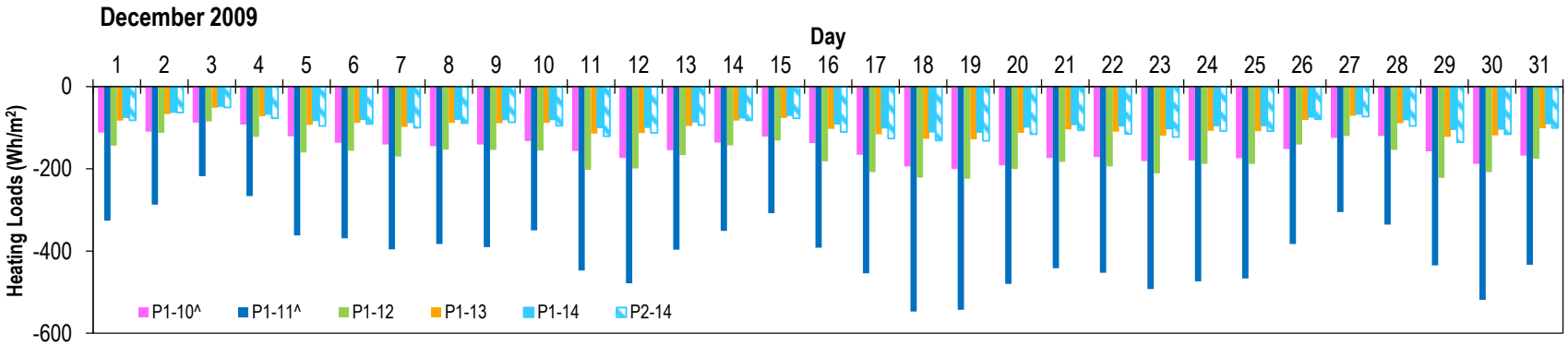

December 2009
Cooling Loads (Wh/m²)
1
0
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
January 2010
Cooling Loads (Wh/m²)
1
0
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
February 2010
Cooling Loads (Wh/m²)
1
0
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day

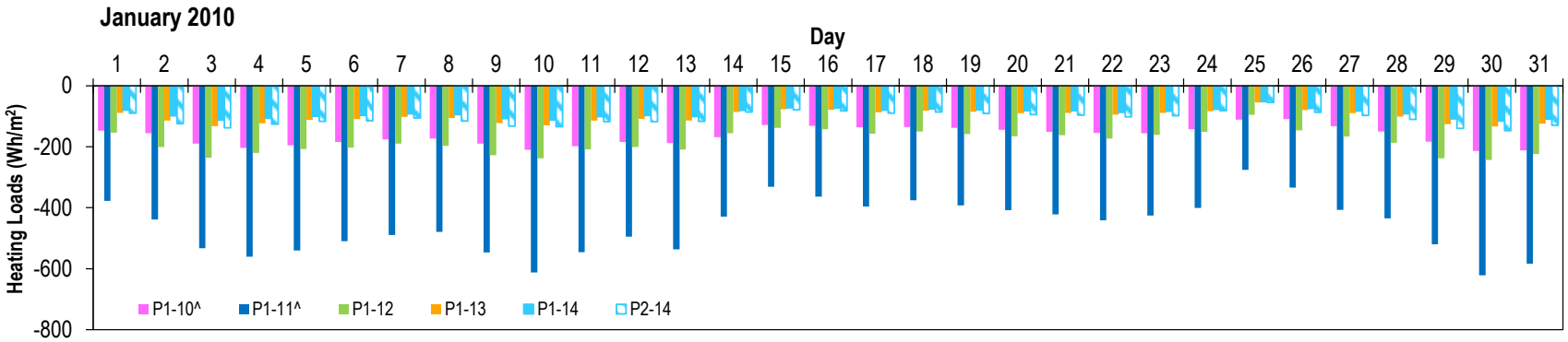

March 2010
Cooling Loads (Wh/m²)
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14
Day
April 2010
Cooling Loads (Wh/m²)
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14
Day
May 2010
Cooling Loads (Wh/m²)
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14
Day

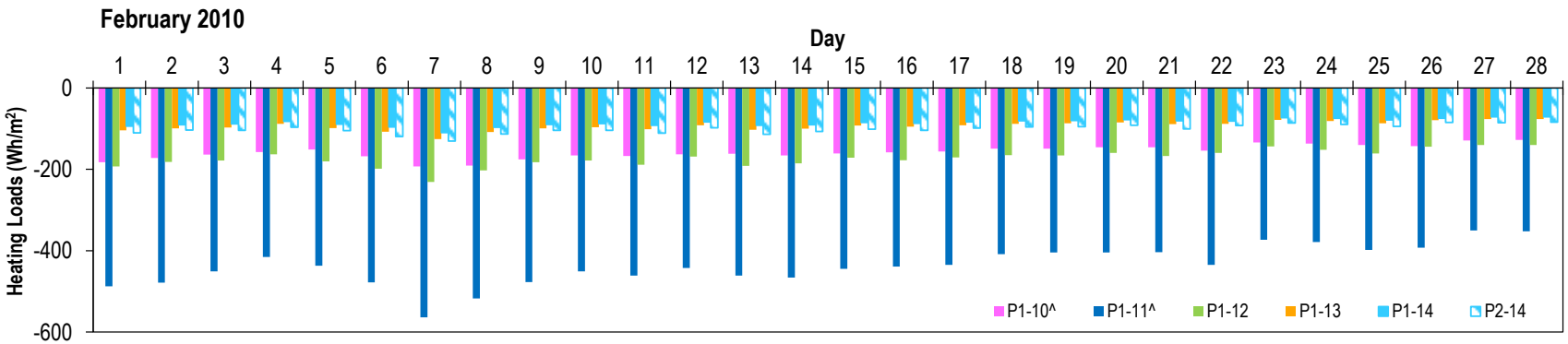

June 2010
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14
Cooling Loads (Wh/m²)
Day
July 2010
August 2010

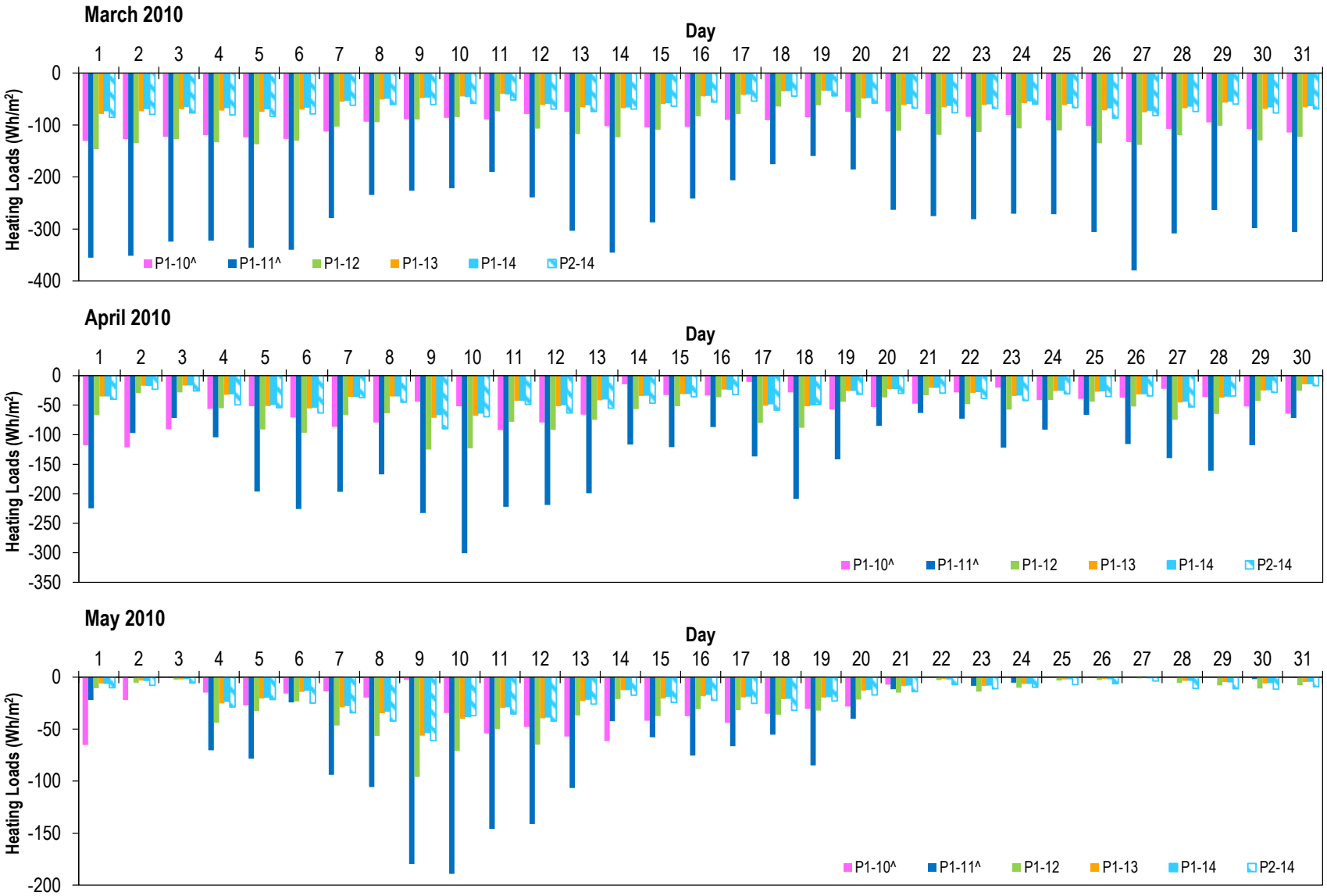
Heating loads (Wh/m$^2$). Refer to Figures 25 thru 28 for sensor location.

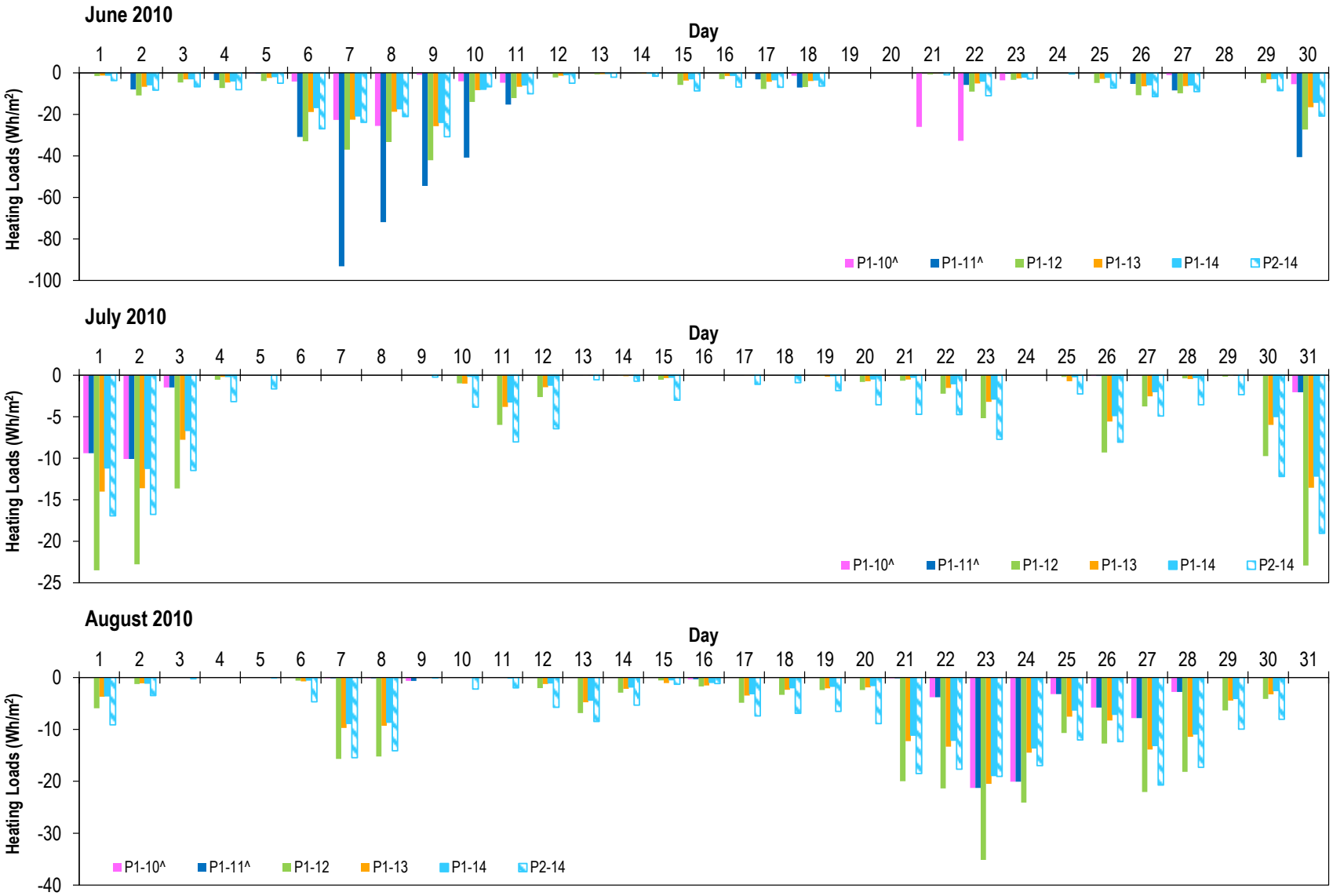



December 2009
Day
Heating Loads (Wh/m²)
0
-200
-400
-600
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14


January 2010
Day
Heating Loads (Wh/m²)
0
-200
-400
-600
-800
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14

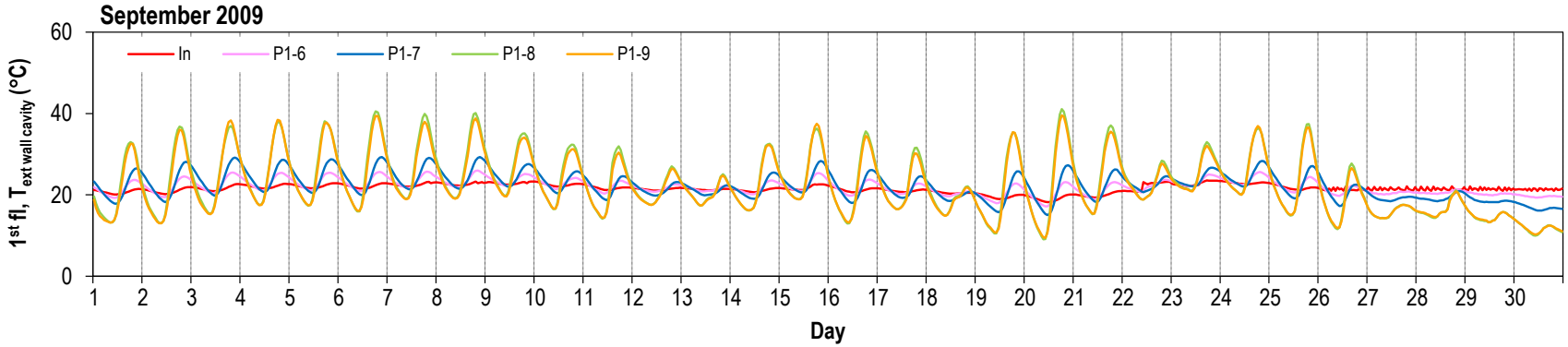

February 2010
Day
Heating Loads (Wh/m²)
0
-200
-400
-600
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14

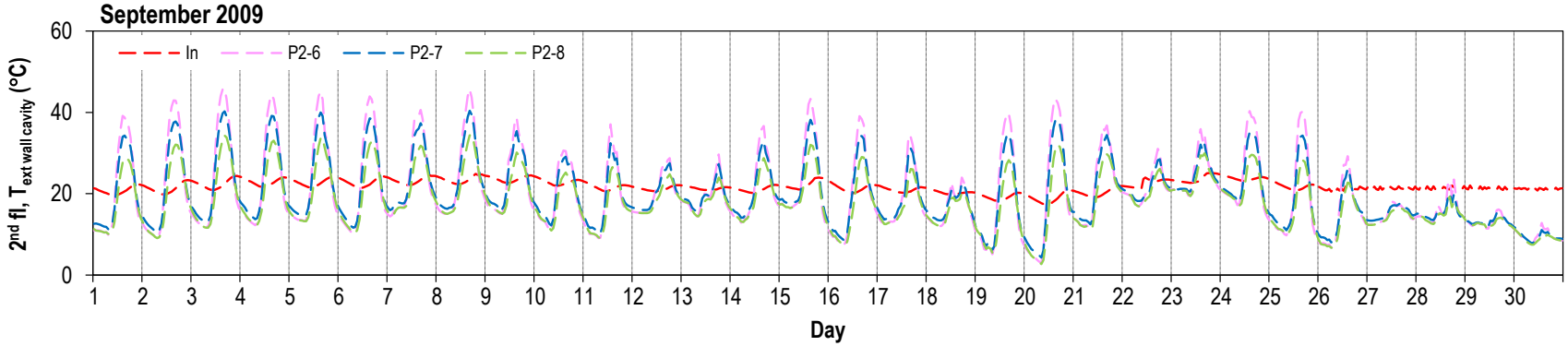

March 2010
Day
Heating Loads (Wh/m²)
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14
April 2010
Day
Heating Loads (Wh/m²)
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14
May 2010
Day
Heating Loads (Wh/m²)
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14

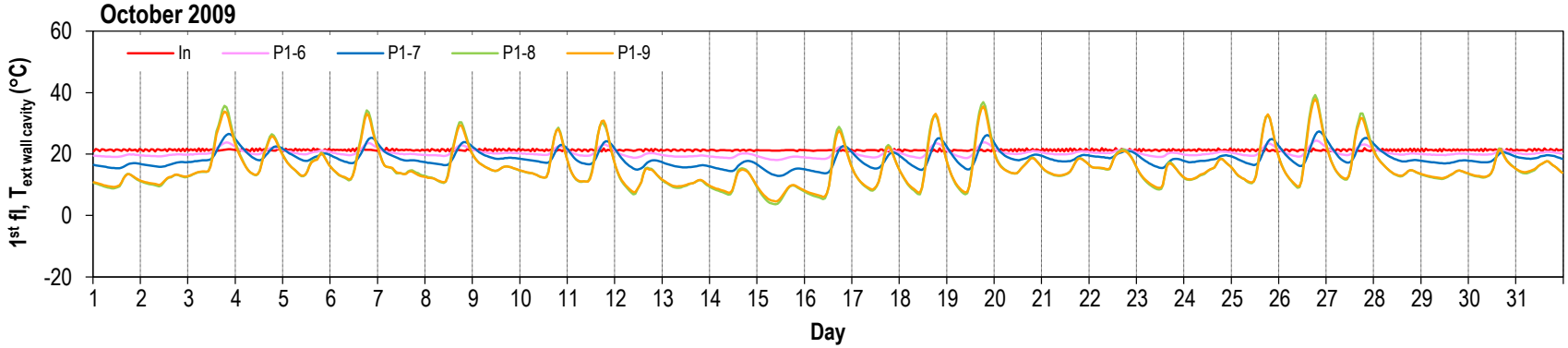

June 2010
Day
Heating Loads (Wh/m²)
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14
July 2010
Day
Heating Loads (Wh/m²)
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14
August 2010
Day
Heating Loads (Wh/m²)
P1-10^
P1-11^
P1-12
P1-13
P1-14
P2-14

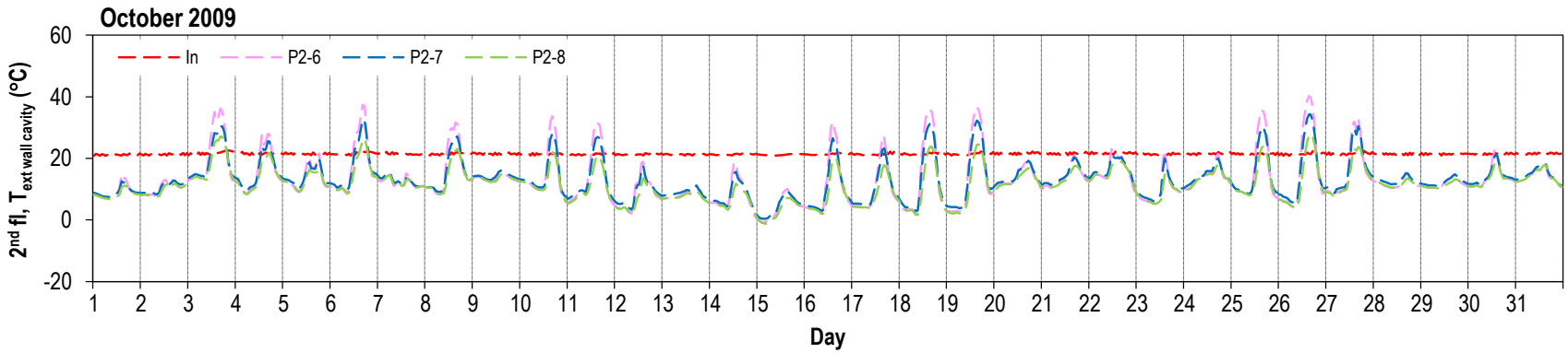
# Appendix C: South Panels

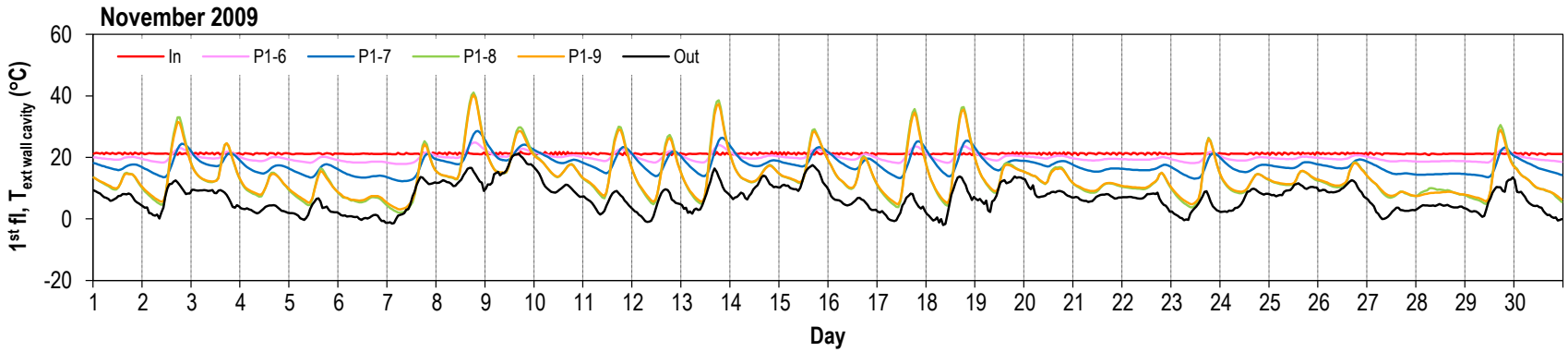
Temperature (°C) at exterior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

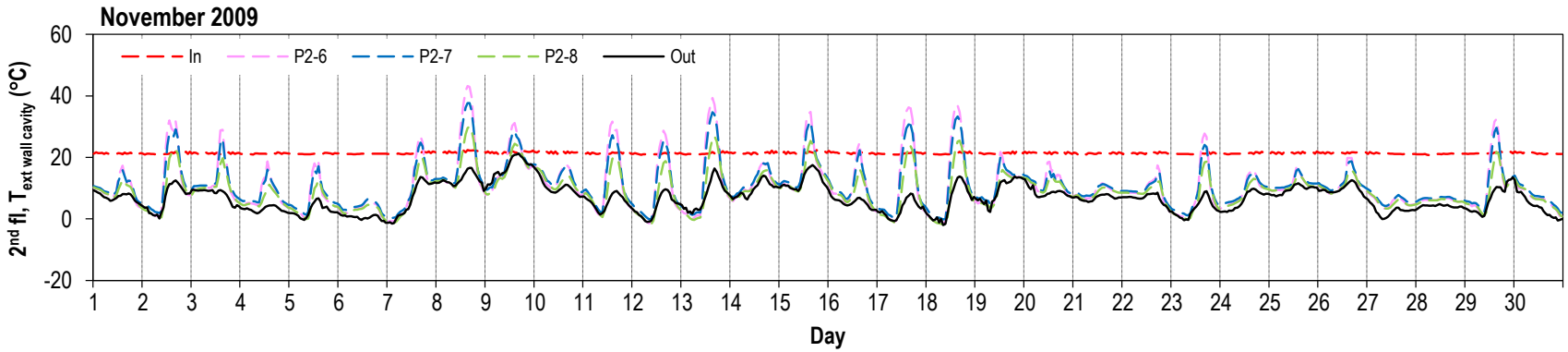


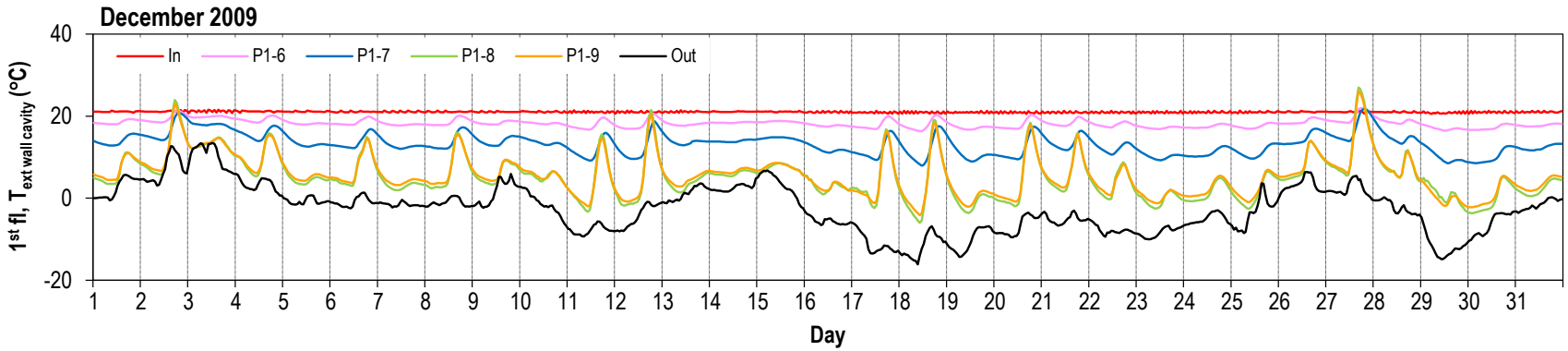



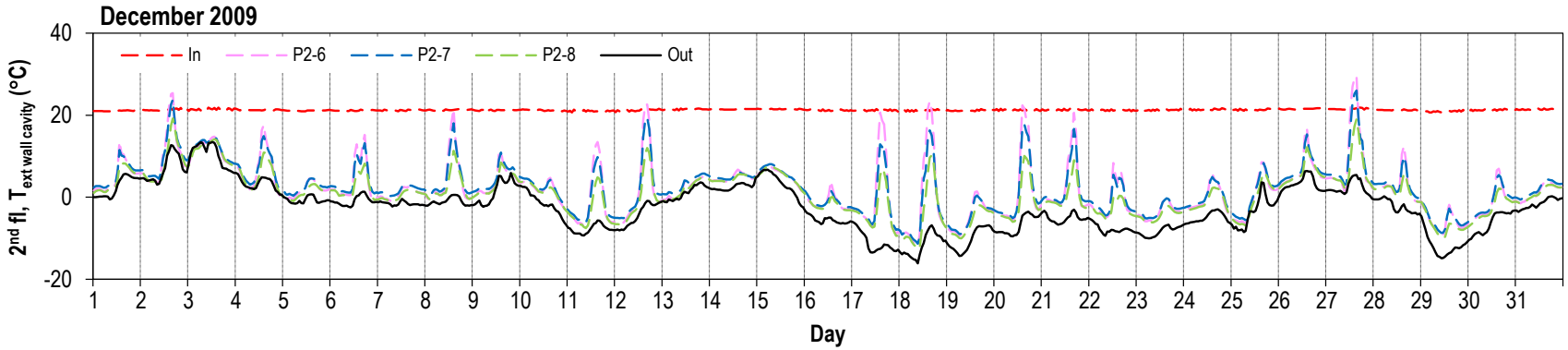



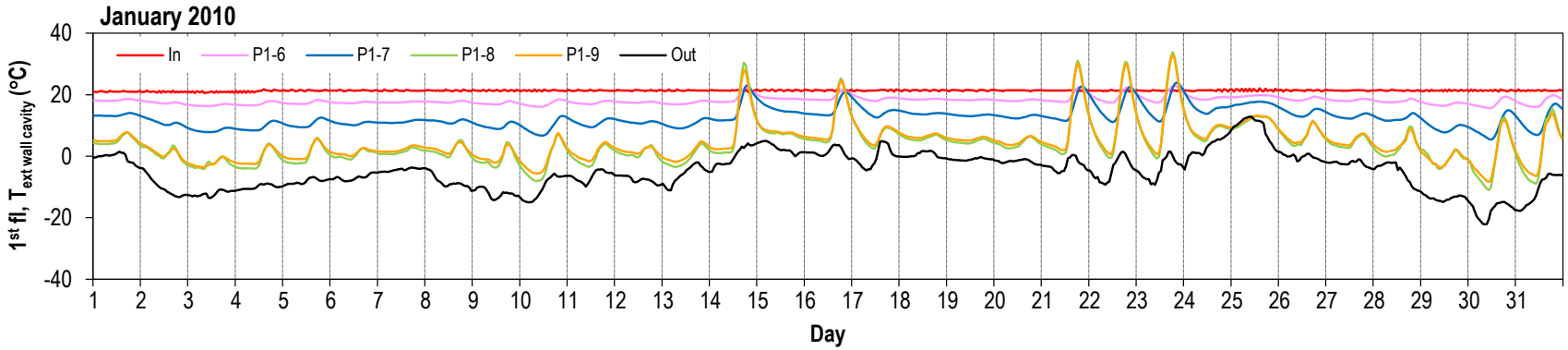

October 2009
In
P2-6
P2-7
P2-8
2nd fl, T ext wall cavity (°C)
Day

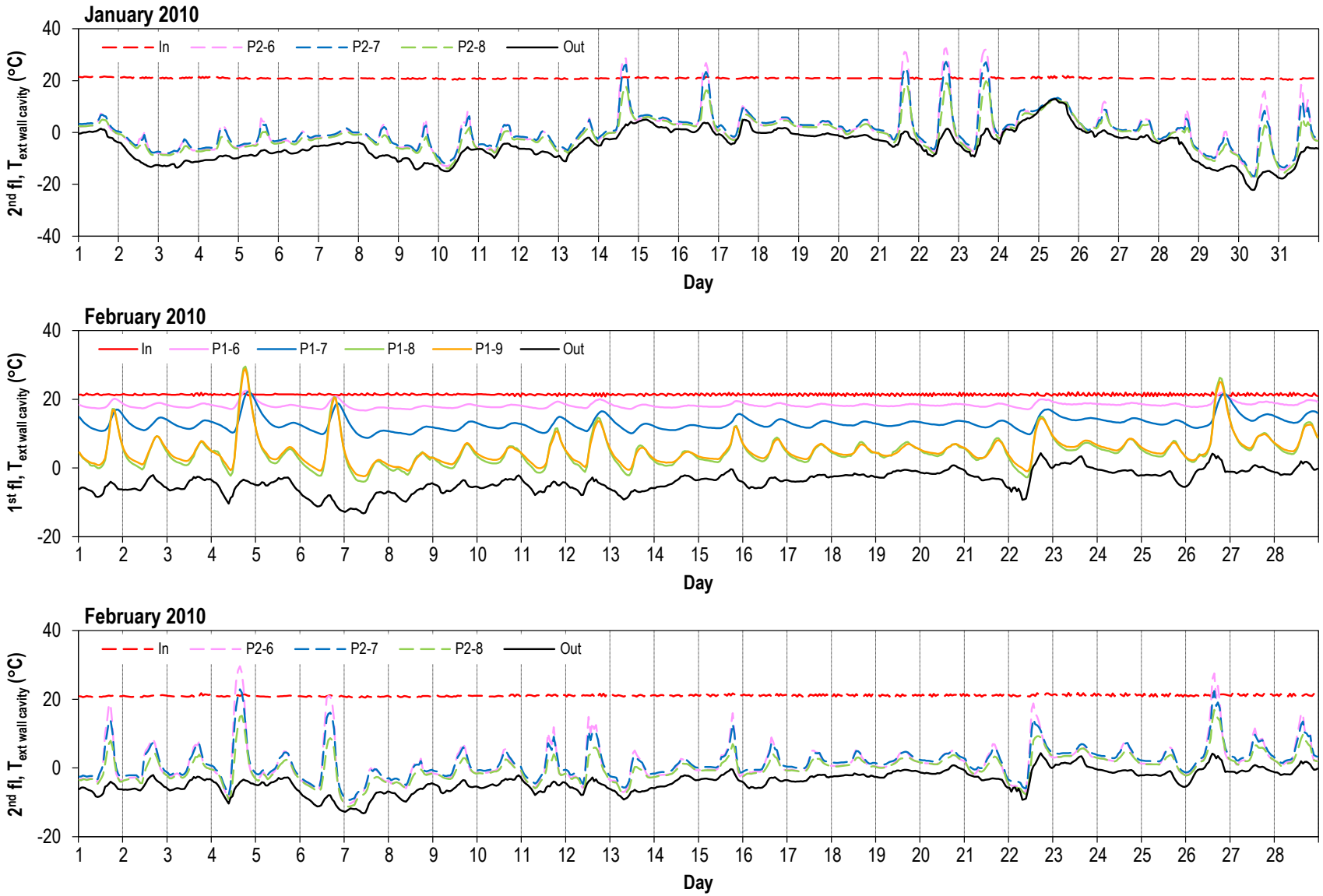

November 2009
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, T ext wall cavity (°C)
Day

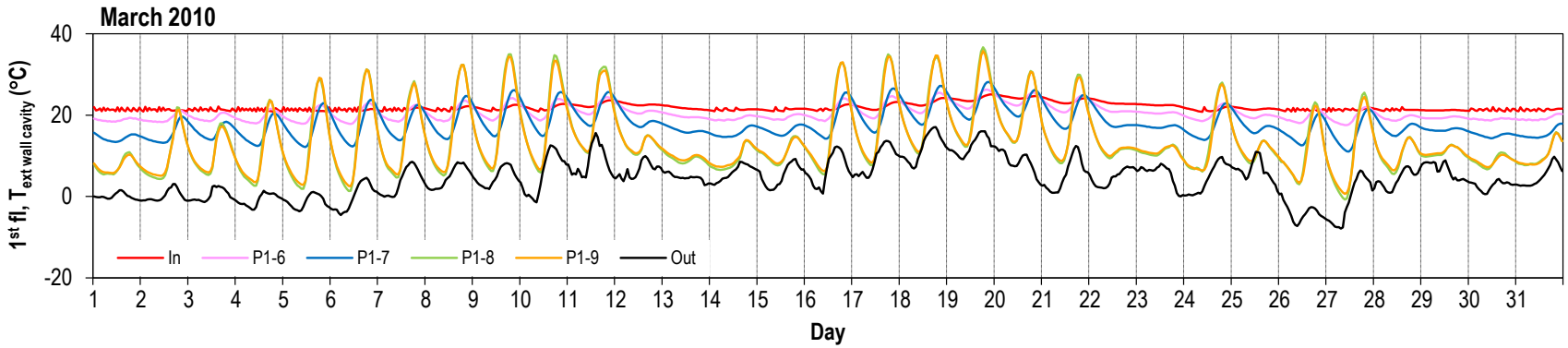

November 2009
In
P2-6
P2-7
P2-8
Out
2nd fl, T ext wall cavity (°C)
Day

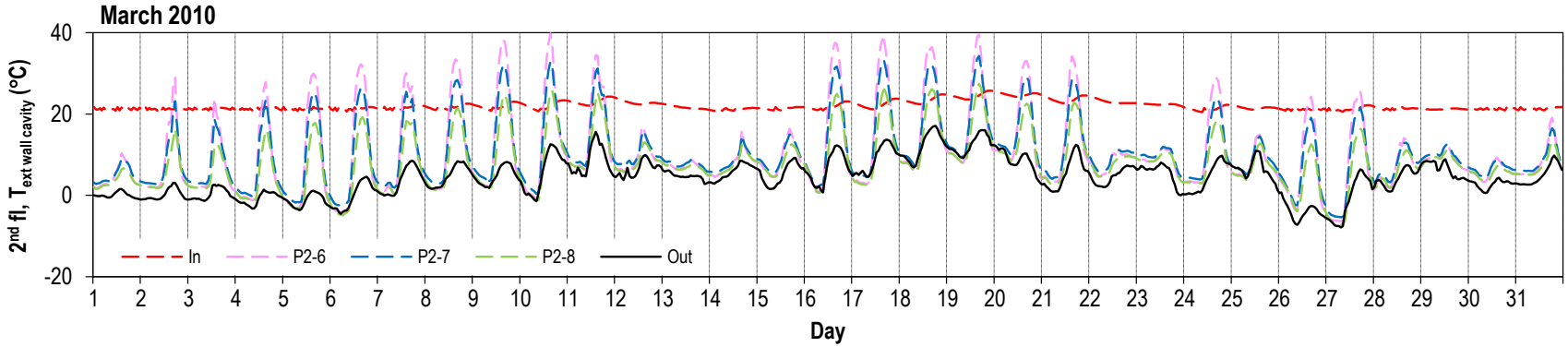

December 2009
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, T ext wall cavity (°C)
Day

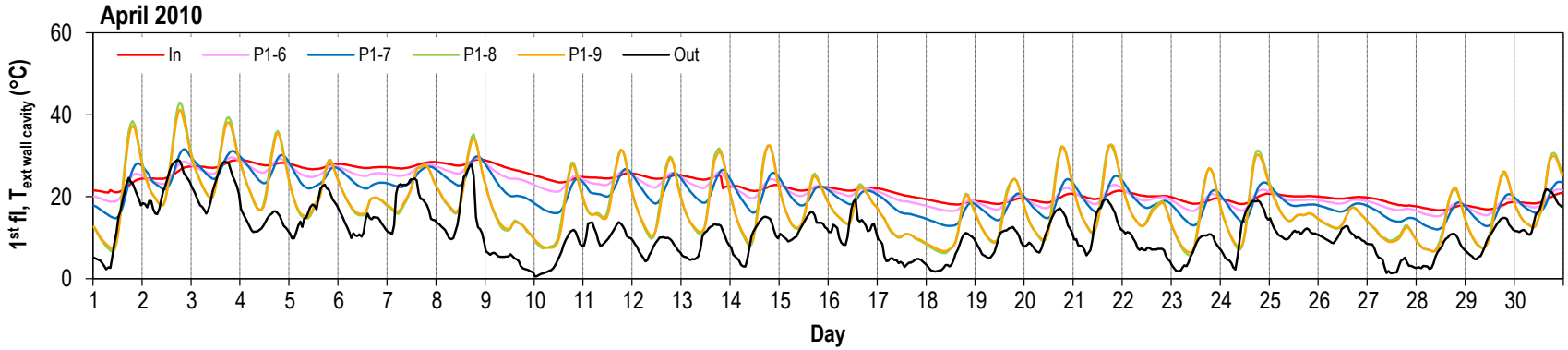

December 2009
In
P2-6
P2-7
P2-8
Out
2nd fl, T ext wall cavity (°C)
Day

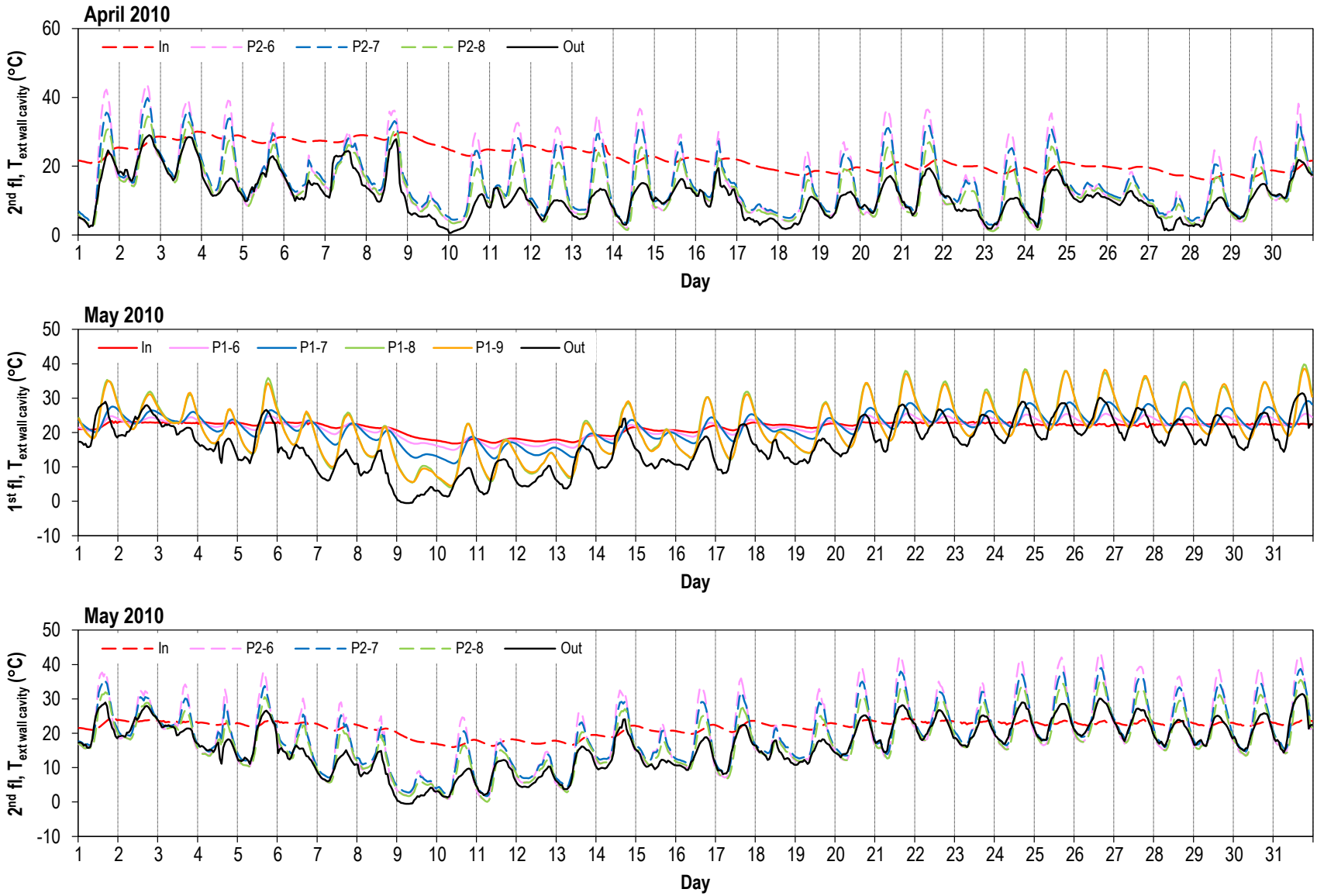

January 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, T ext wall cavity (°C)
Day

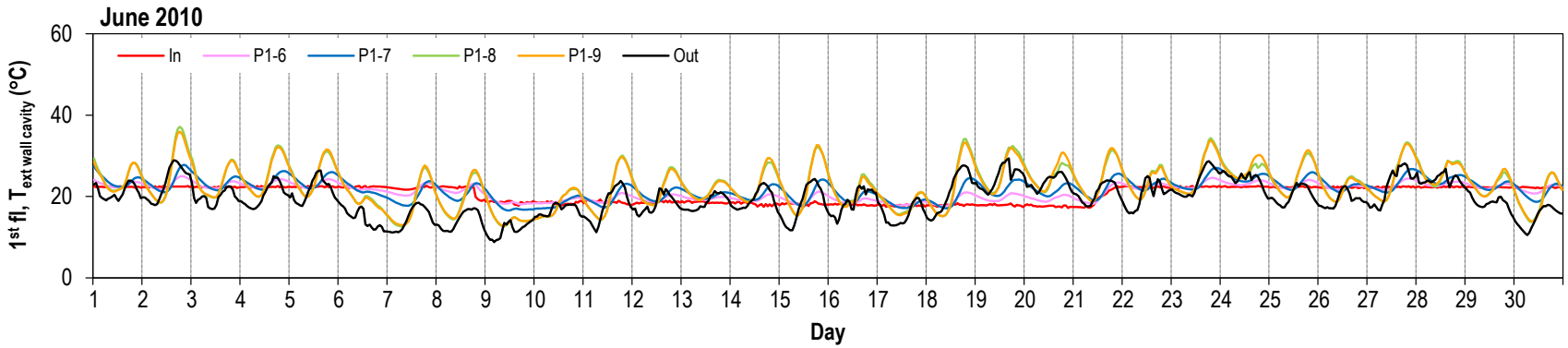

January 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, T ext wall cavity (°C)
Day
February 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, T ext wall cavity (°C)
Day
February 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, T ext wall cavity (°C)
Day

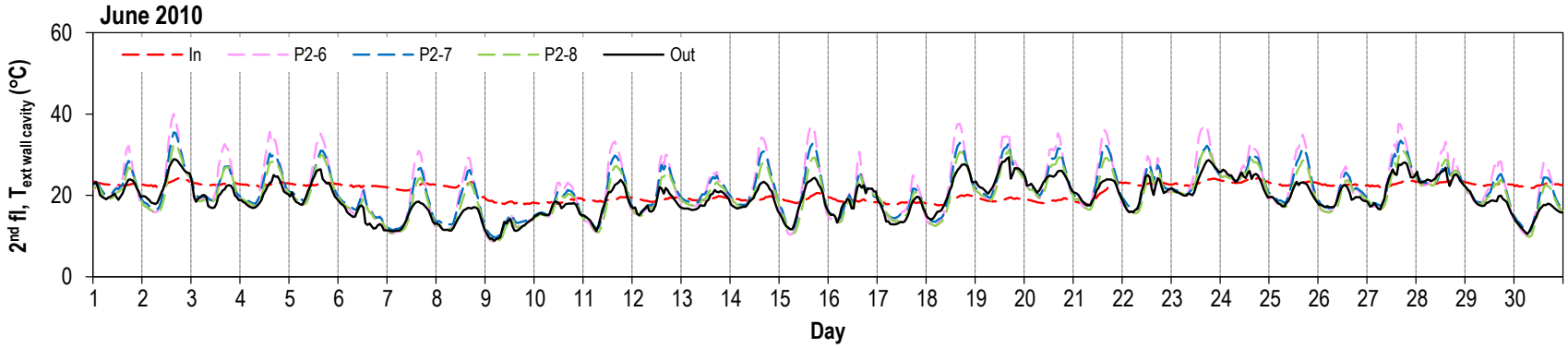

March 2010
1st fl, T ext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day

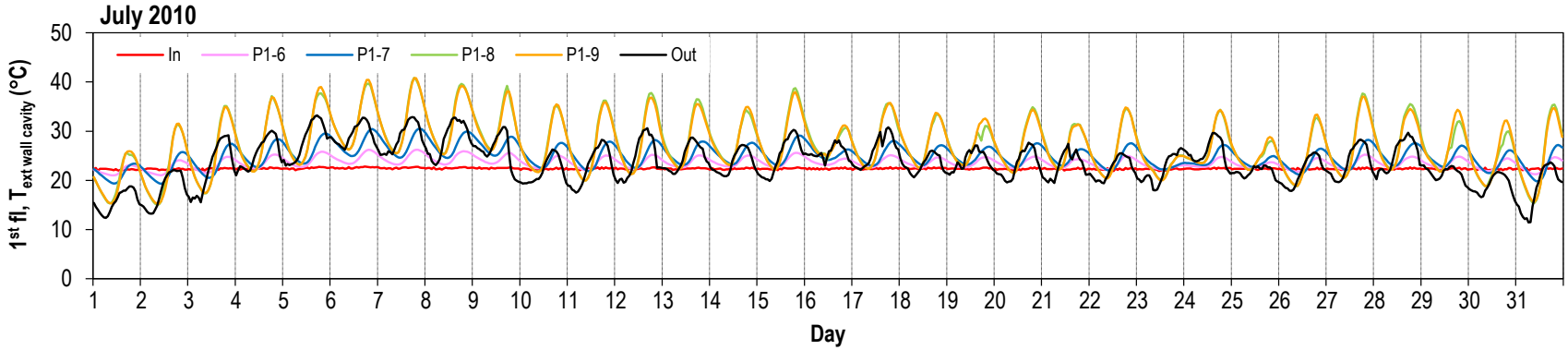

March 2010
2nd fl, T ext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day

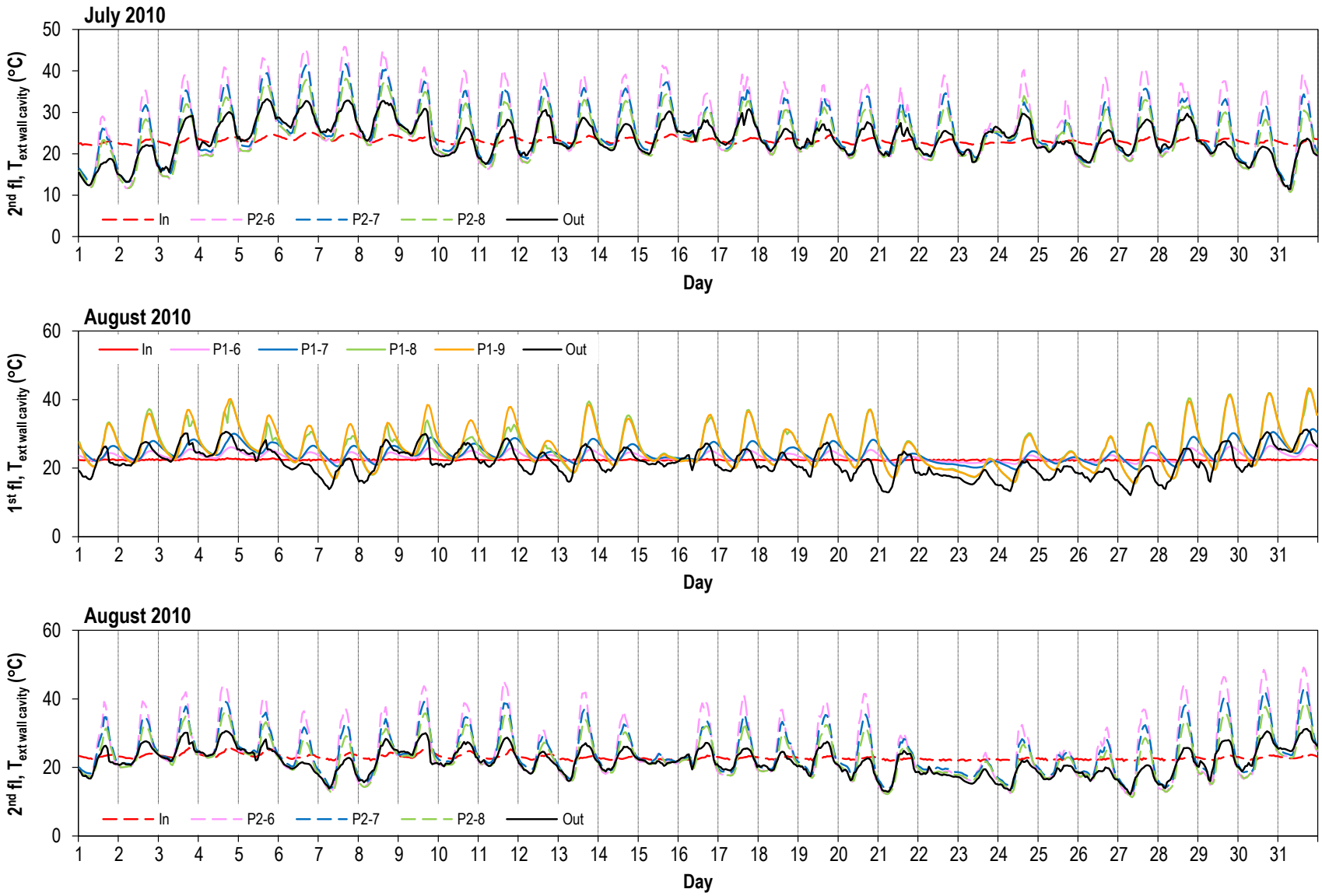

April 2010
1st fl, T ext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day


April 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, T ext wall cavity (°C)
Day
May 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, T ext wall cavity (°C)
Day
May 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, T ext wall cavity (°C)
Day

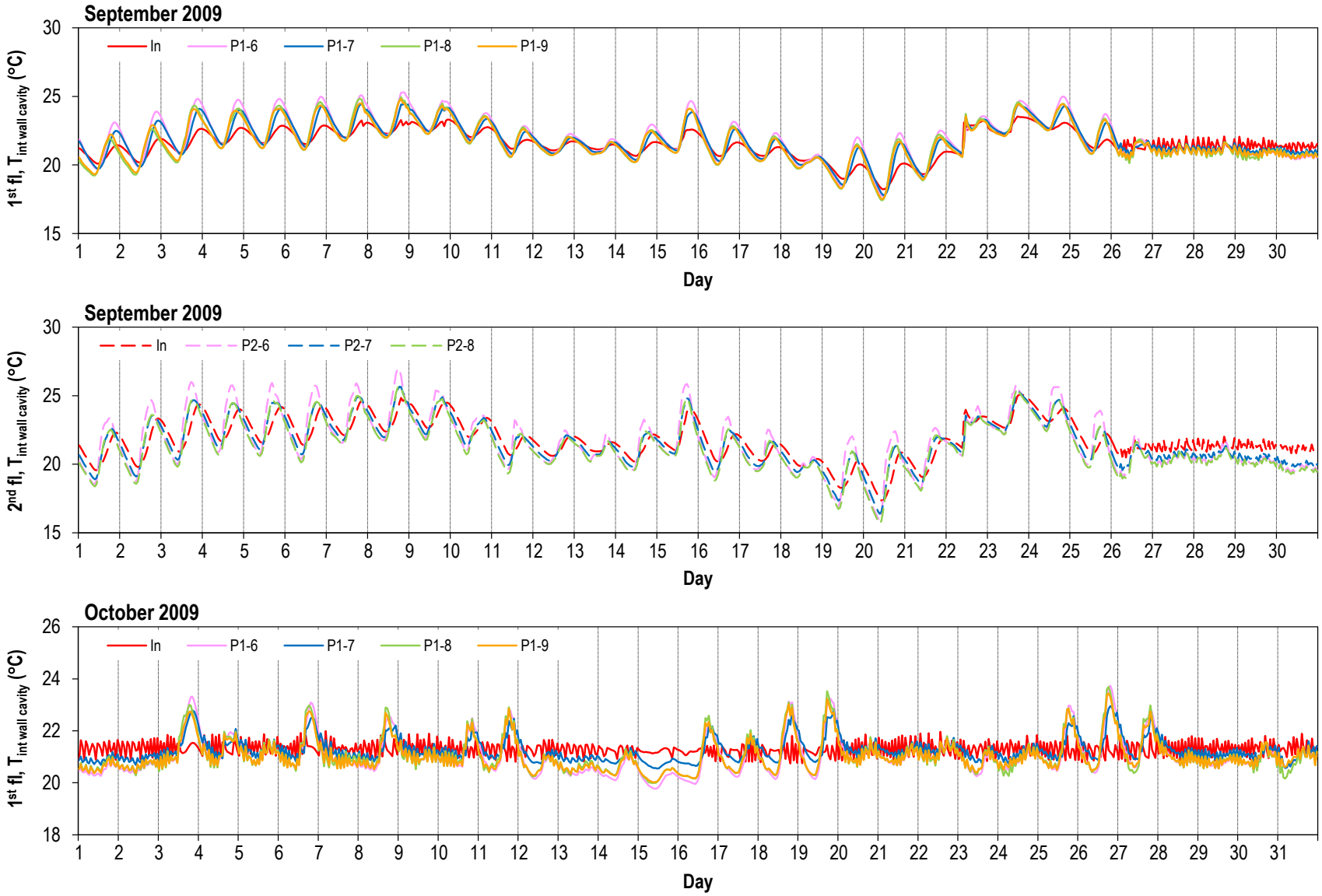

June 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, T ext wall cavity (°C)
Day

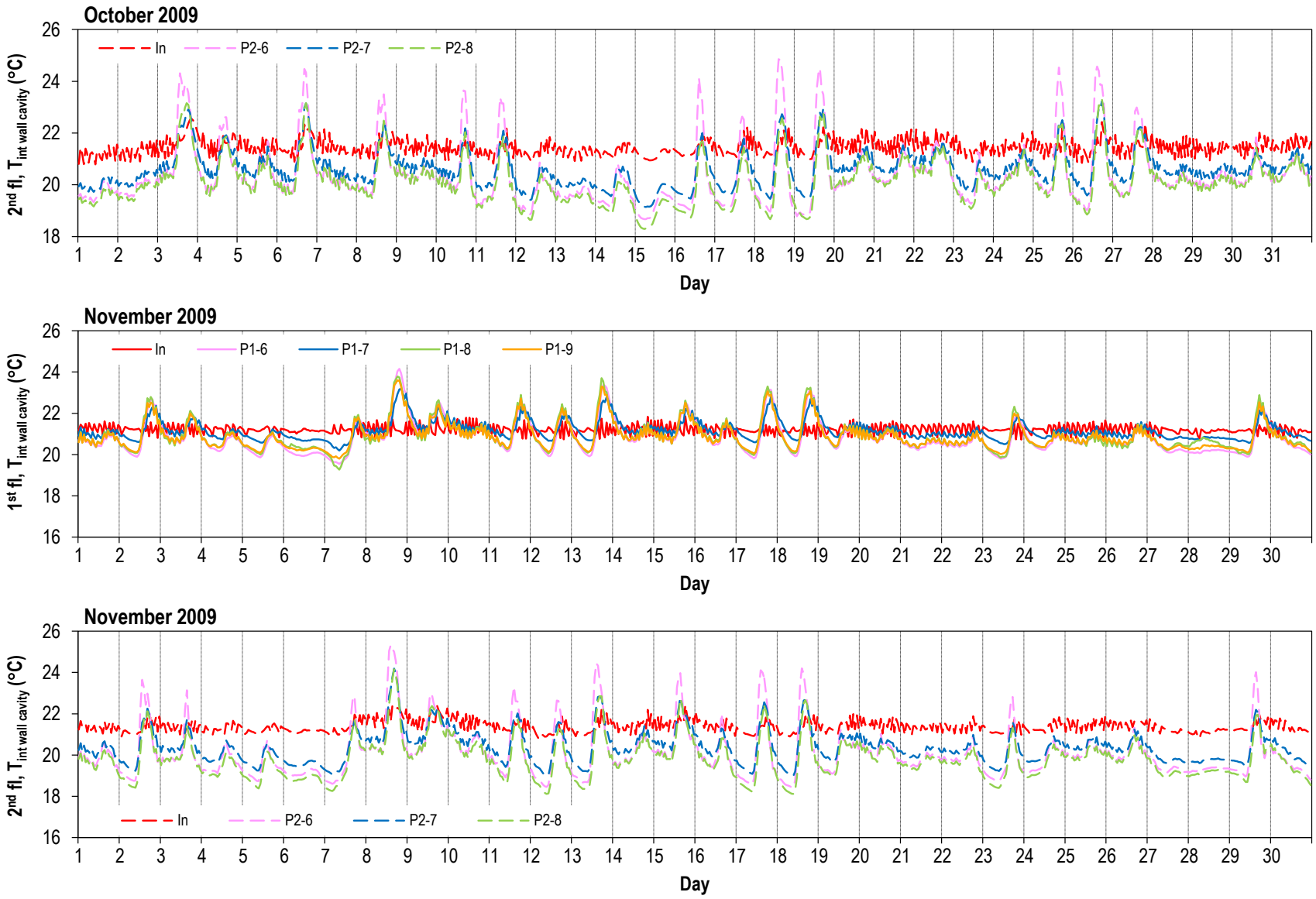

June 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, T ext wall cavity (°C)
Day

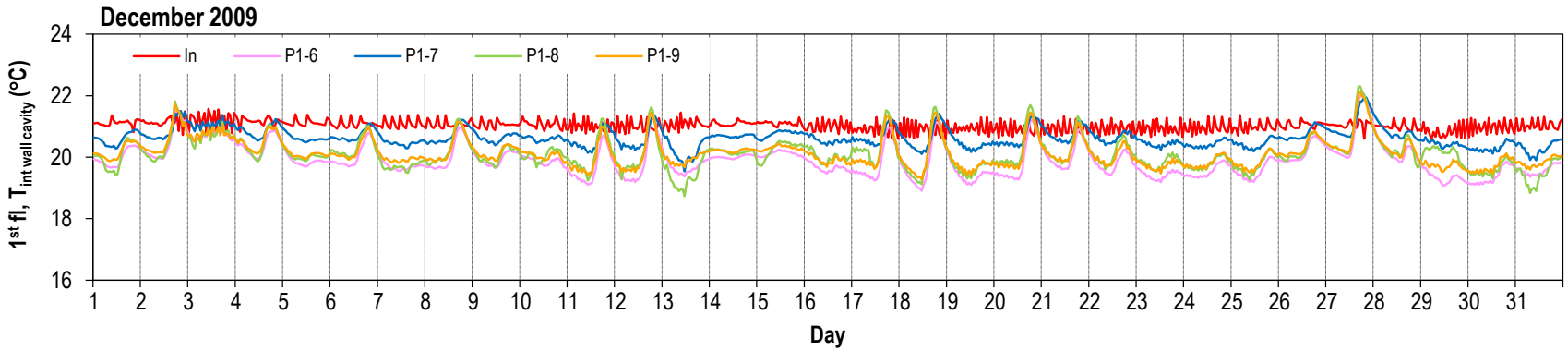

July 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, T ext wall cavity (°C)
Day

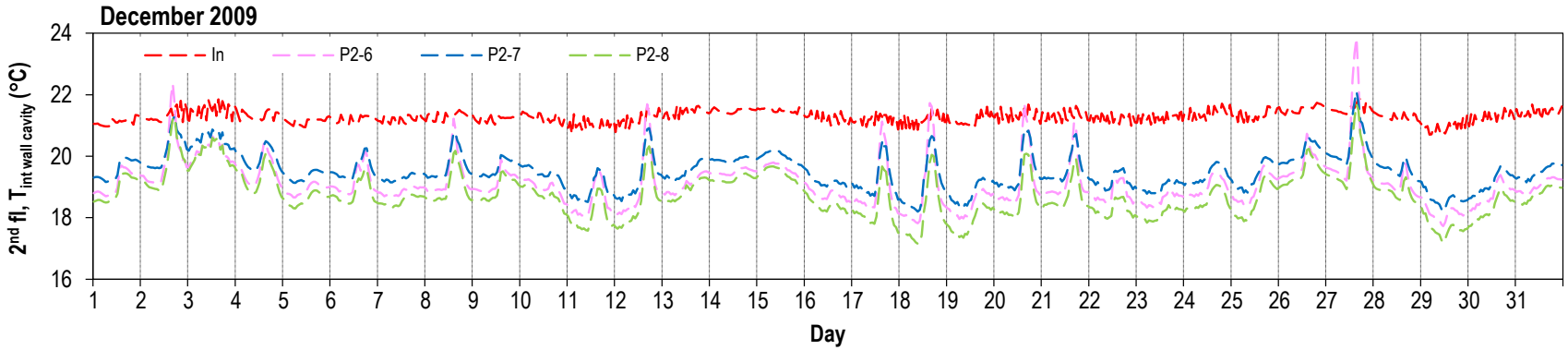

July 2010
2nd fl, T ext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day
August 2010
1st fl, T ext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day
August 2010
2nd fl, T ext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day

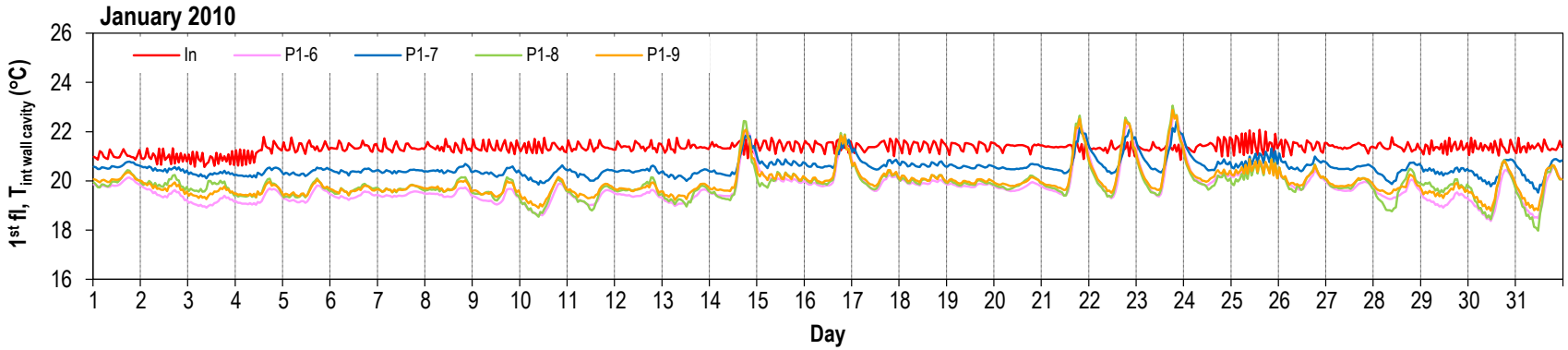
Temperature (°C) at interior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

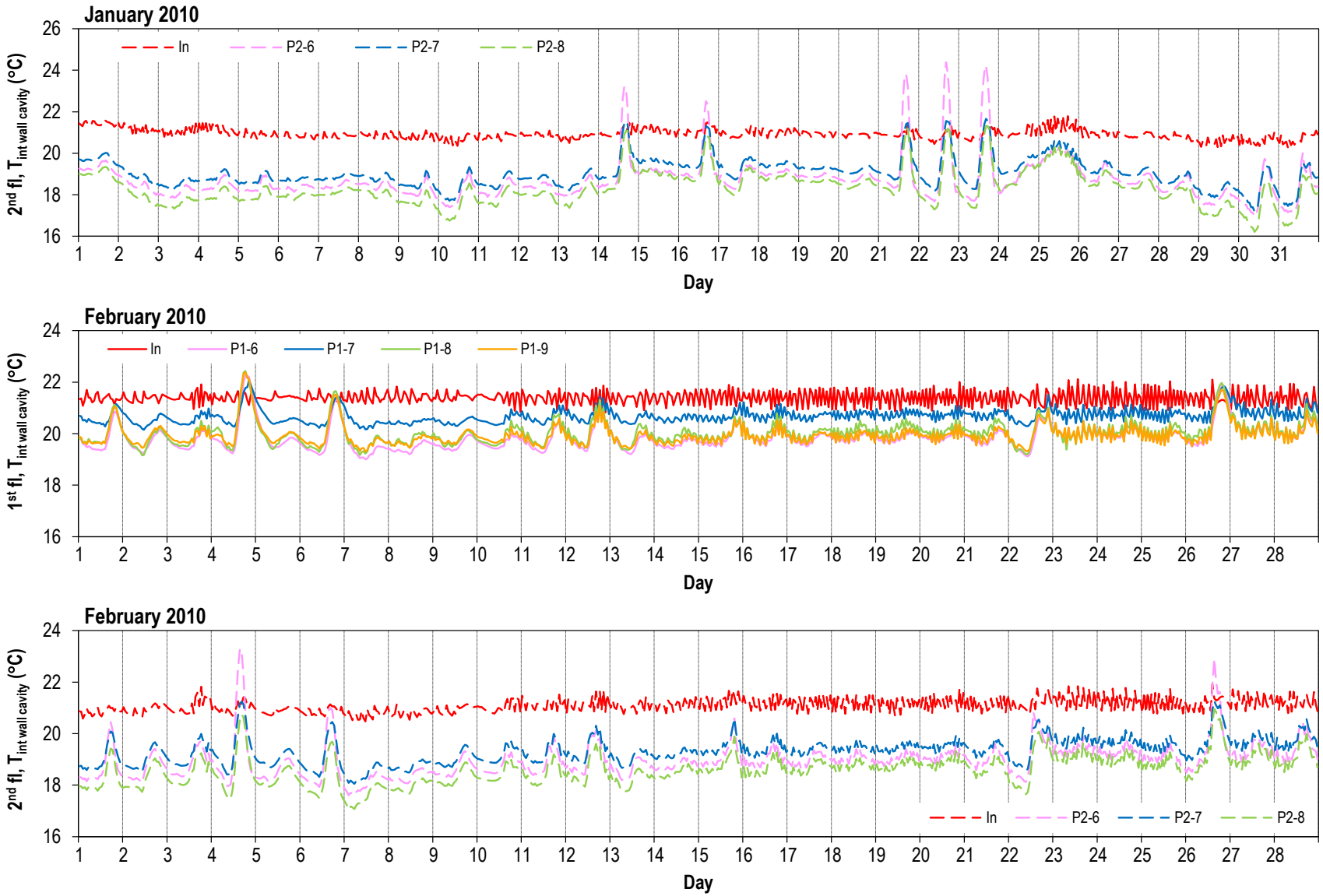


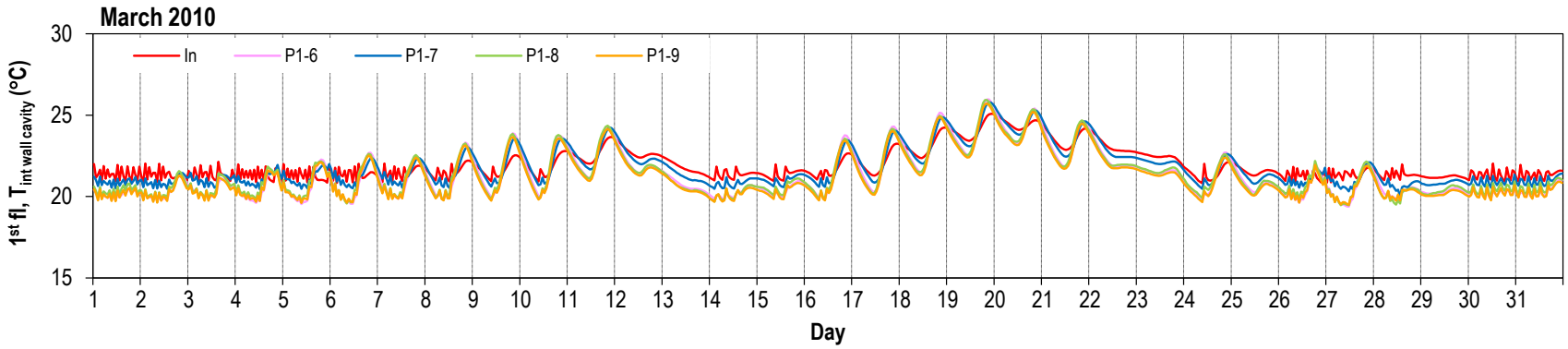

October 2009
In
P2-6
P2-7
P2-8
2nd fl, T int wall cavity (°C)
Day
November 2009
In
P1-6
P1-7
P1-8
P1-9
1st fl, T int wall cavity (°C)
Day
November 2009
In
P2-6
P2-7
P2-8
2nd fl, T int wall cavity (°C)
Day

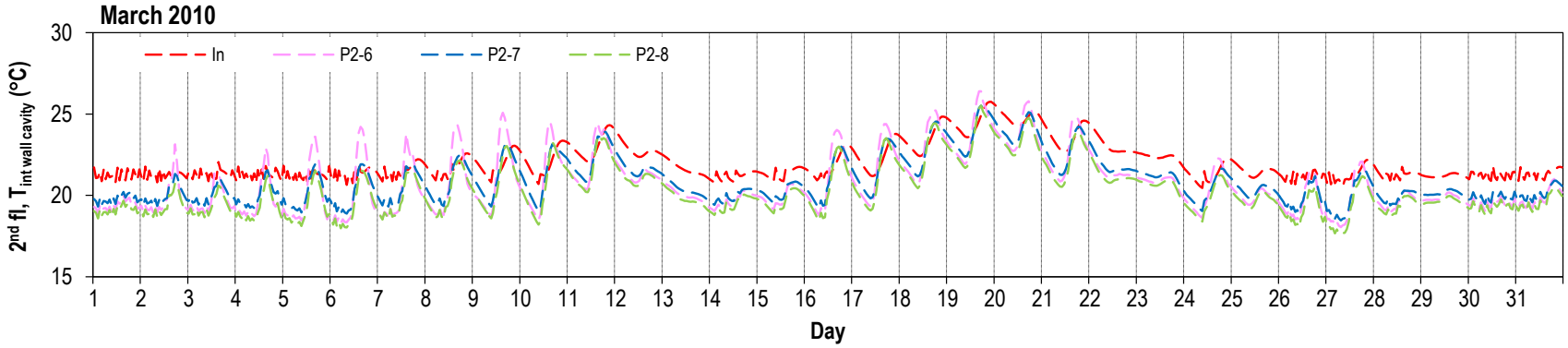

December 2009
In
P1-6
P1-7
P1-8
P1-9
1st fl, T int wall cavity (°C)
Day

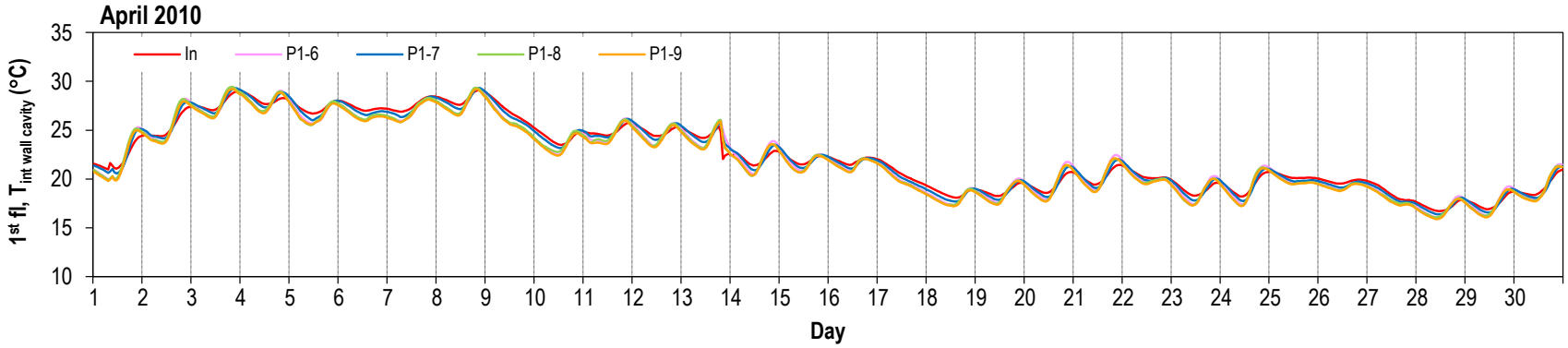

December 2009
In
P2-6
P2-7
P2-8
2nd fl, T int wall cavity (°C)
Day

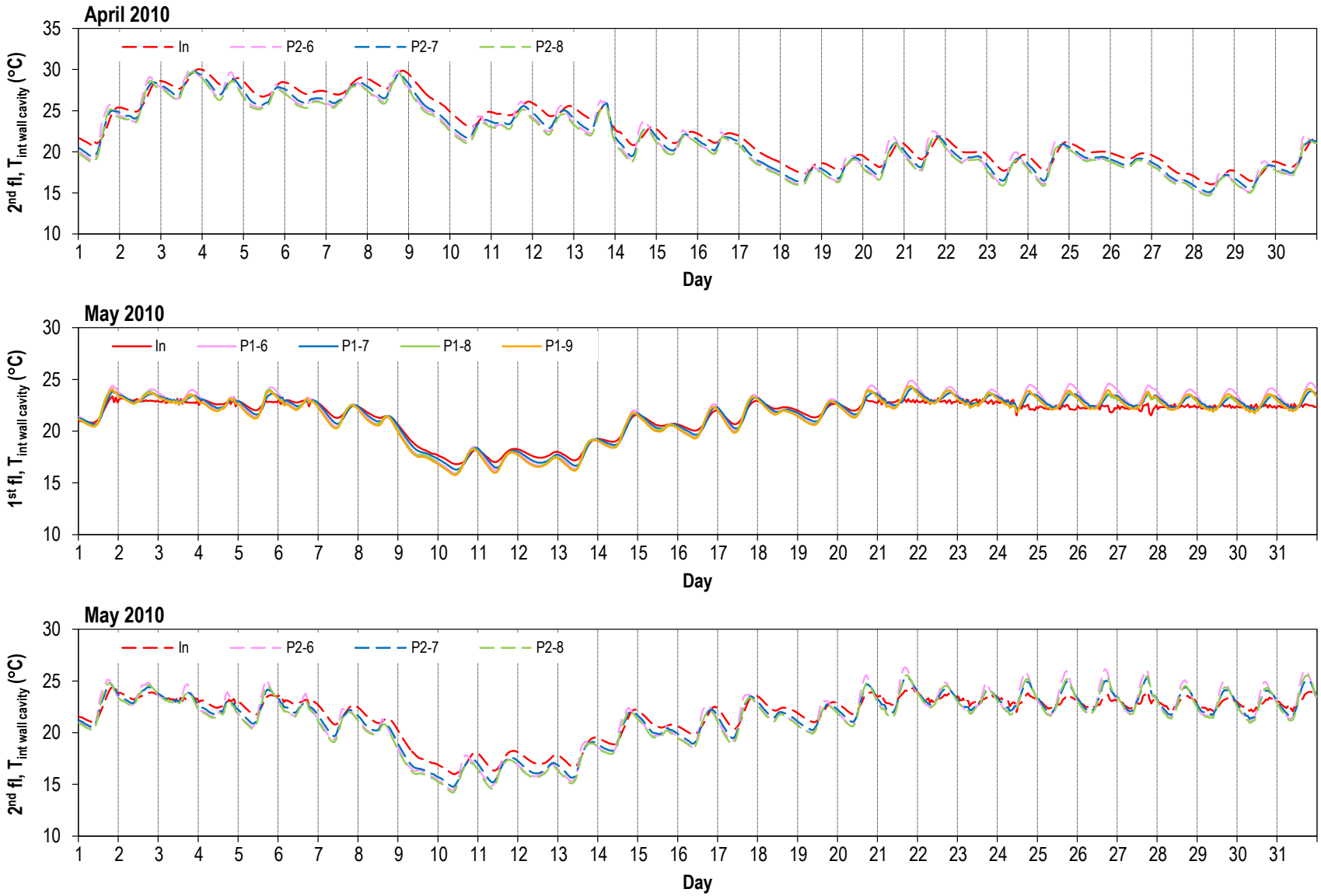

January 2010
In
P1-6
P1-7
P1-8
P1-9
1st fl, T int wall cavity (°C)
Day

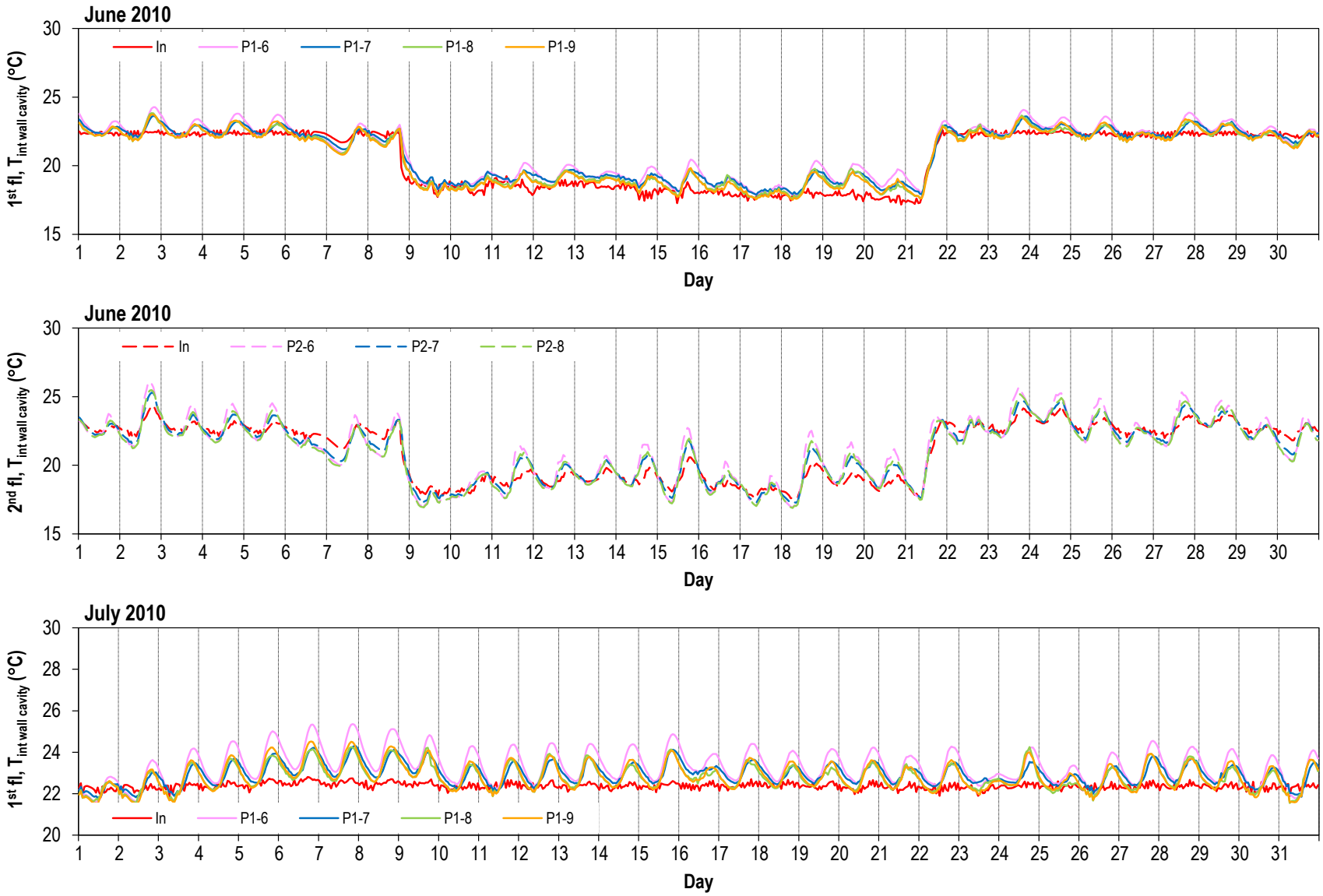

January 2010
In
P2-6
P2-7
P2-8
2nd fl, T int wall cavity (°C)
Day
February 2010
In
P1-6
P1-7
P1-8
P1-9
1st fl, T int wall cavity (°C)
Day
February 2010
In
P2-6
P2-7
P2-8
2nd fl, T int wall cavity (°C)
Day

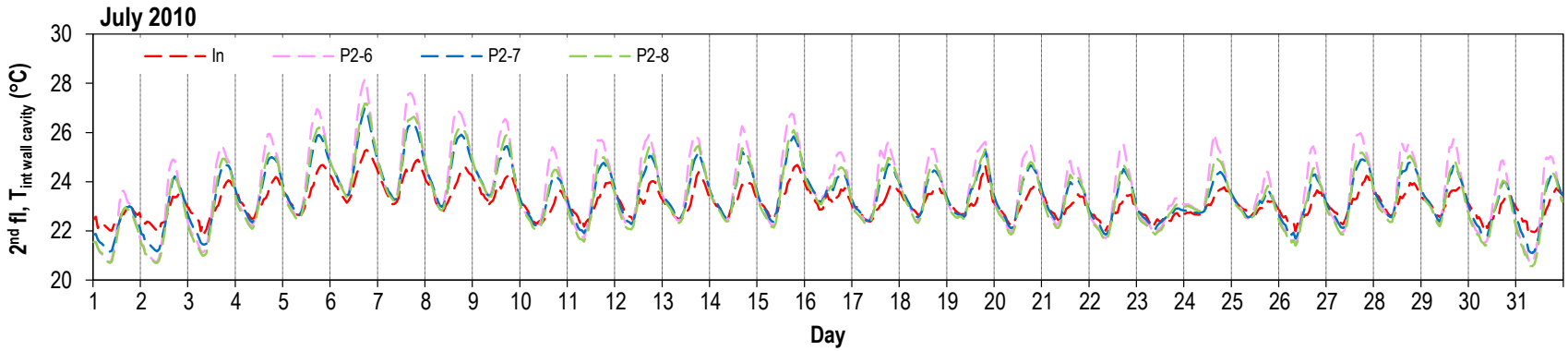

March 2010
In
P1-6
P1-7
P1-8
P1-9
1st fl, T int wall cavity (°C)
Day

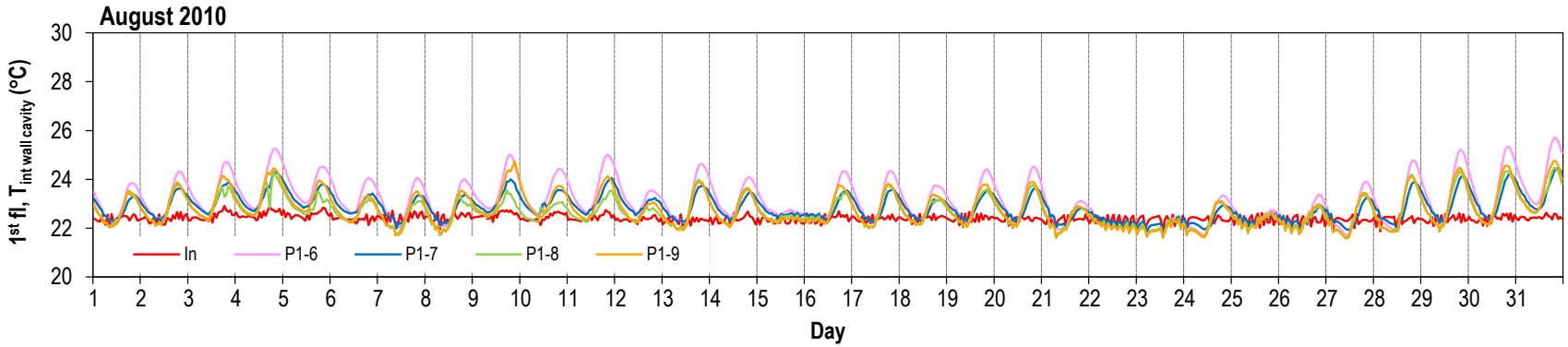

March 2010
In
P2-6
P2-7
P2-8
2nd fl, T int wall cavity (°C)
Day

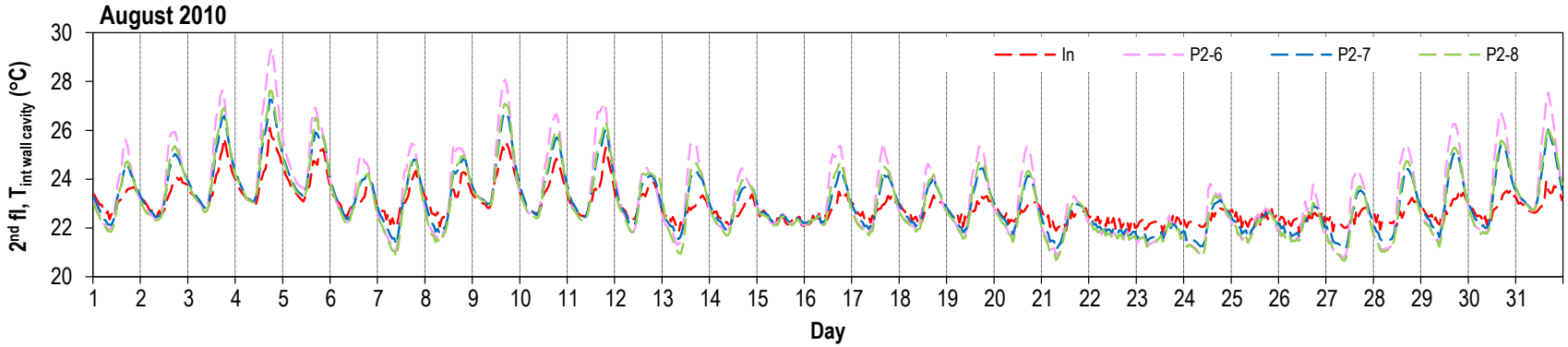

April 2010
In
P1-6
P1-7
P1-8
P1-9
1st fl, T int wall cavity (°C)
Day


April 2010
In
P2-6
P2-7
P2-8
2nd fl, T int wall cavity (°C)
Day
May 2010
In
P1-6
P1-7
P1-8
P1-9
1st fl, T int wall cavity (°C)
Day
May 2010
In
P2-6
P2-7
P2-8
2nd fl, T int wall cavity (°C)
Day

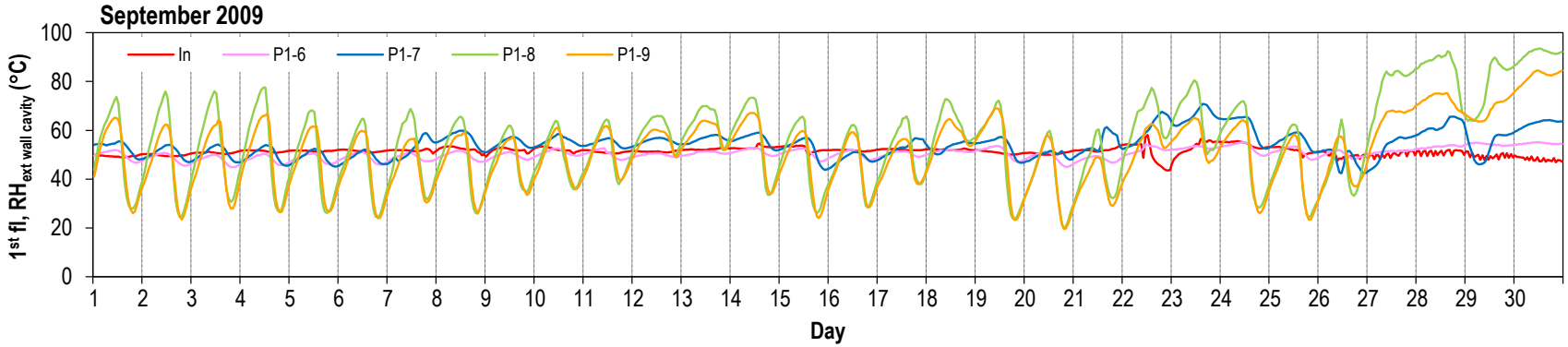

June 2010
In
P1-6
P1-7
P1-8
P1-9
1st fl, T int wall cavity (°C)
Day
June 2010
In
P2-6
P2-7
P2-8
2nd fl, T int wall cavity (°C)
Day
July 2010
In
P1-6
P1-7
P1-8
P1-9
1st fl, T int wall cavity (°C)
Day

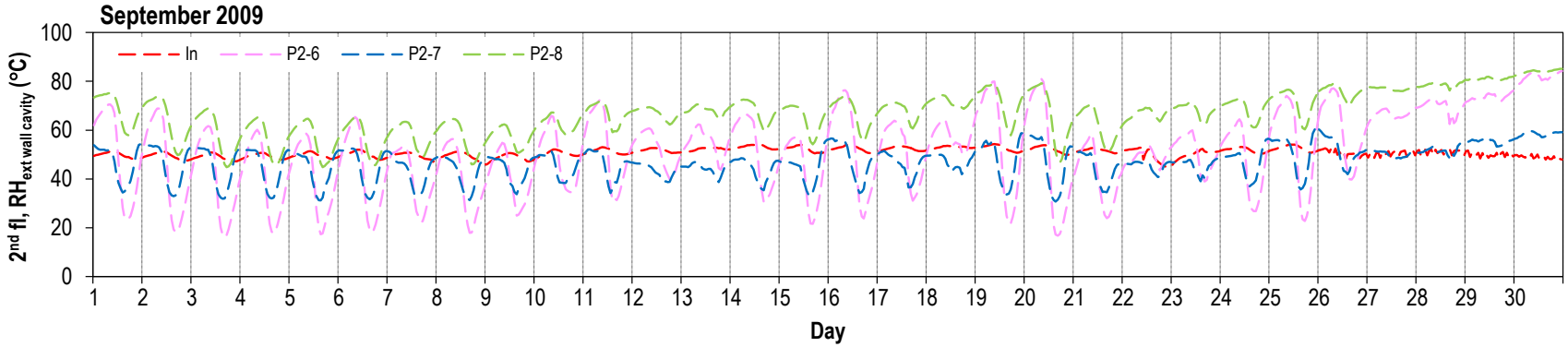

July 2010
In
P2-6
P2-7
P2-8
2nd fl, T int wall cavity (°C)
Day

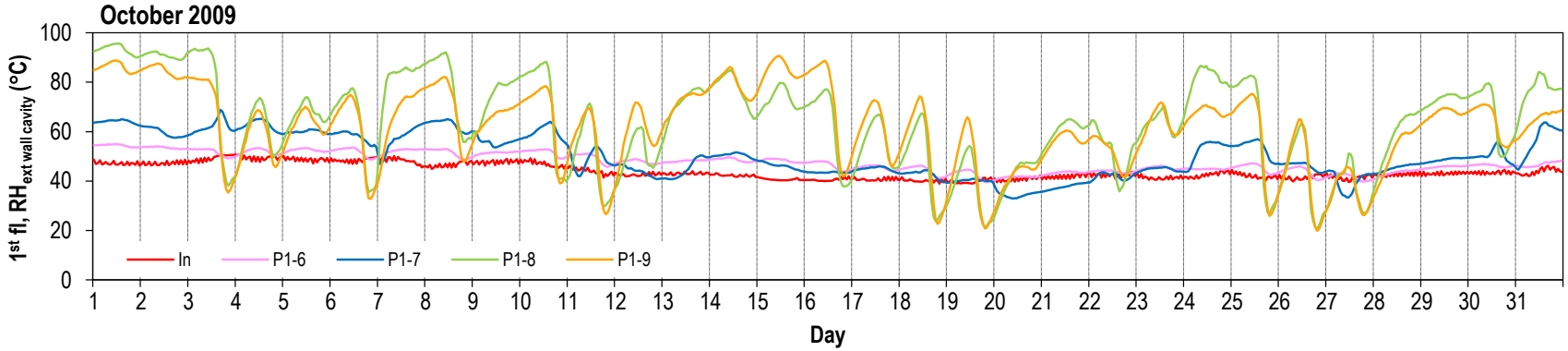

August 2010
In
P1-6
P1-7
P1-8
P1-9
1st fl, T int wall cavity (°C)
Day

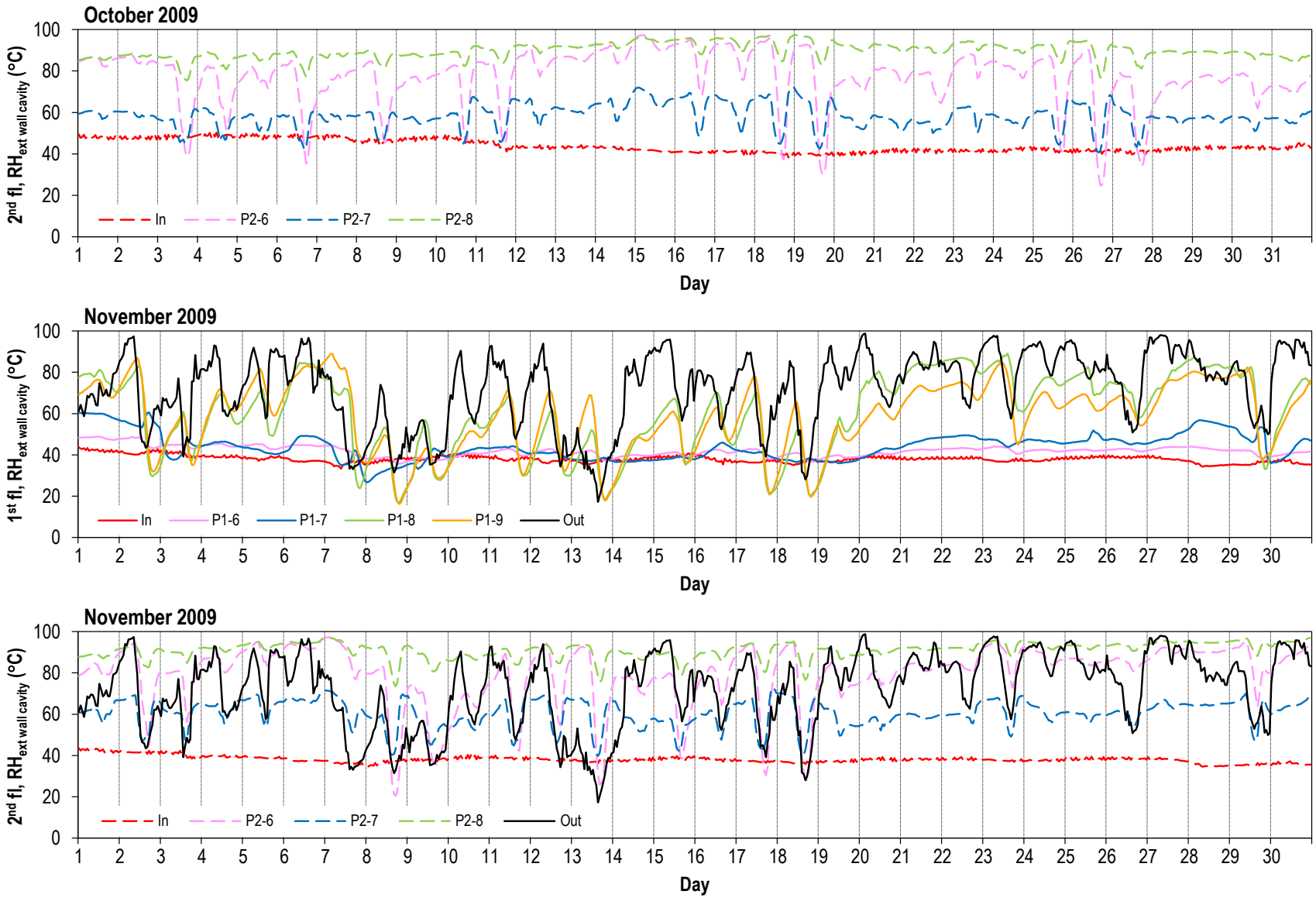

August 2010
In
P2-6
P2-7
P2-8
2nd fl, T int wall cavity (°C)
Day

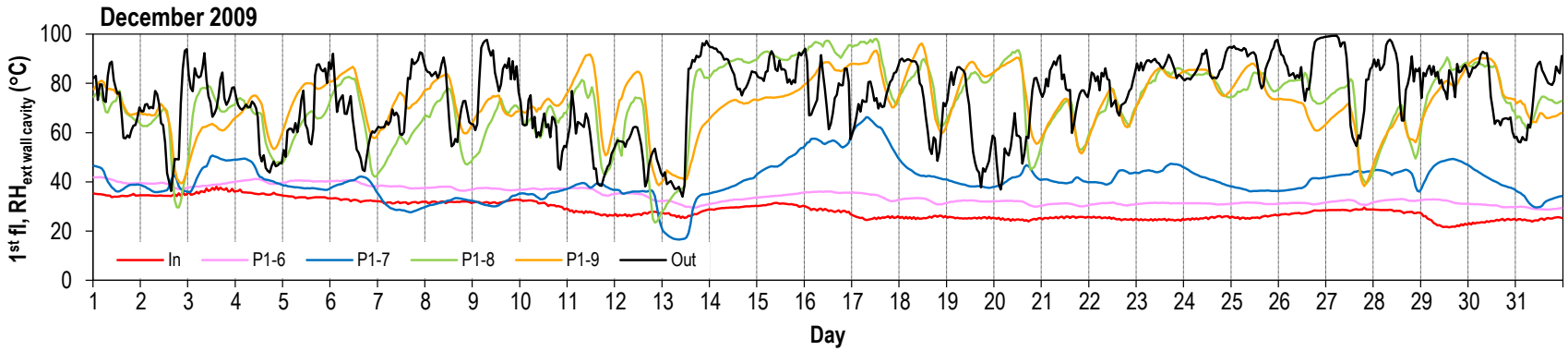
Relative humidity (%) at exterior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

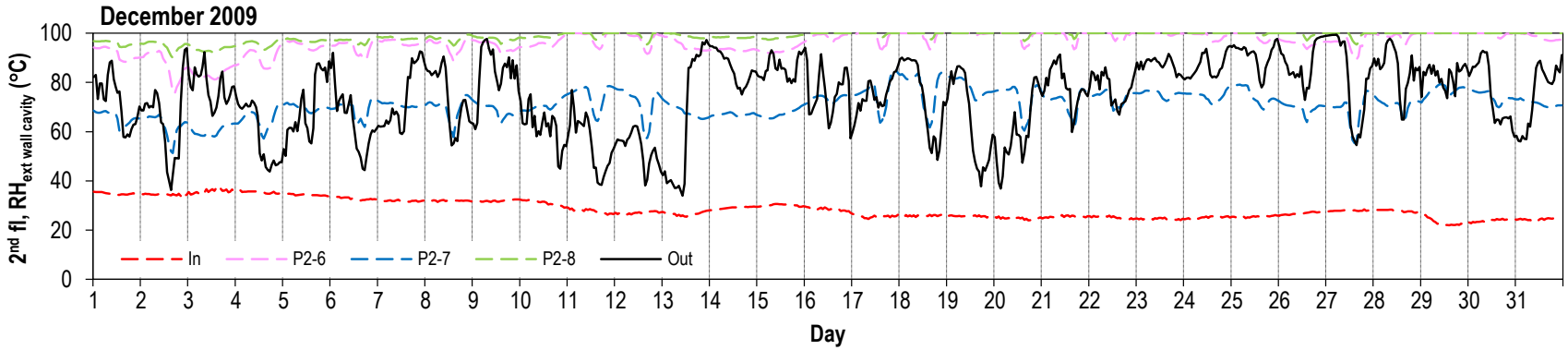


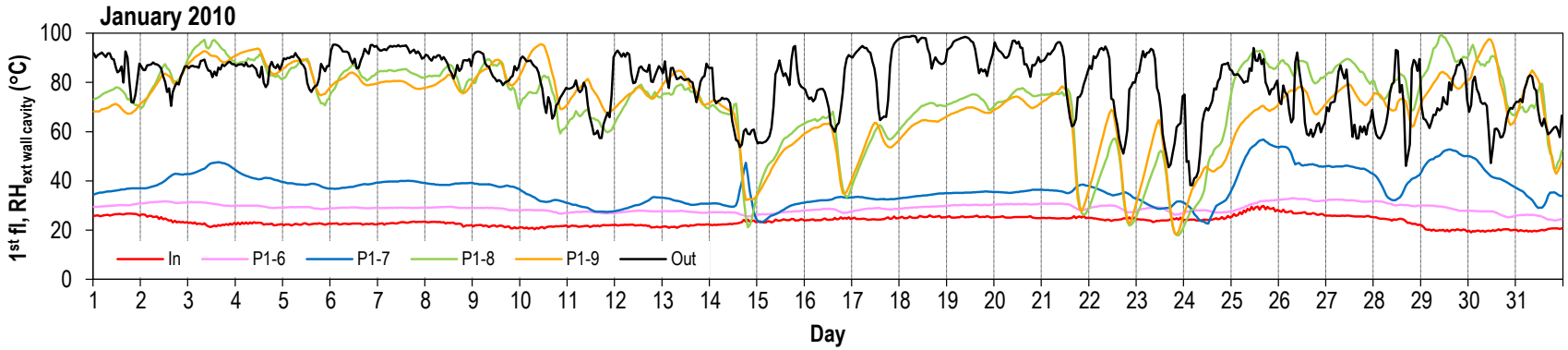



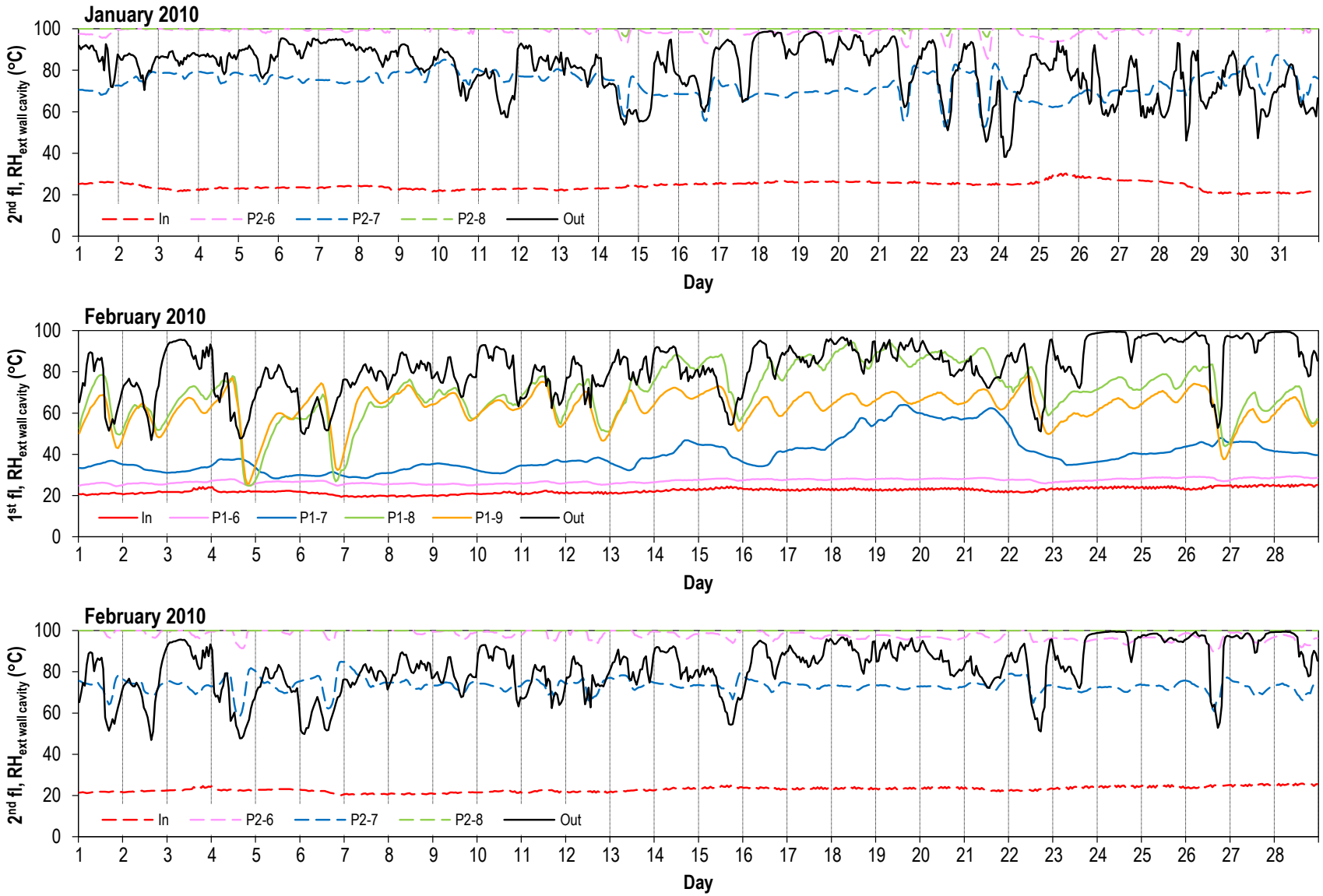



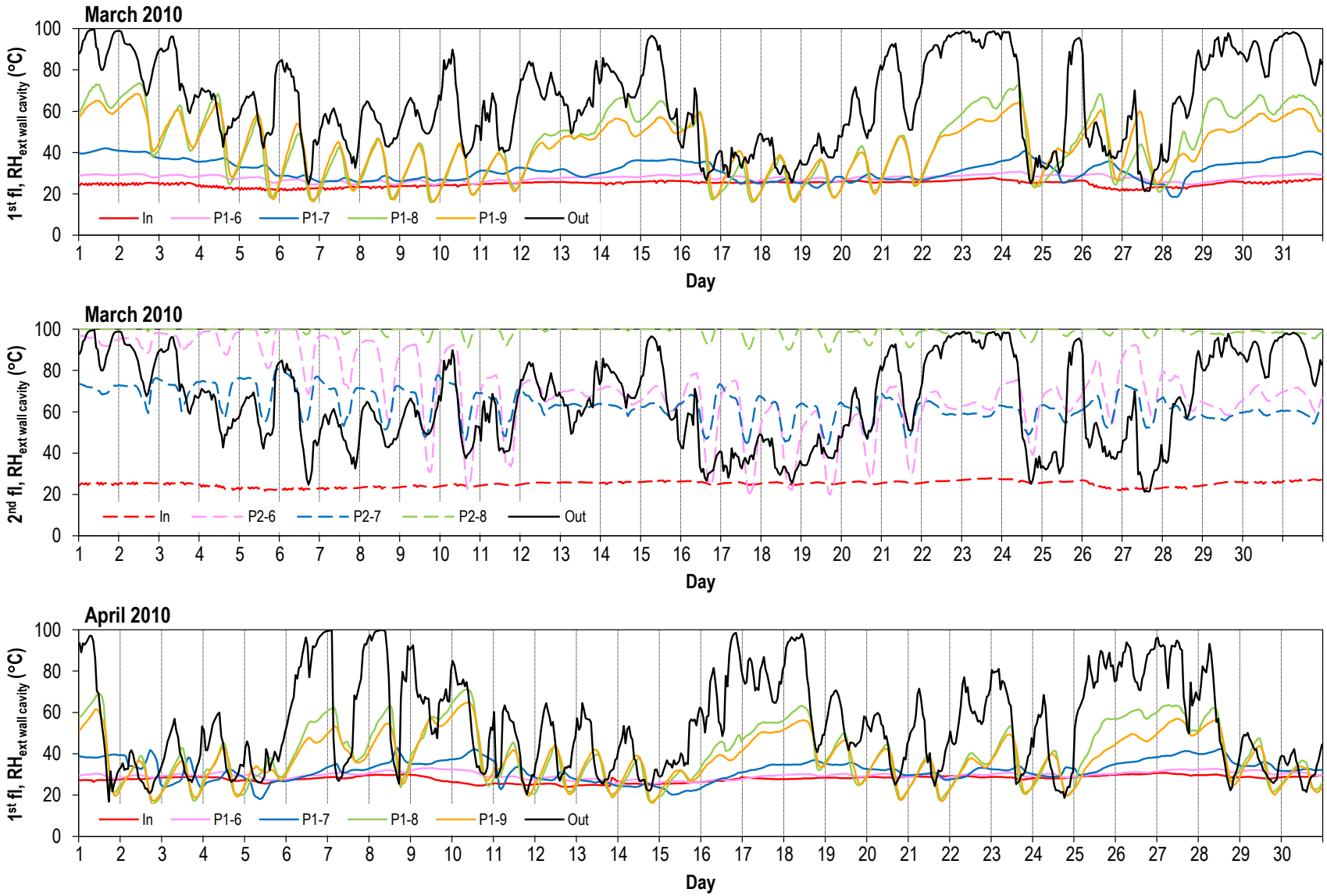

October 2009
2nd fl, RHext wall cavity (°C)
In
P2-6
P2-7
P2-8
Day
November 2009
1st fl, RHext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day
November 2009
2nd fl, RHext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day

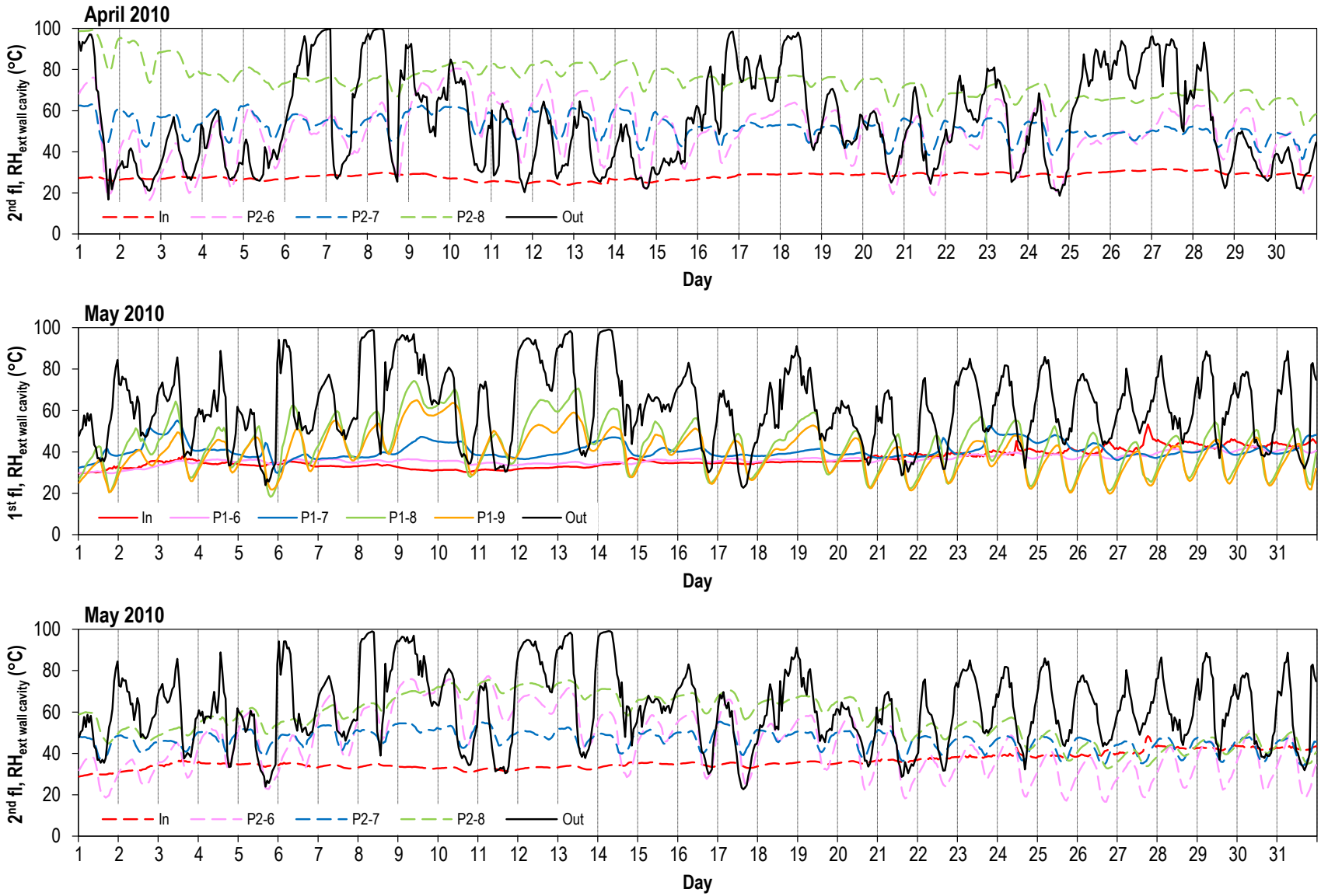

December 2009
1st fl, RHext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day

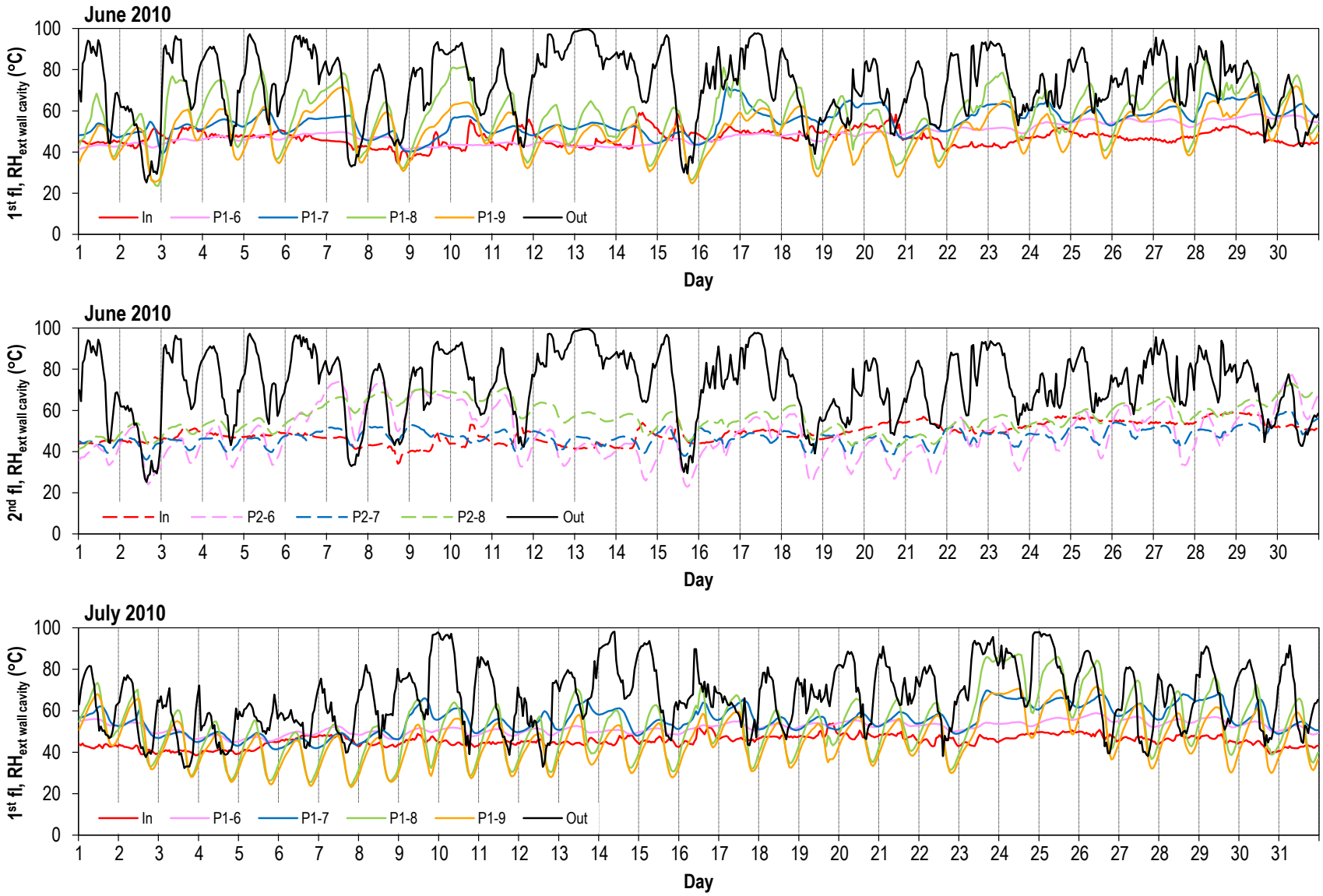

December 2009
2nd fl, RHext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day

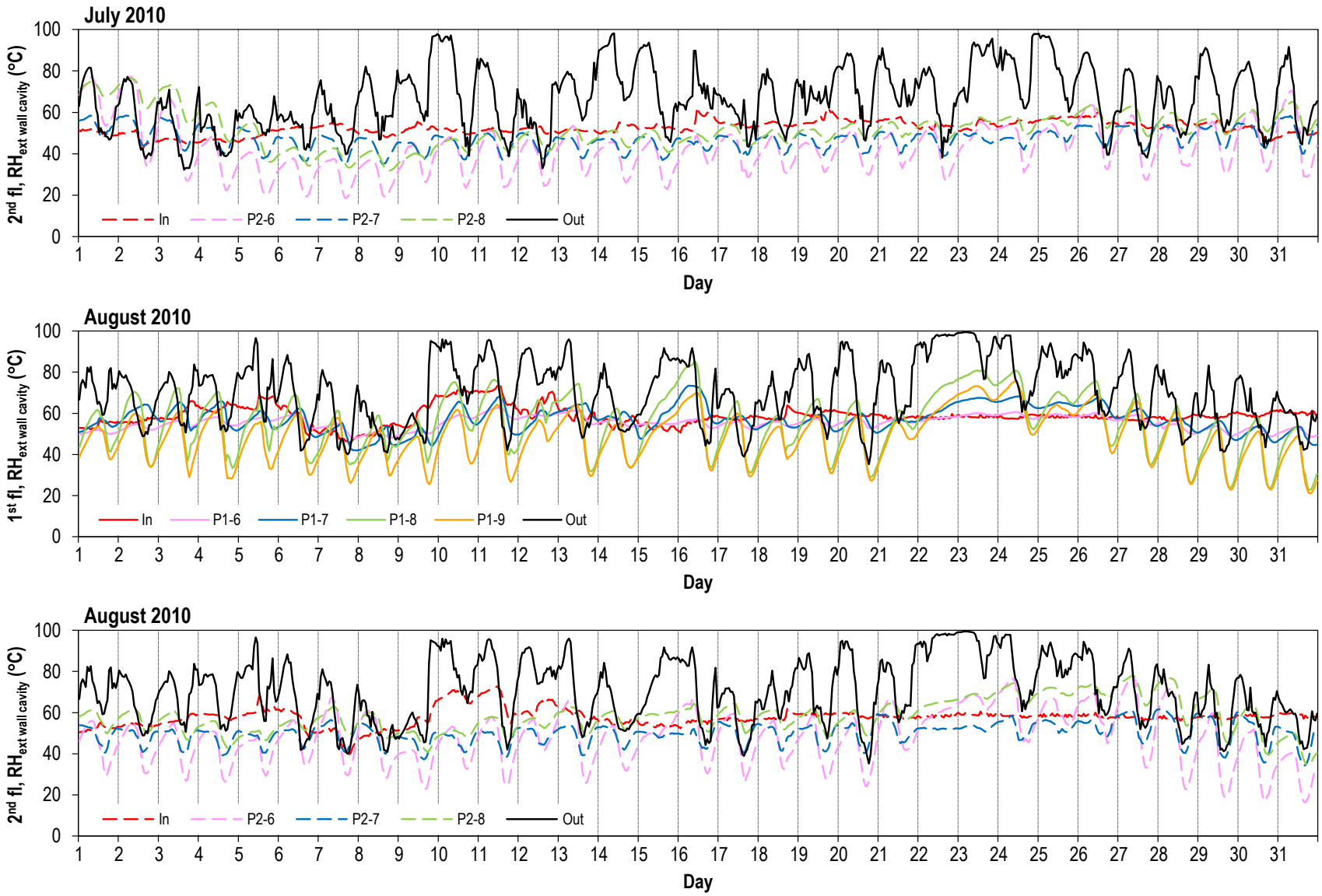

January 2010
1st fl, RHext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day


January 2010
2nd fl, RHext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day
February 2010
1st fl, RHext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day
February 2010
2nd fl, RHext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day

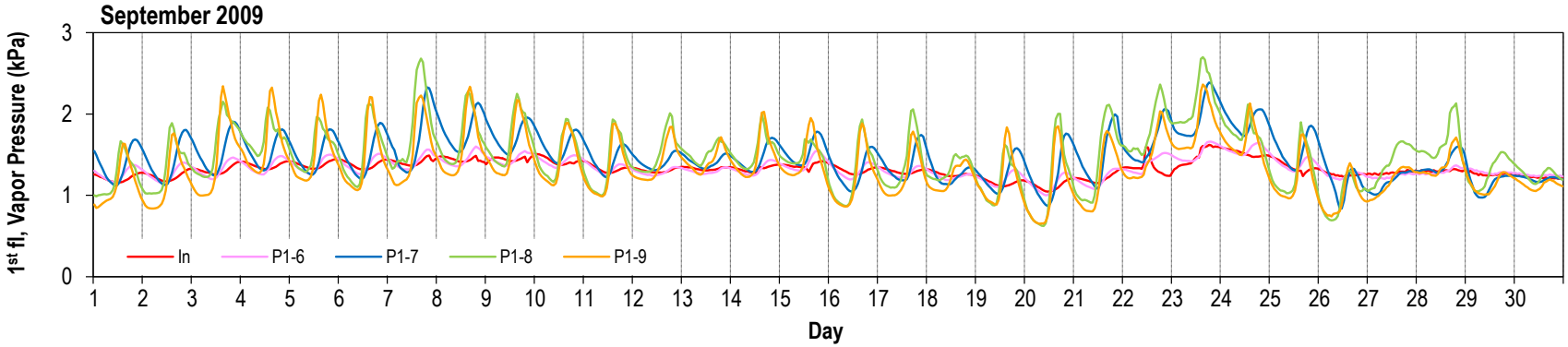

March 2010
1st fl, RHext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day
March 2010
2nd fl, RHext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day
April 2010
1st fl, RHext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day

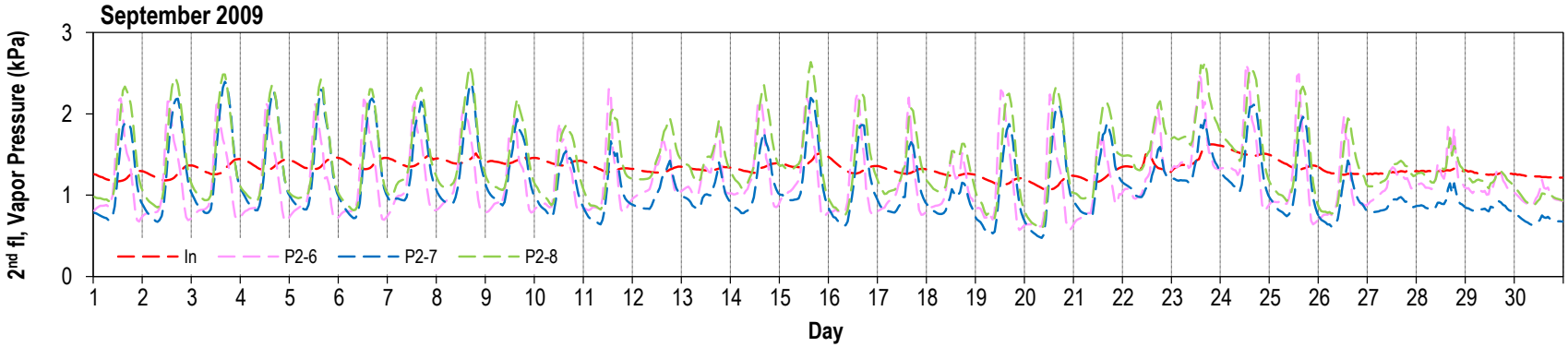

April 2010
2nd fl, RHext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day
May 2010
1st fl, RHext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day
May 2010
2nd fl, RHext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day

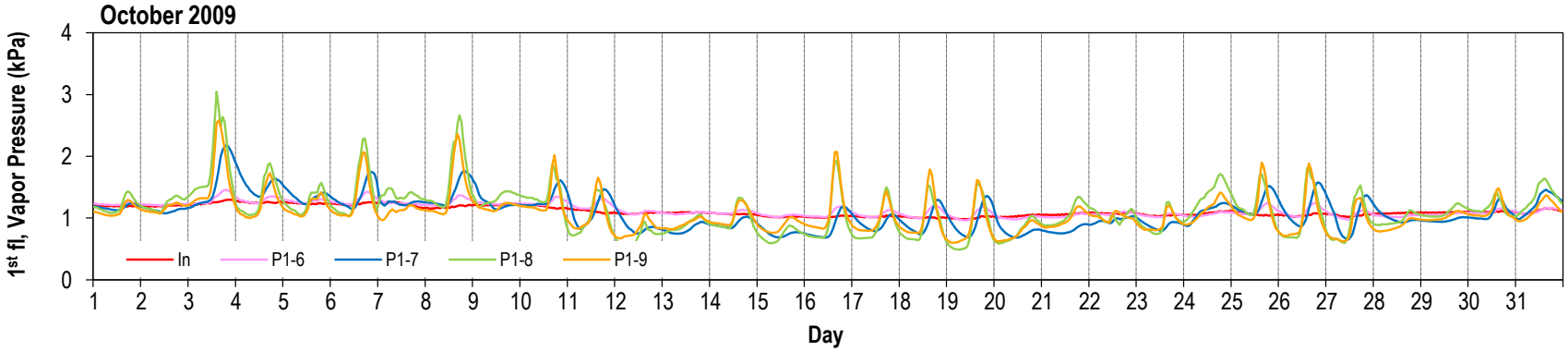

June 2010
1st fl, RHext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day
June 2010
2nd fl, RHext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day
July 2010
1st fl, RHext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day

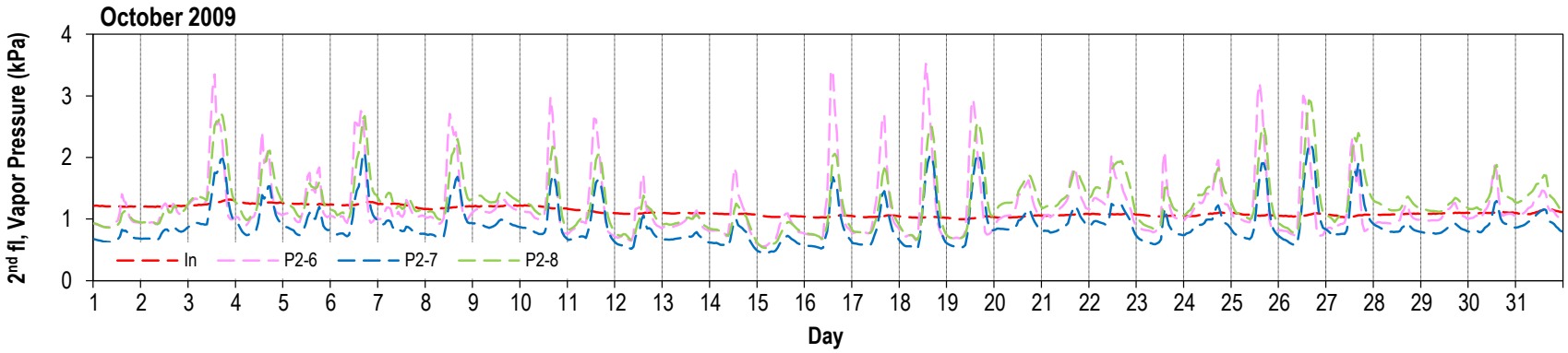

July 2010
2nd fl, RHext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day
August 2010
1st fl, RHext wall cavity (°C)
In
P1-6
P1-7
P1-8
P1-9
Out
Day
August 2010
2nd fl, RHext wall cavity (°C)
In
P2-6
P2-7
P2-8
Out
Day

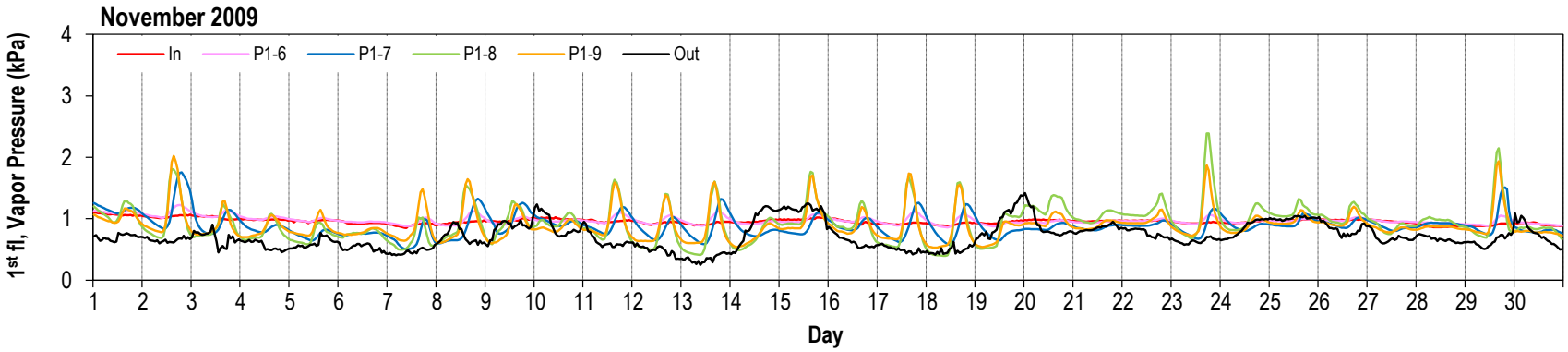
Water vapor pressure (kPa) at exterior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

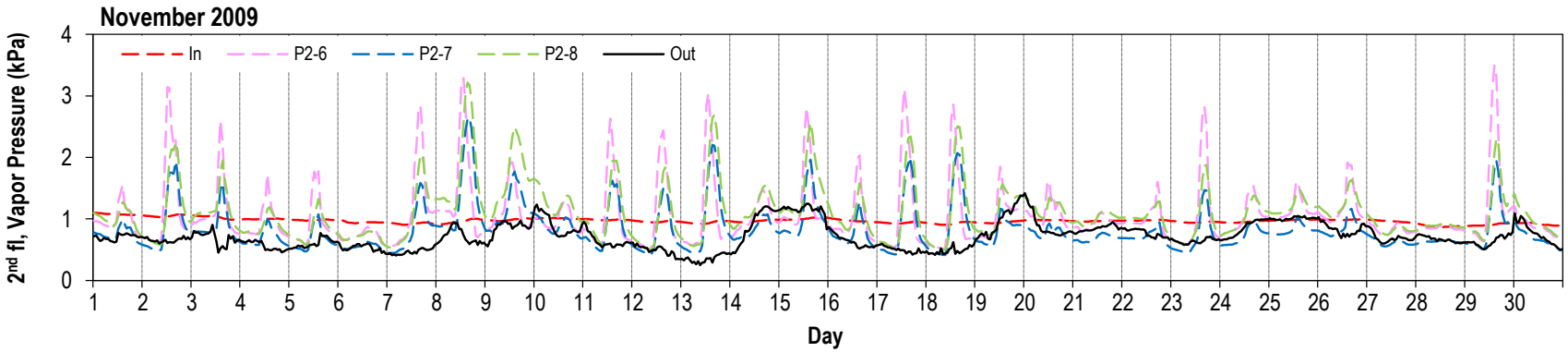


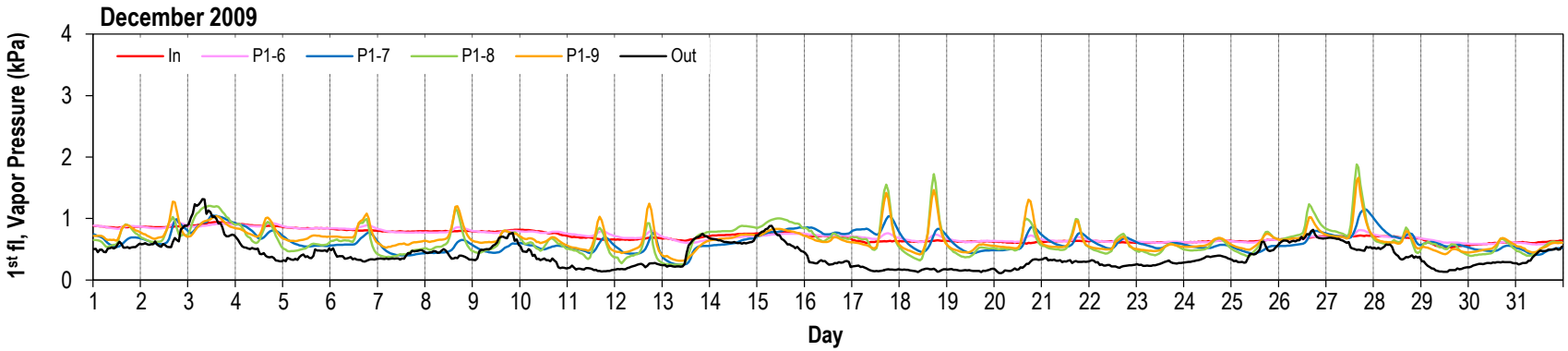



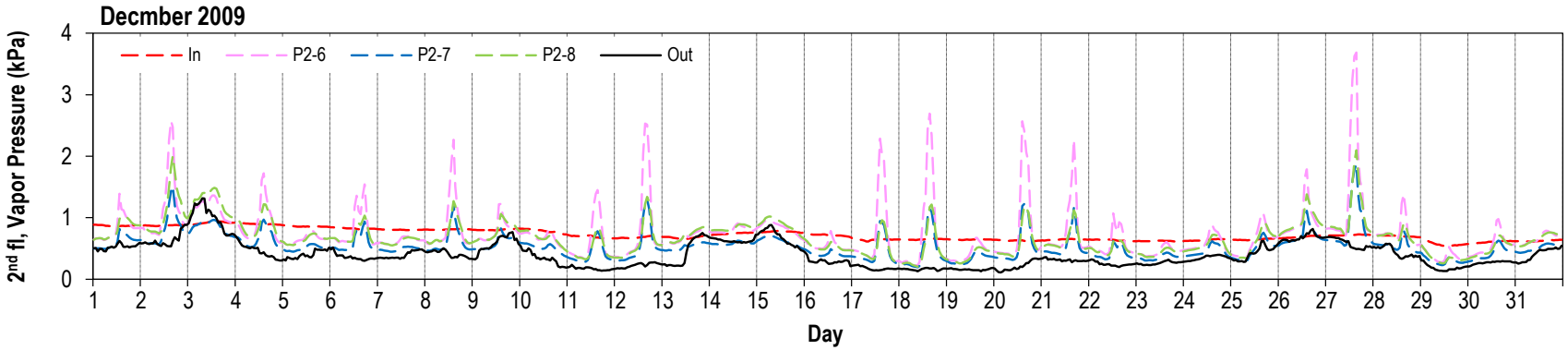



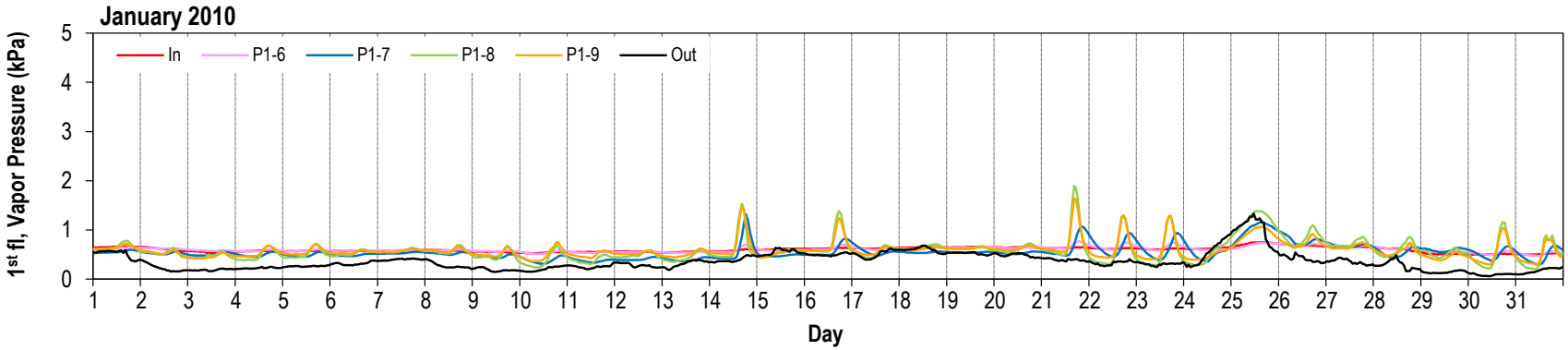

October 2009
2nd fl, Vapor Pressure (kPa)
In
P2-6
P2-7
P2-8
Day

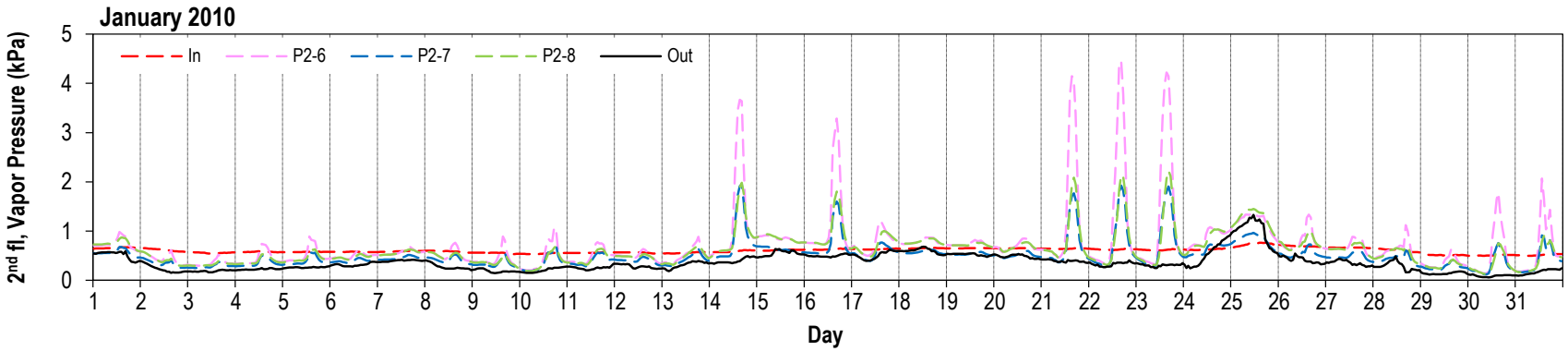

November 2009
1st fl, Vapor Pressure (kPa)
In
P1-6
P1-7
P1-8
P1-9
Out
Day

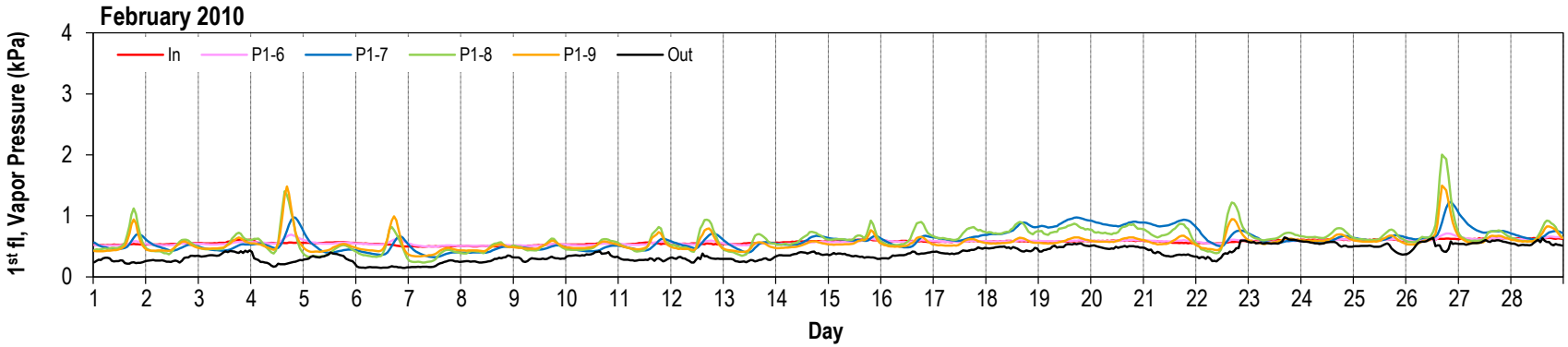

November 2009
2nd fl, Vapor Pressure (kPa)
In
P2-6
P2-7
P2-8
Out
Day

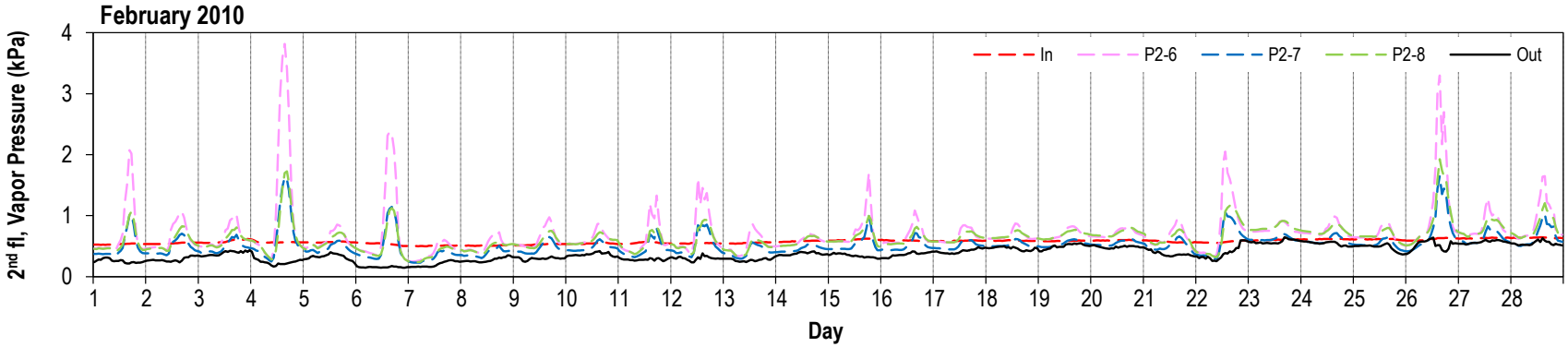

December 2009
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, Vapor Pressure (kPa)
Day

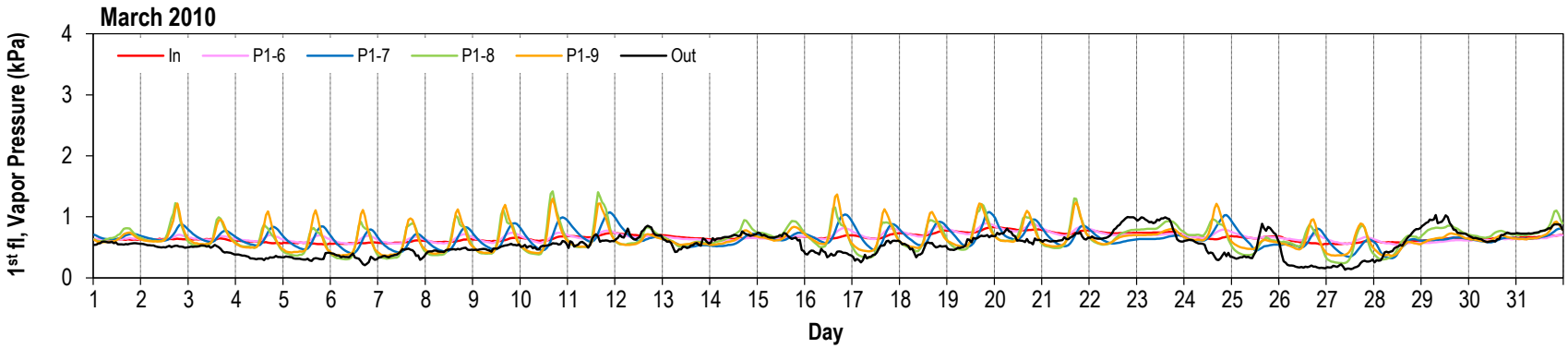

Decmber 2009
In
P2-6
P2-7
P2-8
Out
2nd fl, Vapor Pressure (kPa)
Day

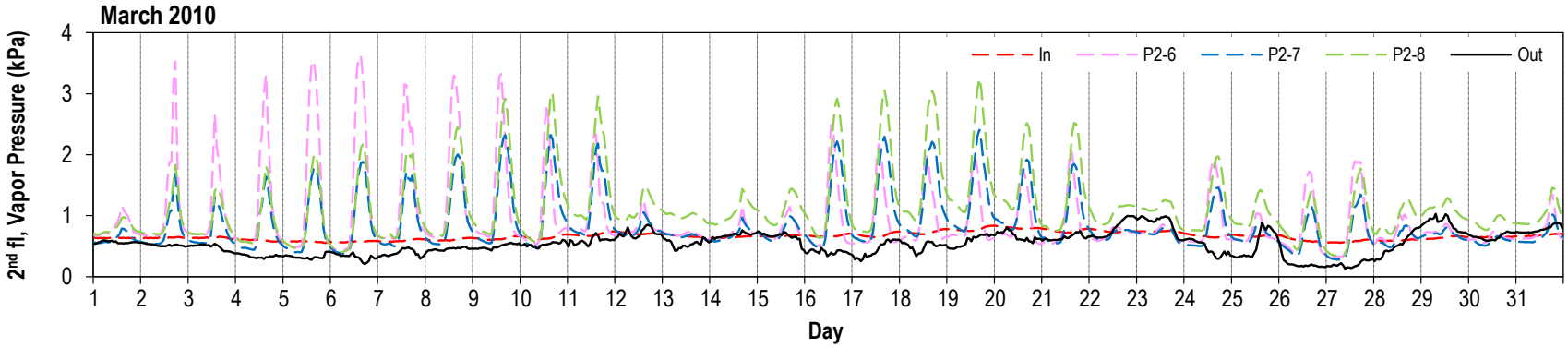

January 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, Vapor Pressure (kPa)
Day

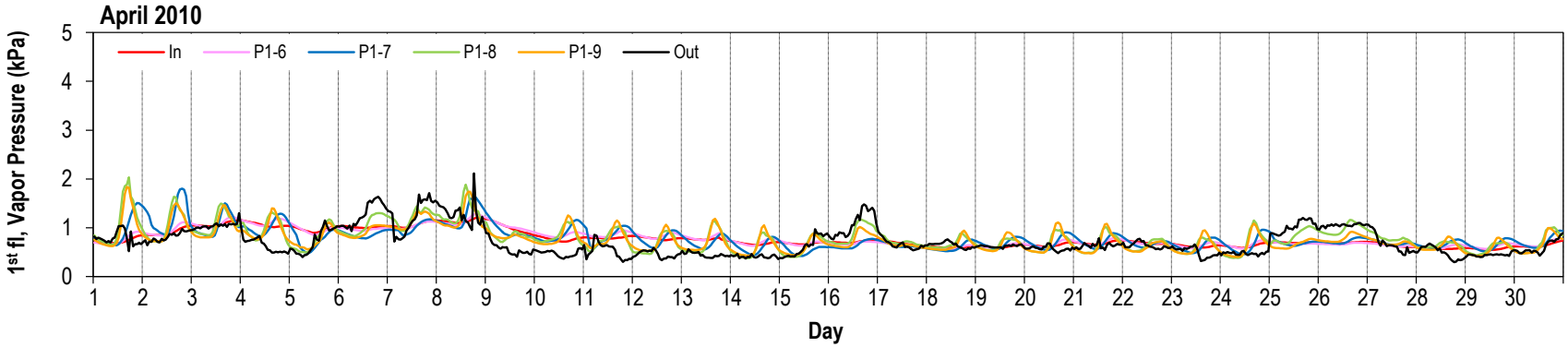

January 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, Vapor Pressure (kPa)
Day

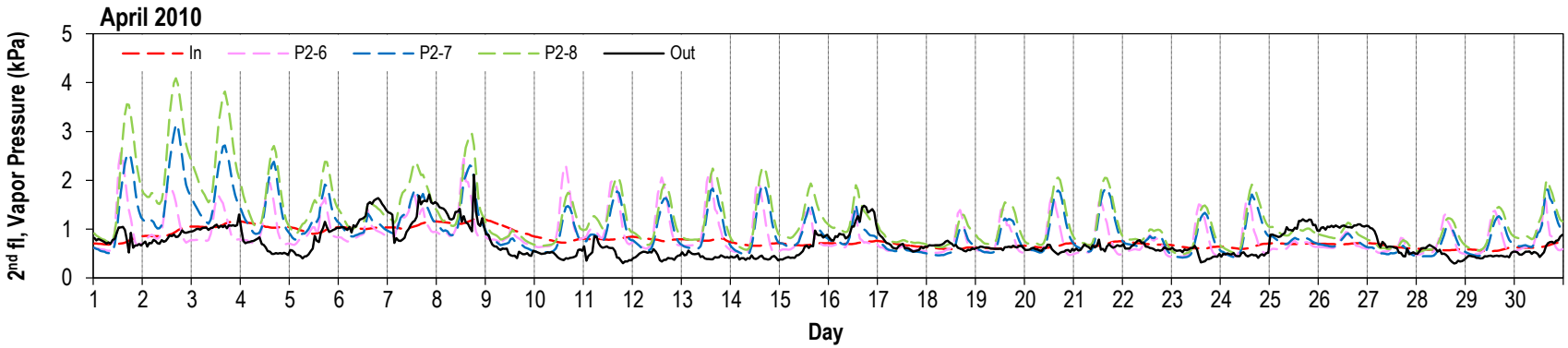

February 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, Vapor Pressure (kPa)
Day

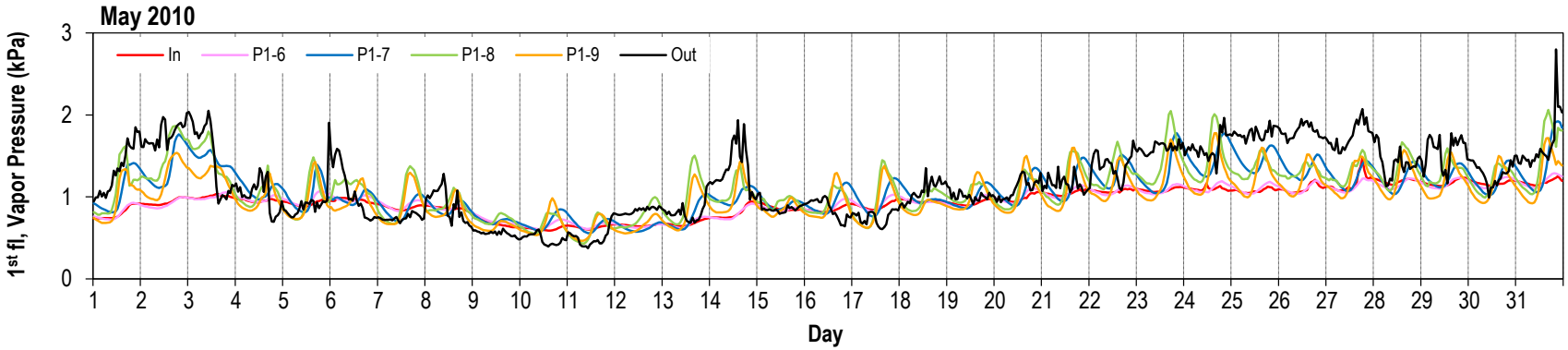

February 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, Vapor Pressure (kPa)
Day

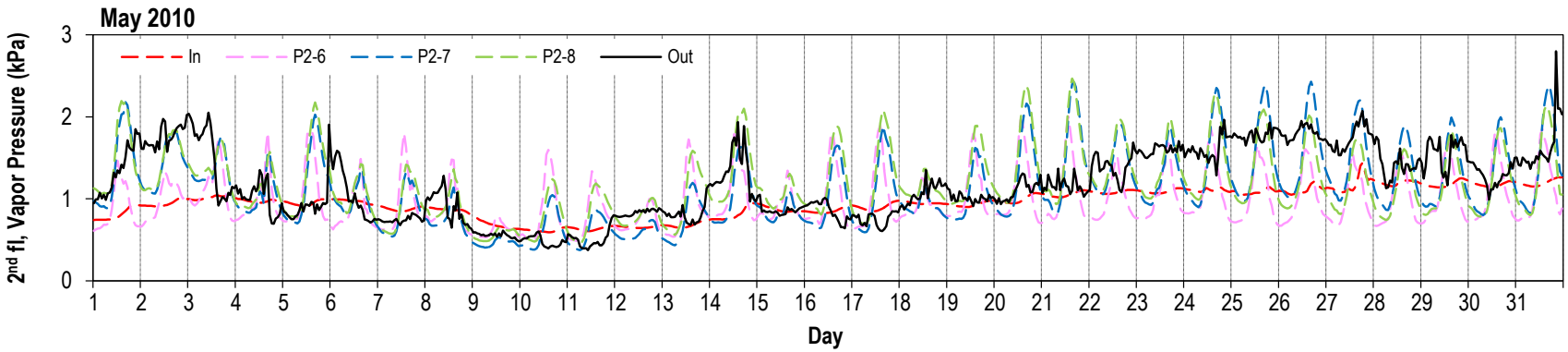

March 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, Vapor Pressure (kPa)
Day

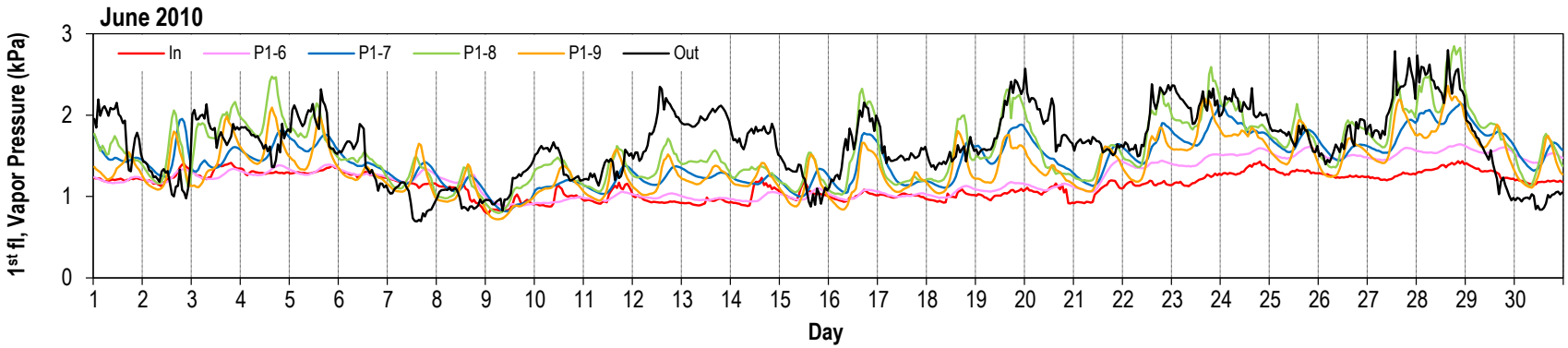

March 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, Vapor Pressure (kPa)
Day

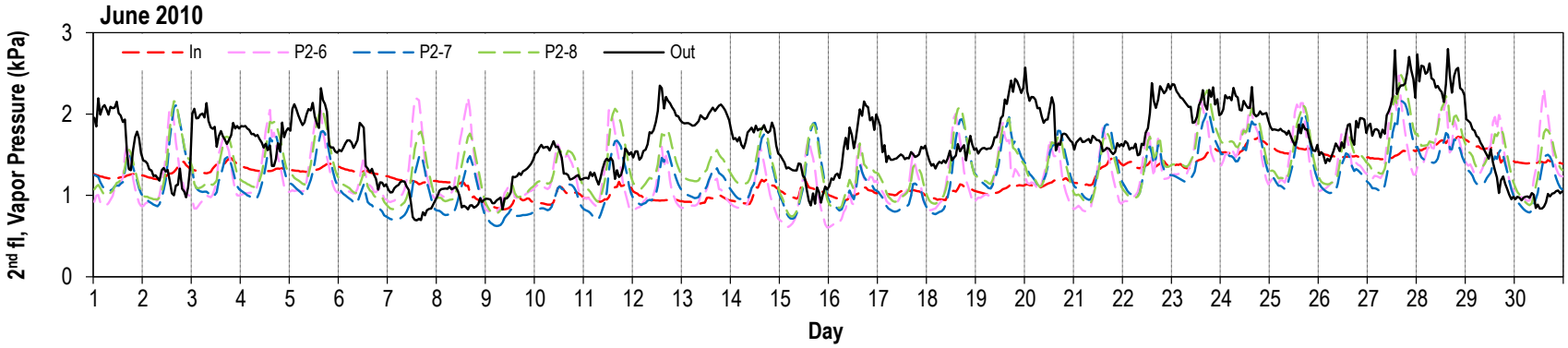

April 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, Vapor Pressure (kPa)
Day

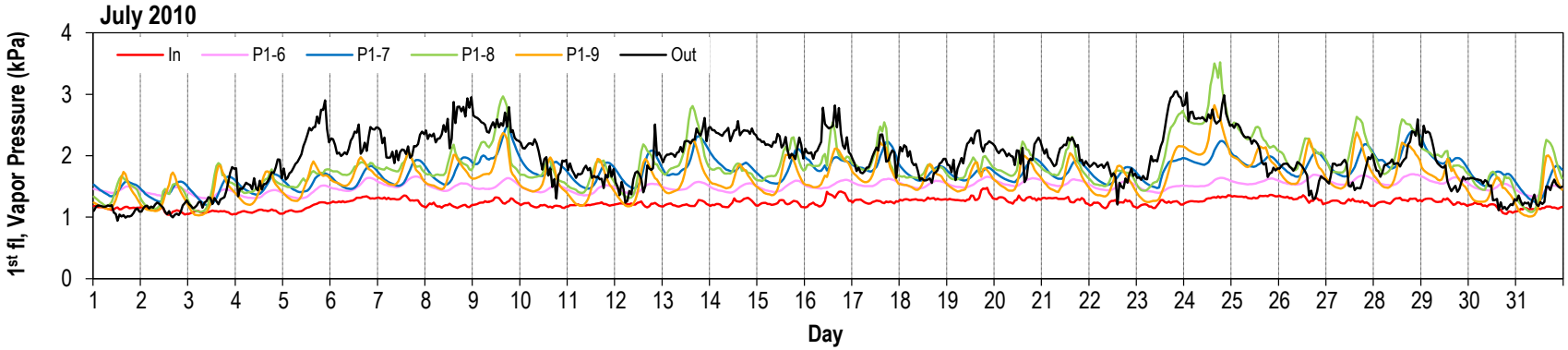

April 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, Vapor Pressure (kPa)
Day

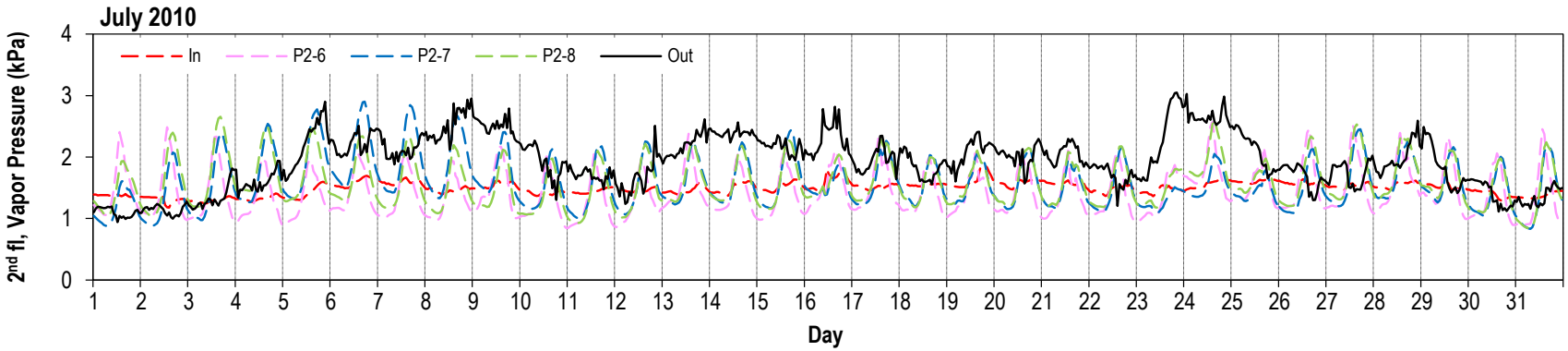

May 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, Vapor Pressure (kPa)
Day

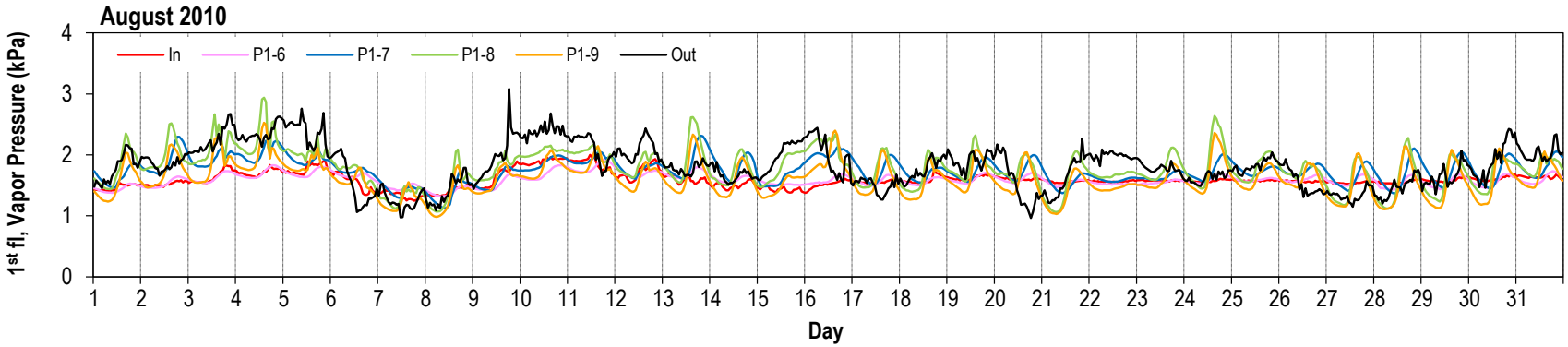

May 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, Vapor Pressure (kPa)
Day

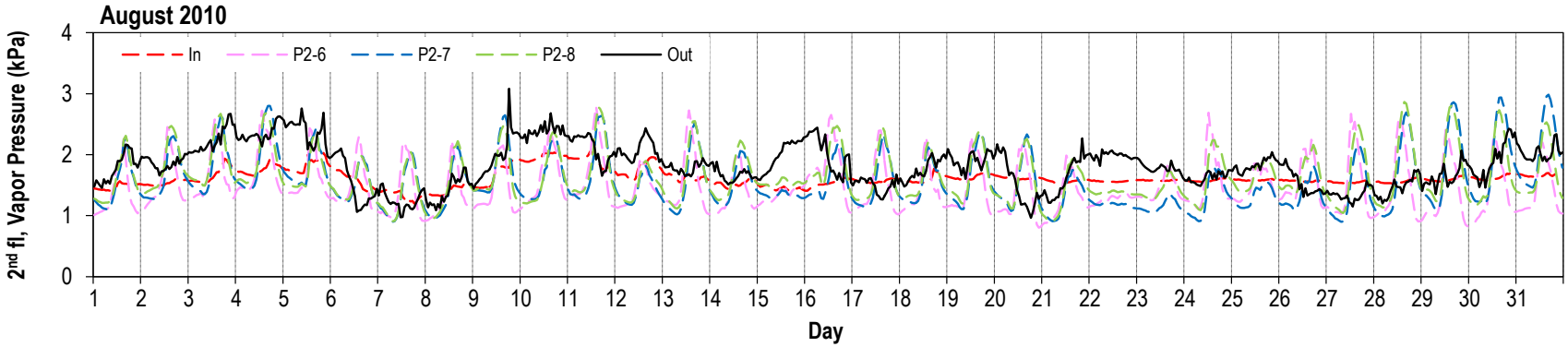

June 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, Vapor Pressure (kPa)
Day


June 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, Vapor Pressure (kPa)
Day

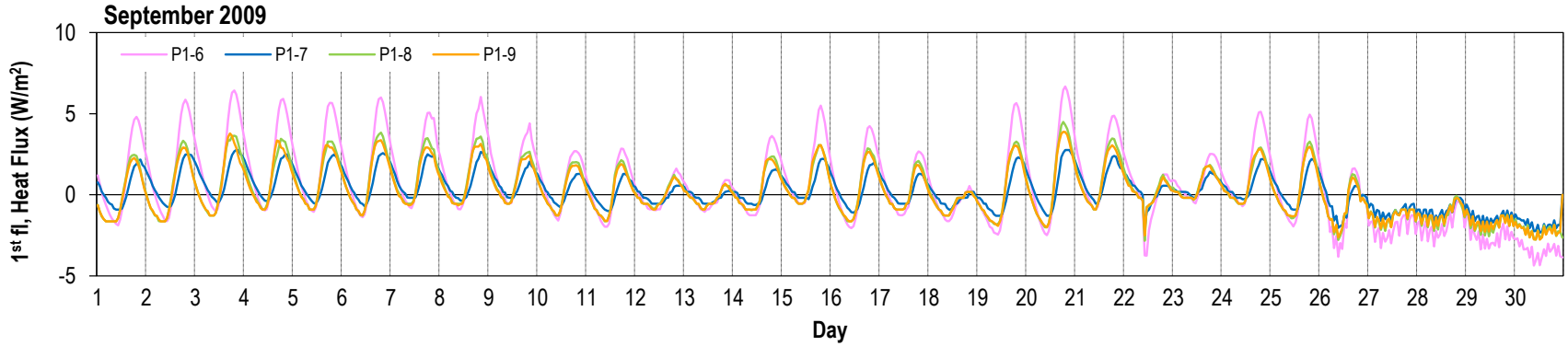

July 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, Vapor Pressure (kPa)
Day

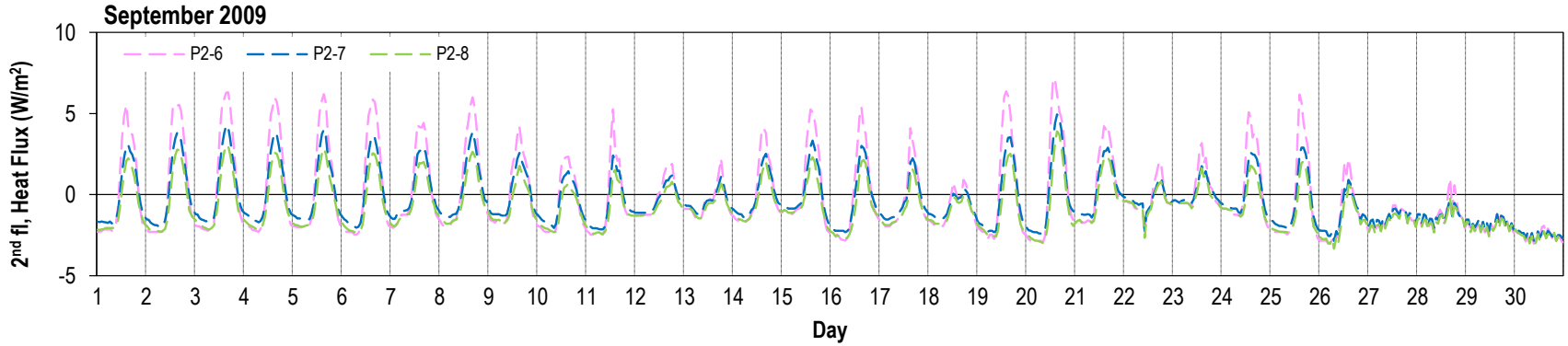

July 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, Vapor Pressure (kPa)
Day

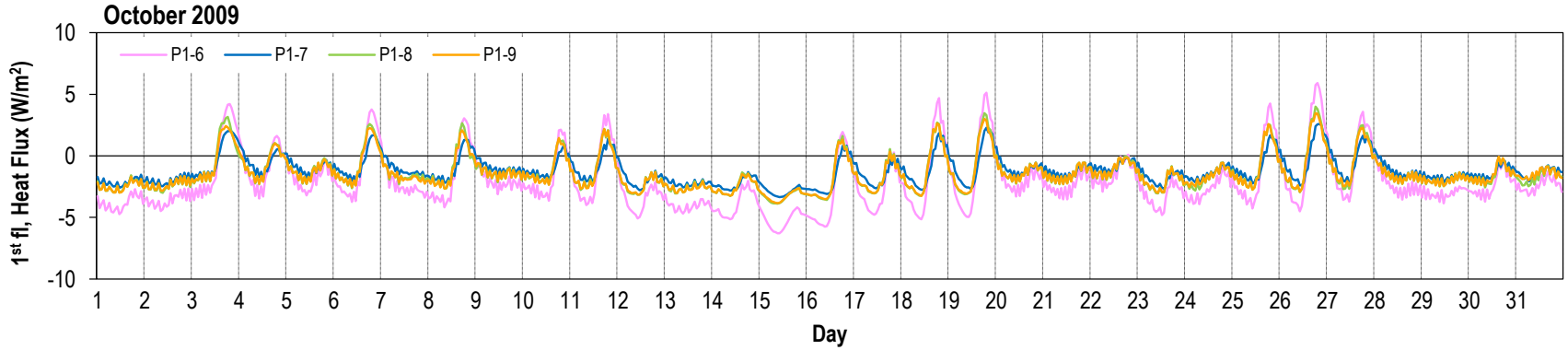

August 2010
In
P1-6
P1-7
P1-8
P1-9
Out
1st fl, Vapor Pressure (kPa)
Day

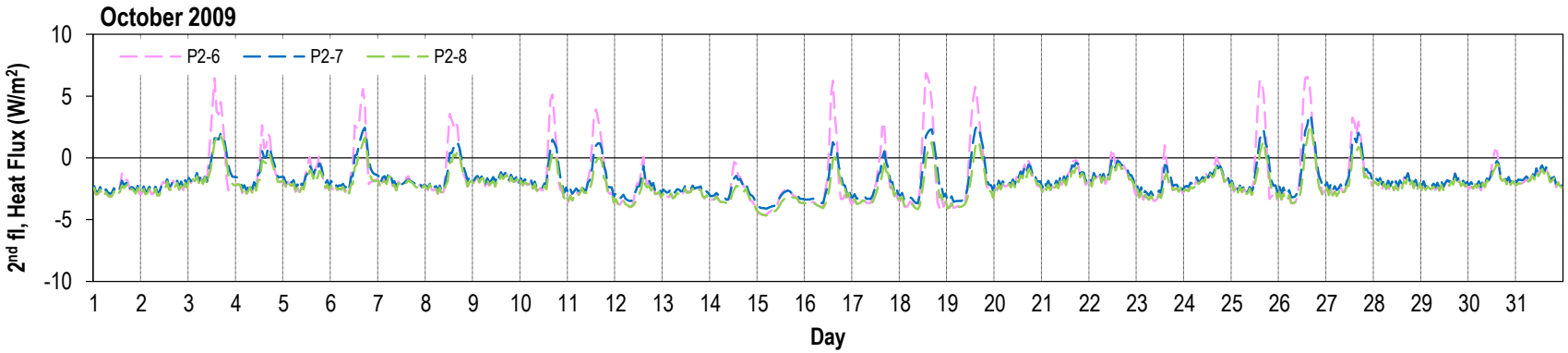

August 2010
In
P2-6
P2-7
P2-8
Out
2nd fl, Vapor Pressure (kPa)
Day

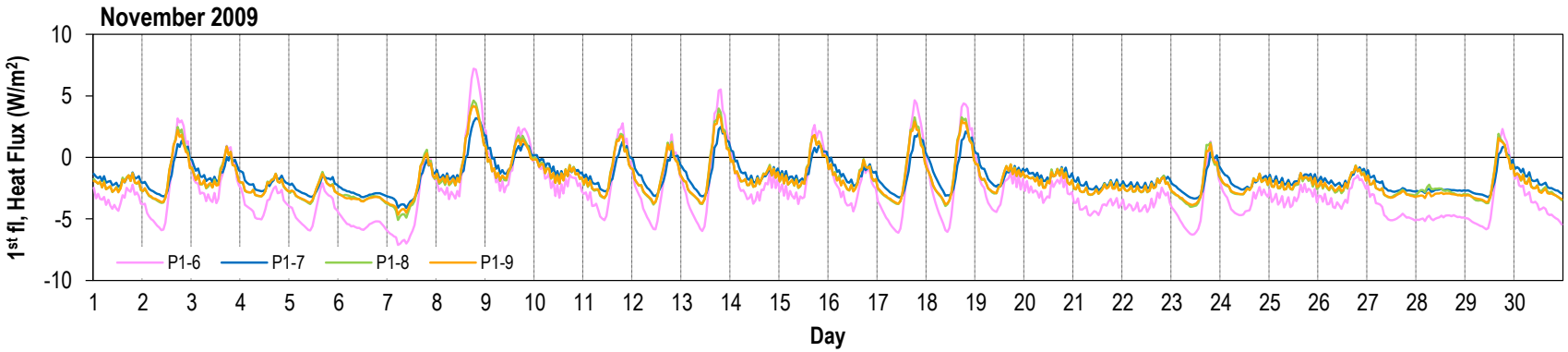
Heat flux (W/m$^2$) thru interior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

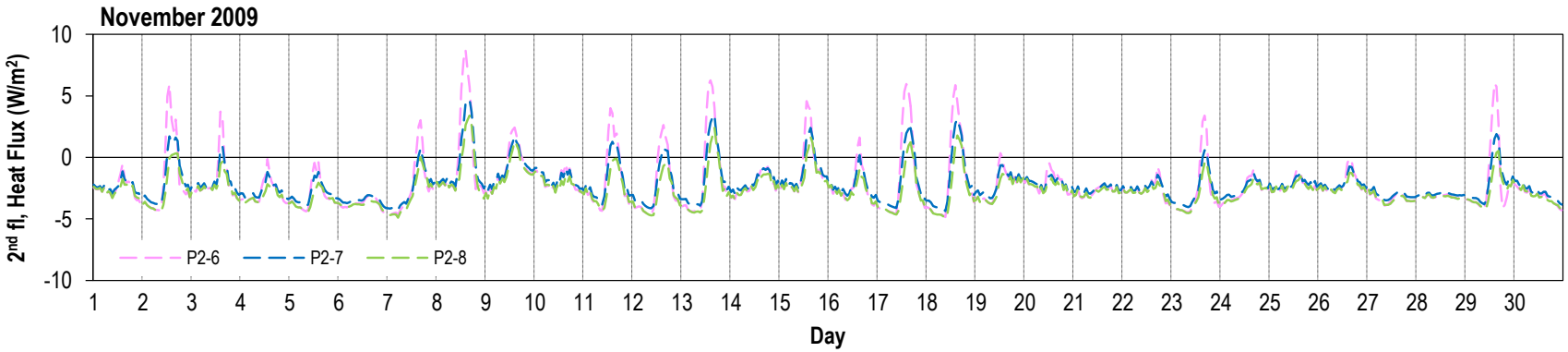


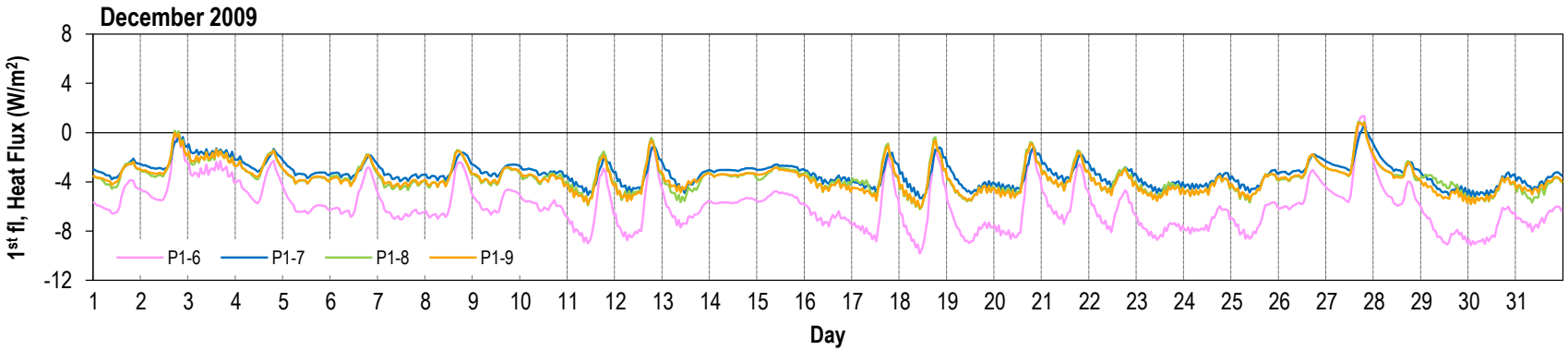



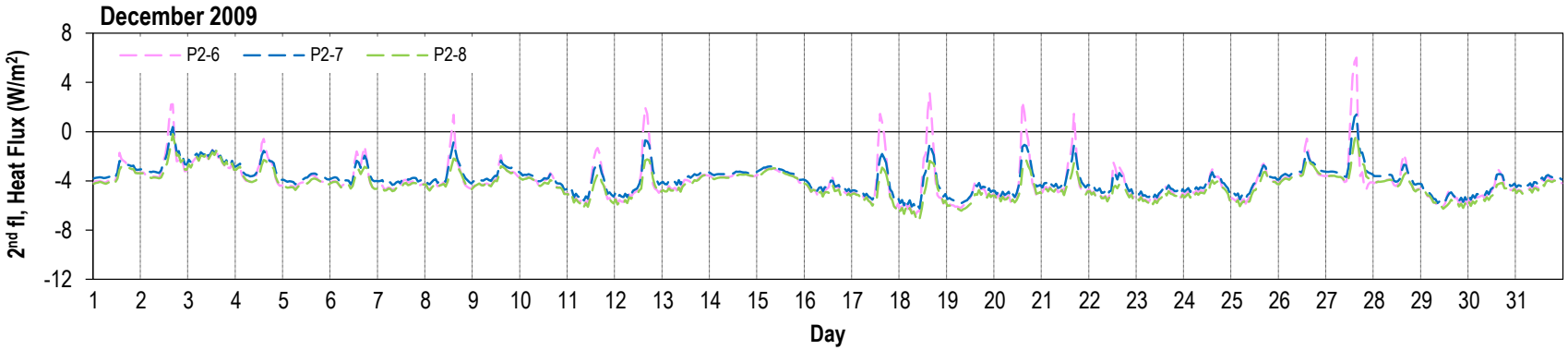



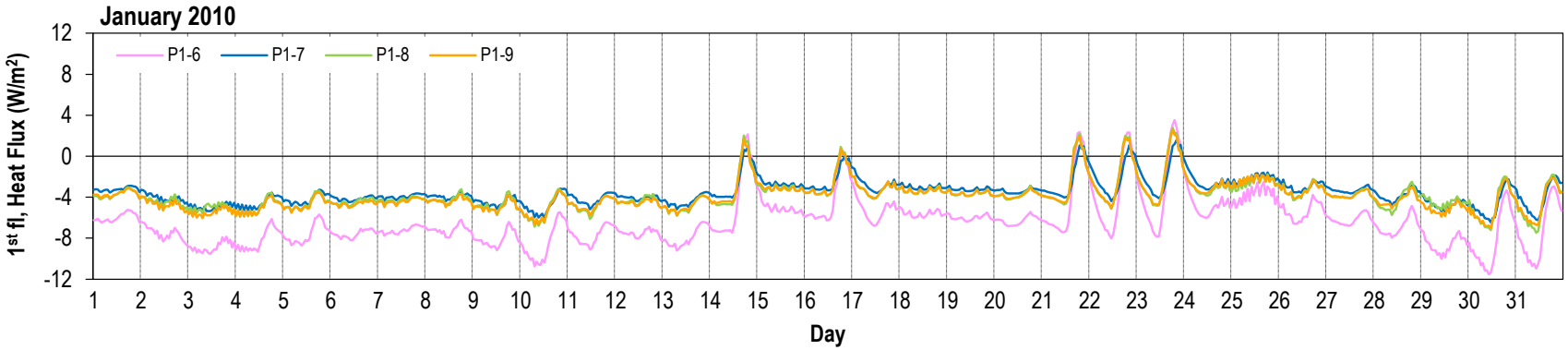

October 2009
P2-6
P2-7
P2-8
2nd fl, Heat Flux (W/m2)
Day

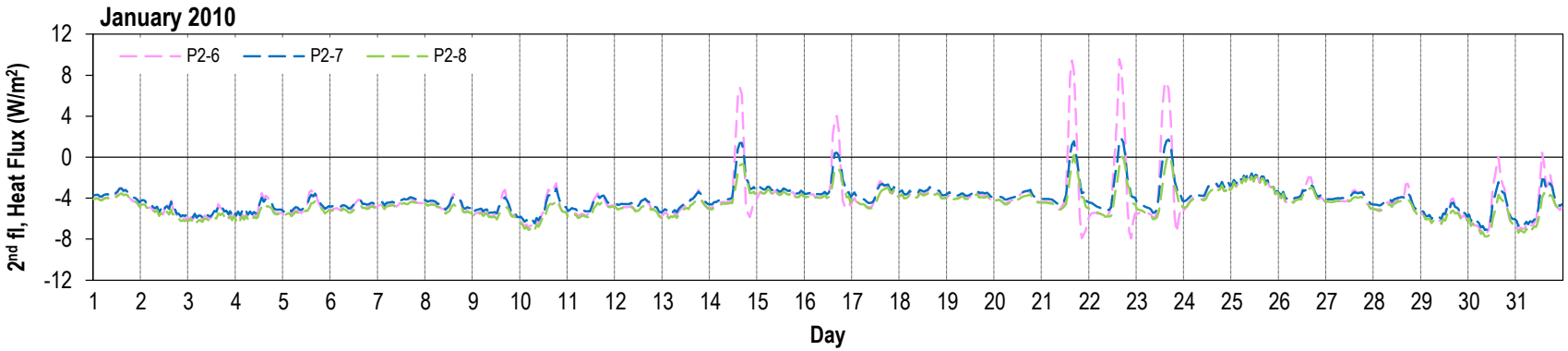

November 2009
P1-6
P1-7
P1-8
P1-9
1st fl, Heat Flux (W/m2)
Day

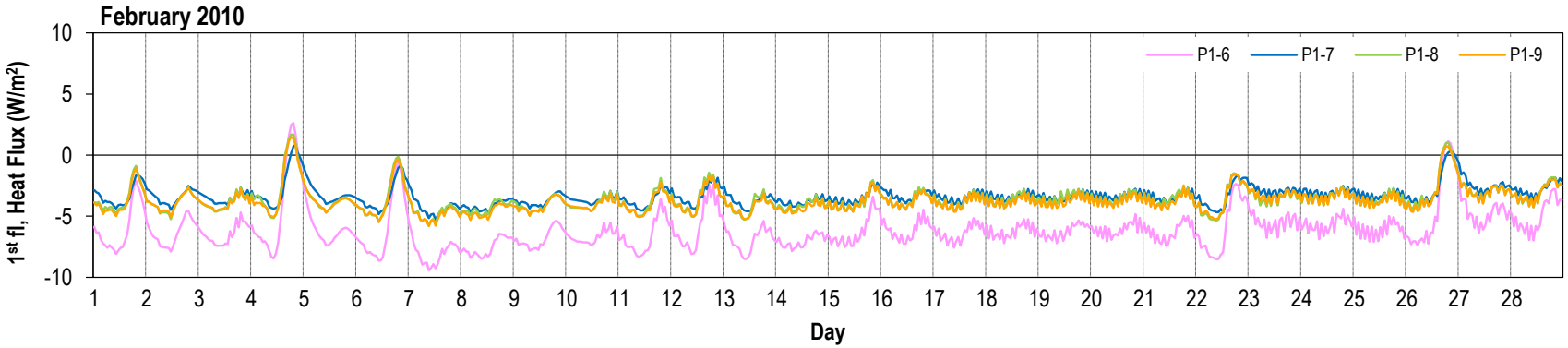

November 2009
P2-6
P2-7
P2-8
2nd fl, Heat Flux (W/m2)
Day

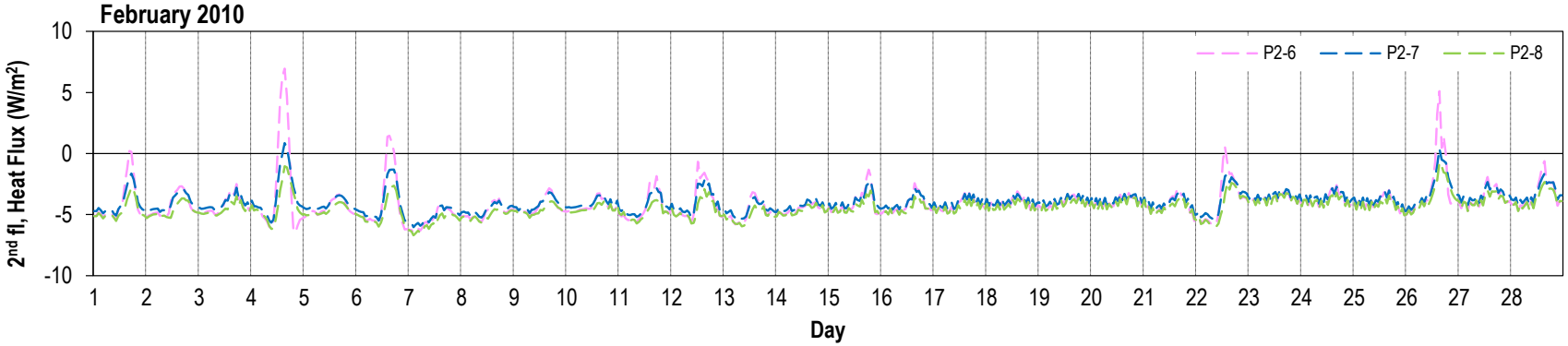

December 2009
1st fl, Heat Flux (W/m2)
P1-6
P1-7
P1-8
P1-9
Day

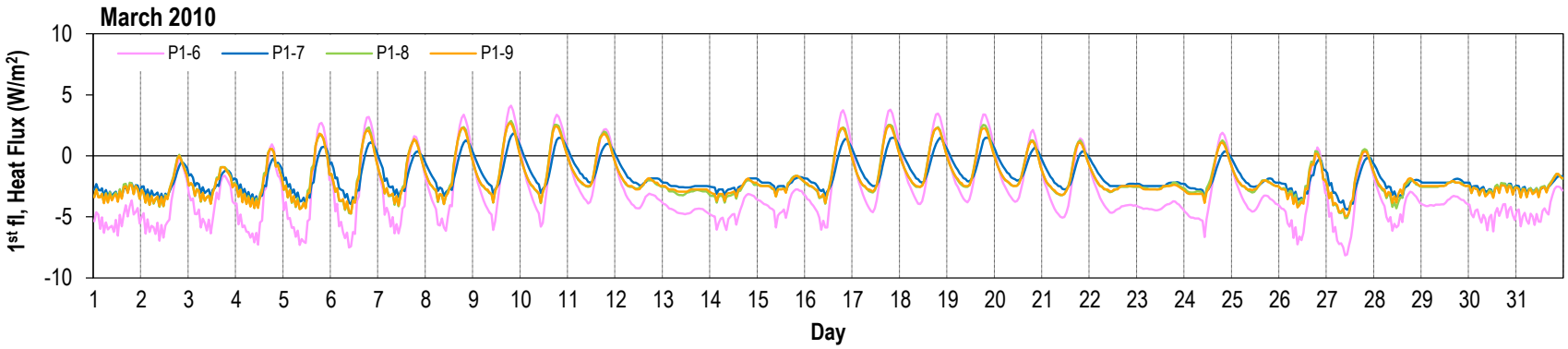

December 2009
2nd fl, Heat Flux (W/m2)
P2-6
P2-7
P2-8
Day

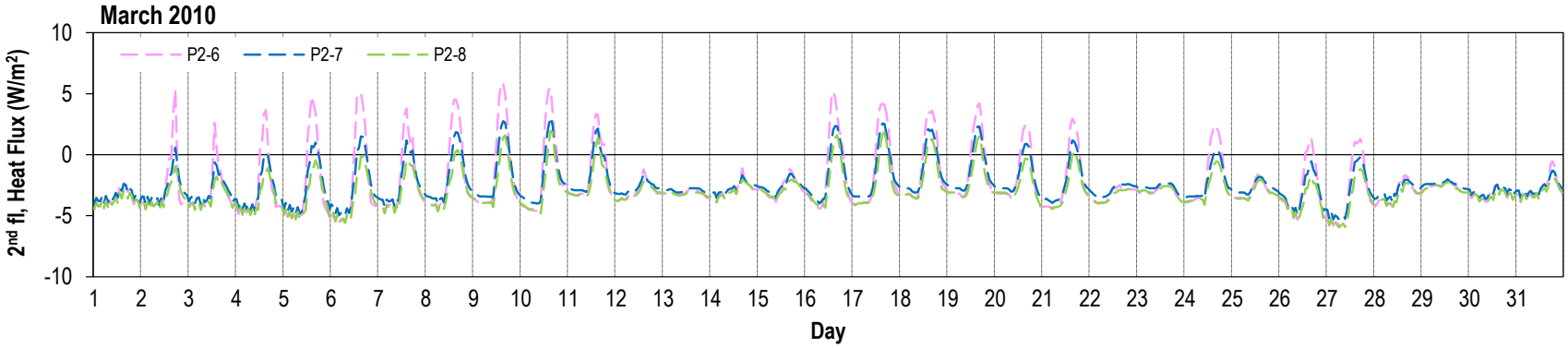

January 2010
1st fl, Heat Flux (W/m2)
P1-6
P1-7
P1-8
P1-9
Day

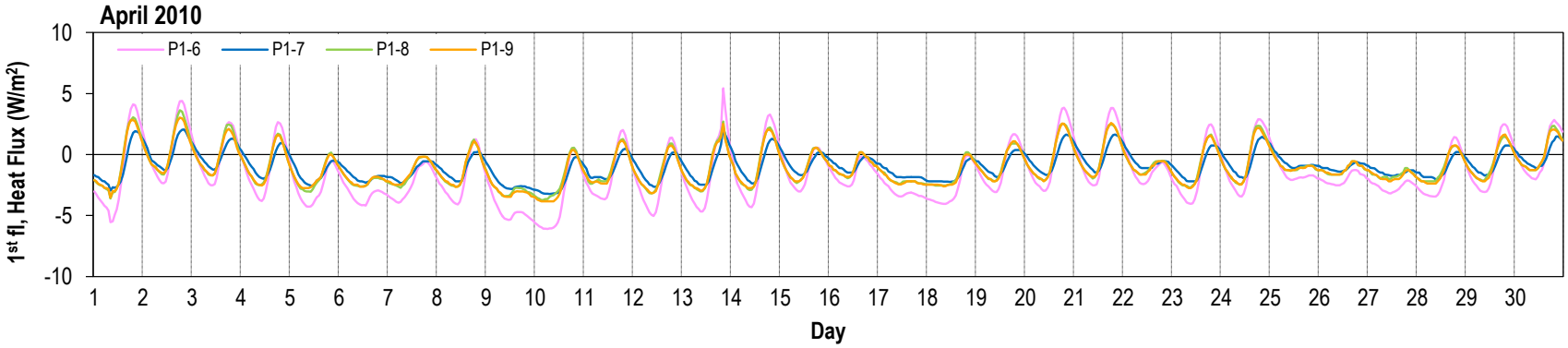

January 2010
P2-6
P2-7
P2-8
2nd fl, Heat Flux (W/m2)
Day

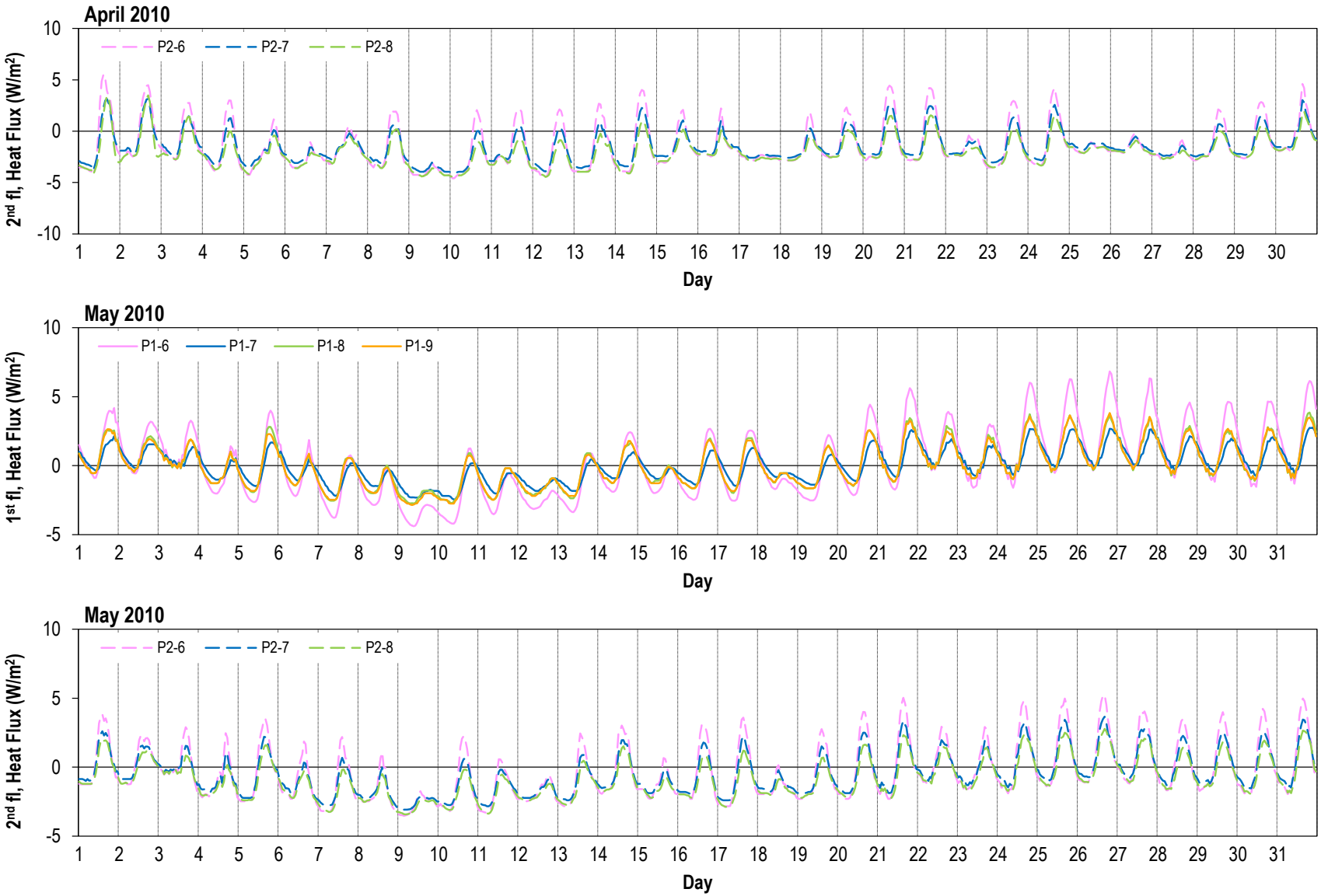

February 2010
P1-6
P1-7
P1-8
P1-9
1st fl, Heat Flux (W/m2)
Day

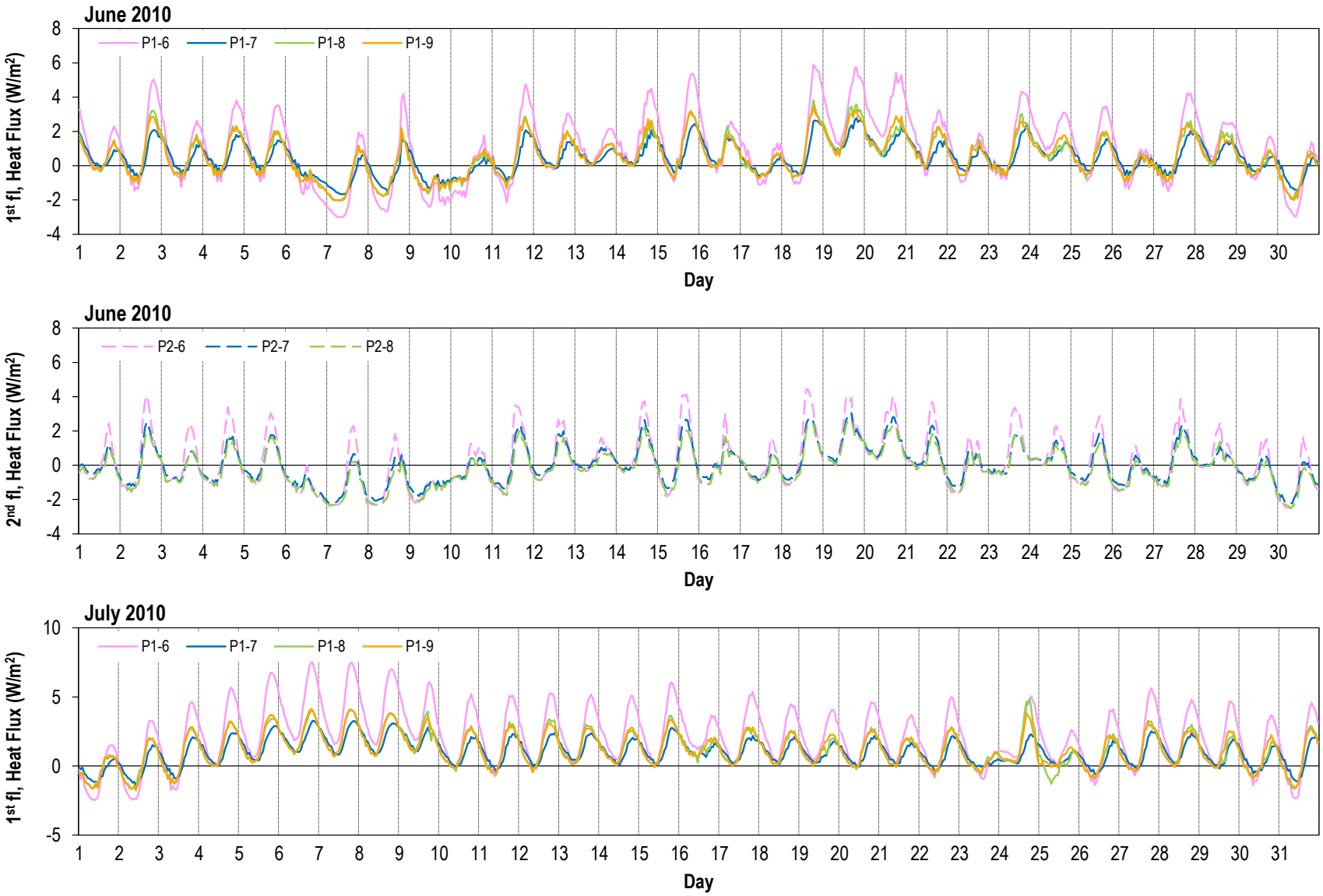

February 2010
P2-6
P2-7
P2-8
2nd fl, Heat Flux (W/m2)
Day

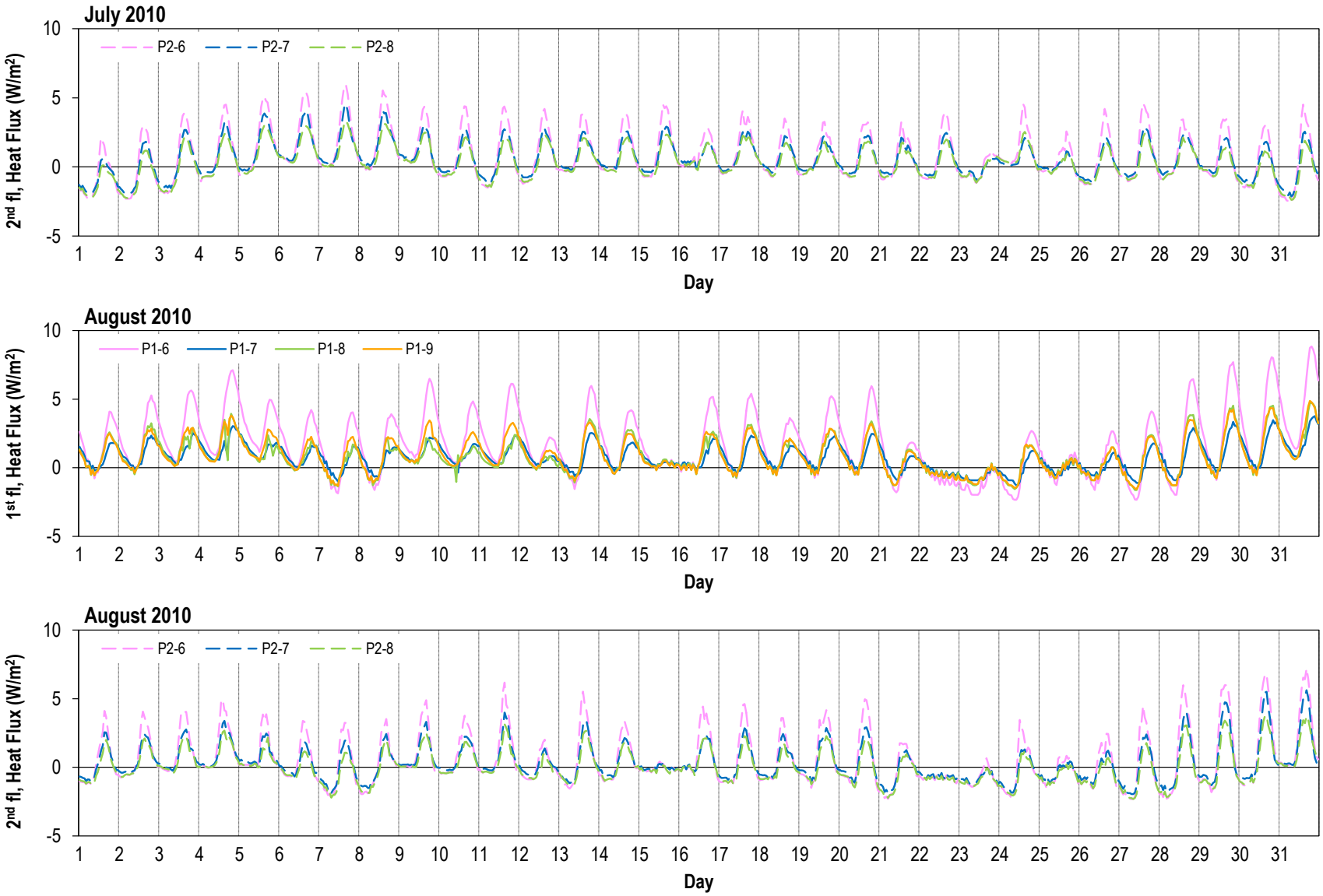

March 2010
P1-6
P1-7
P1-8
P1-9
1st fl, Heat Flux (W/m2)
10
5
0
-5
-10
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day


March 2010
P2-6
P2-7
P2-8
2nd fl, Heat Flux (W/m2)
10
5
0
-5
-10
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

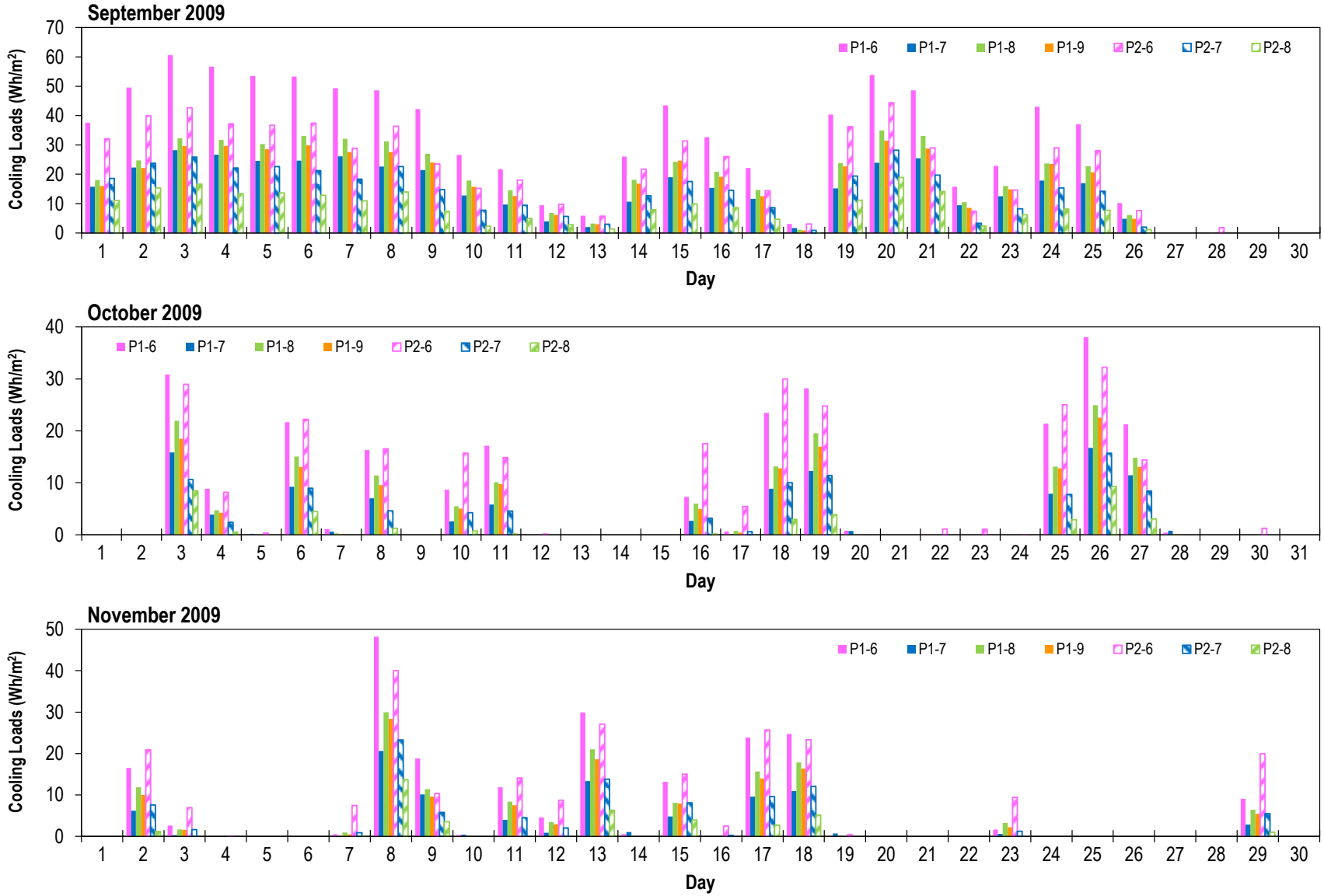

April 2010
P1-6
P1-7
P1-8
P1-9
1st fl, Heat Flux (W/m2)
10
5
0
-5
-10
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day

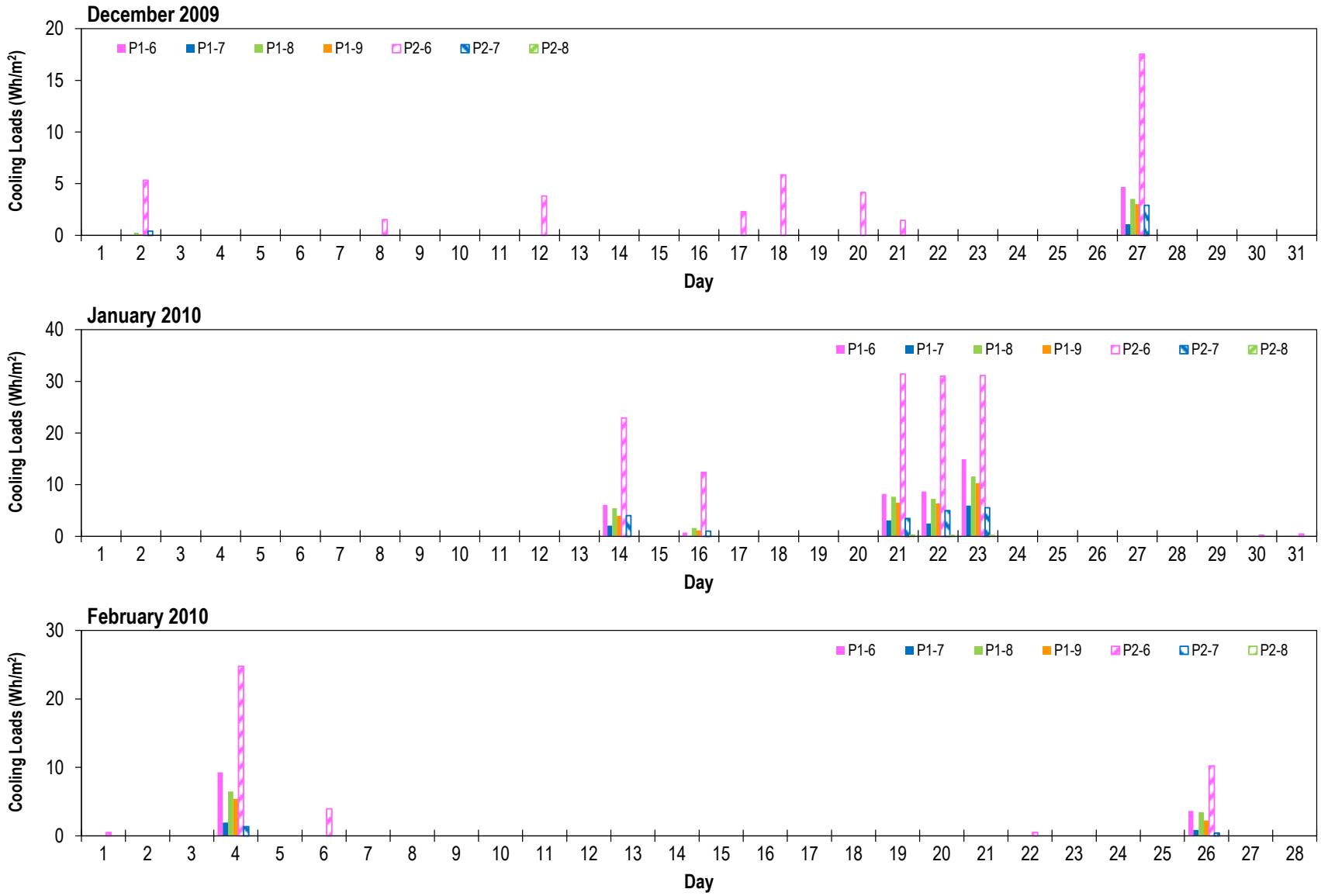

April 2010
P2-6
P2-7
P2-8
2nd fl, Heat Flux (W/m2)
Day
May 2010
P1-6
P1-7
P1-8
P1-9
1st fl, Heat Flux (W/m2)
Day
May 2010
P2-6
P2-7
P2-8
2nd fl, Heat Flux (W/m2)
Day

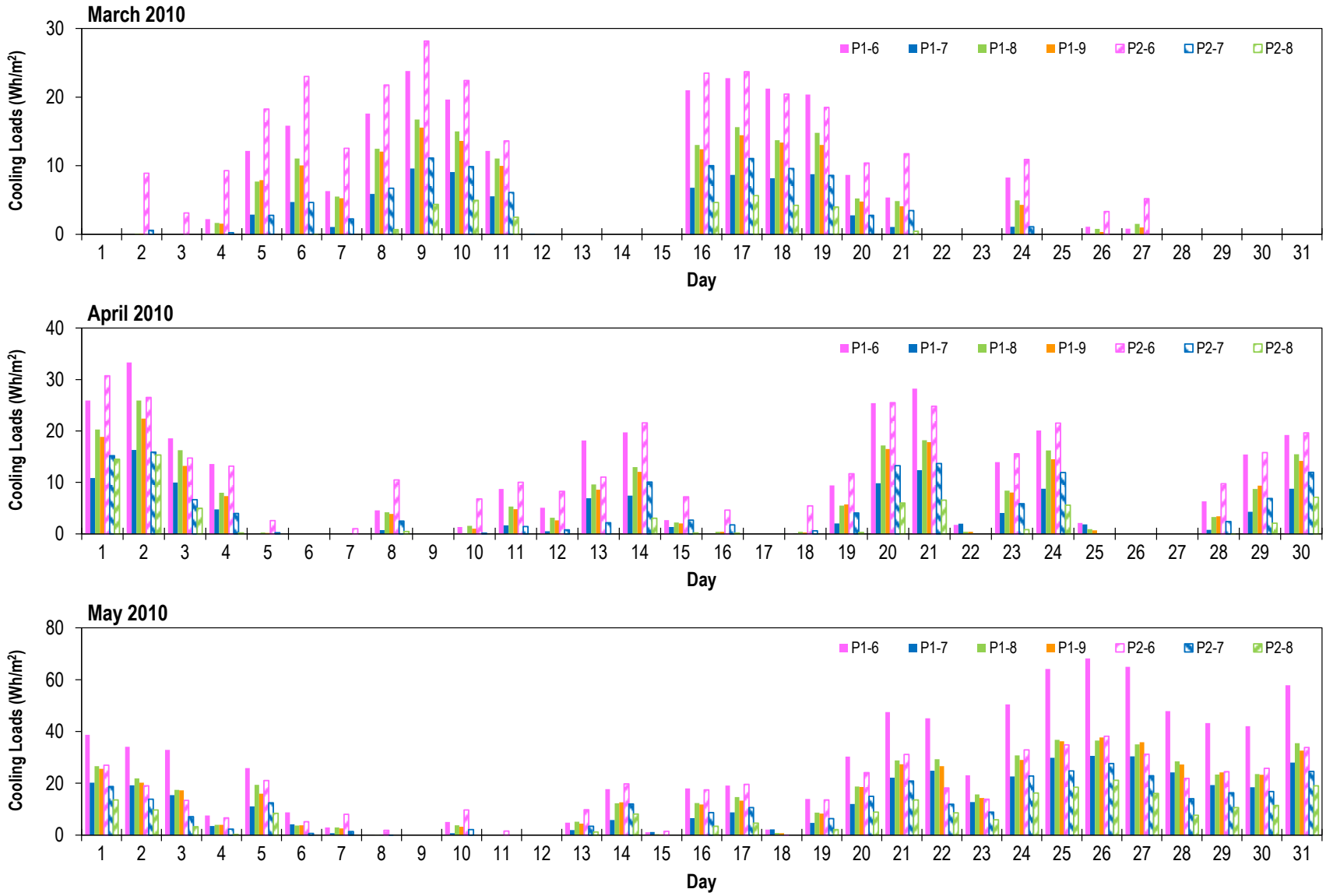

June 2010
P1-6
P1-7
P1-8
P1-9
1st fl, Heat Flux (W/m2)
Day
June 2010
P2-6
P2-7
P2-8
2nd fl, Heat Flux (W/m2)
Day
July 2010
P1-6
P1-7
P1-8
P1-9
1st fl, Heat Flux (W/m2)
Day

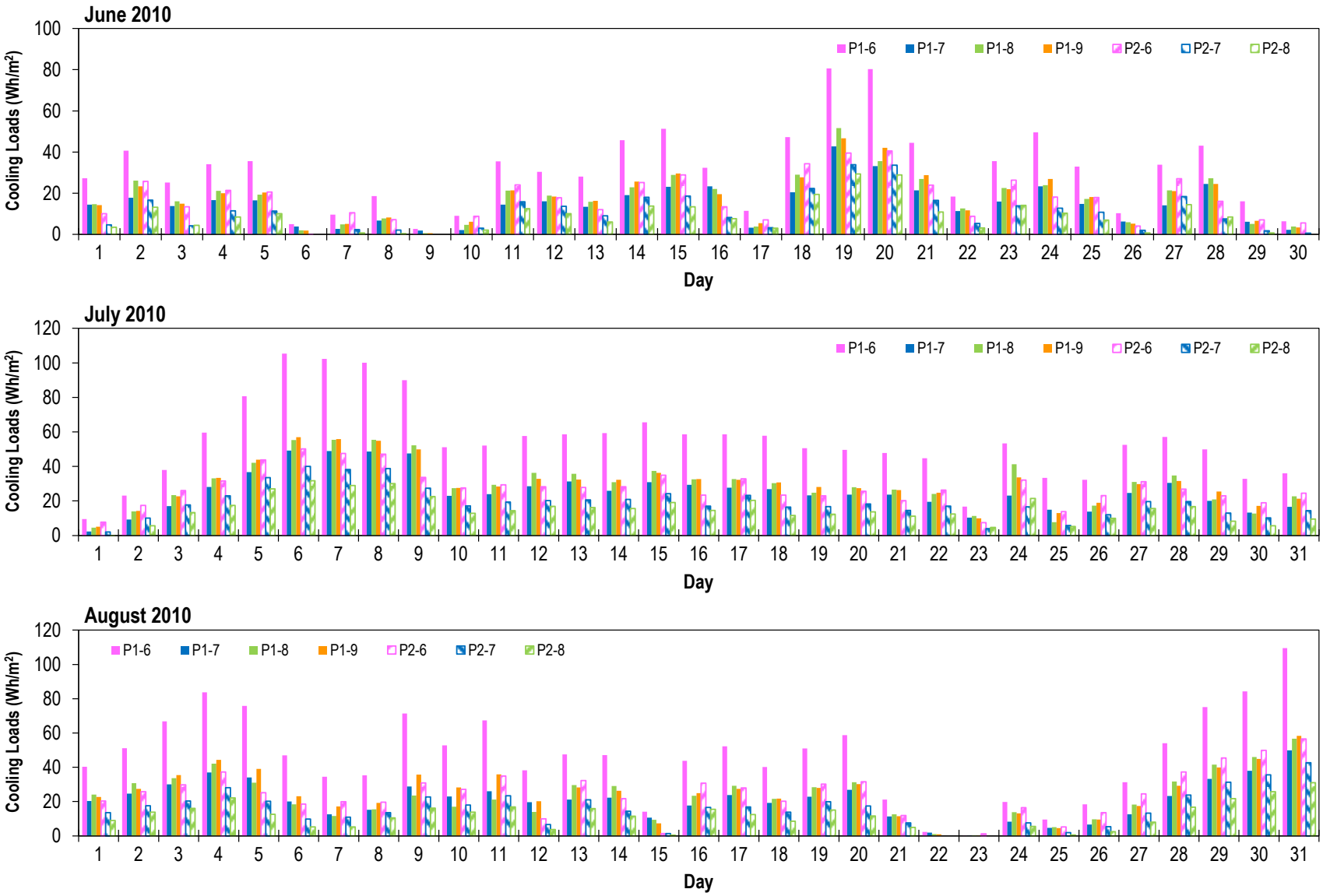

July 2010
P2-6
P2-7
P2-8
2nd fl, Heat Flux (W/m2)
Day
August 2010
P1-6
P1-7
P1-8
P1-9
1st fl, Heat Flux (W/m2)
Day
August 2010
P2-6
P2-7
P2-8
2nd fl, Heat Flux (W/m2)
Day

Cooling loads (Wh/m$^2$). Refer to Figures 25 thru 28 for sensor location.

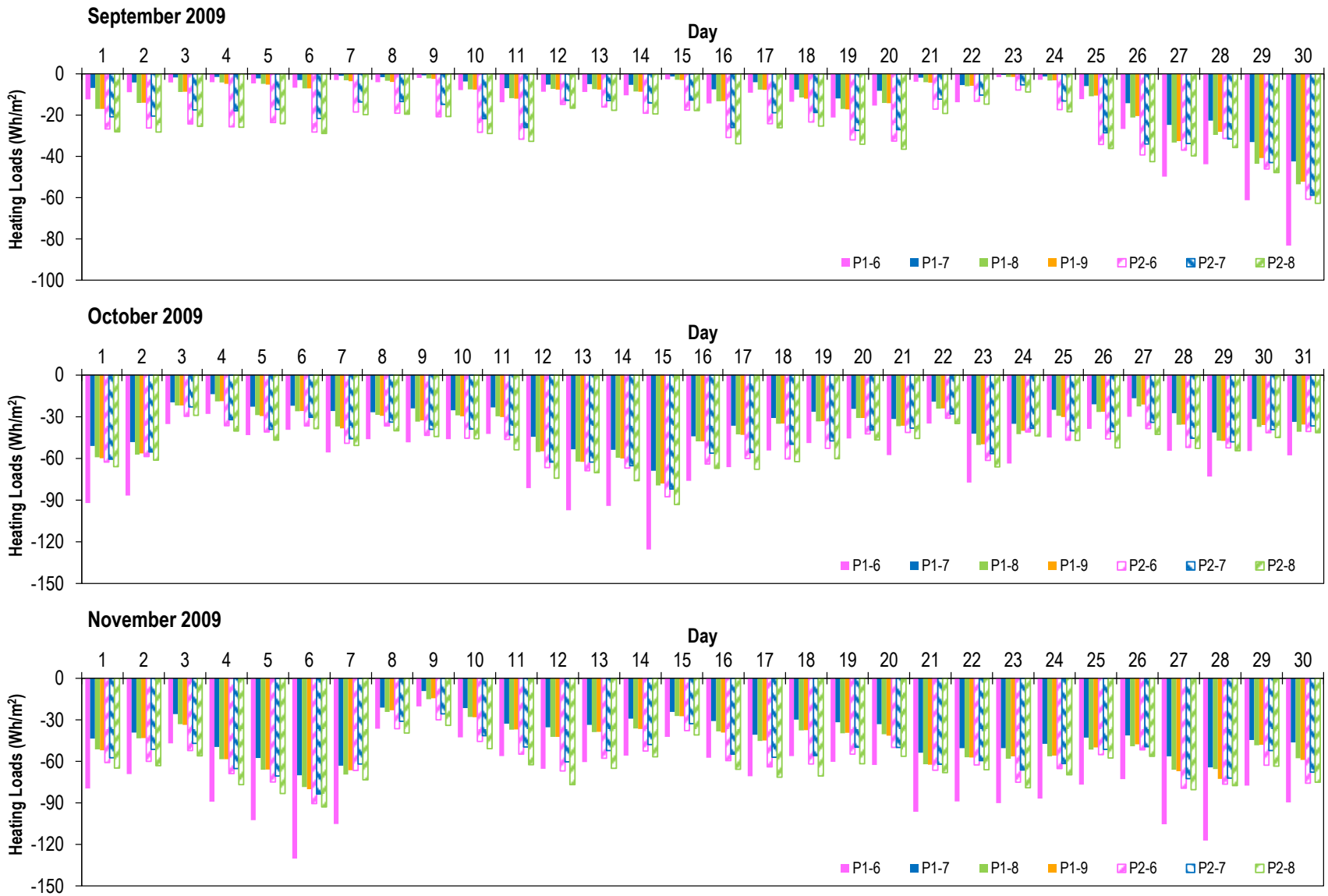


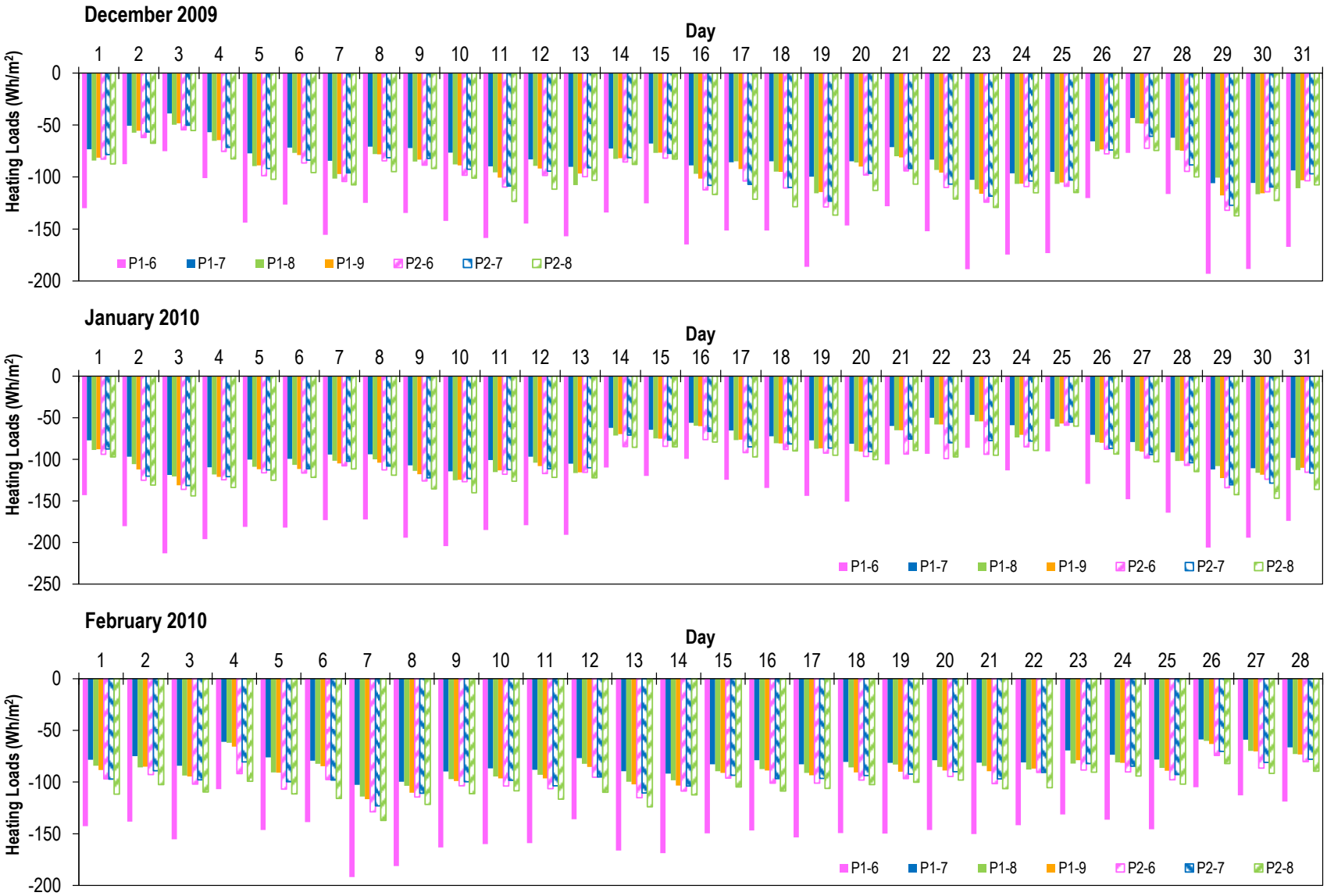

December 2009
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8
Cooling Loads (Wh/m²)
Day
January 2010
February 2010

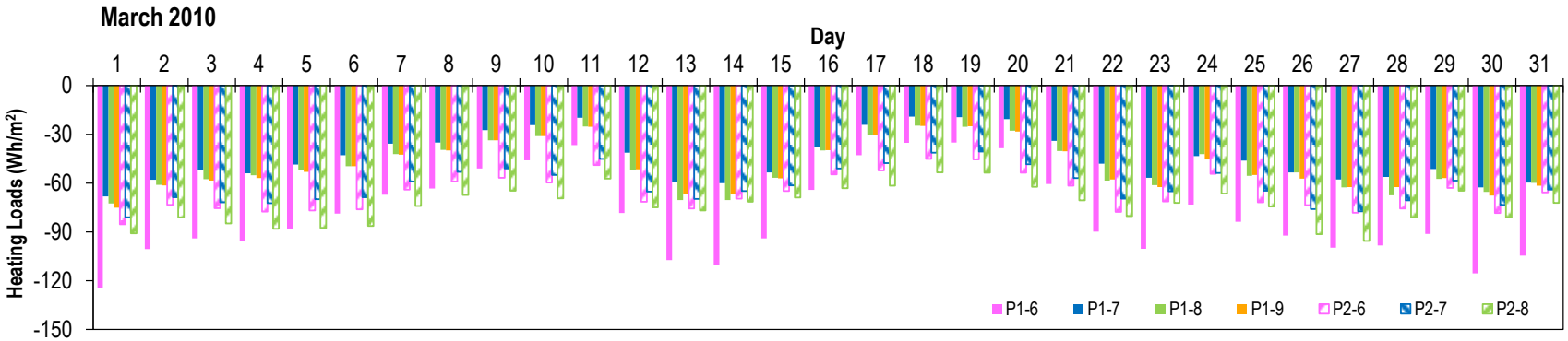

March 2010
Cooling Loads (Wh/m²)
Day
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8
April 2010
Cooling Loads (Wh/m²)
Day
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8
May 2010
Cooling Loads (Wh/m²)
Day
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8

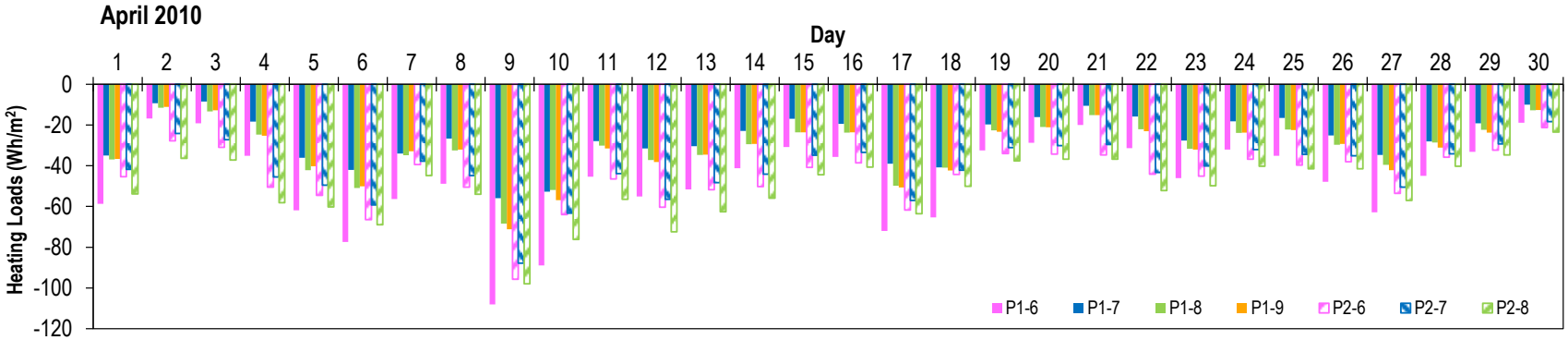

June 2010
Cooling Loads (Wh/m²)
Day
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8
July 2010
Cooling Loads (Wh/m²)
Day
August 2010
Cooling Loads (Wh/m²)
Day

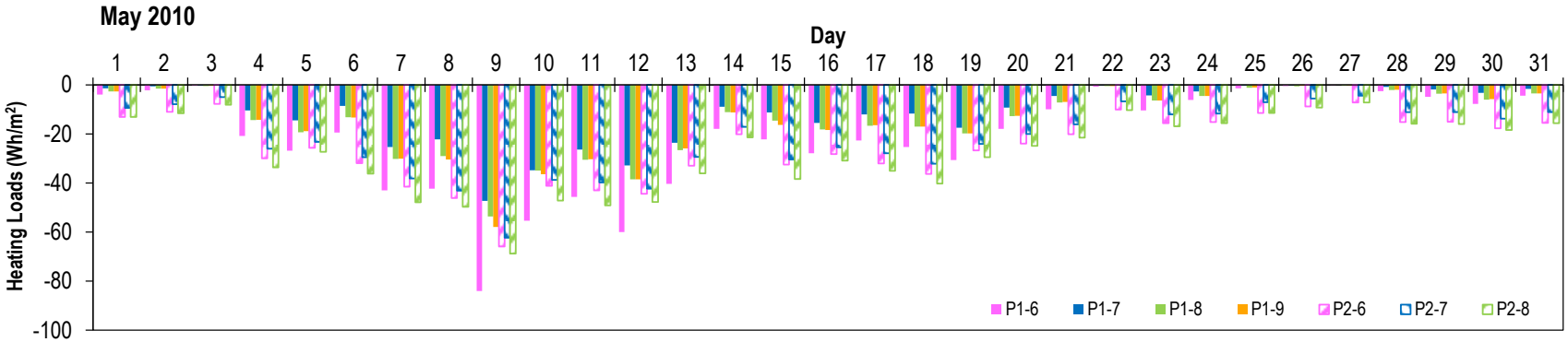
Heating loads (Wh/m$^2$). Refer to Figures 25 thru 28 for sensor location.

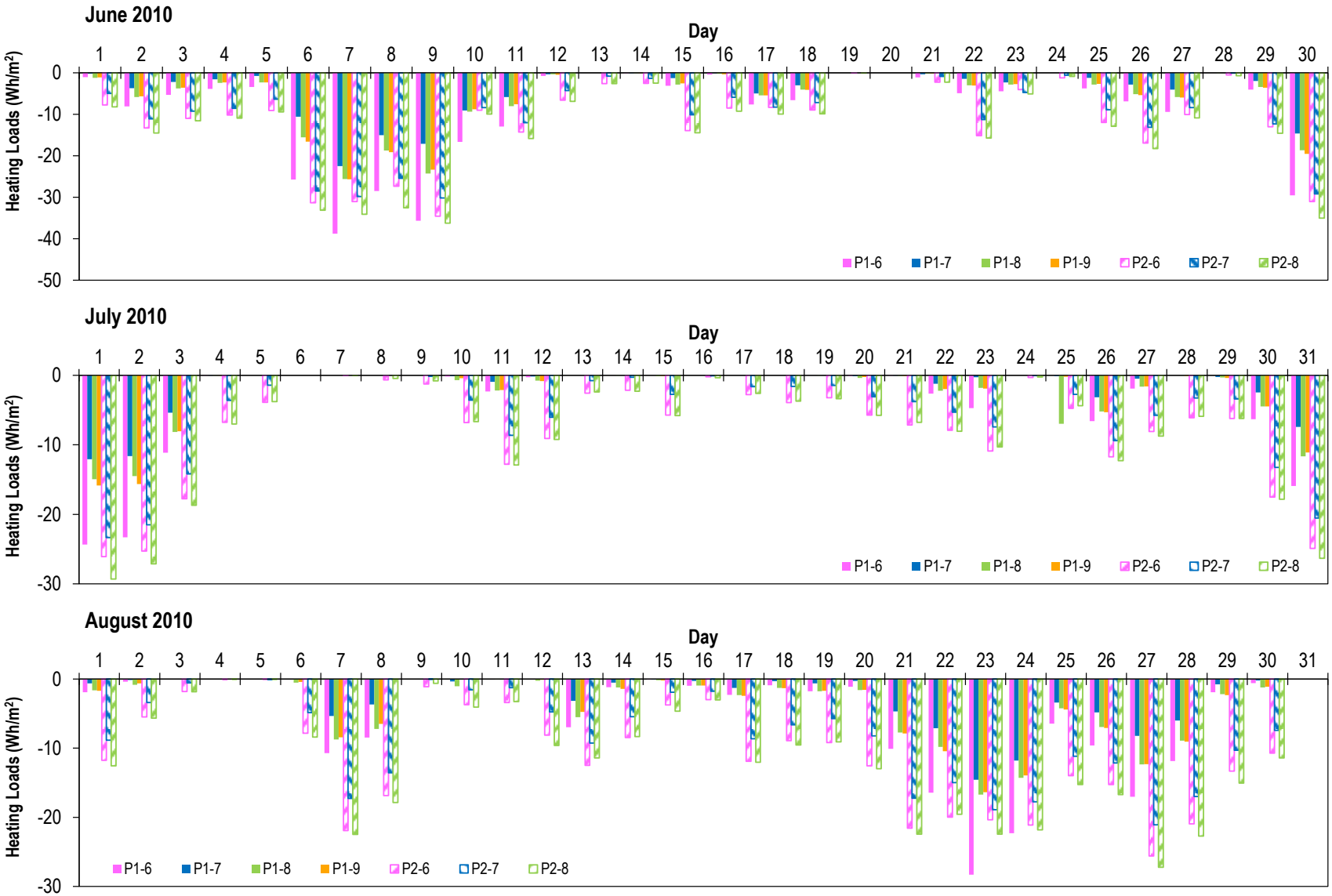



December 2009
Day
Heating Loads (Wh/m²)
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8
January 2010
Day
Heating Loads (Wh/m²)
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8
February 2010
Day
Heating Loads (Wh/m²)
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8


March 2010
Day
Heating Loads (Wh/m²)
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8

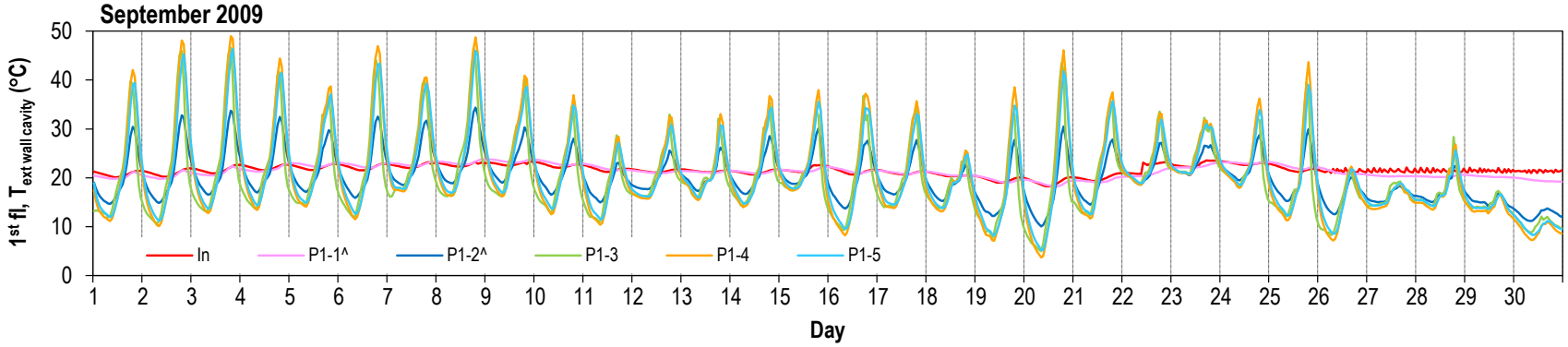

April 2010
Day
Heating Loads (Wh/m²)
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8

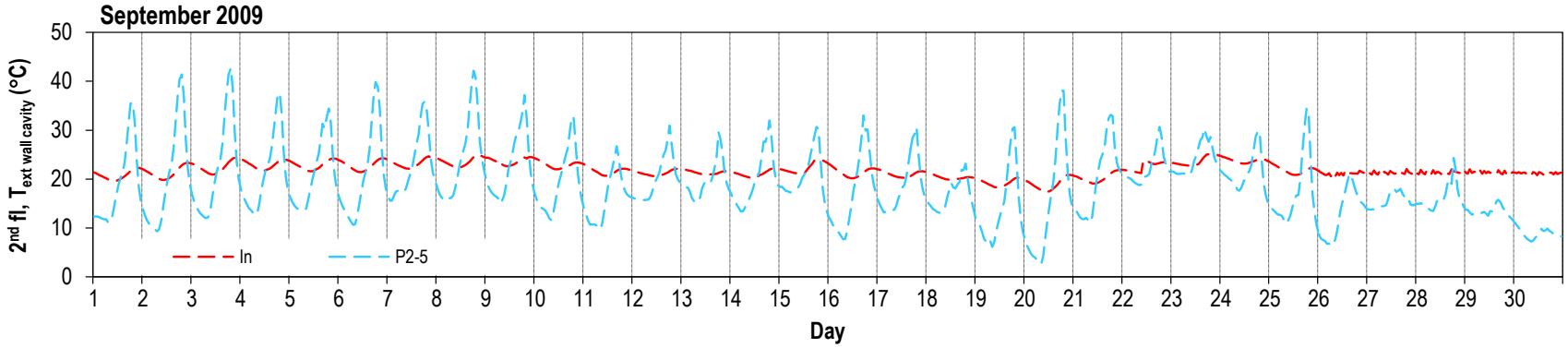

May 2010
Day
Heating Loads (Wh/m²)
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8

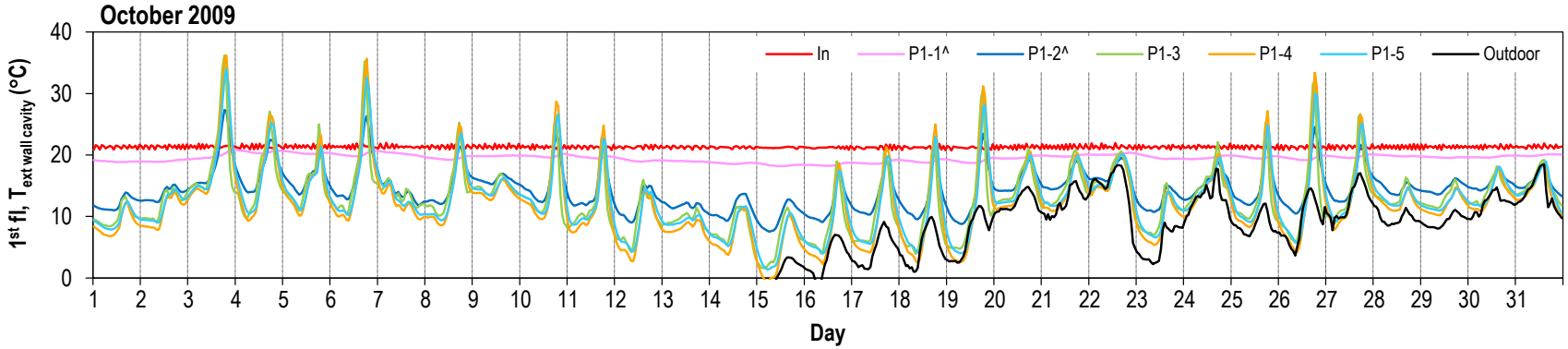

June 2010
Day
Heating Loads (Wh/m²)
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8
July 2010
Day
Heating Loads (Wh/m²)
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8
August 2010
Day
Heating Loads (Wh/m²)
P1-6
P1-7
P1-8
P1-9
P2-6
P2-7
P2-8

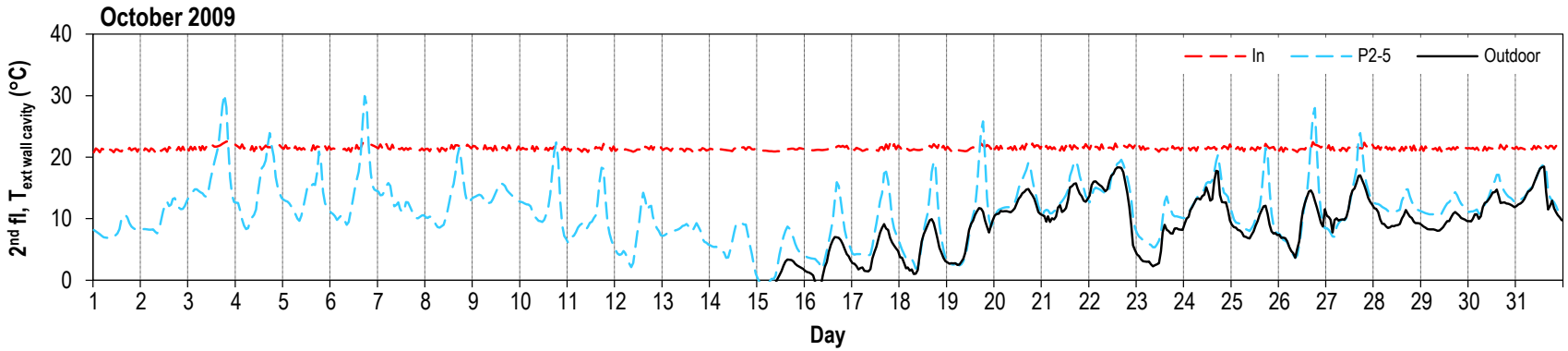
# Appendix D: West Panels

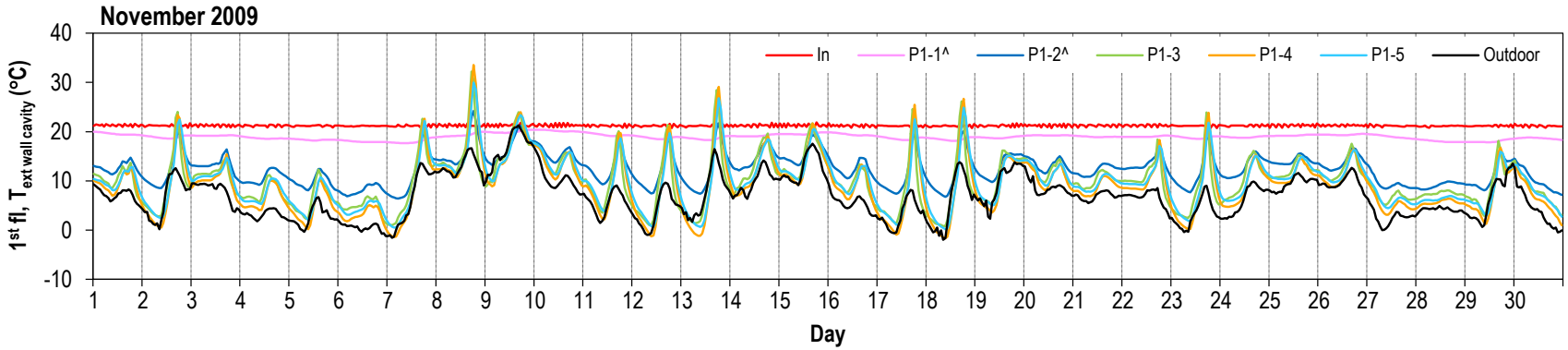
Temperature (°C) at exterior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

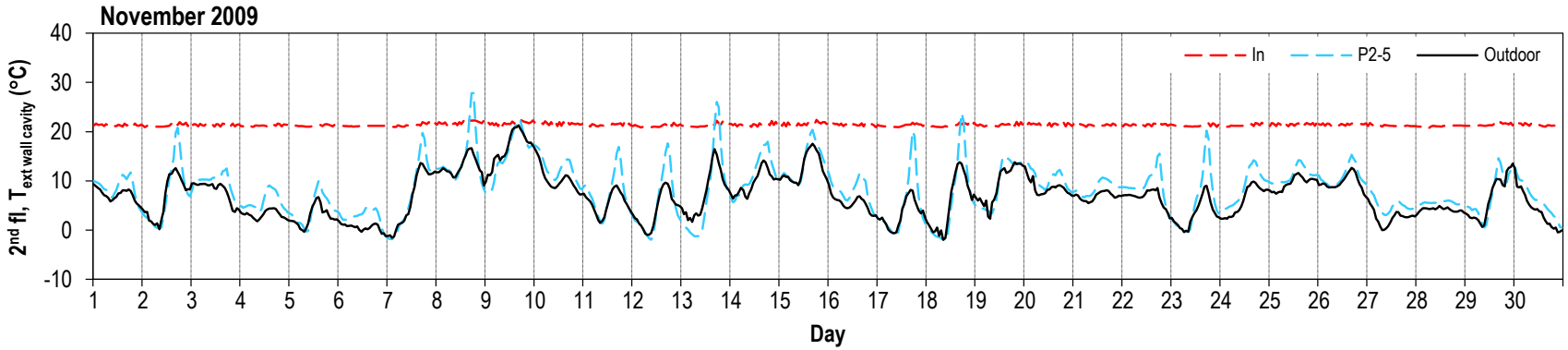


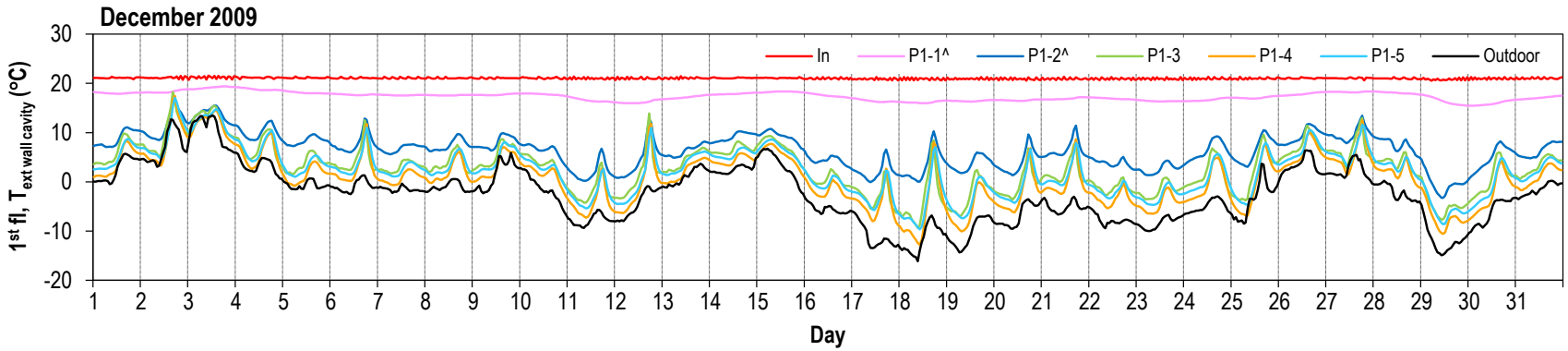



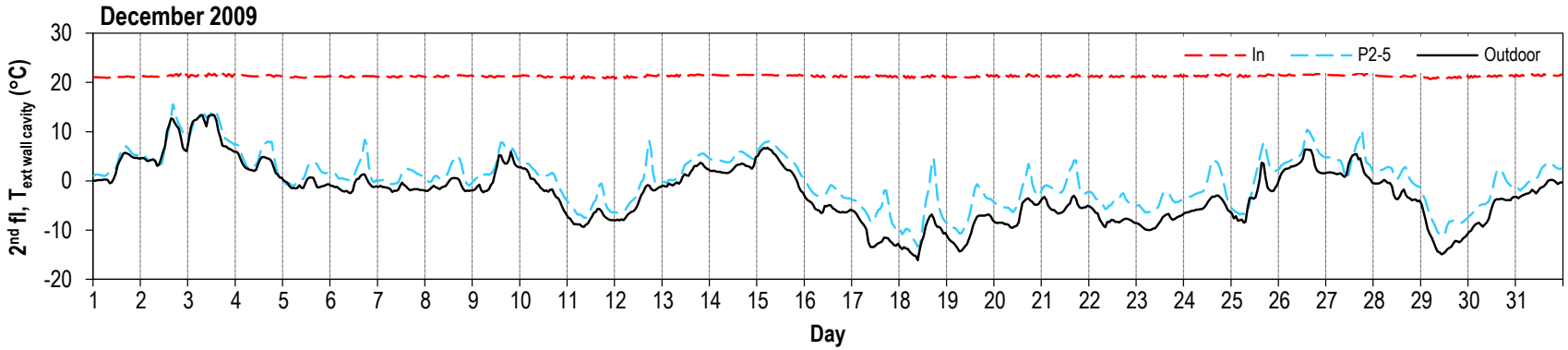



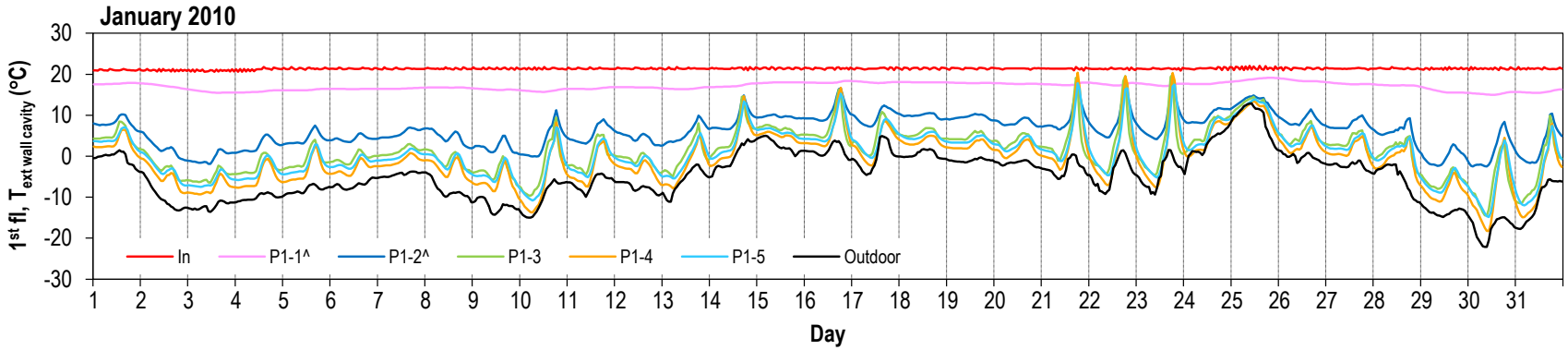

October 2009
2nd fl, T ext wall cavity (°C)
In
P2-5
Outdoor
Day

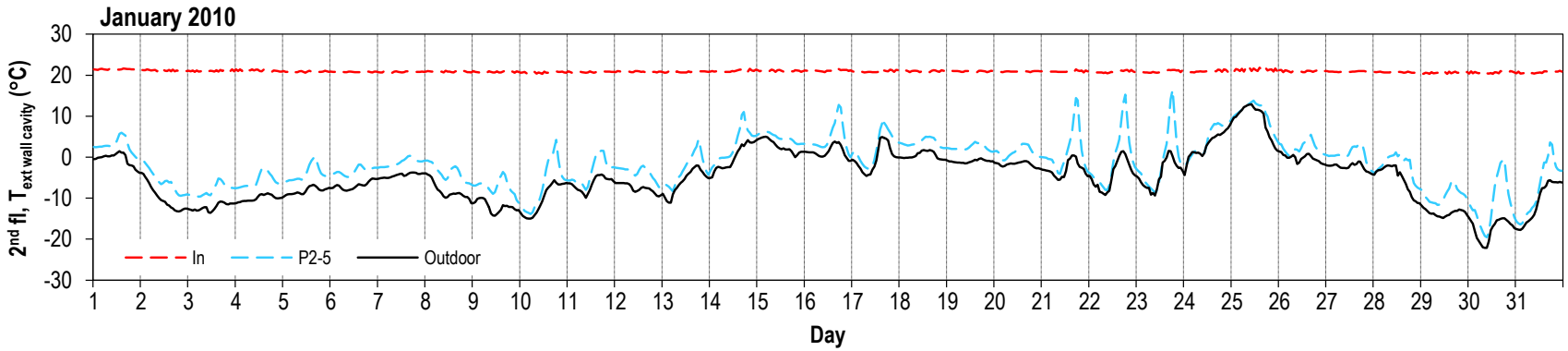

November 2009
1st fl, T ext wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
Day

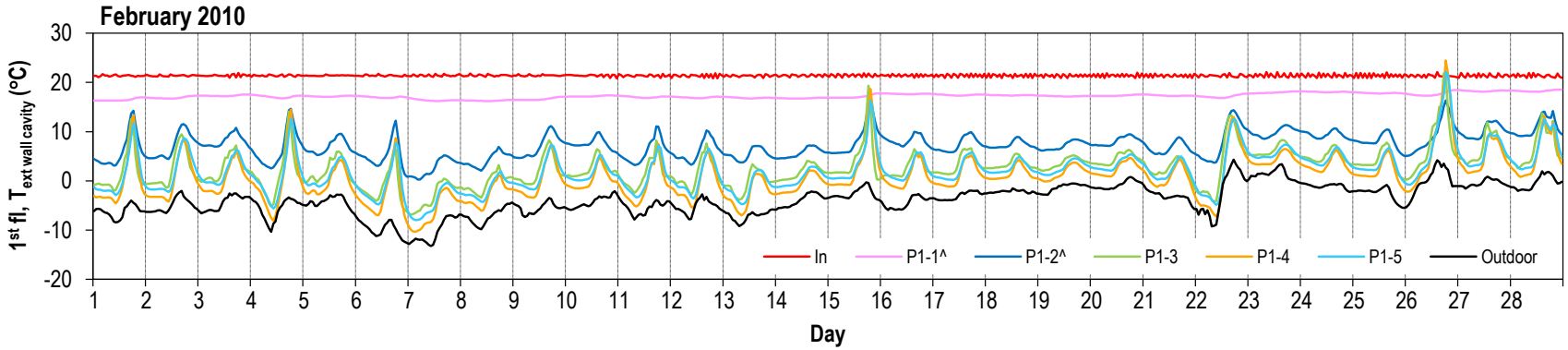

November 2009
2nd fl, T ext wall cavity (°C)
In
P2-5
Outdoor
Day

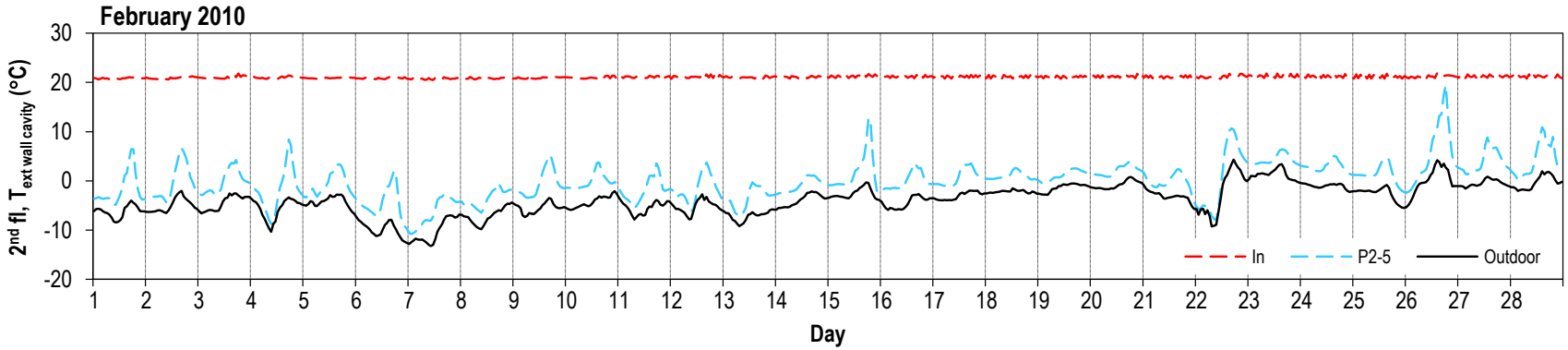

December 2009
1st fl, T ext wall cavity (°C)
Day
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor

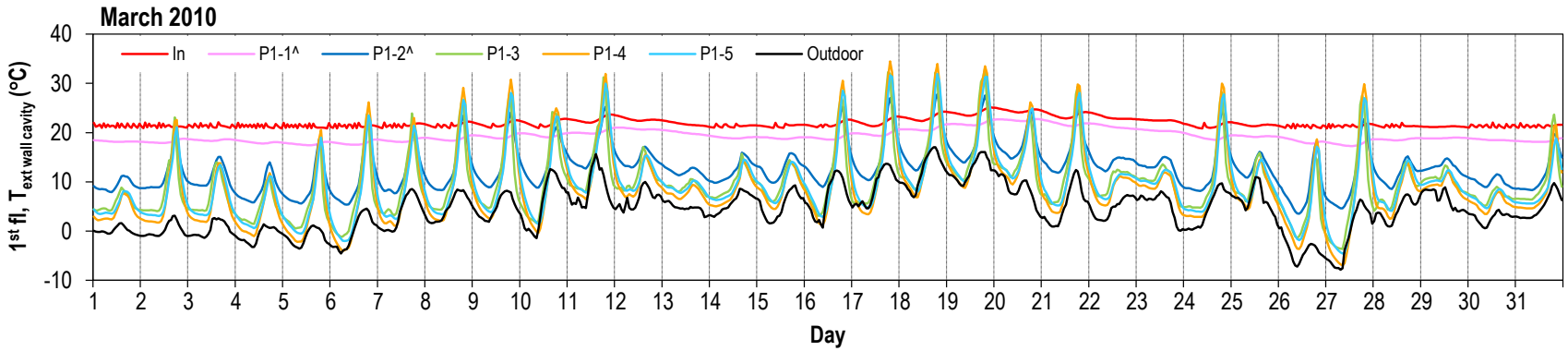

December 2009
2nd fl, T ext wall cavity (°C)
Day
In
P2-5
Outdoor

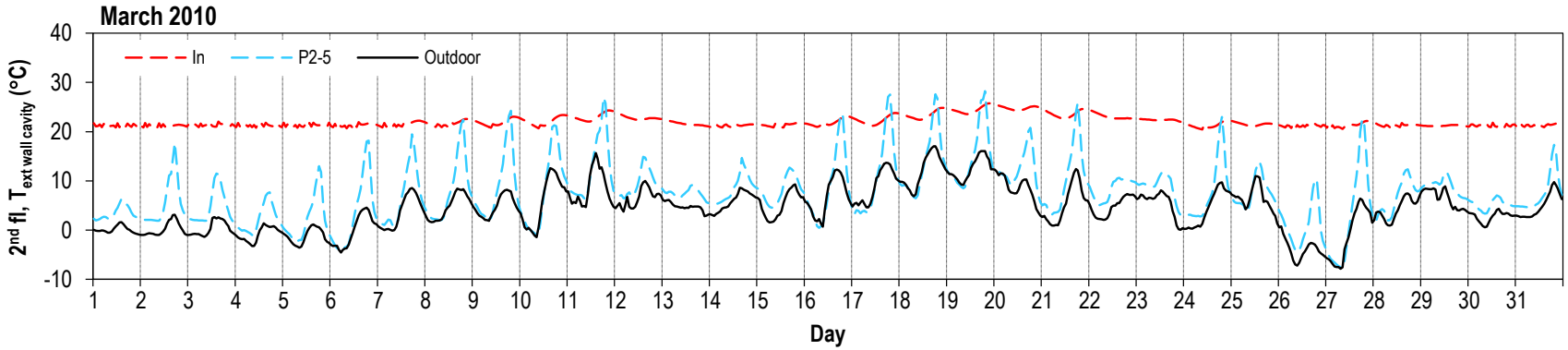

January 2010
1st fl, T ext wall cavity (°C)
Day
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor

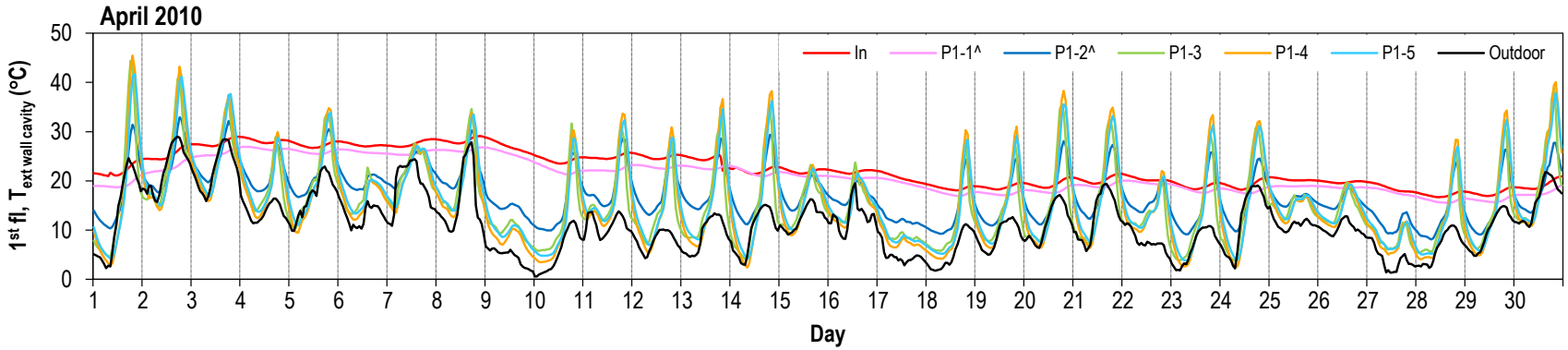

January 2010
2nd fl, T ext wall cavity (°C)
In
P2-5
Outdoor
Day

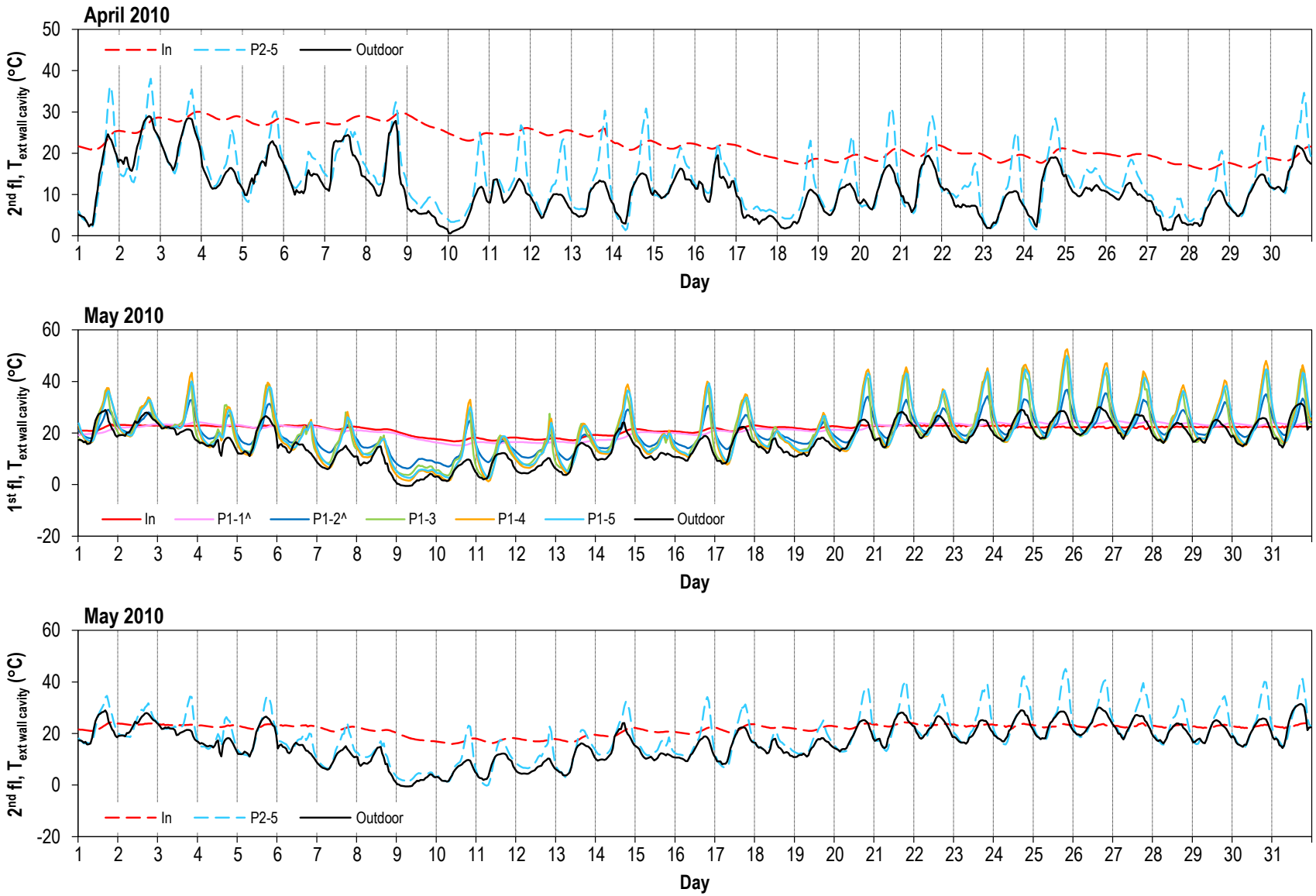

February 2010
1st fl, T ext wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
Day

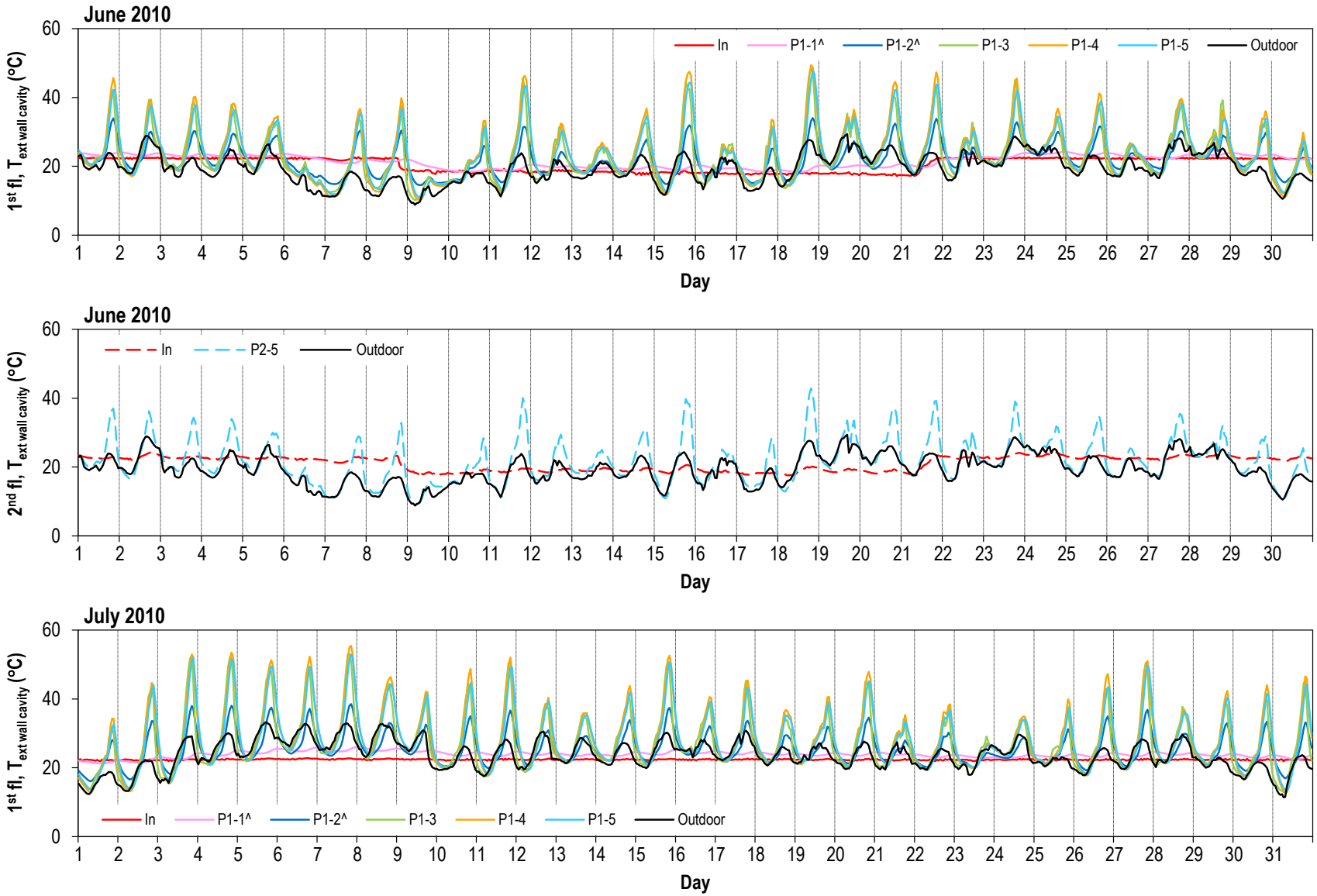

February 2010
2nd fl, T ext wall cavity (°C)
In
P2-5
Outdoor
Day

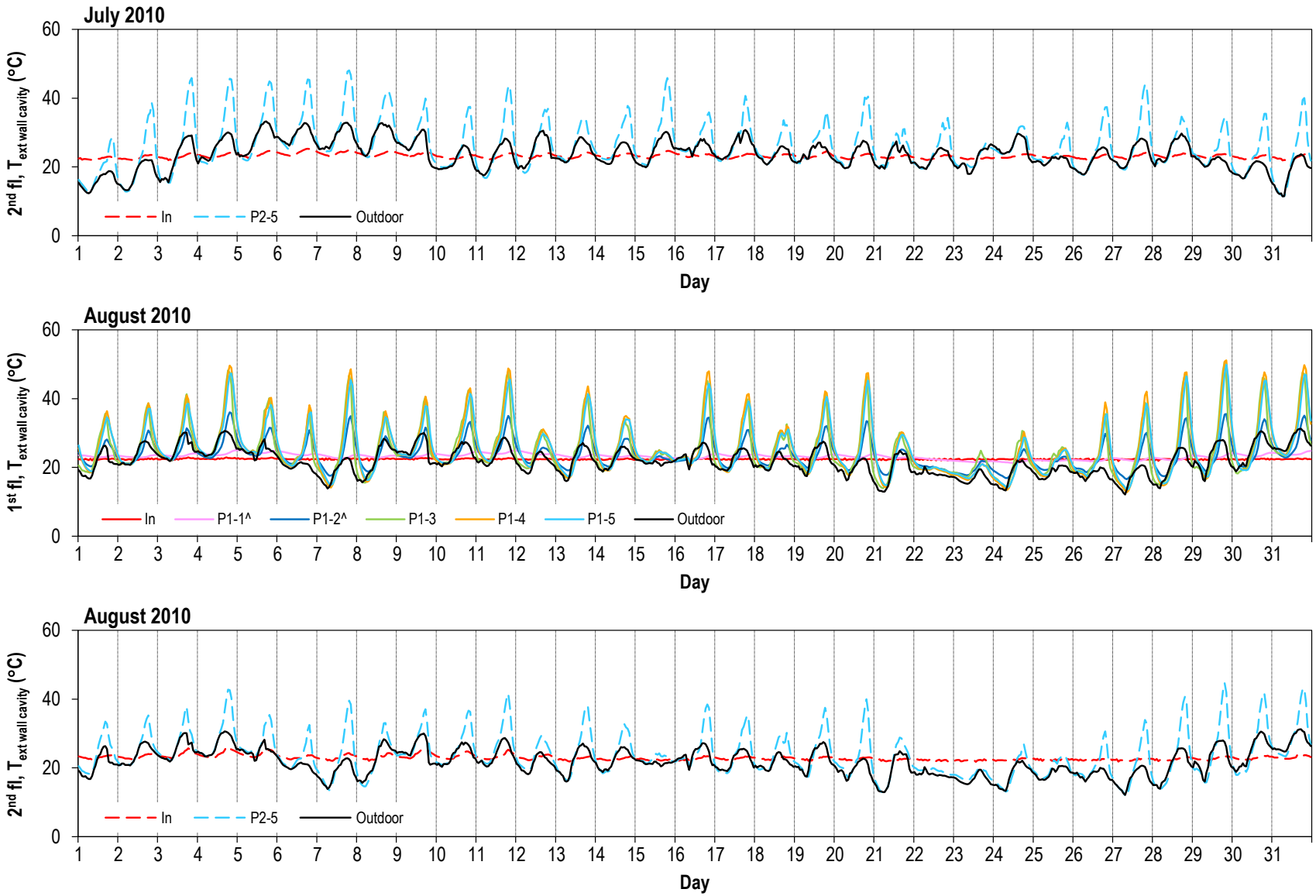

March 2010
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
1st fl, T ext wall cavity (°C)
Day


March 2010
In
P2-5
Outdoor
2nd fl, T ext wall cavity (°C)
Day

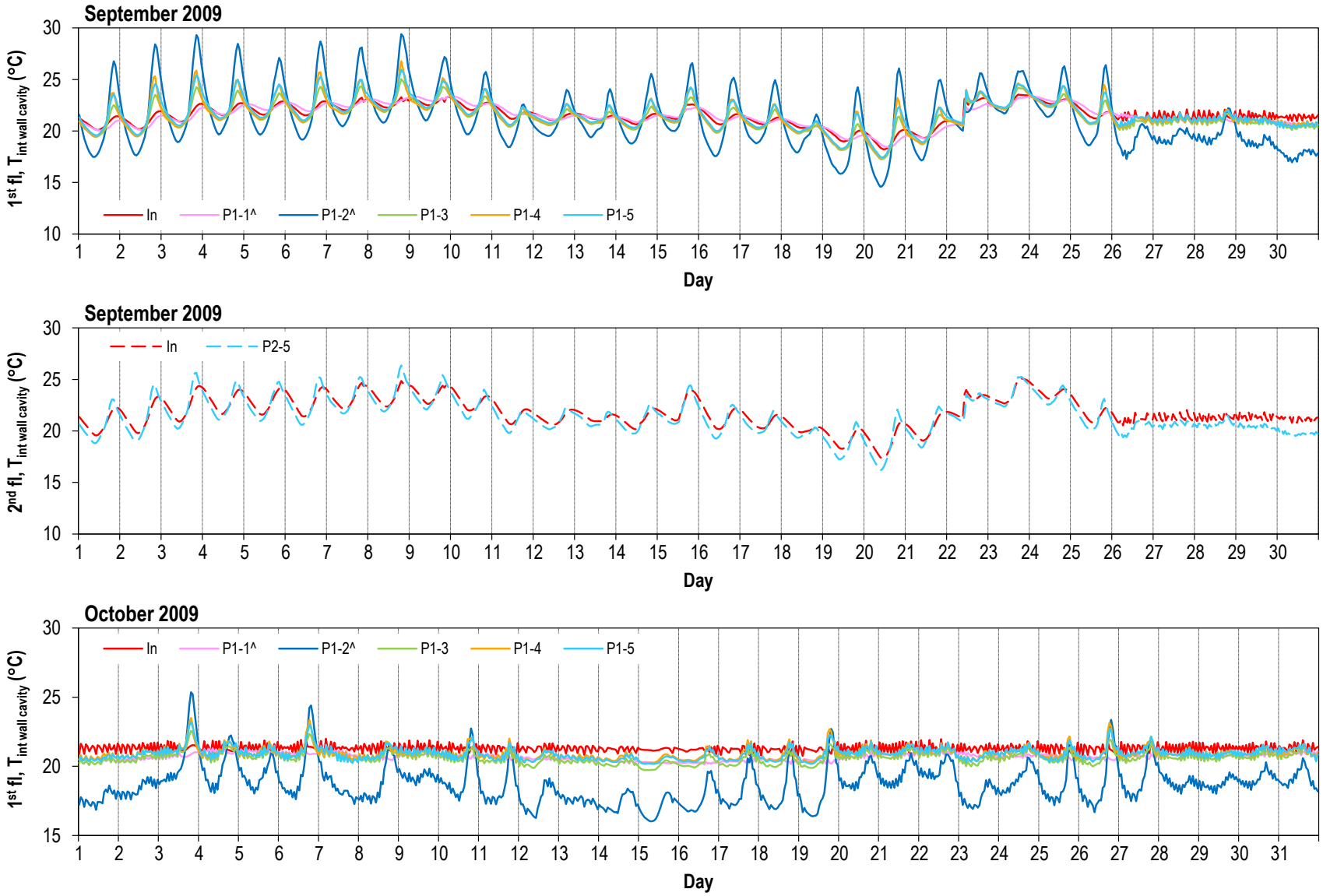

April 2010
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
1st fl, T ext wall cavity (°C)
Day

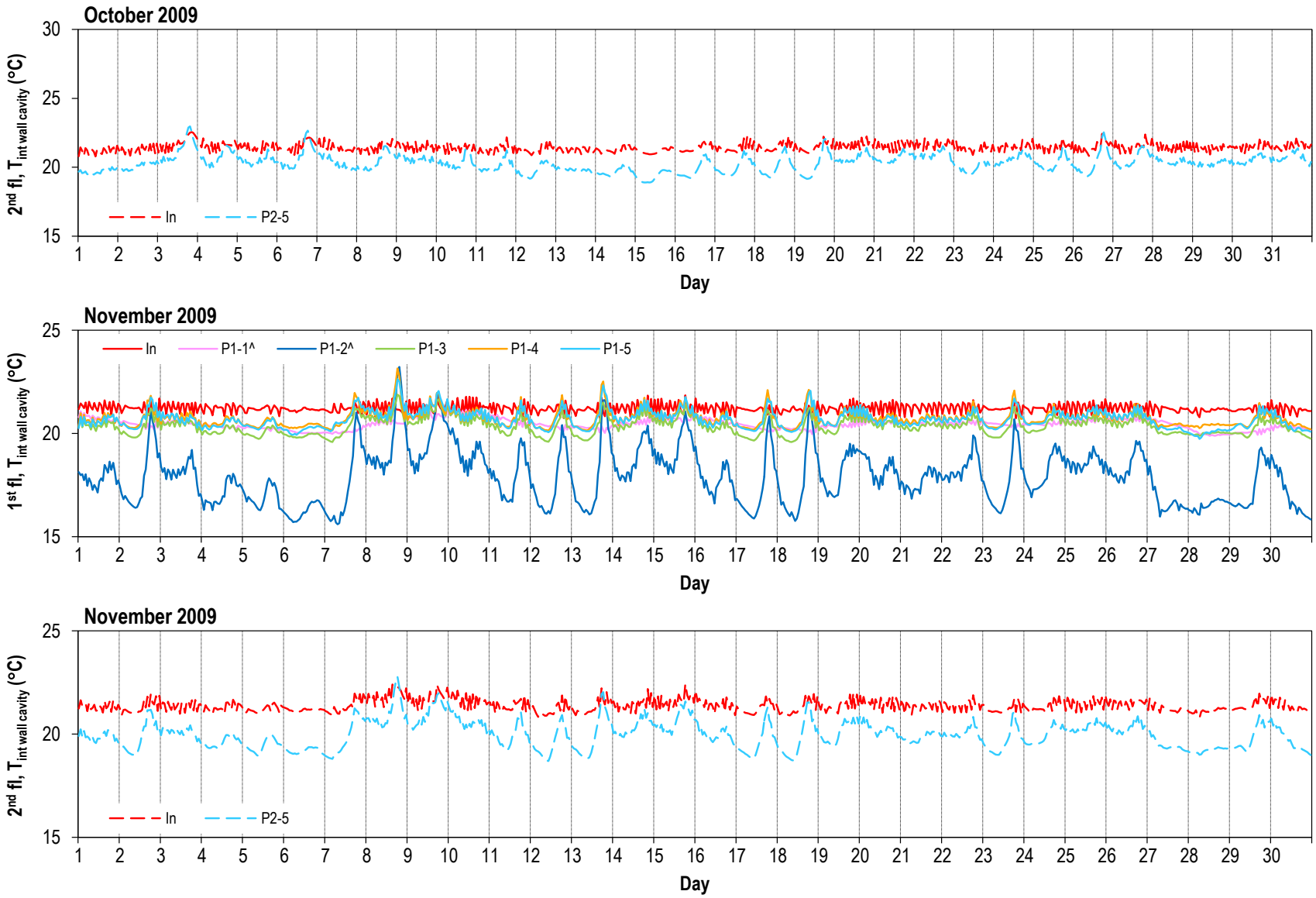

April 2010
2nd fl, T ext wall cavity (°C)
In
P2-5
Outdoor
Day
May 2010
1st fl, T ext wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
Day
May 2010
2nd fl, T ext wall cavity (°C)
In
P2-5
Outdoor
Day

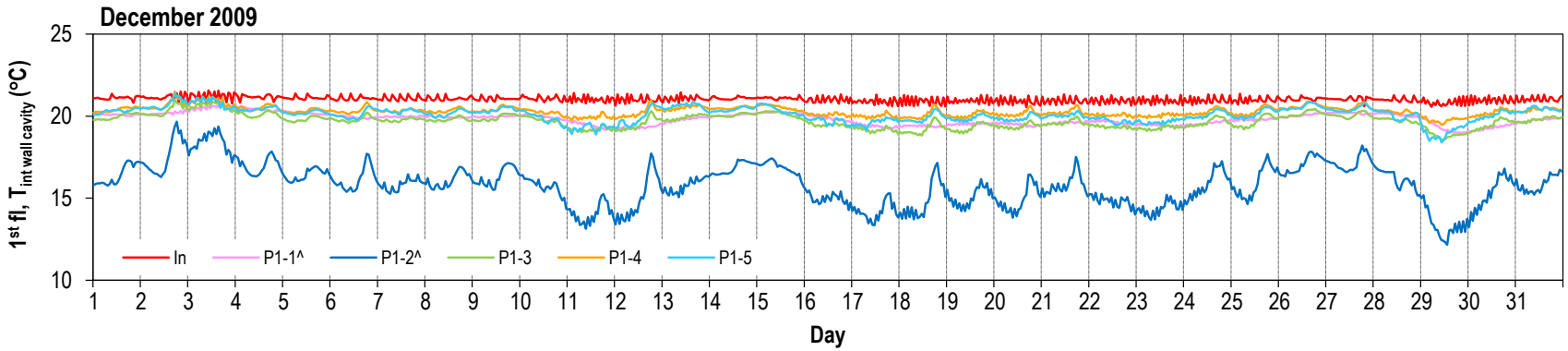

June 2010
1st fl, T ext wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
Day
June 2010
2nd fl, T ext wall cavity (°C)
In
P2-5
Outdoor
Day
July 2010
1st fl, T ext wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
Day

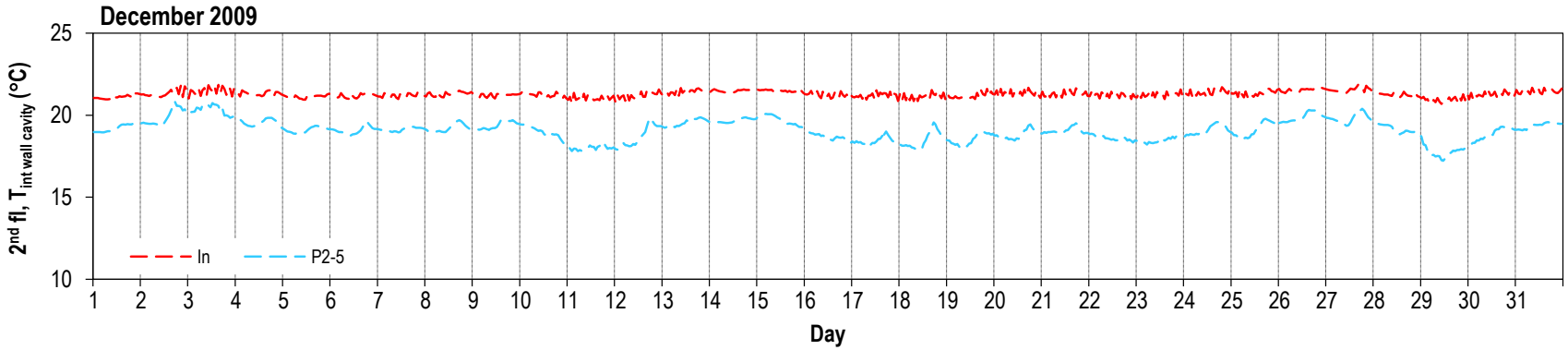

July 2010
2nd fl, T ext wall cavity (°C)
In
P2-5
Outdoor
Day
August 2010
1st fl, T ext wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
Day
August 2010
2nd fl, T ext wall cavity (°C)
In
P2-5
Outdoor
Day

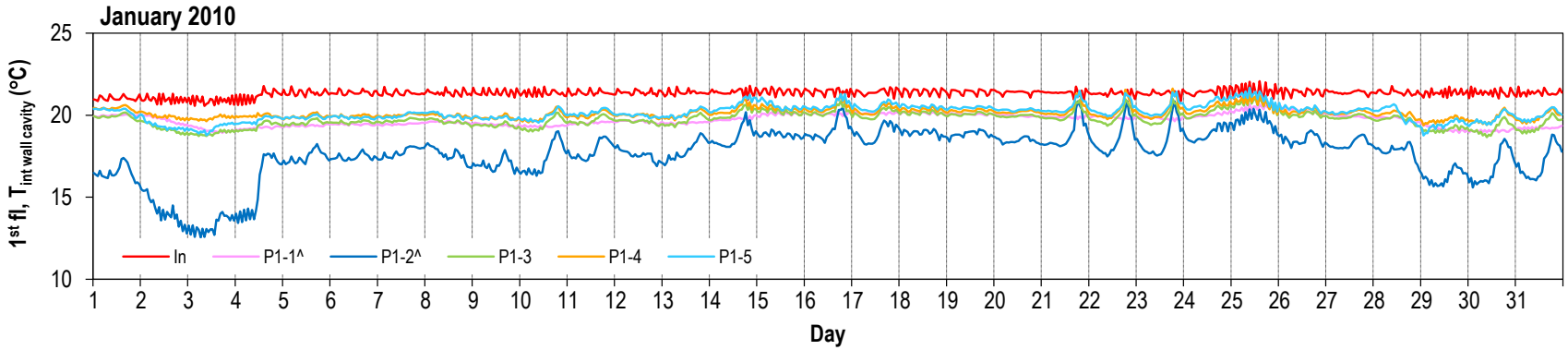
Temperature (°C) at interior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

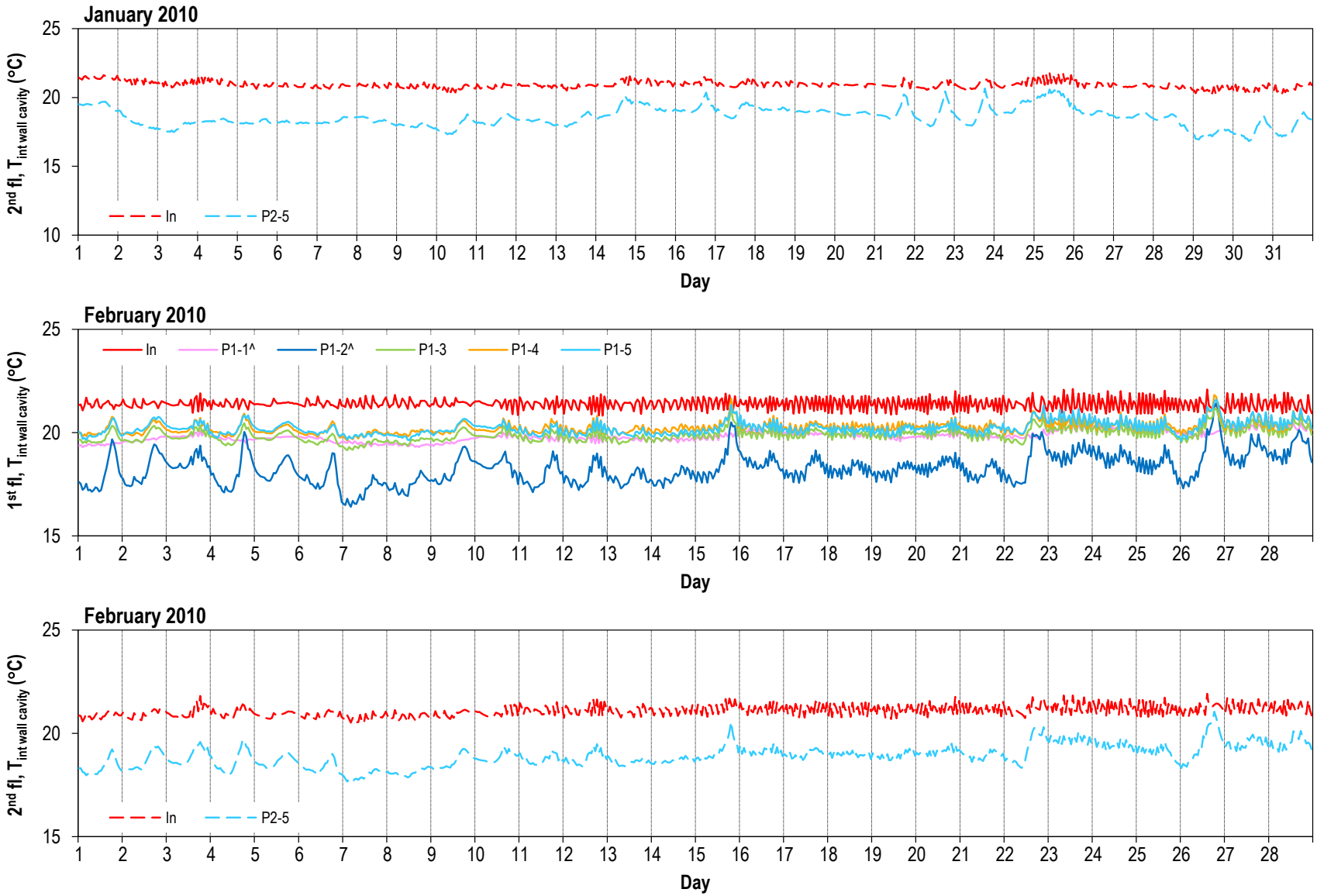


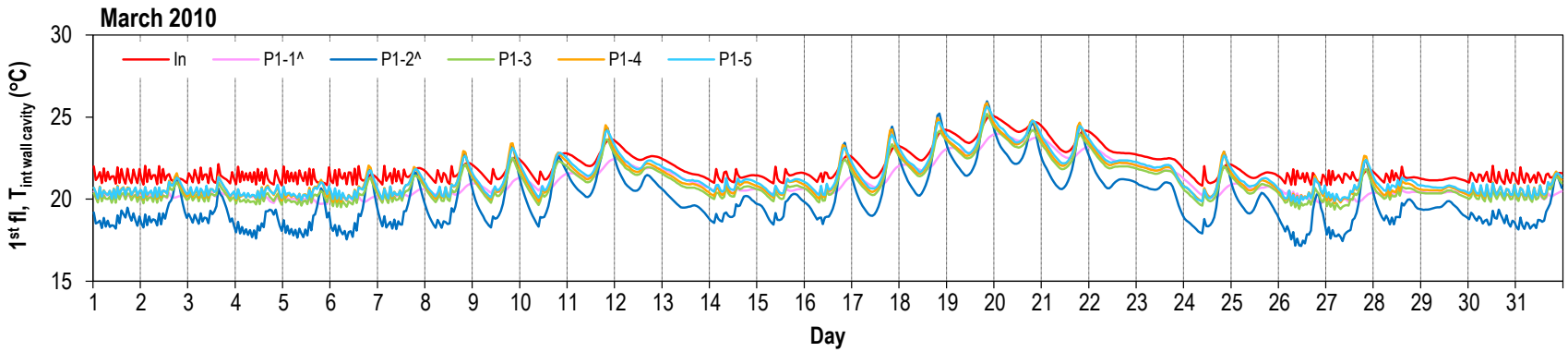

October 2009
2nd fl, T int wall cavity (°C)
In
P2-5
Day
November 2009
1st fl, T int wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Day
November 2009
2nd fl, T int wall cavity (°C)
In
P2-5
Day

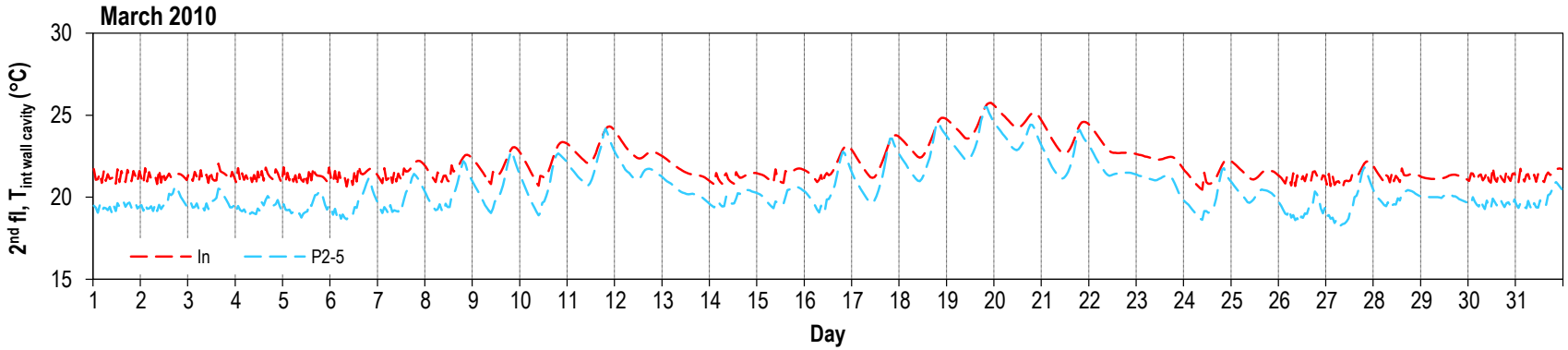

December 2009
1st fl, T int wall cavity (°C)
25
20
15
10
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

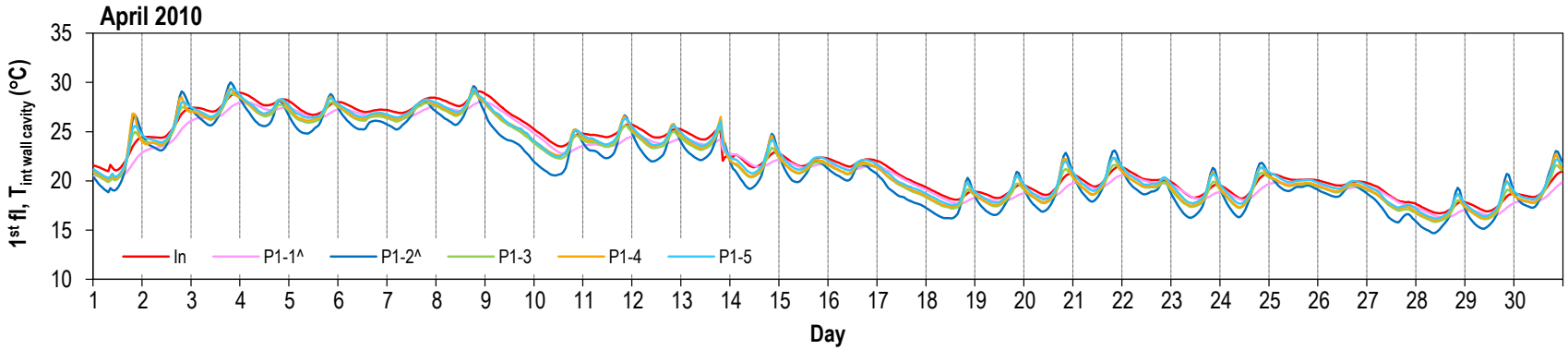

December 2009
2nd fl, T int wall cavity (°C)
25
20
15
10
In
P2-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

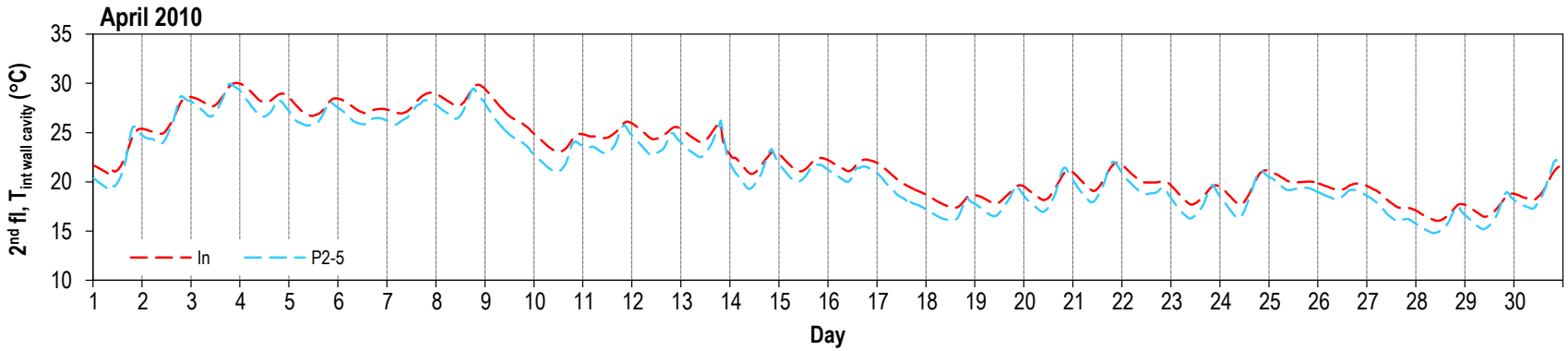

January 2010
1st fl, T int wall cavity (°C)
25
20
15
10
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

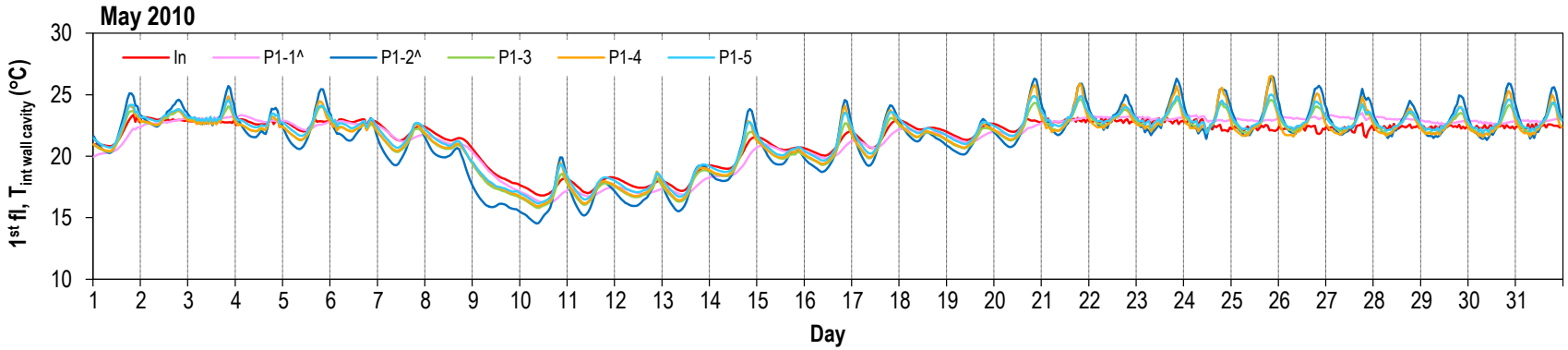

January 2010
2nd fl, T int wall cavity (°C)
In
P2-5
Day
February 2010
1st fl, T int wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Day
February 2010
2nd fl, T int wall cavity (°C)
In
P2-5
Day

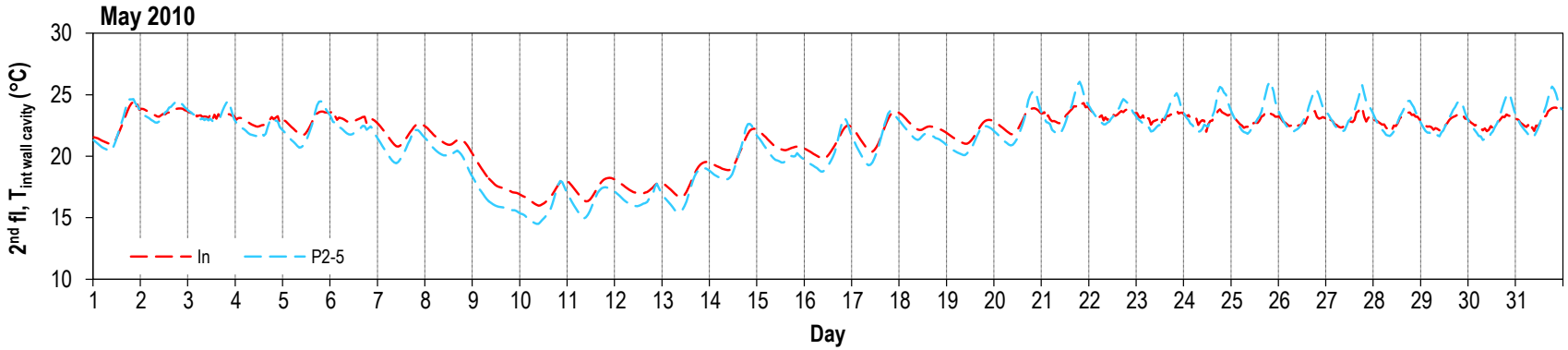

March 2010
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
1st fl, T int wall cavity (°C)
Day

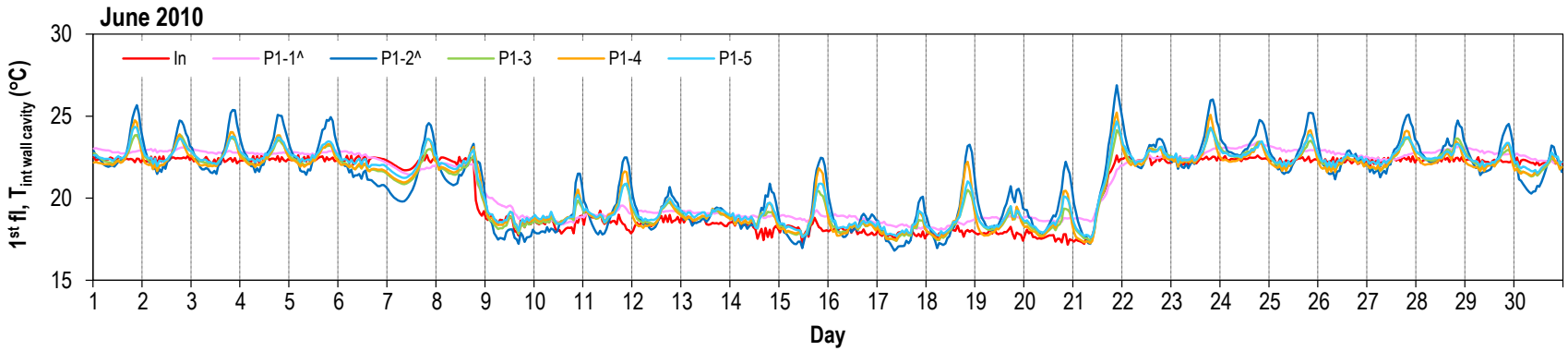

March 2010
In
P2-5
2nd fl, T int wall cavity (°C)
Day

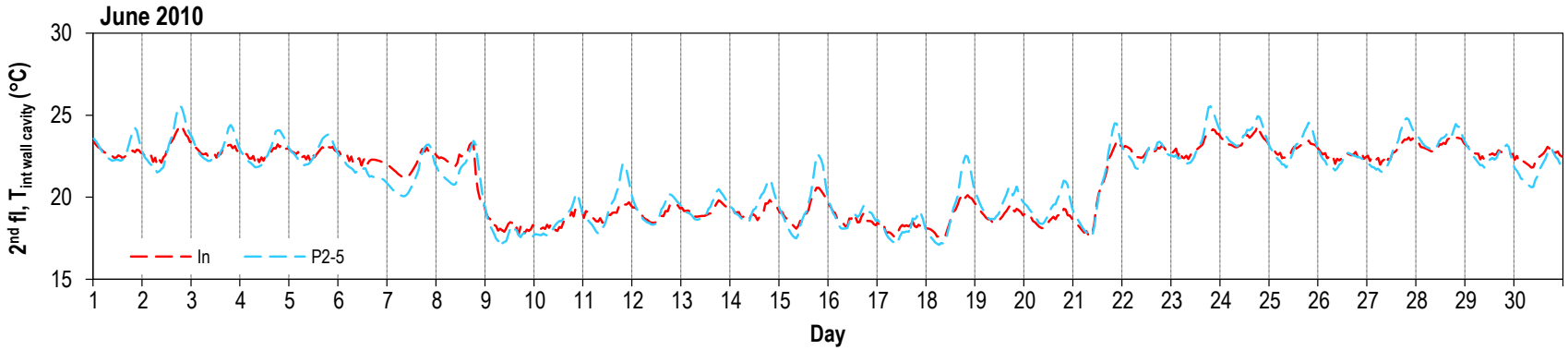

April 2010
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
1st fl, T int wall cavity (°C)
Day

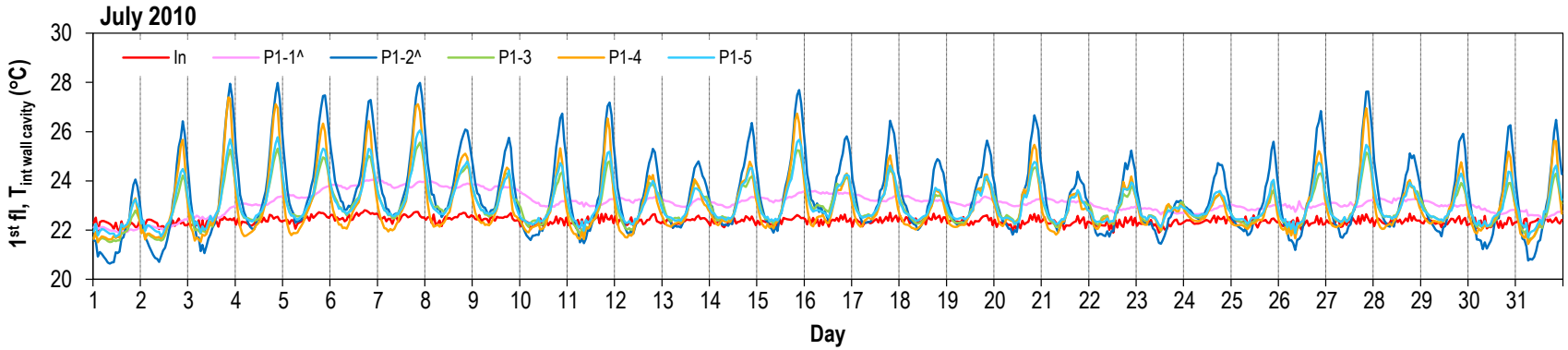

April 2010
2nd fl, T int wall cavity (°C)
In
P2-5
Day

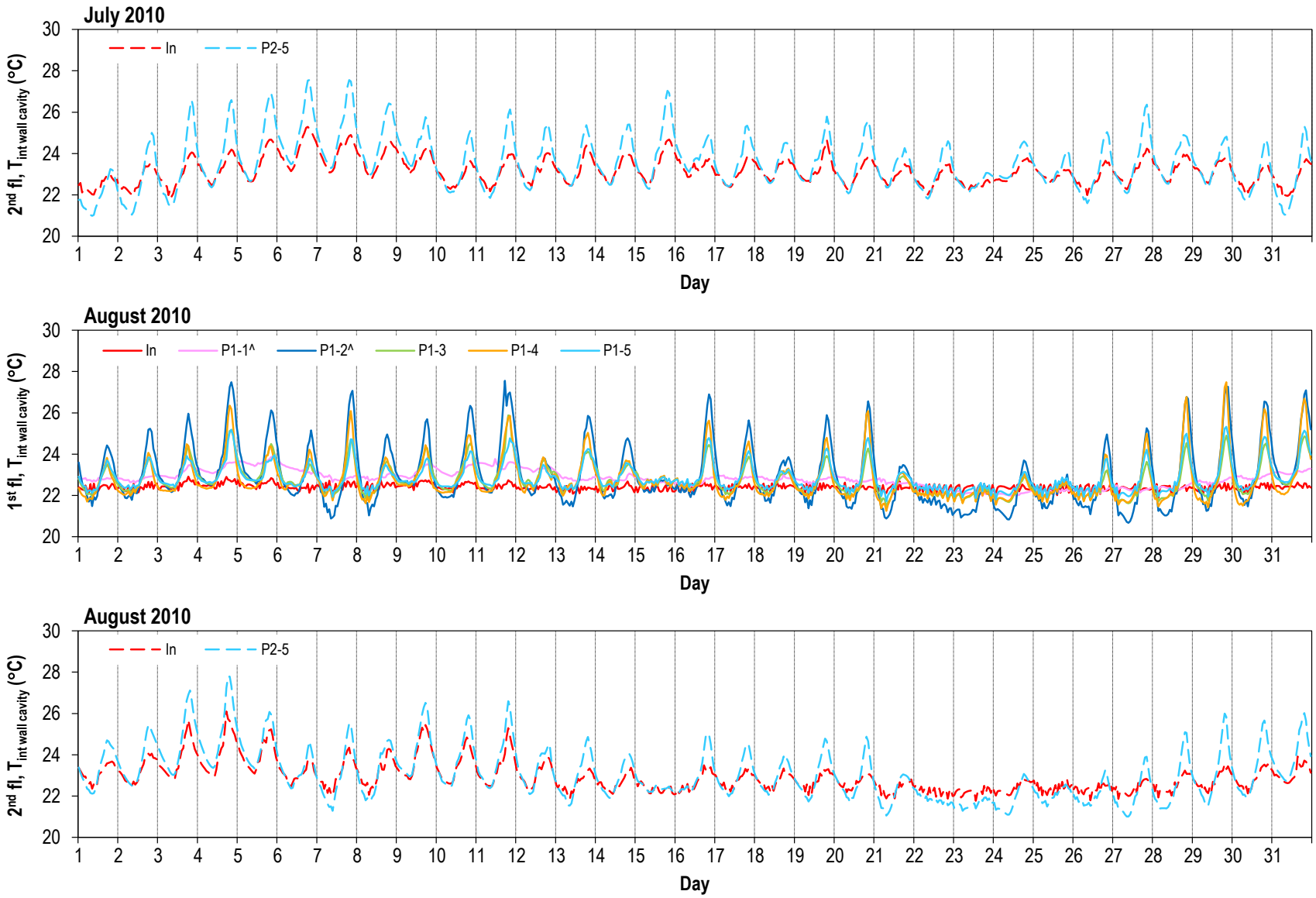

May 2010
1st fl, T int wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Day


May 2010
2nd fl, T int wall cavity (°C)
In
P2-5
Day

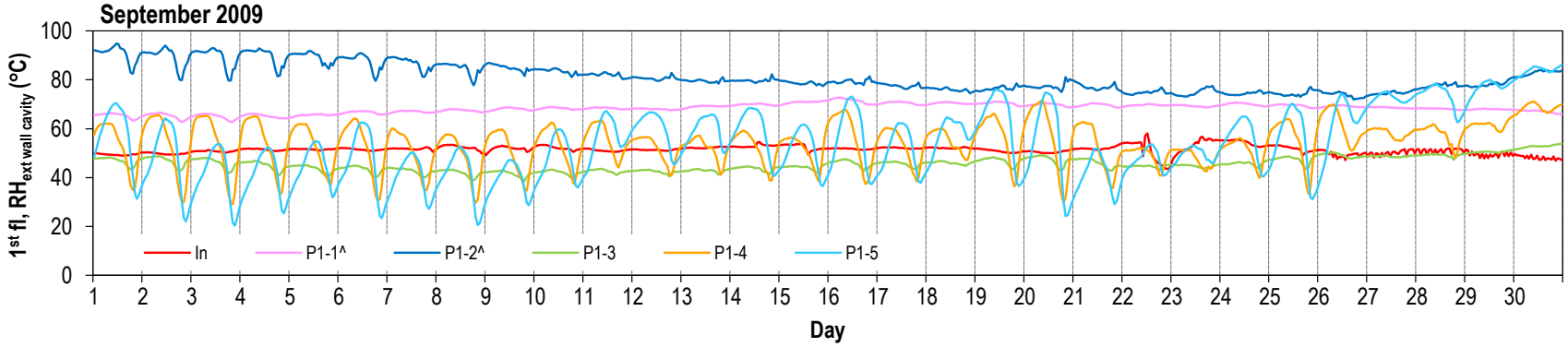

June 2010
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
1st fl, T int wall cavity (°C)
Day

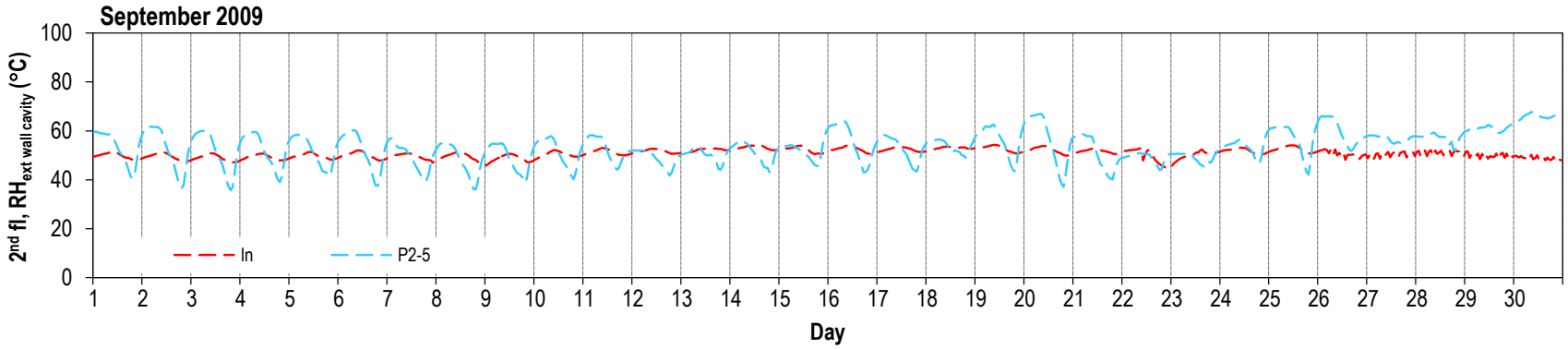

June 2010
In
P2-5
2nd fl, T int wall cavity (°C)
Day

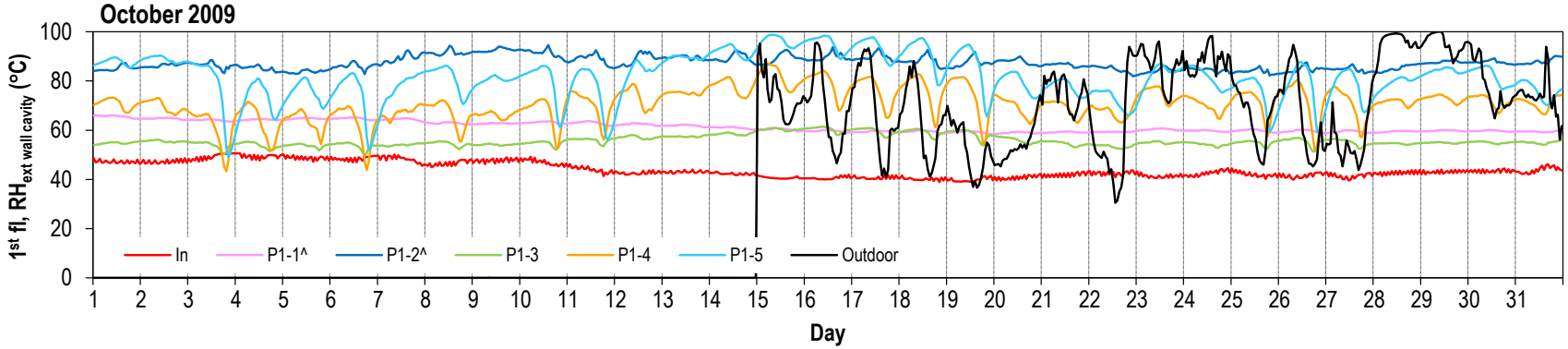

July 2010
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
1st fl, T int wall cavity (°C)
Day

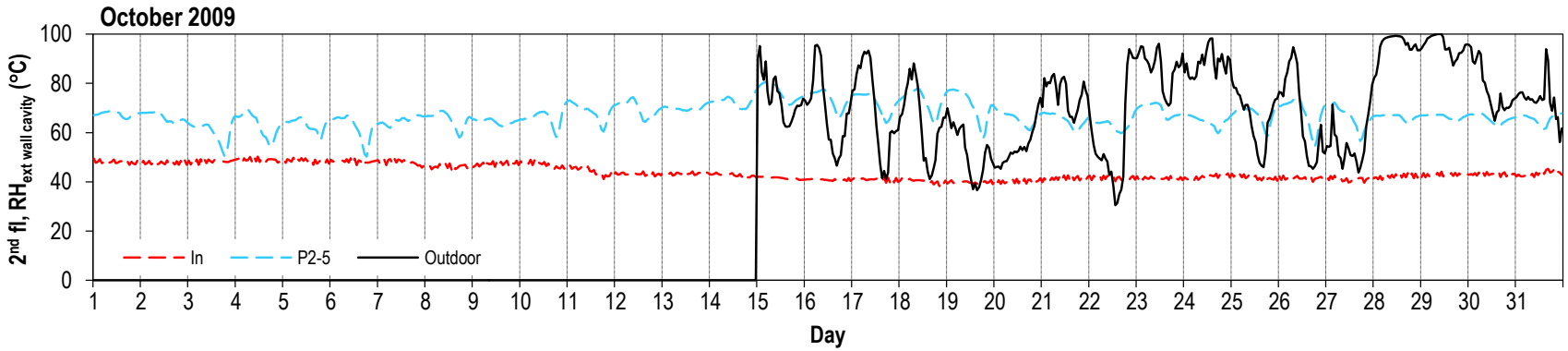

July 2010
In
P2-5
2nd fl, T int wall cavity (°C)
Day
August 2010
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
1st fl, T int wall cavity (°C)
Day
August 2010
In
P2-5
2nd fl, T int wall cavity (°C)
Day

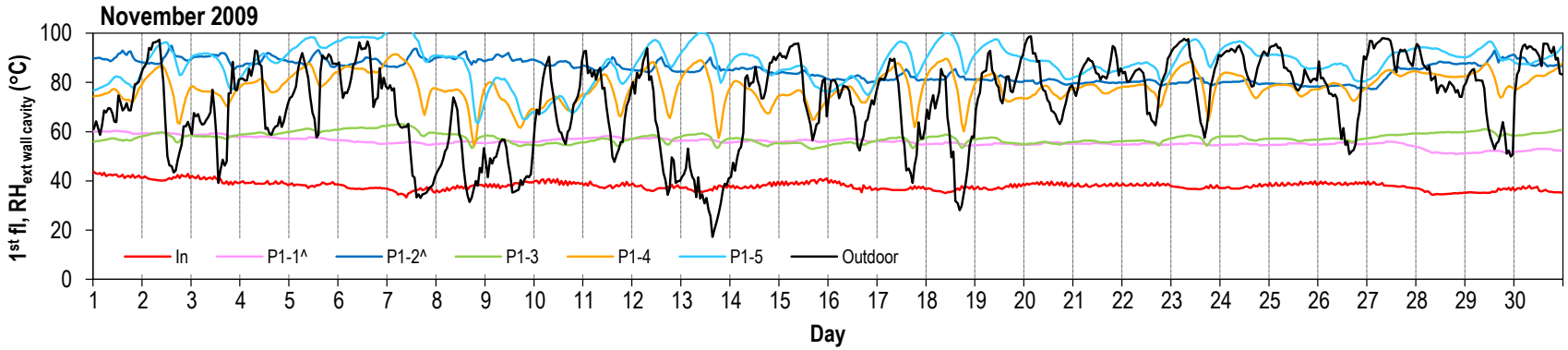
Relative humidity (%) at exterior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

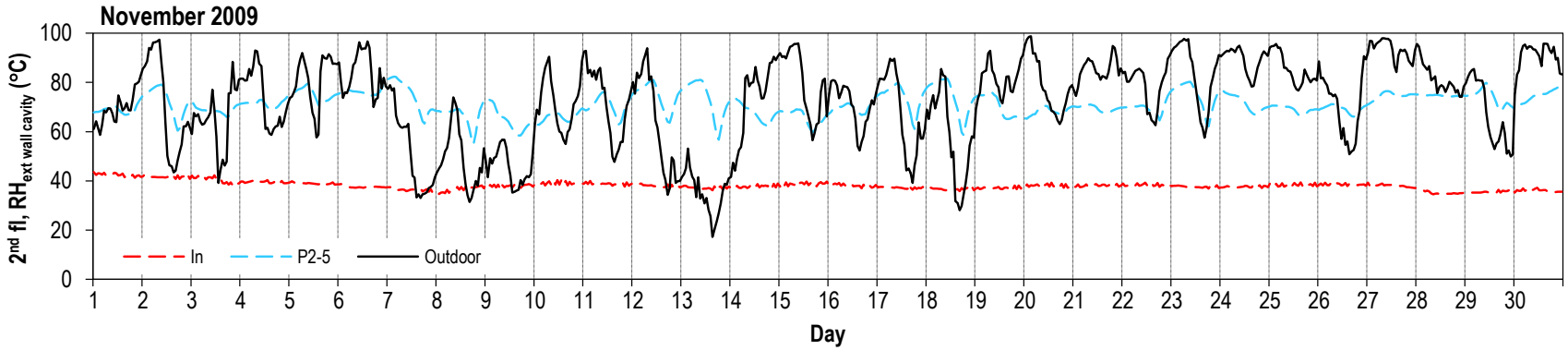


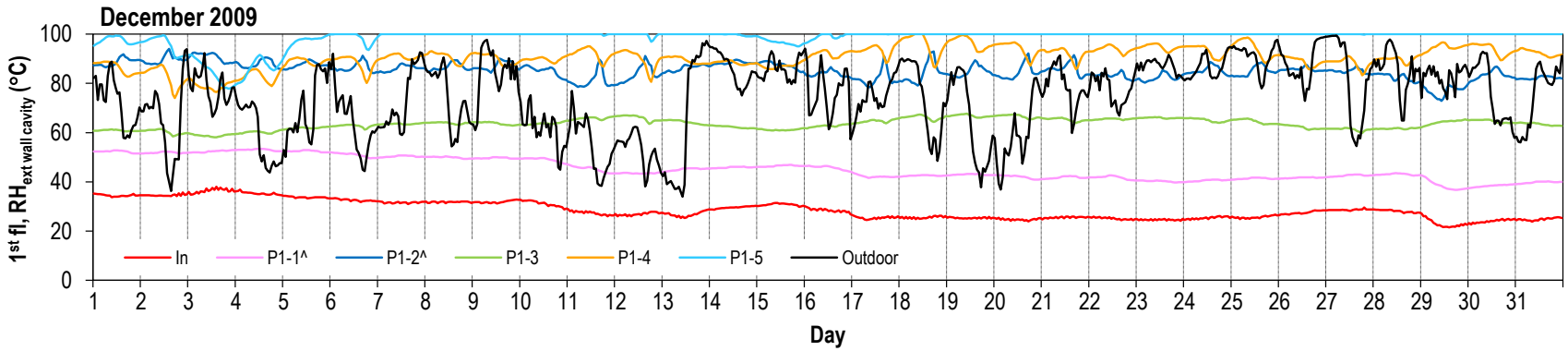



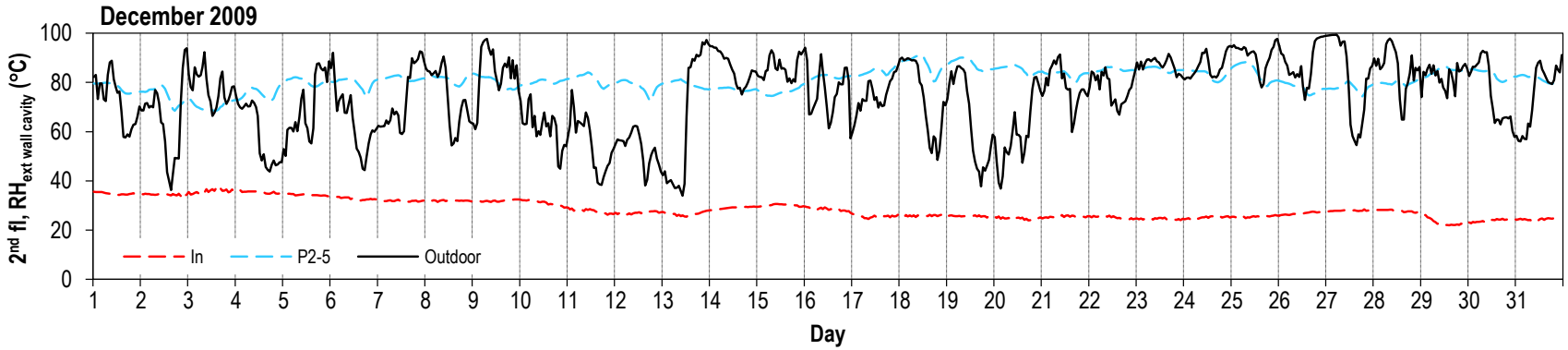



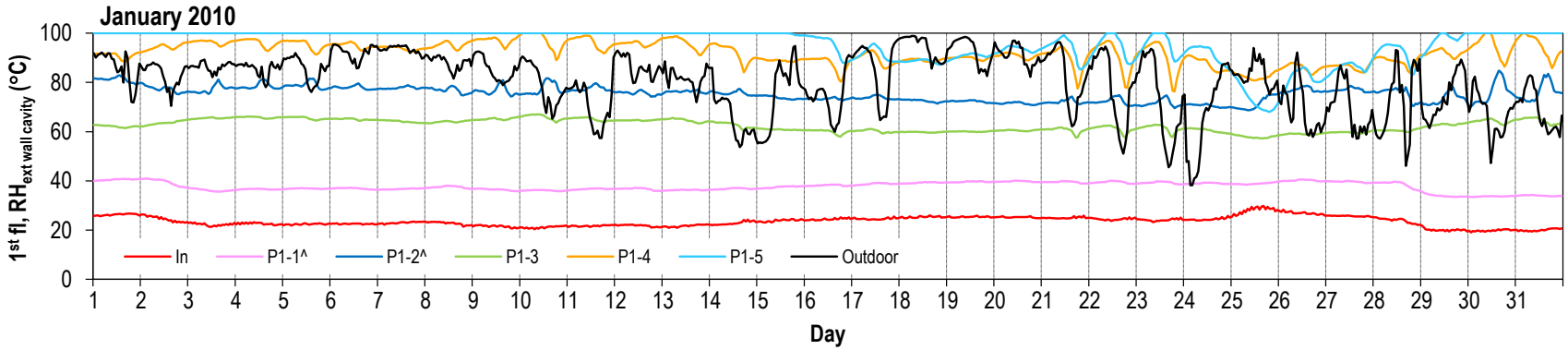

October 2009
2nd fl, RHext wall cavity (°C)
In
P2-5
Outdoor
Day

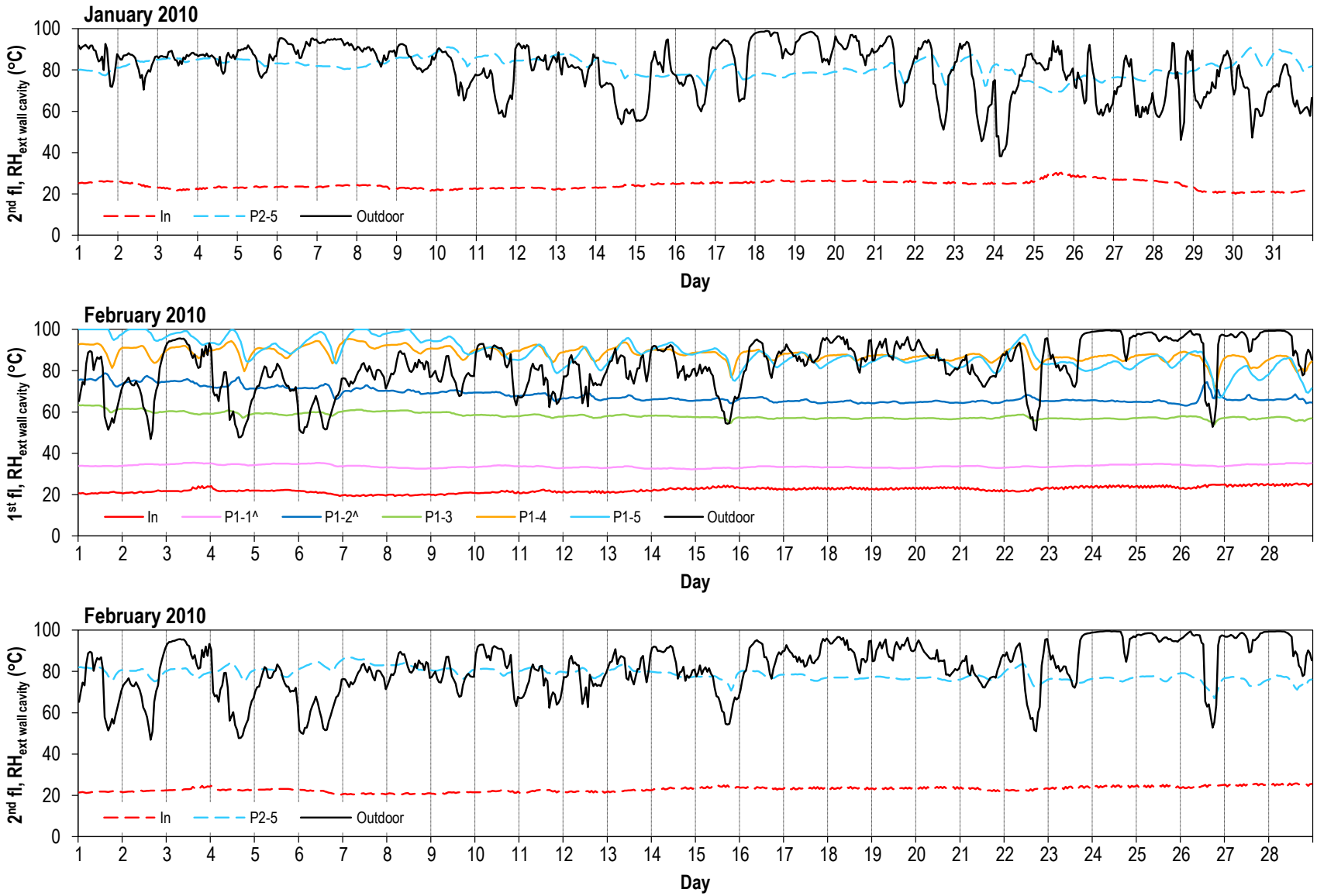

November 2009
1st fl, RHext wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
Day

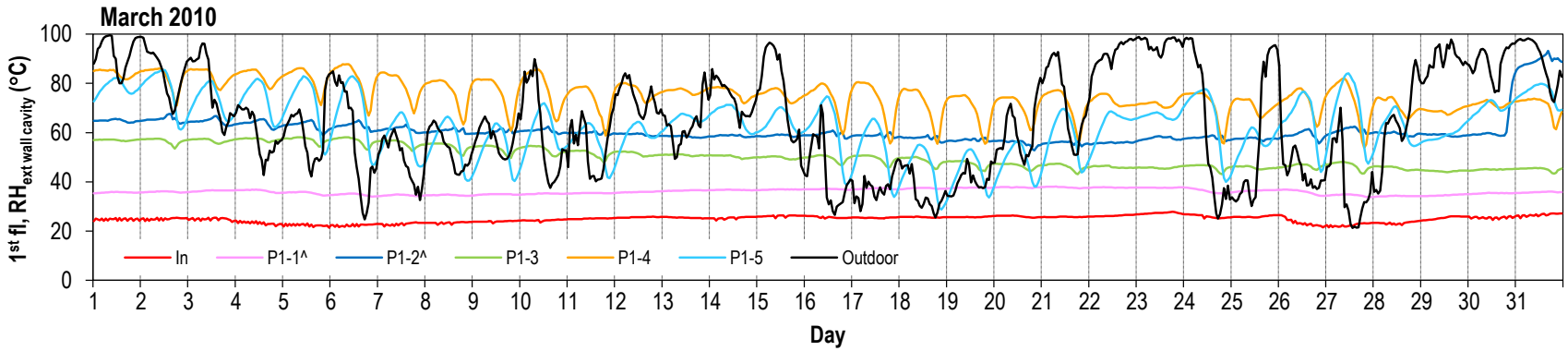

November 2009
2nd fl, RHext wall cavity (°C)
In
P2-5
Outdoor
Day

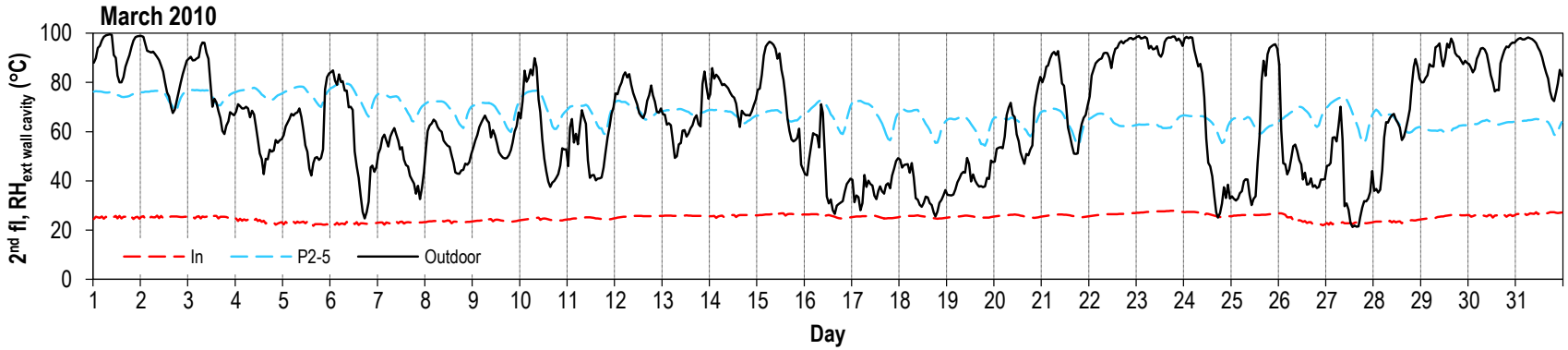

December 2009
1st fl, RHext wall cavity (°C)
100
80
60
40
20
0
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

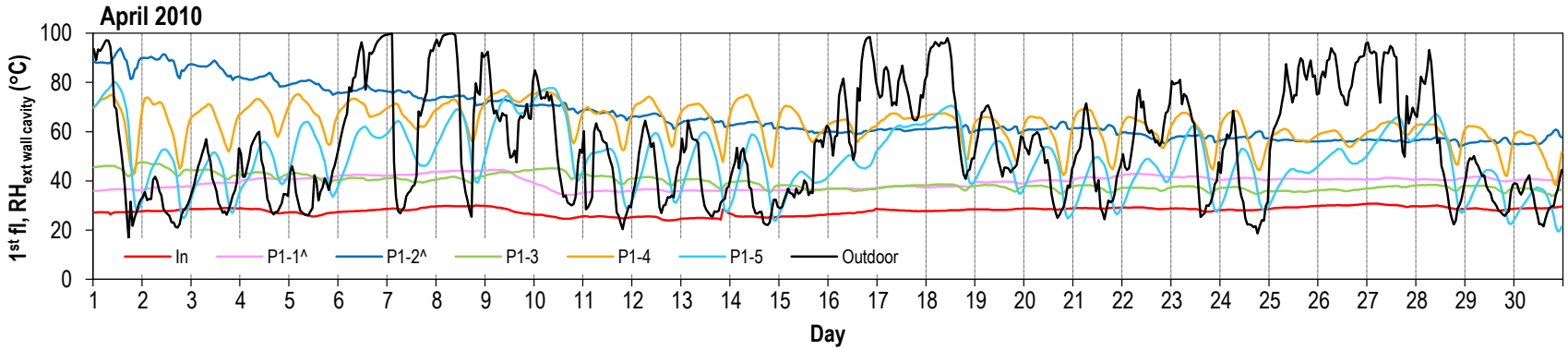

December 2009
2nd fl, RHext wall cavity (°C)
100
80
60
40
20
0
In
P2-5
Outdoor
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

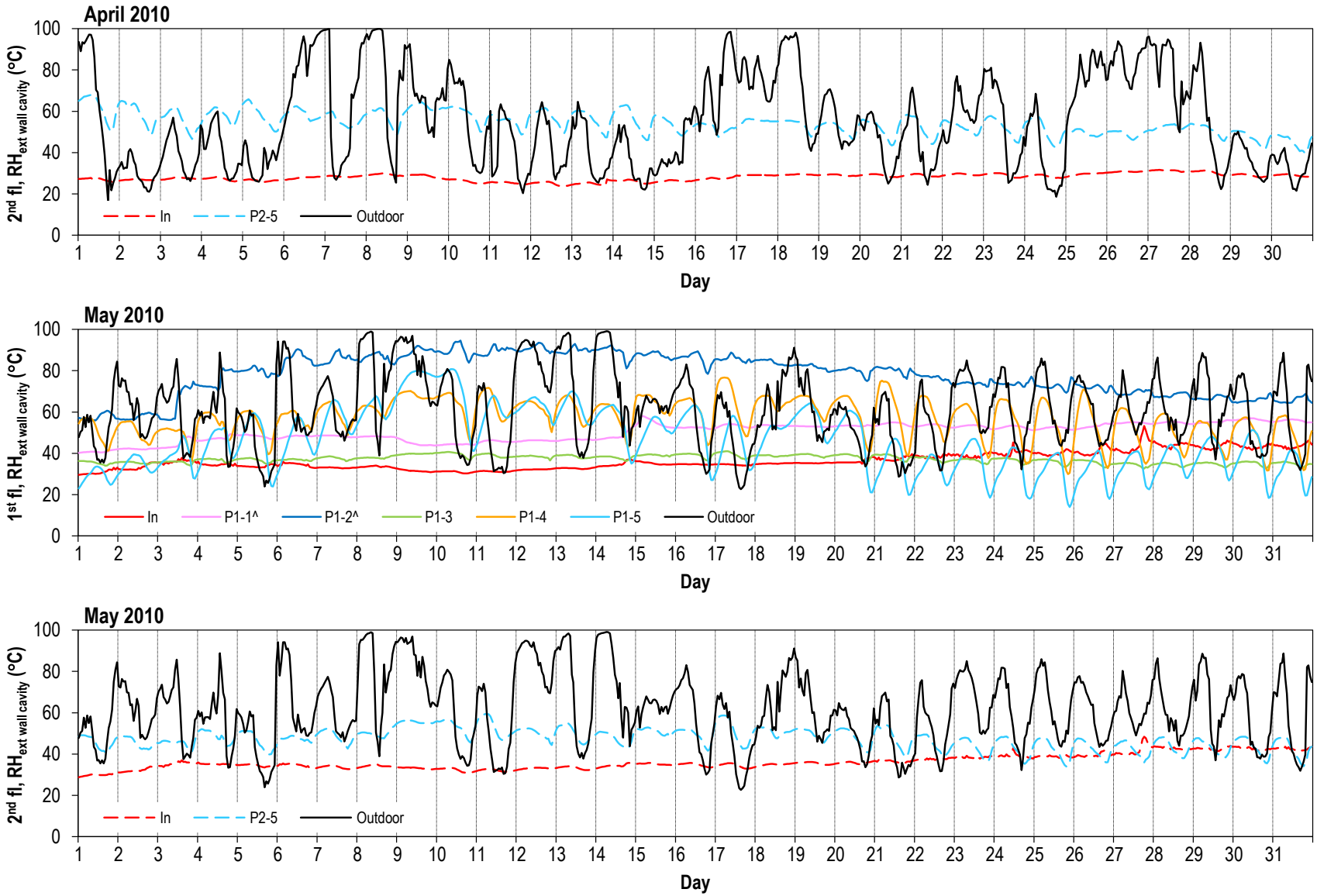

January 2010
1st fl, RHext wall cavity (°C)
100
80
60
40
20
0
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

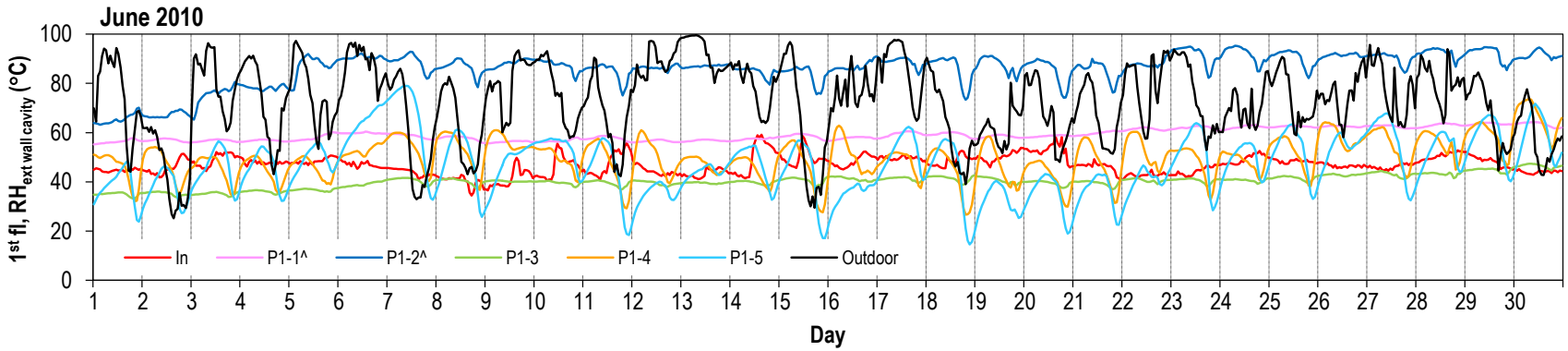

January 2010
2nd fl, RHext wall cavity (°C)
In
P2-5
Outdoor
Day
February 2010
1st fl, RHext wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
Day
February 2010
2nd fl, RHext wall cavity (°C)
In
P2-5
Outdoor
Day

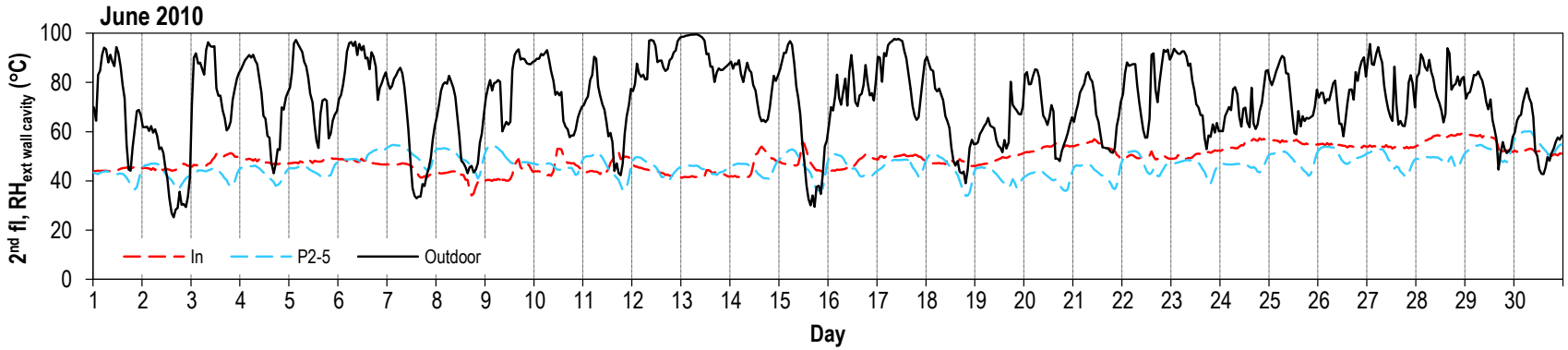

March 2010
1st fl, RHext wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
Day

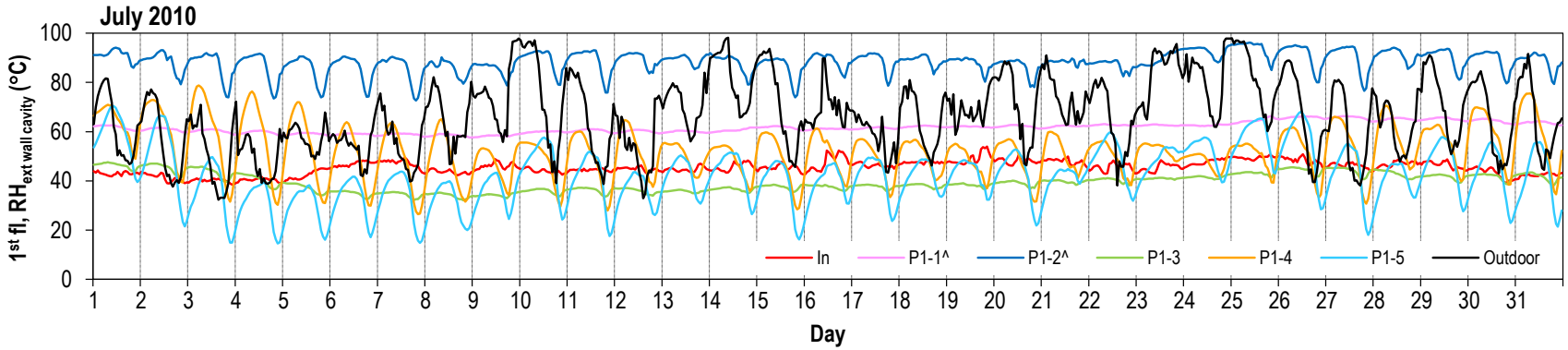

March 2010
2nd fl, RHext wall cavity (°C)
In
P2-5
Outdoor
Day

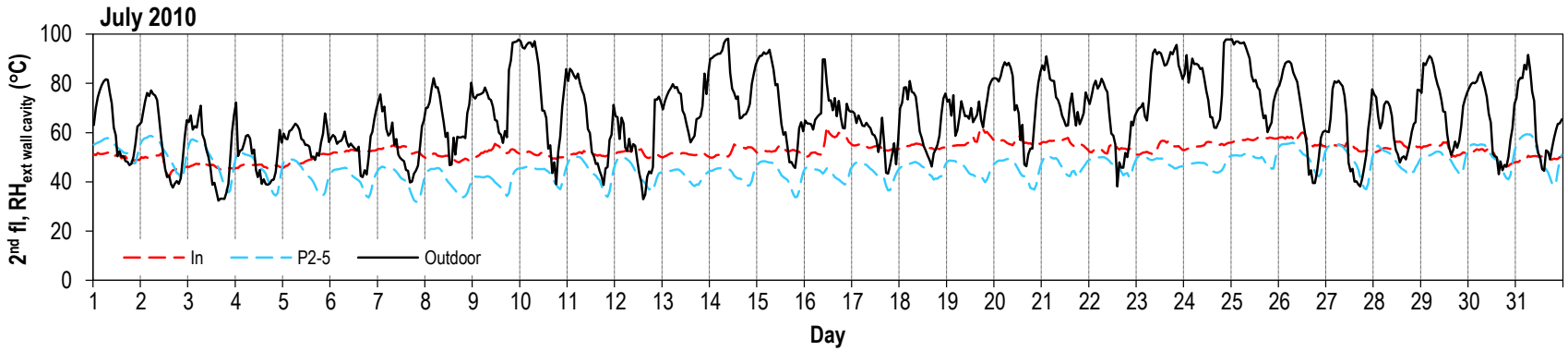

April 2010
1st fl, RHext wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
Day

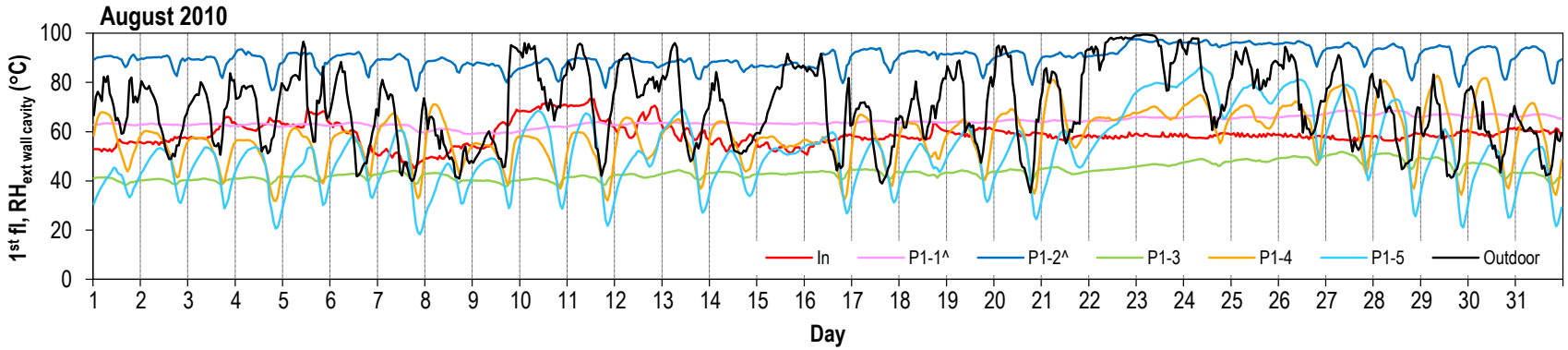

April 2010
2nd fl, RHext wall cavity (°C)
In
P2-5
Outdoor
Day
May 2010
1st fl, RHext wall cavity (°C)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor
Day
May 2010
2nd fl, RHext wall cavity (°C)
In
P2-5
Outdoor
Day

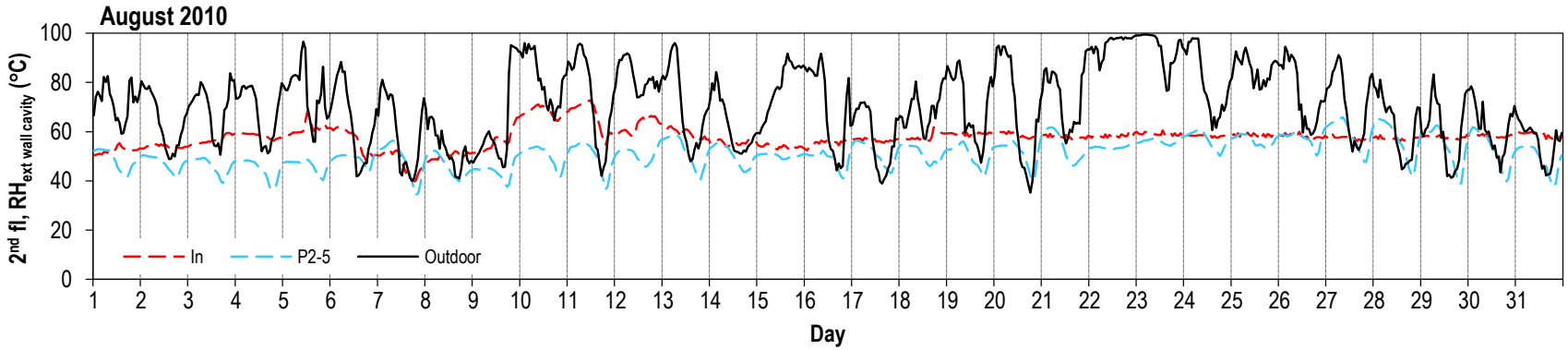

June 2010
1st fl, RHext wall cavity (°C)
Day
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor


June 2010
2nd fl, RHext wall cavity (°C)
Day
In
P2-5
Outdoor

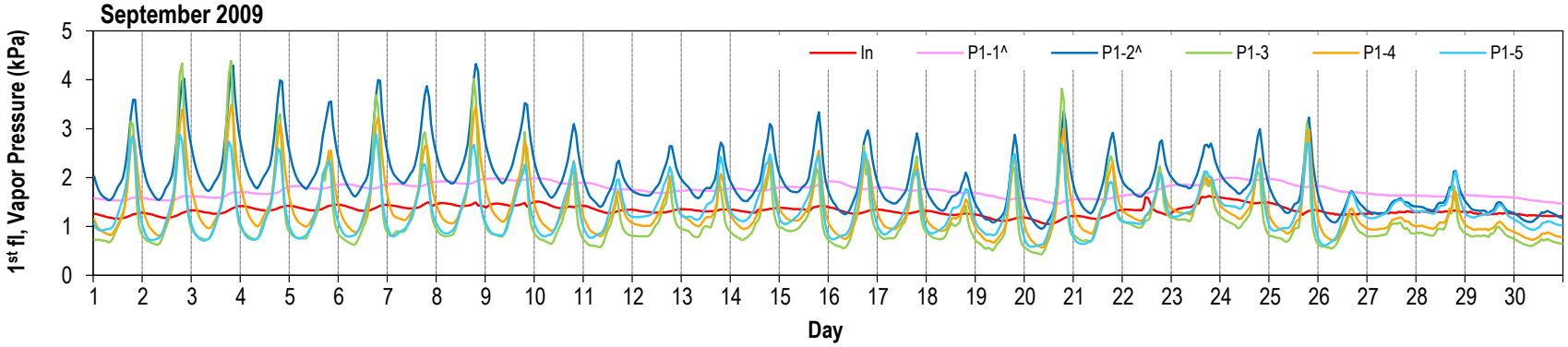

July 2010
1st fl, RHext wall cavity (°C)
Day
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor

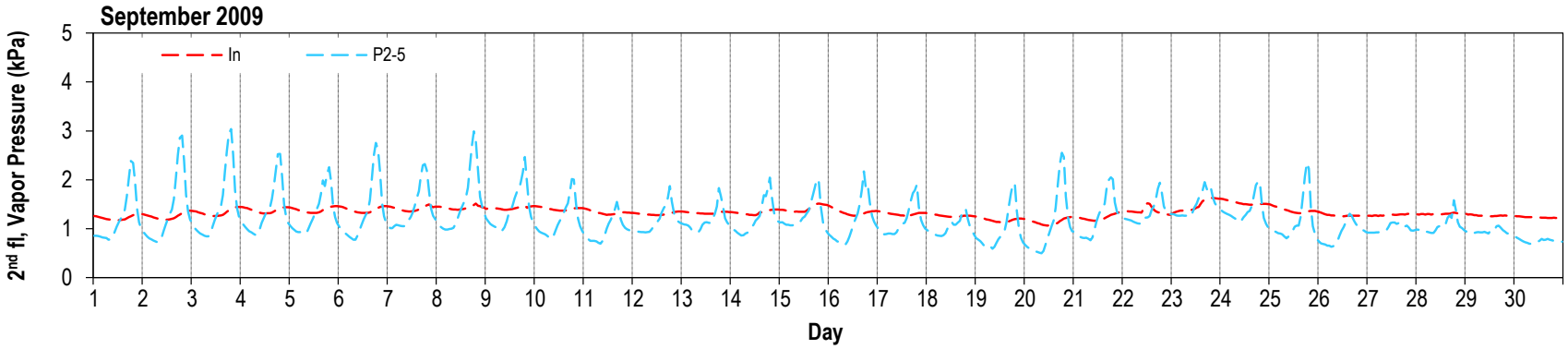

July 2010
2nd fl, RHext wall cavity (°C)
Day
In
P2-5
Outdoor

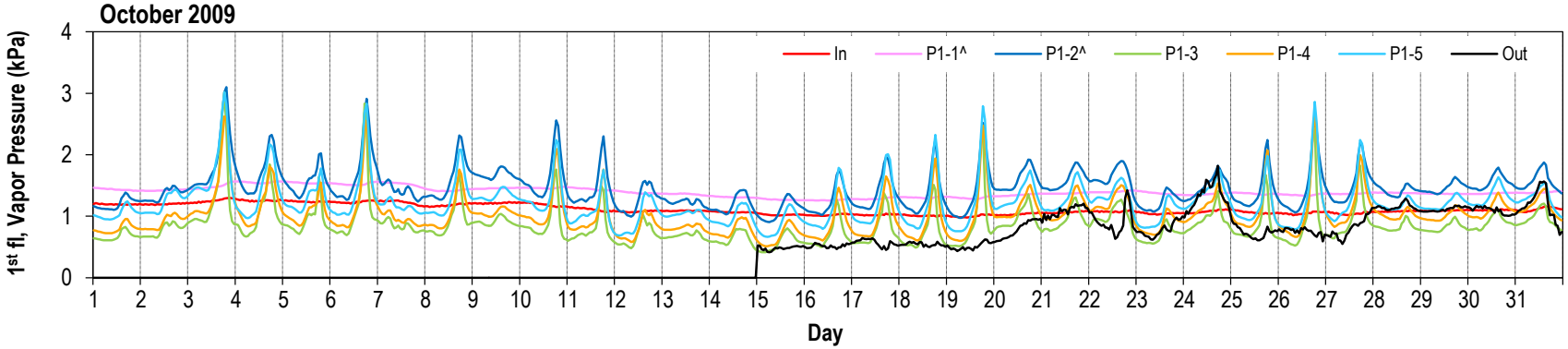

August 2010
1st fl, RHext wall cavity (°C)
Day
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Outdoor

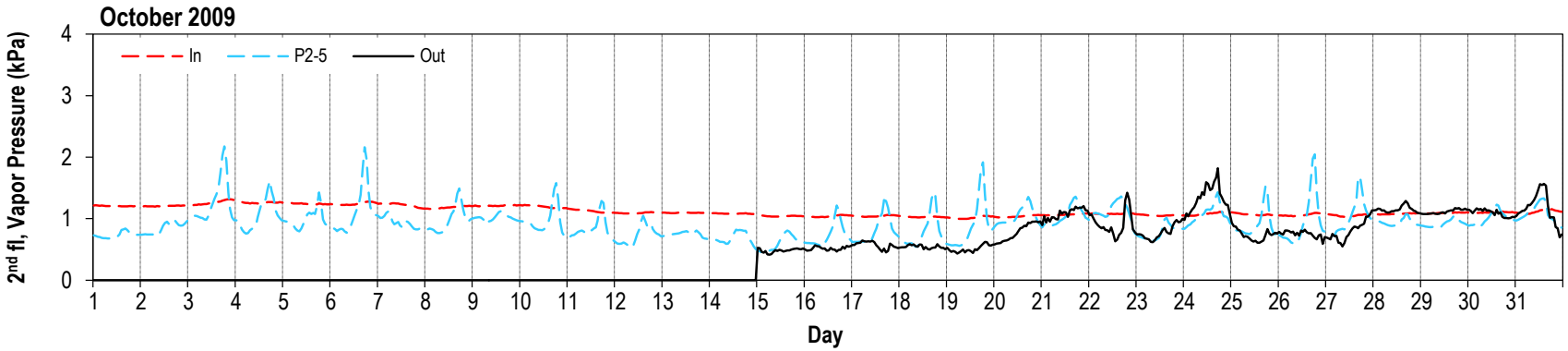

August 2010
2nd fl, RHext wall cavity (°C)
Day
In
P2-5
Outdoor

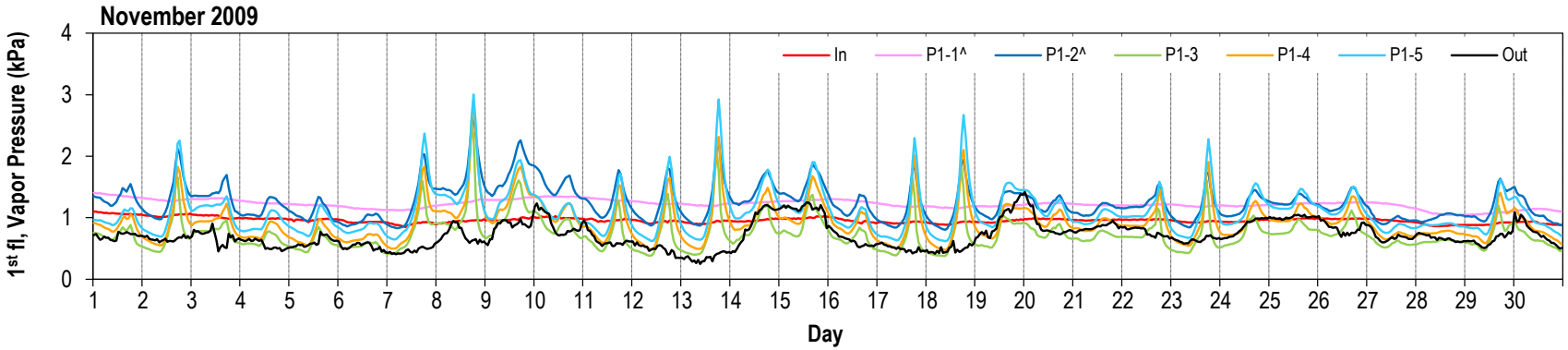
Water vapor pressure (kPa) at exterior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

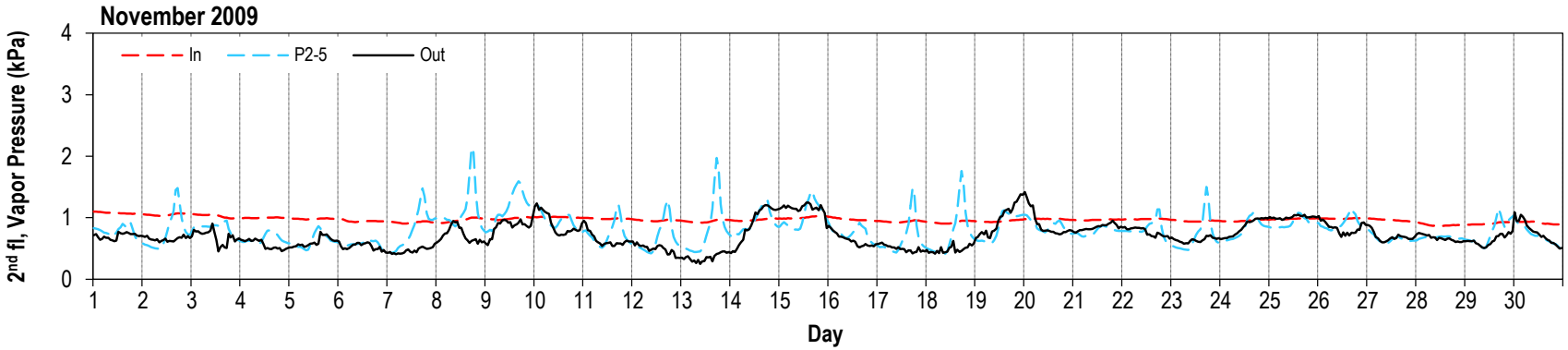


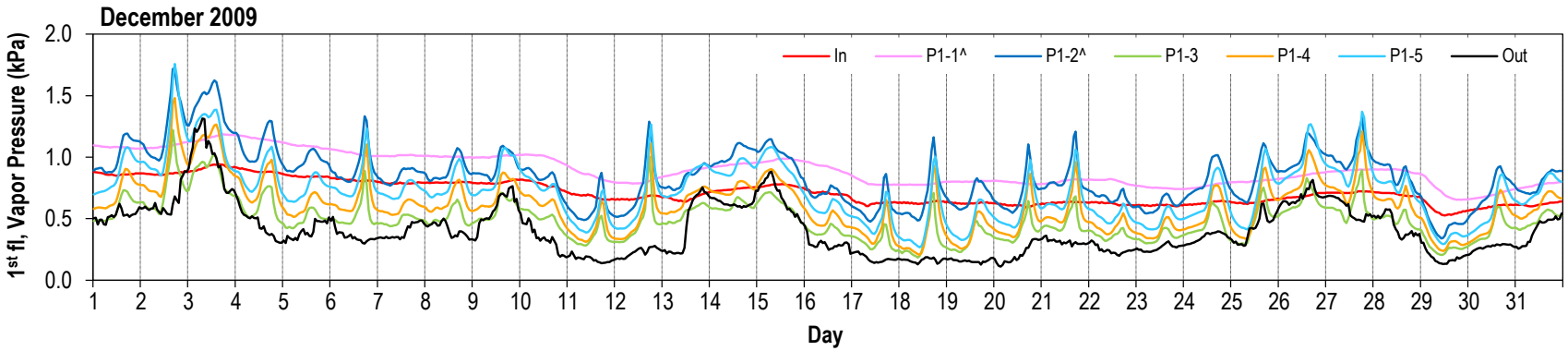



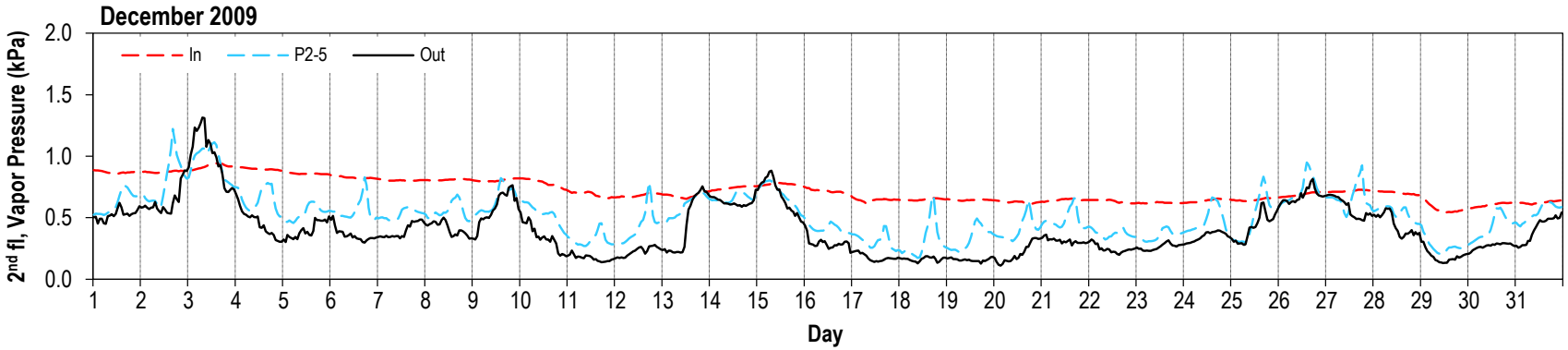



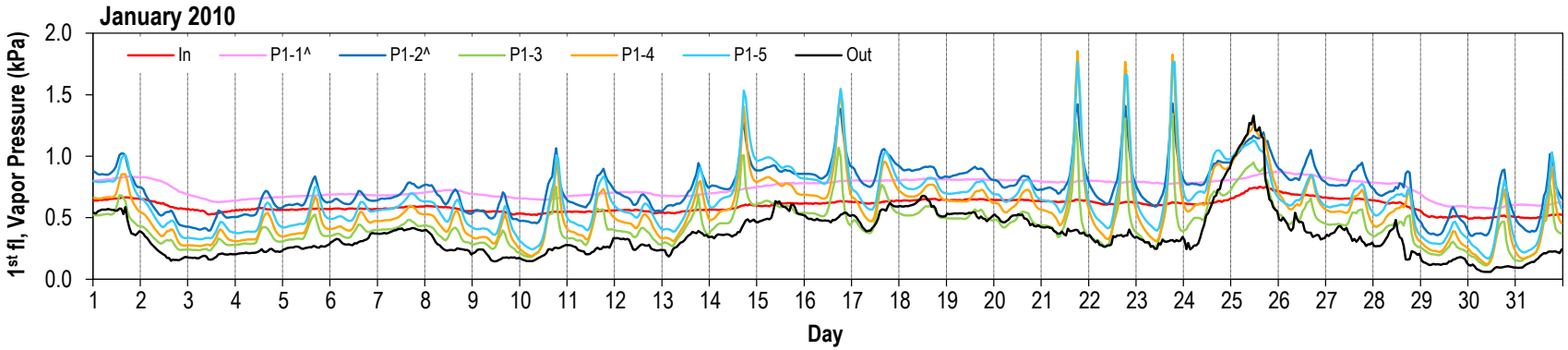

October 2009
In
P2-5
Out
2nd fl, Vapor Pressure (kPa)
Day

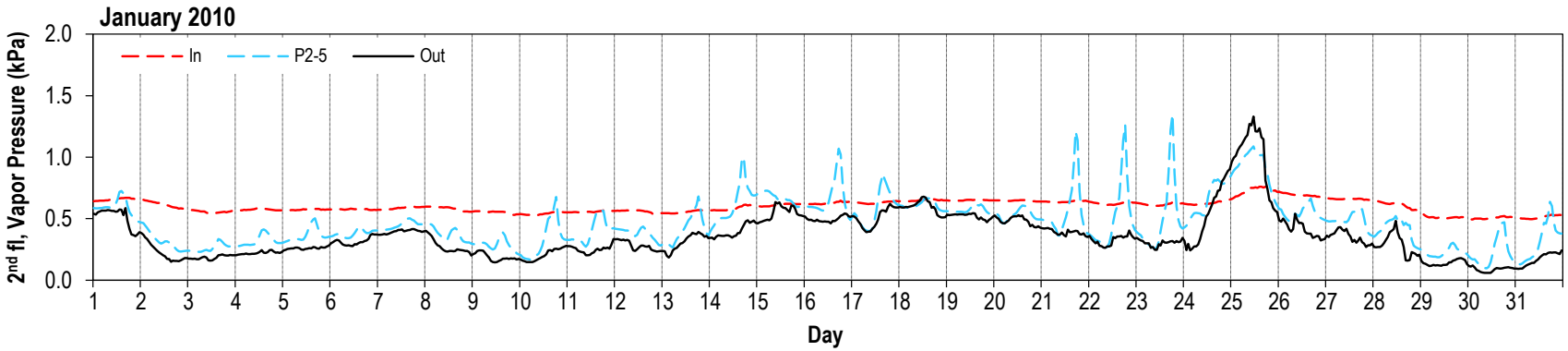

November 2009
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Out
1st fl, Vapor Pressure (kPa)
Day

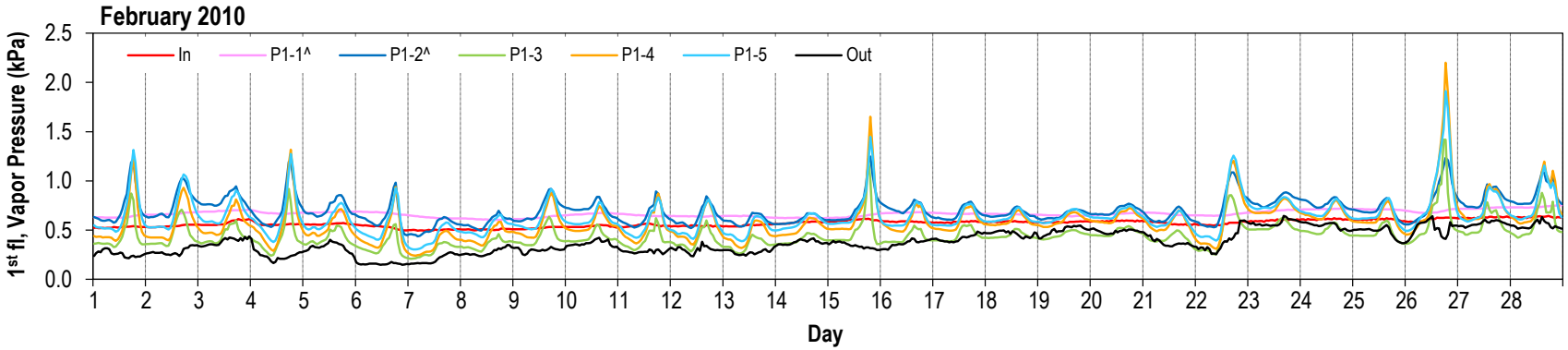

November 2009
In
P2-5
Out
2nd fl, Vapor Pressure (kPa)
Day

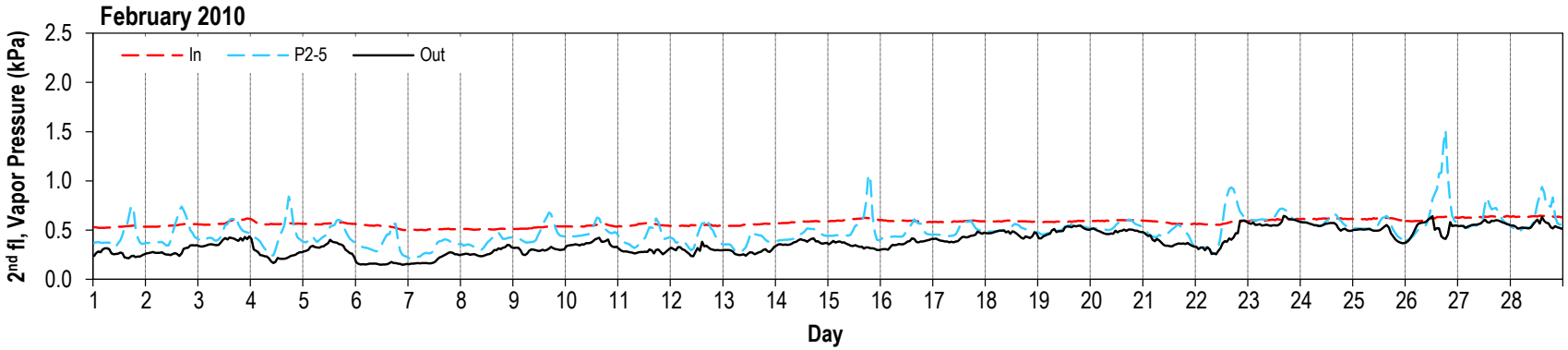

December 2009
1st fl, Vapor Pressure (kPa)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Out
Day

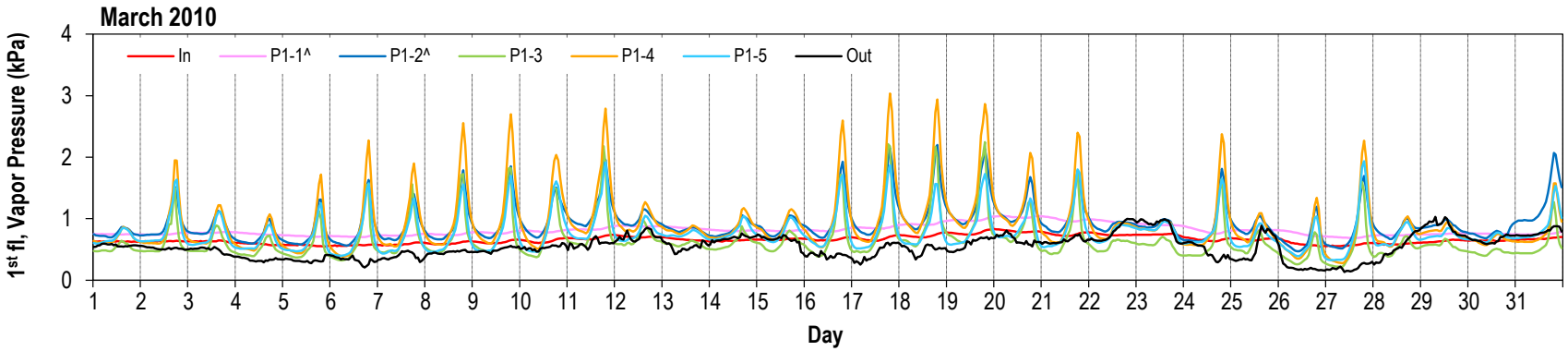

December 2009
2nd fl, Vapor Pressure (kPa)
In
P2-5
Out
Day

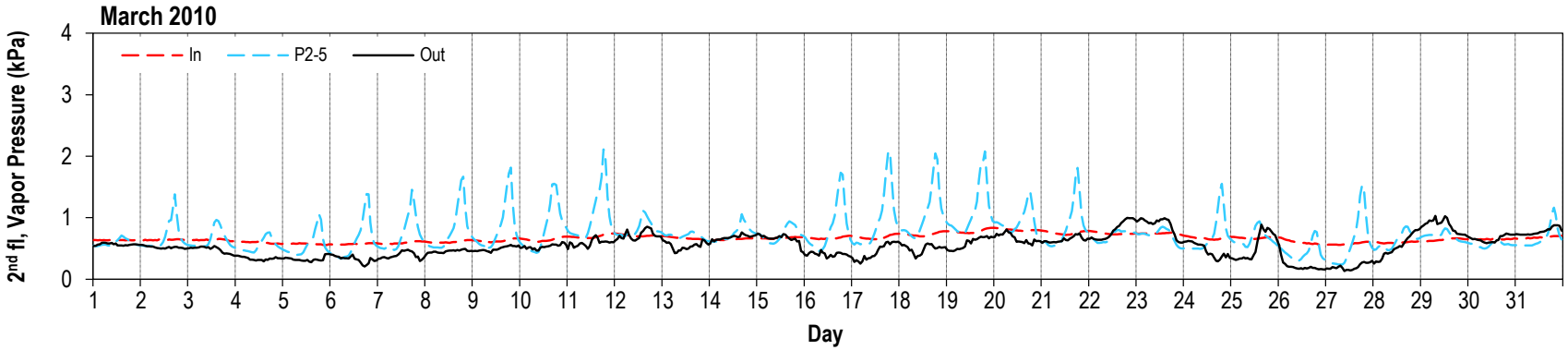

January 2010
1st fl, Vapor Pressure (kPa)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Out
Day

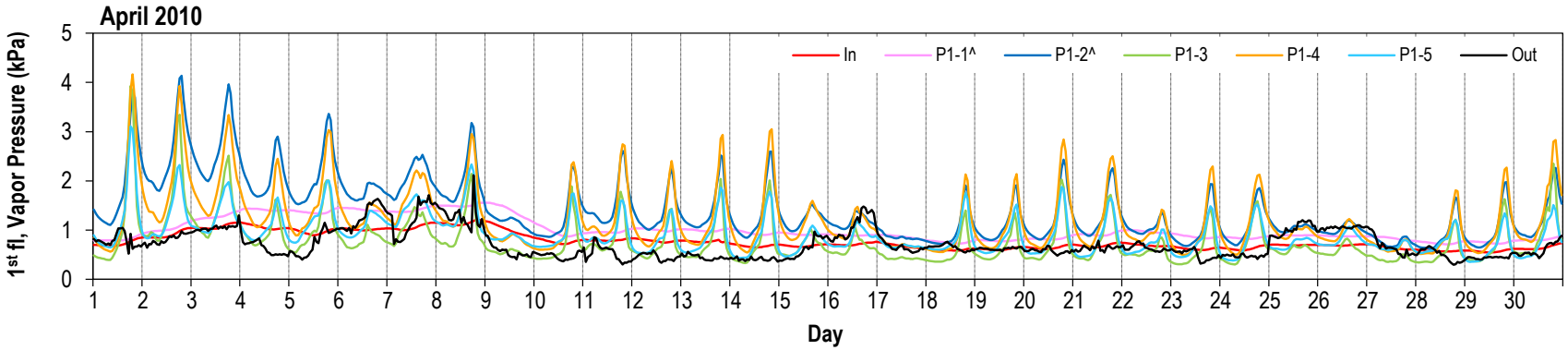

January 2010
In
P2-5
Out
2nd fl, Vapor Pressure (kPa)
Day

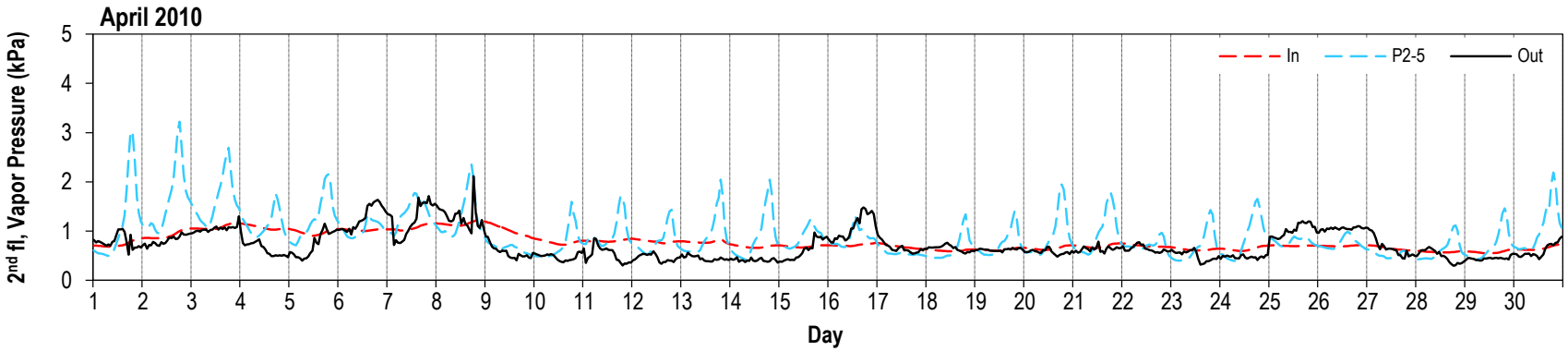

February 2010
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Out
1st fl, Vapor Pressure (kPa)
Day

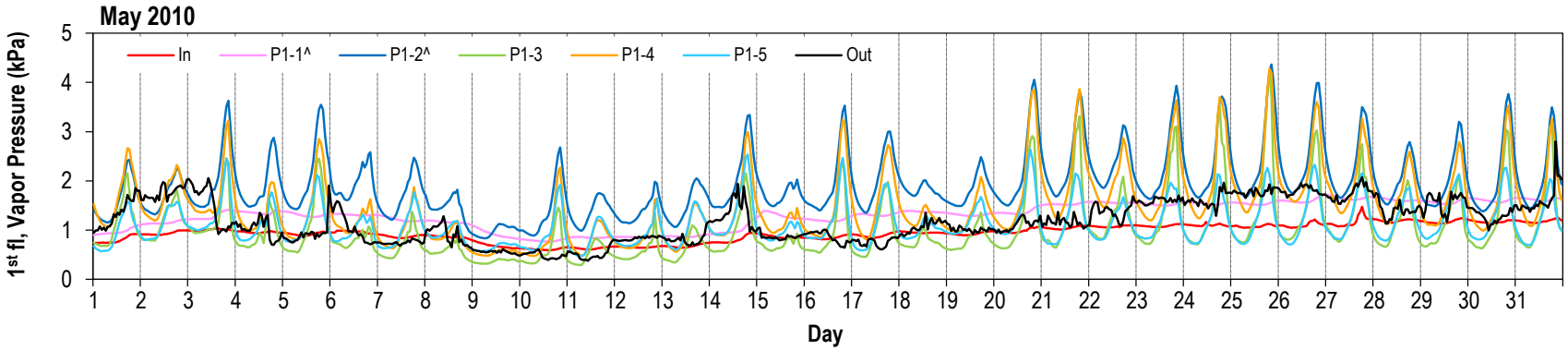

February 2010
In
P2-5
Out
2nd fl, Vapor Pressure (kPa)
Day

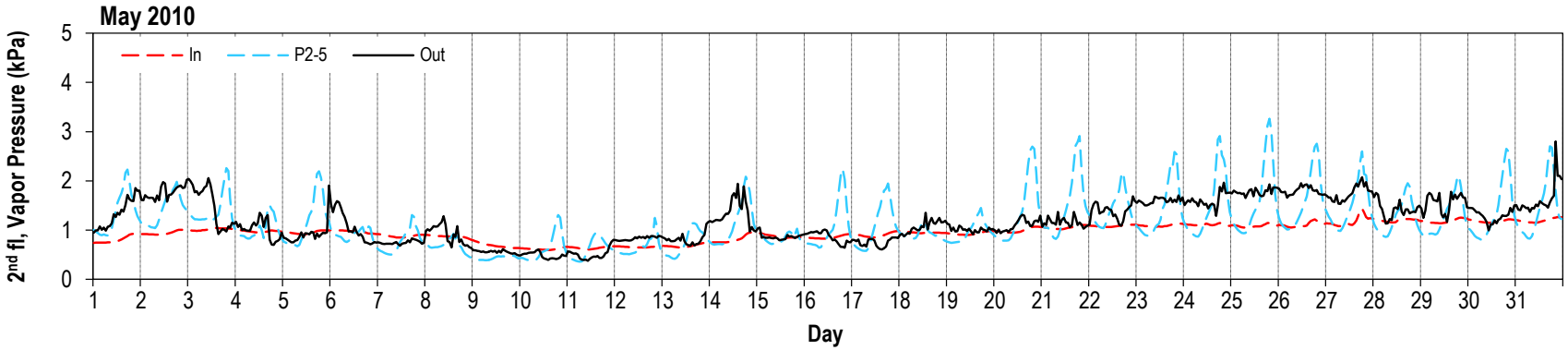

March 2010
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Out
1st fl, Vapor Pressure (kPa)
Day

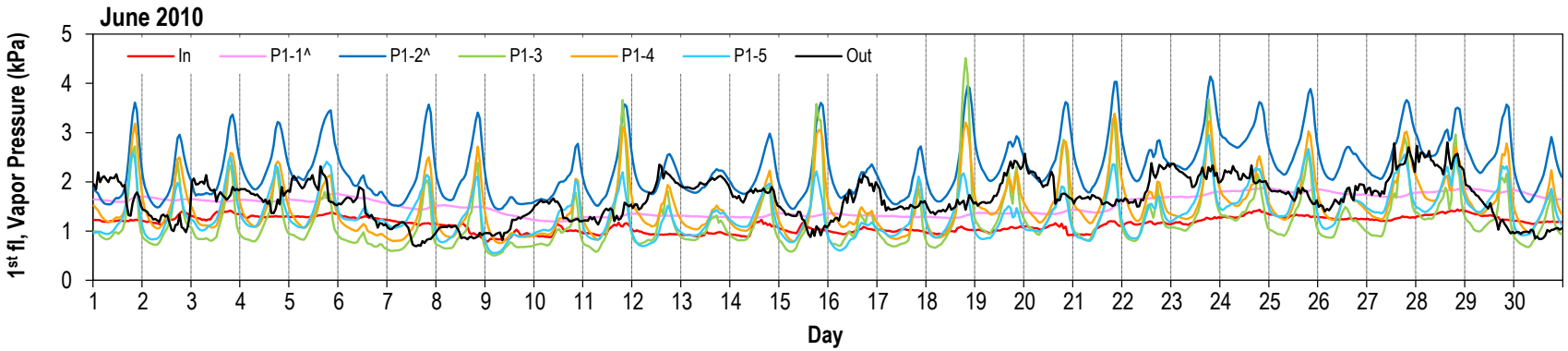

March 2010
In
P2-5
Out
2nd fl, Vapor Pressure (kPa)
Day

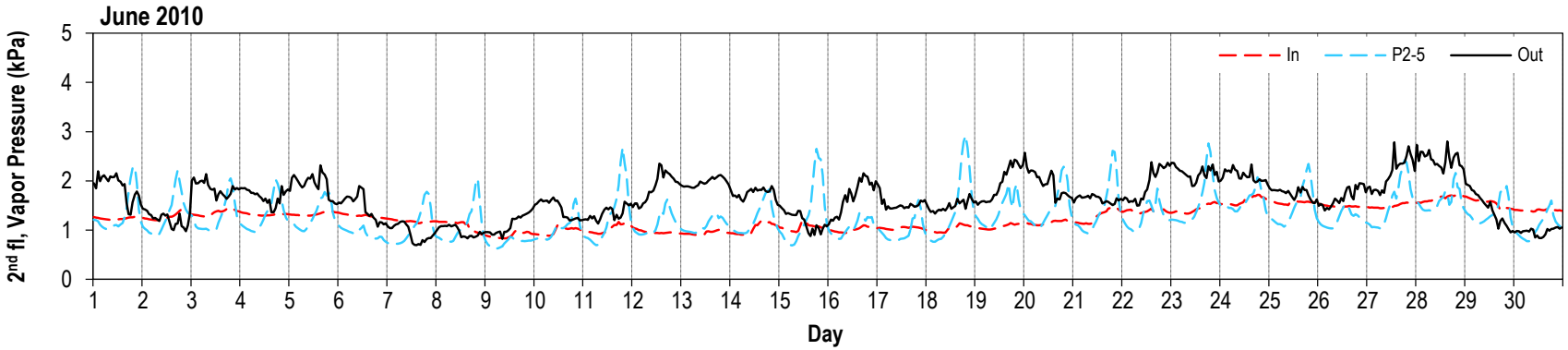

April 2010
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Out
1st fl, Vapor Pressure (kPa)
Day

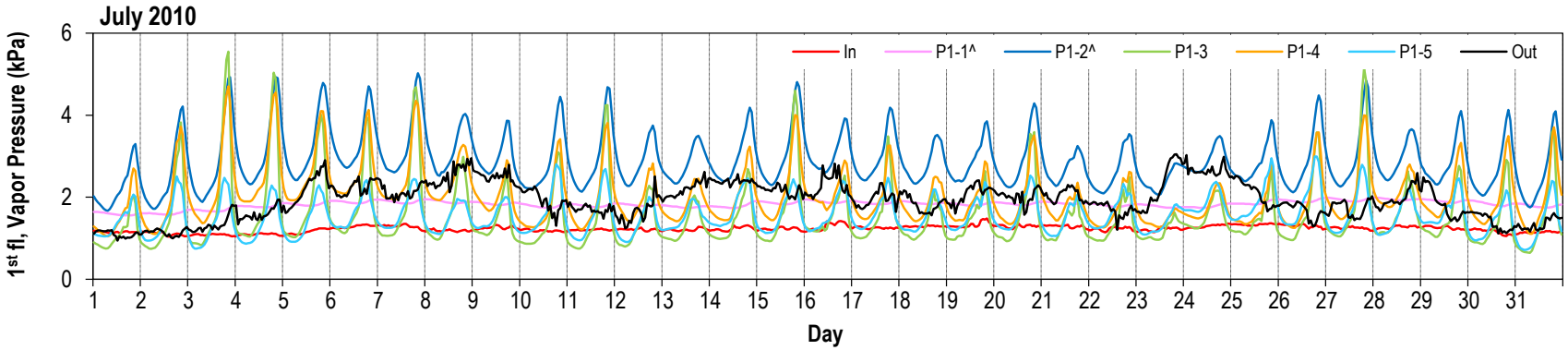

April 2010
2nd fl, Vapor Pressure (kPa)
In
P2-5
Out
Day

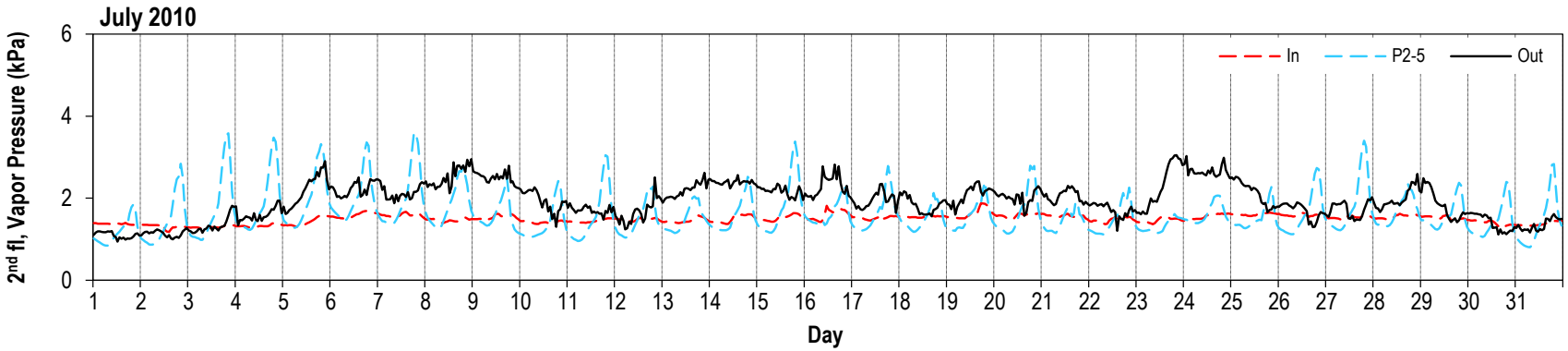

May 2010
1st fl, Vapor Pressure (kPa)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Out
Day

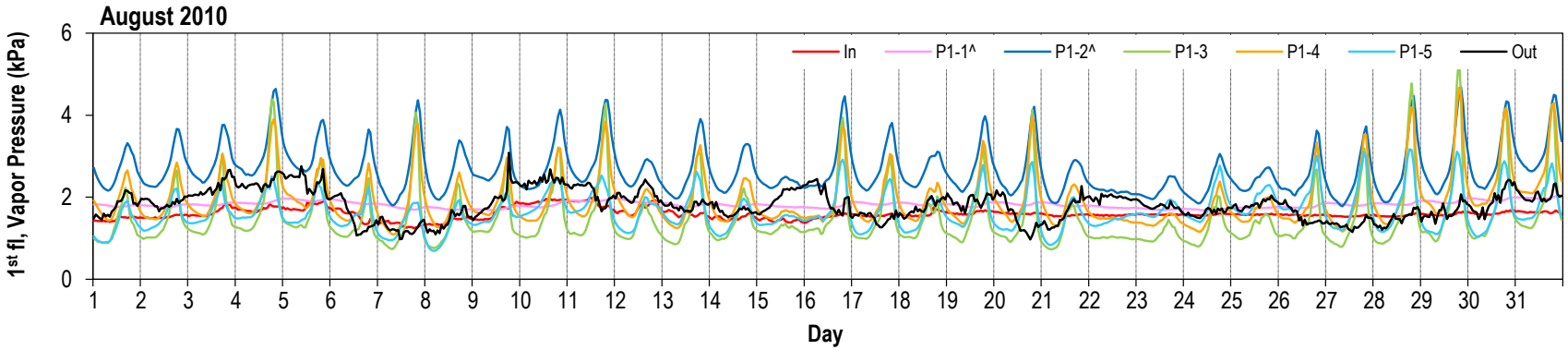

May 2010
2nd fl, Vapor Pressure (kPa)
In
P2-5
Out
Day

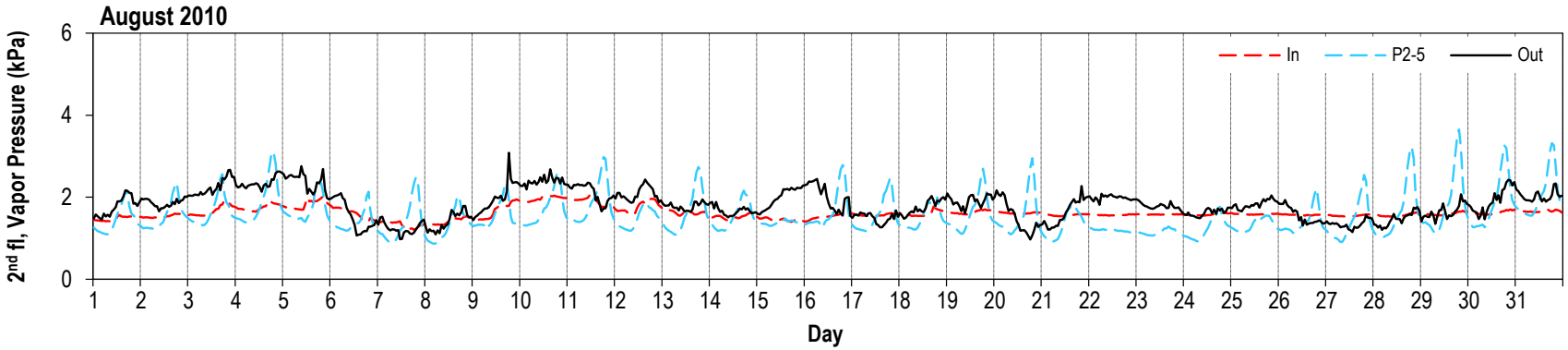

June 2010
1st fl, Vapor Pressure (kPa)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Out
Day


June 2010
2nd fl, Vapor Pressure (kPa)
In
P2-5
Out
Day

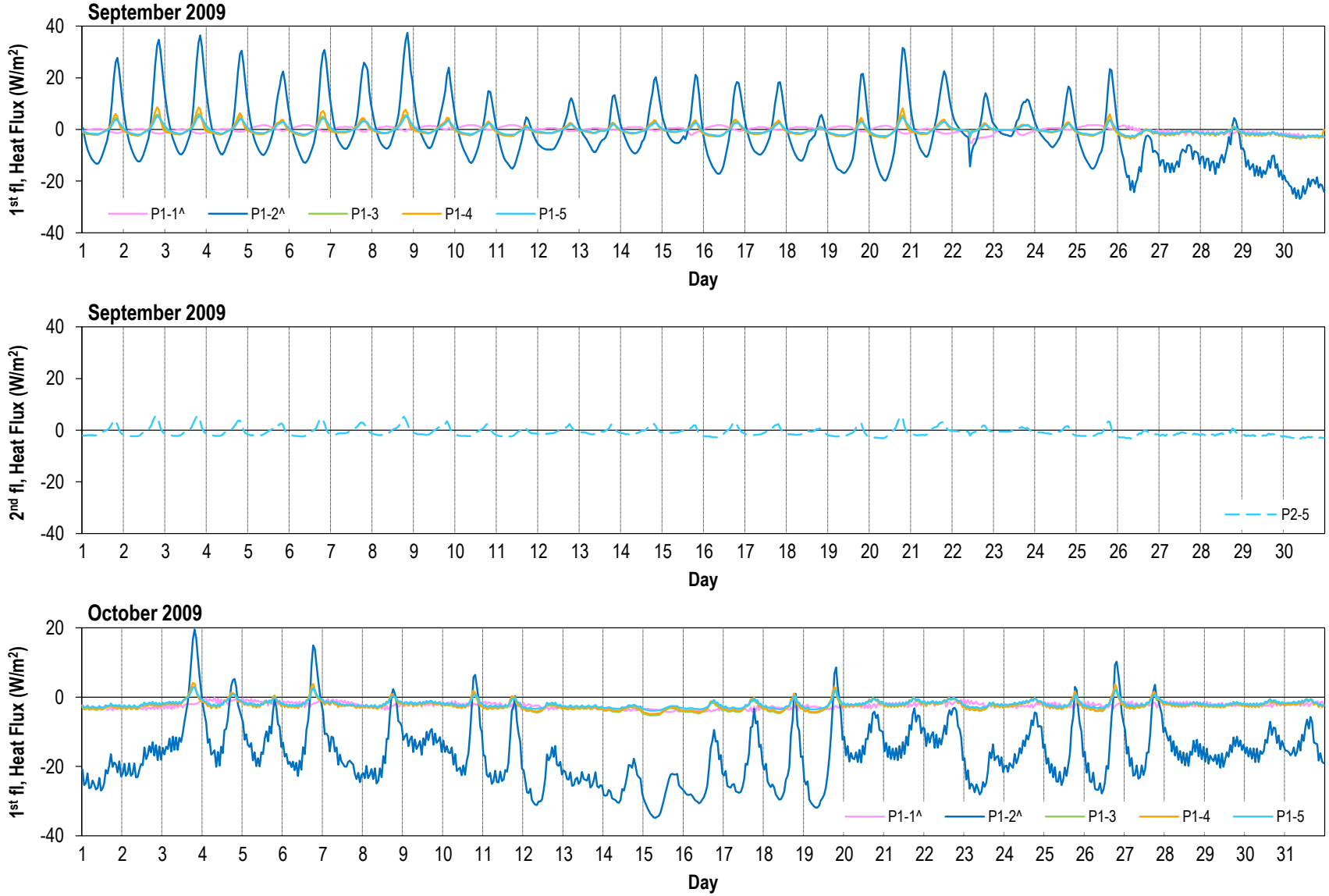

July 2010
1st fl, Vapor Pressure (kPa)
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Out
Day

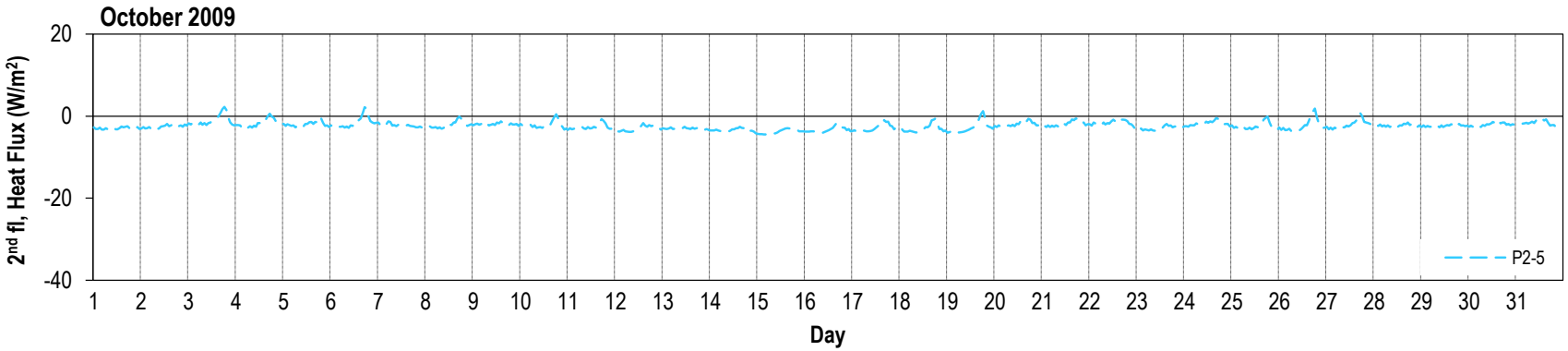

July 2010
2nd fl, Vapor Pressure (kPa)
Day
In
P2-5
Out

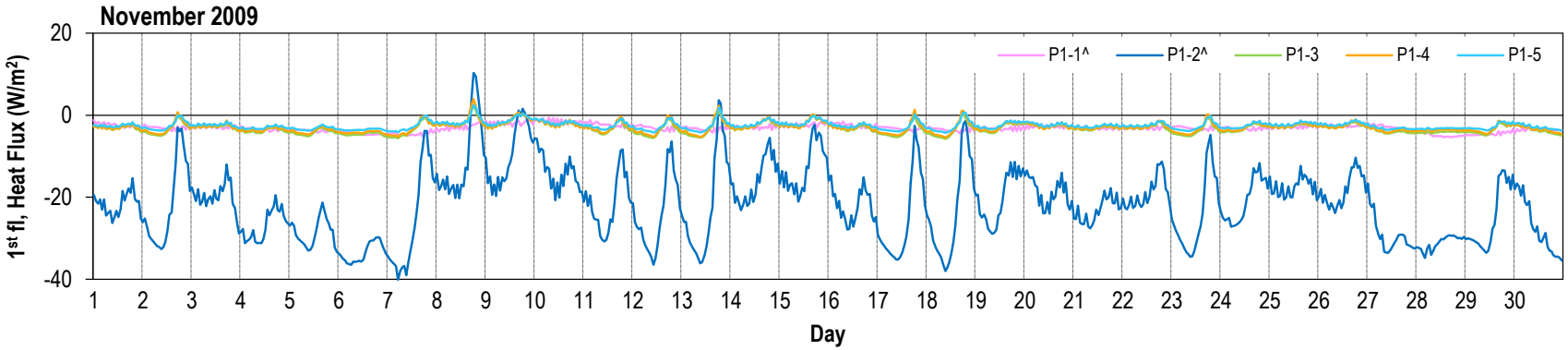

August 2010
1st fl, Vapor Pressure (kPa)
Day
In
P1-1^
P1-2^
P1-3
P1-4
P1-5
Out

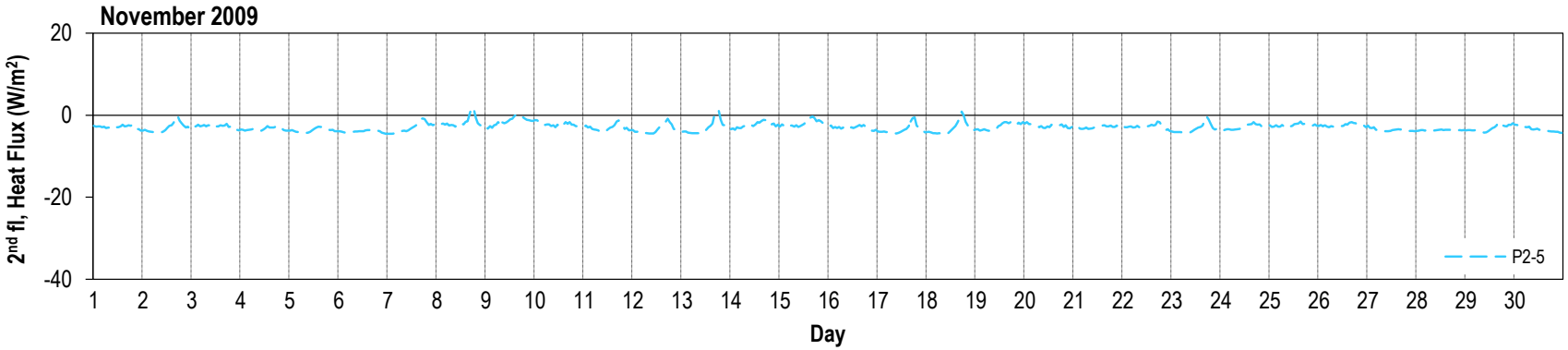

August 2010
2nd fl, Vapor Pressure (kPa)
Day
In
P2-5
Out

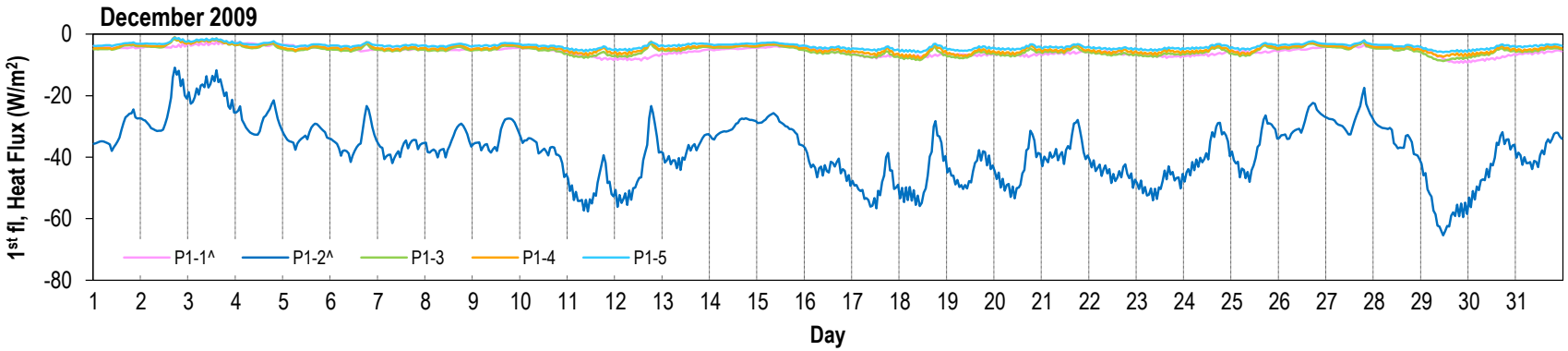
Heat flux (W/m$^2$) thru interior side of stud cavity. Refer to Figures 25 thru 28 for sensor location.

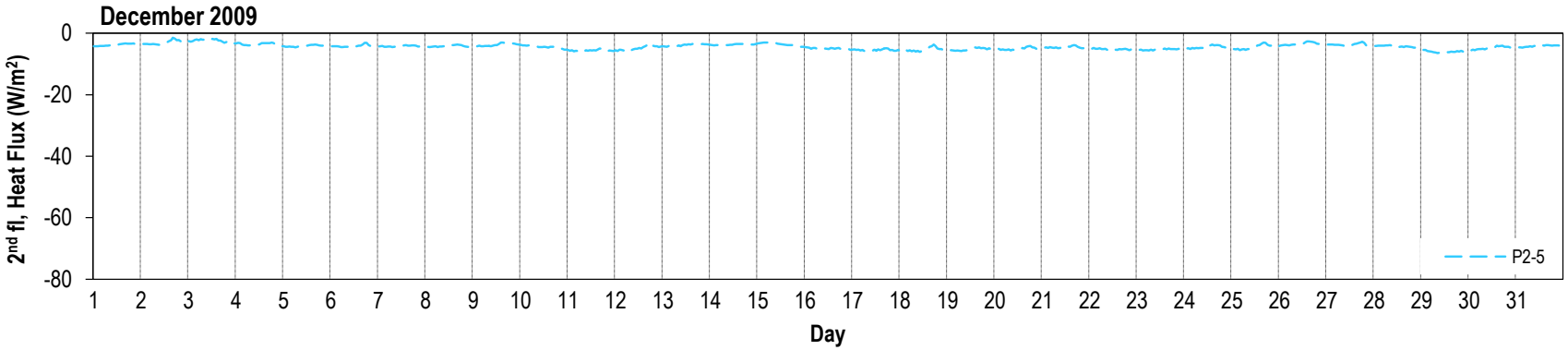


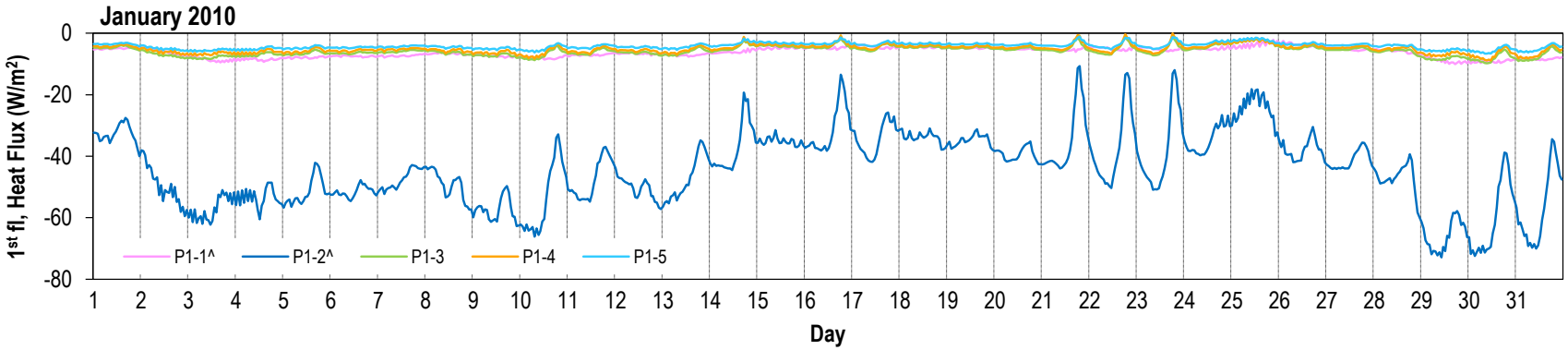

October 2009
2nd fl, Heat Flux (W/m2)
20
0
-20
-40
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
P2-5

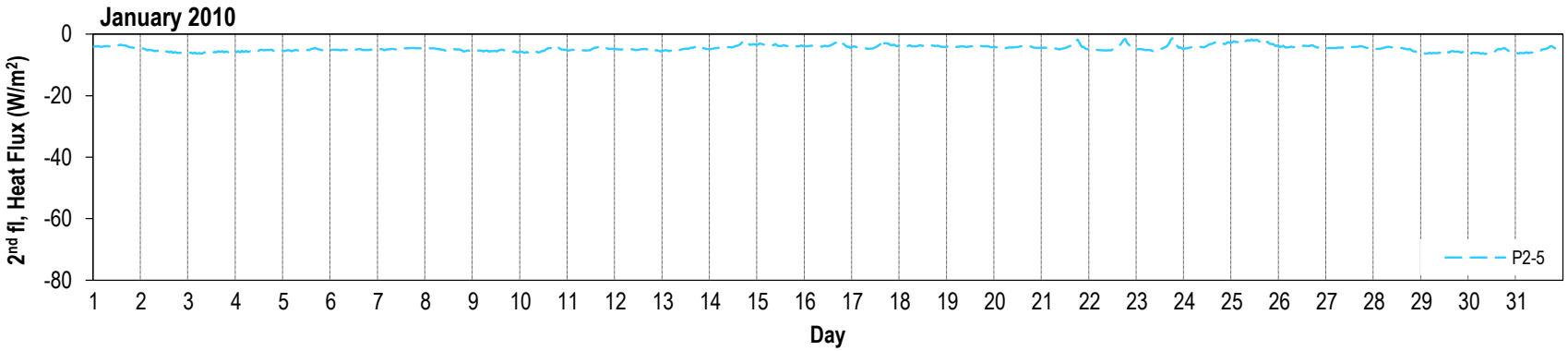

November 2009
1st fl, Heat Flux (W/m2)
20
0
-20
-40
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day
P1-1^
P1-2^
P1-3
P1-4
P1-5

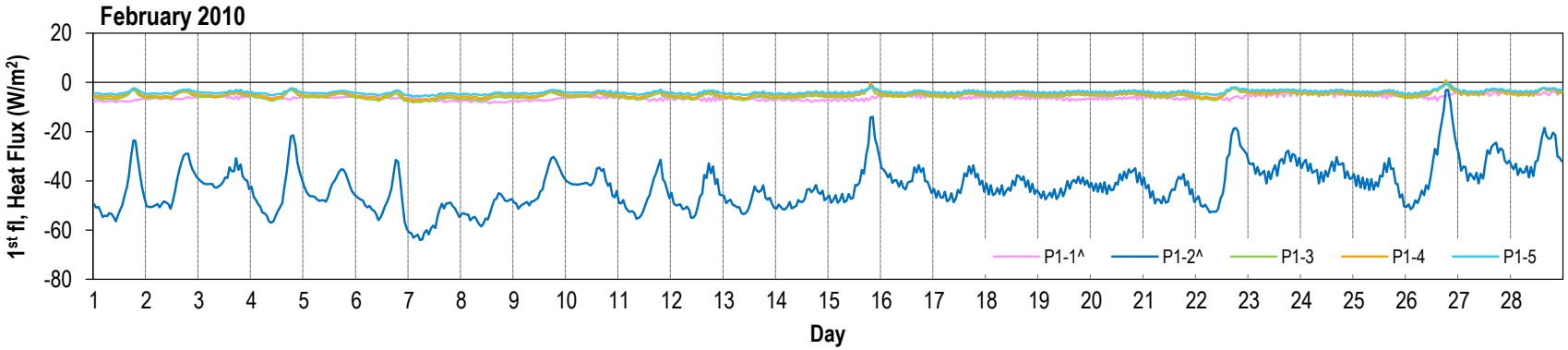

November 2009
2nd fl, Heat Flux (W/m2)
20
0
-20
-40
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day
P2-5

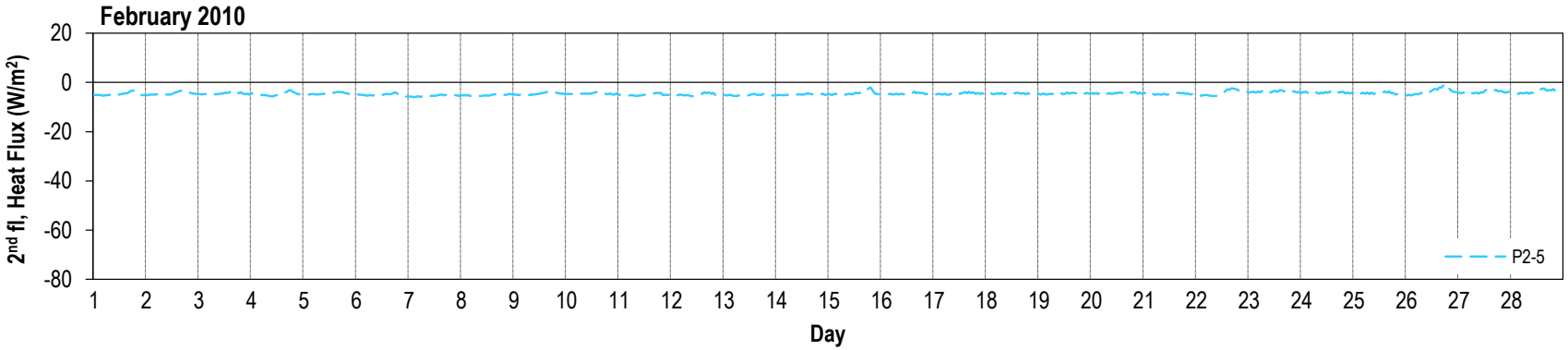

December 2009
1st fl, Heat Flux (W/m2)
0
-20
-40
-60
-80
P1-1^
P1-2^
P1-3
P1-4
P1-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

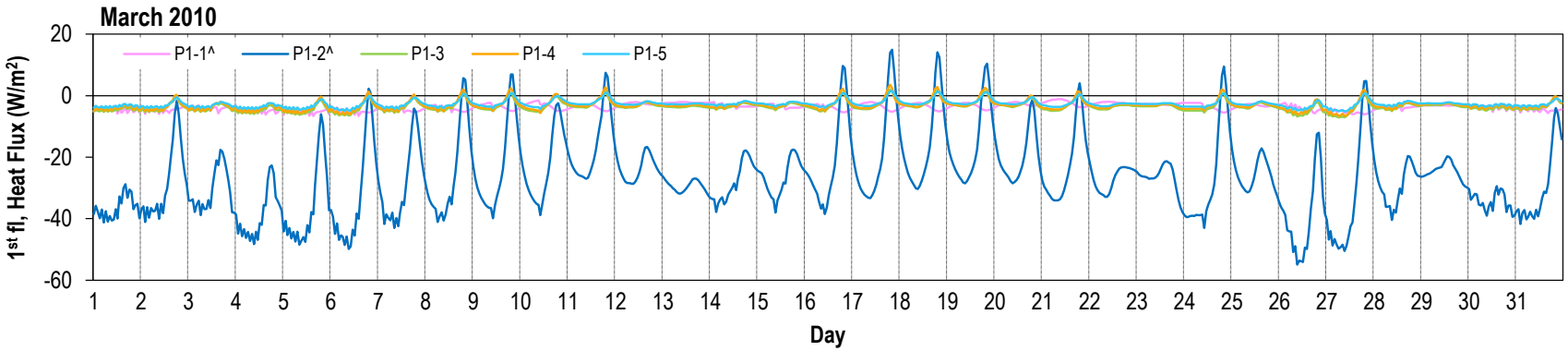

December 2009
2nd fl, Heat Flux (W/m2)
0
-20
-40
-60
-80
P2-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

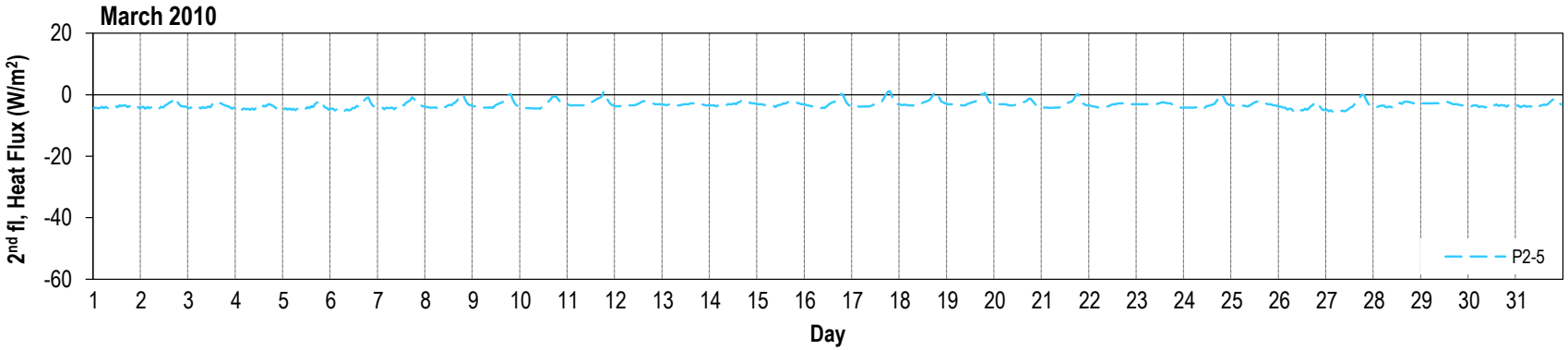

January 2010
1st fl, Heat Flux (W/m2)
0
-20
-40
-60
-80
P1-1^
P1-2^
P1-3
P1-4
P1-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

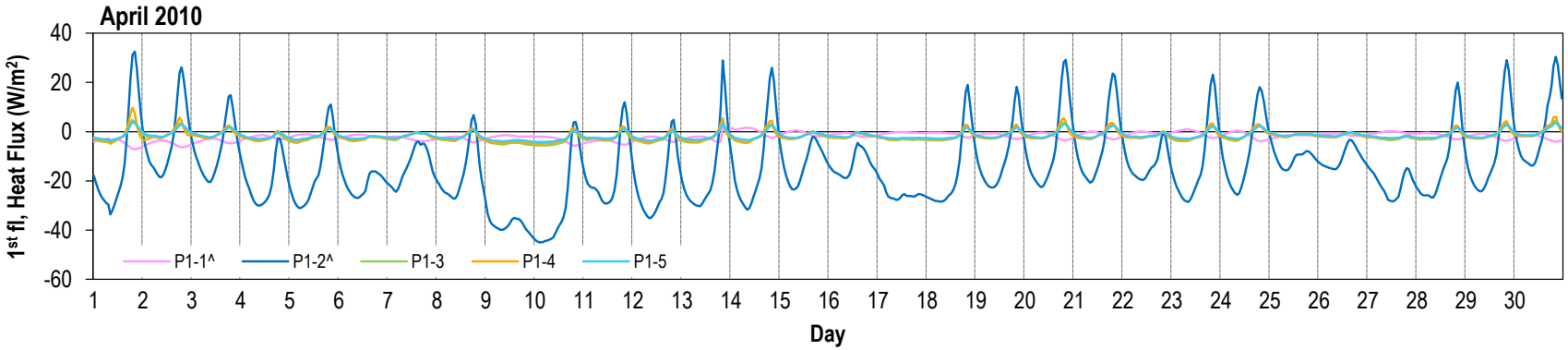

January 2010
2nd fl, Heat Flux (W/m2)
0
-20
-40
-60
-80
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
P2-5

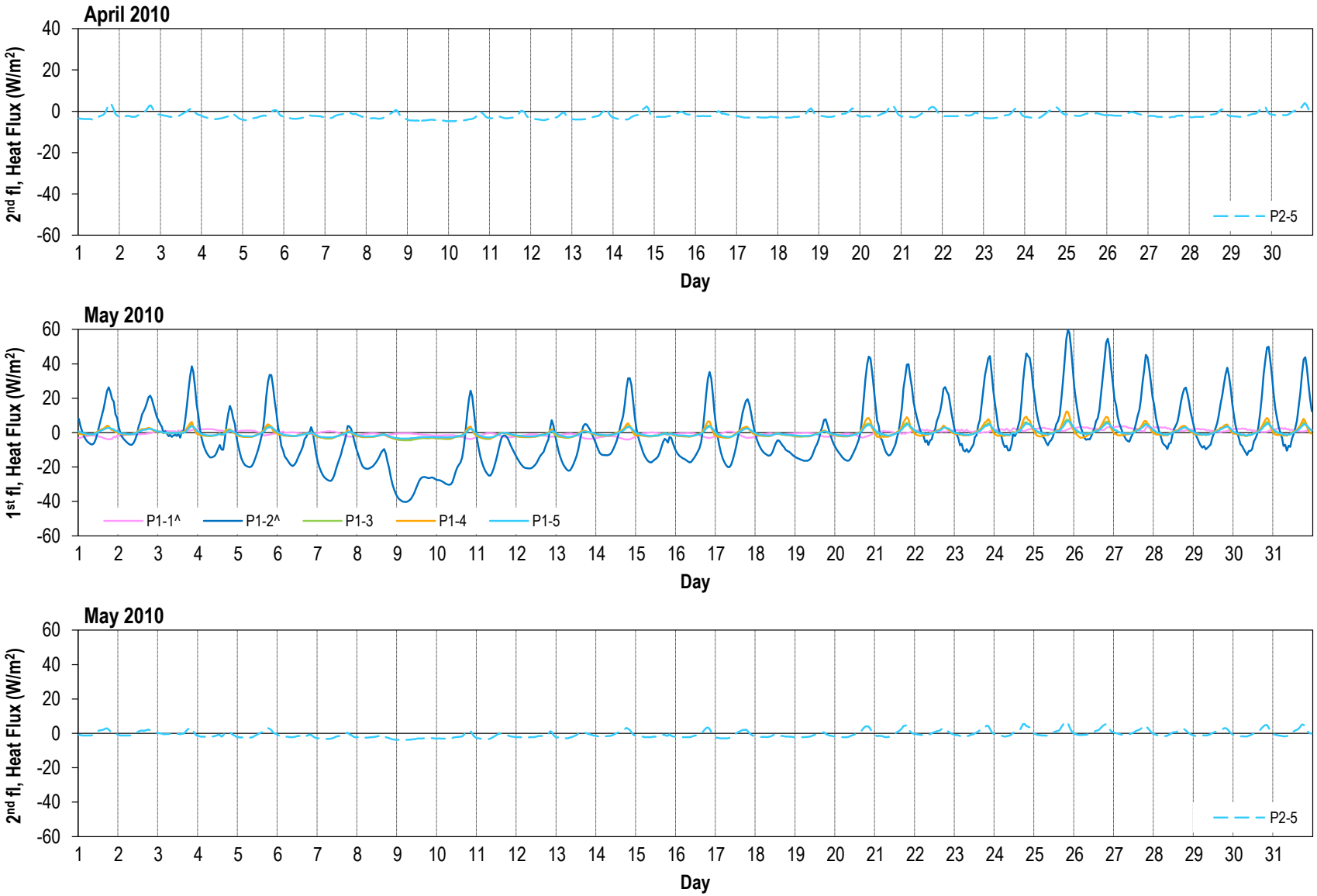

February 2010
1st fl, Heat Flux (W/m2)
20
0
-20
-40
-60
-80
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day
P1-1^
P1-2^
P1-3
P1-4
P1-5

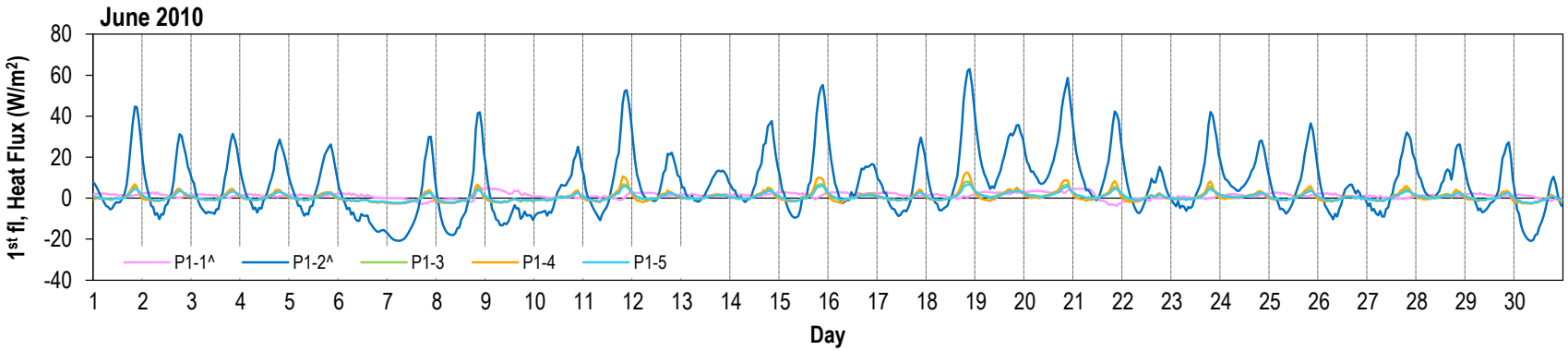

February 2010
2nd fl, Heat Flux (W/m2)
20
0
-20
-40
-60
-80
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day
P2-5

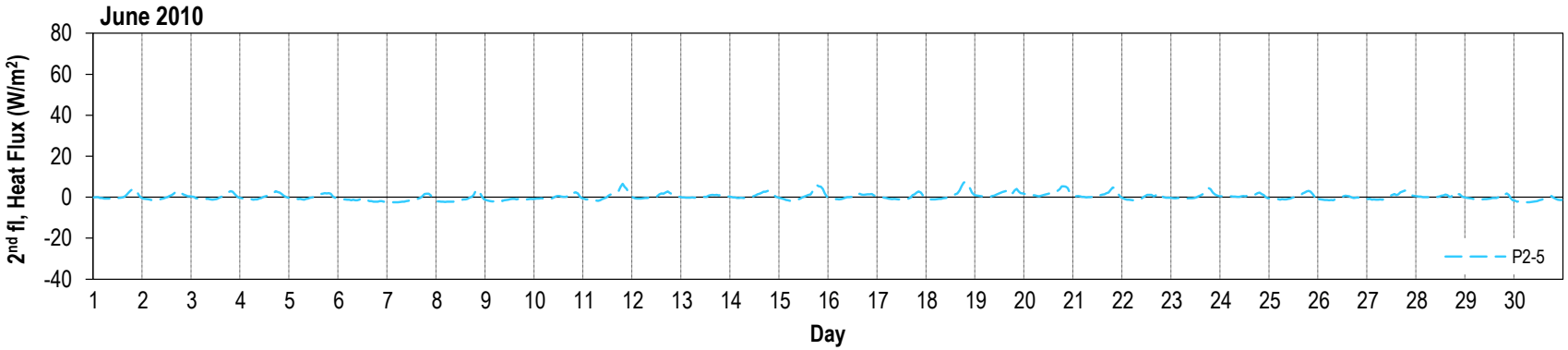

March 2010
P1-1^
P1-2^
P1-3
P1-4
P1-5
1st fl, Heat Flux (W/m2)
Day

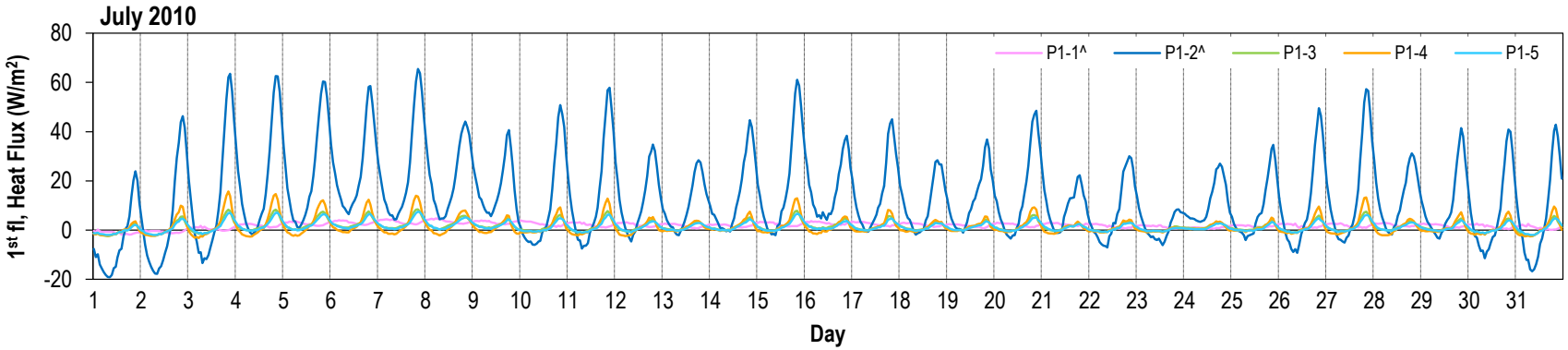

March 2010
P2-5
2nd fl, Heat Flux (W/m2)
Day

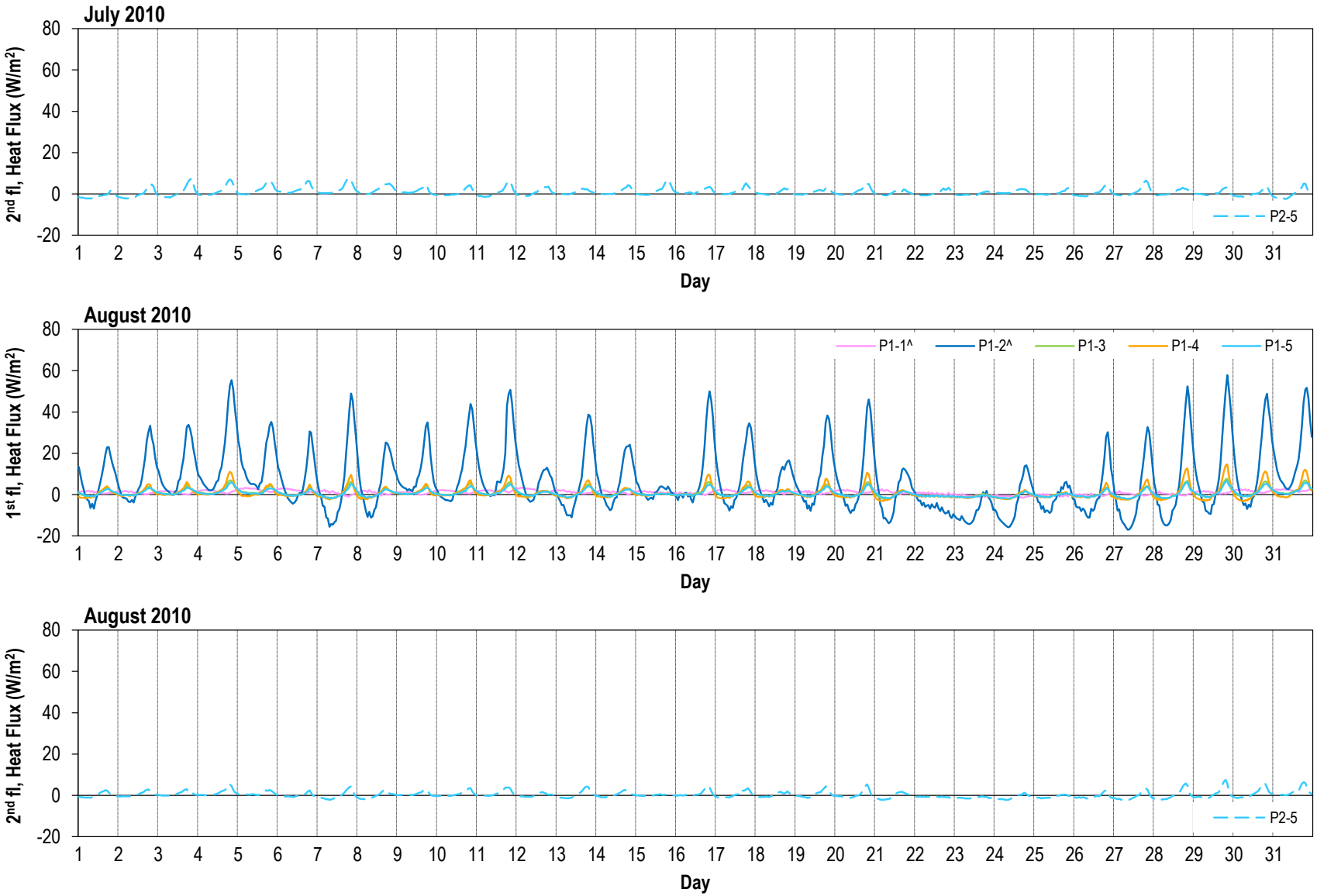

April 2010
P1-1^
P1-2^
P1-3
P1-4
P1-5
1st fl, Heat Flux (W/m2)
Day


April 2010
2nd fl, Heat Flux (W/m2)
40
20
0
-20
-40
-60
P2-5
Day
May 2010
1st fl, Heat Flux (W/m2)
60
40
20
0
-20
-40
-60
P1-1^
P1-2^
P1-3
P1-4
P1-5
Day
May 2010
2nd fl, Heat Flux (W/m2)
60
40
20
0
-20
-40
-60
P2-5
Day

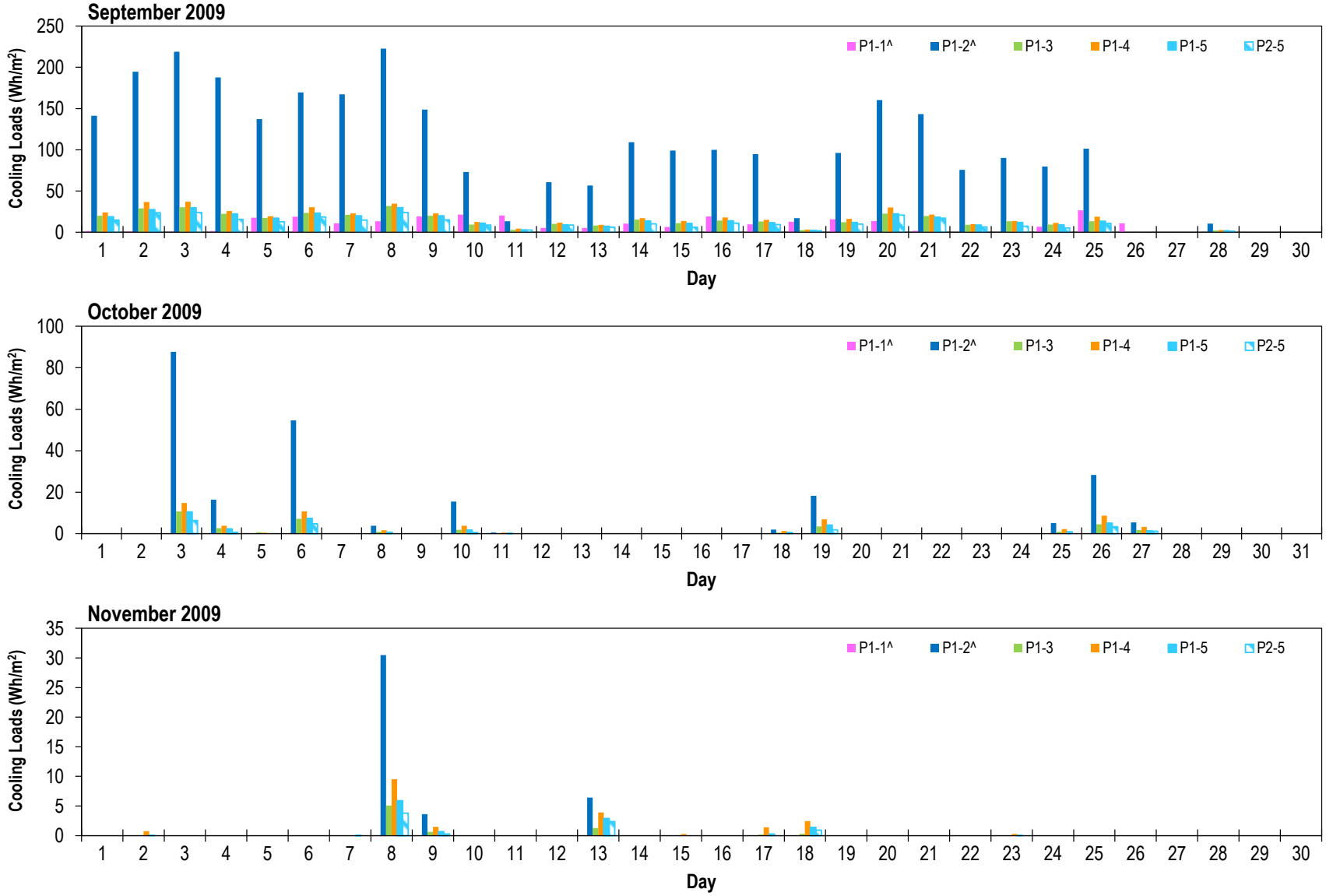

June 2010
1st fl, Heat Flux (W/m2)
80
60
40
20
0
-20
-40
P1-1^
P1-2^
P1-3
P1-4
P1-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day

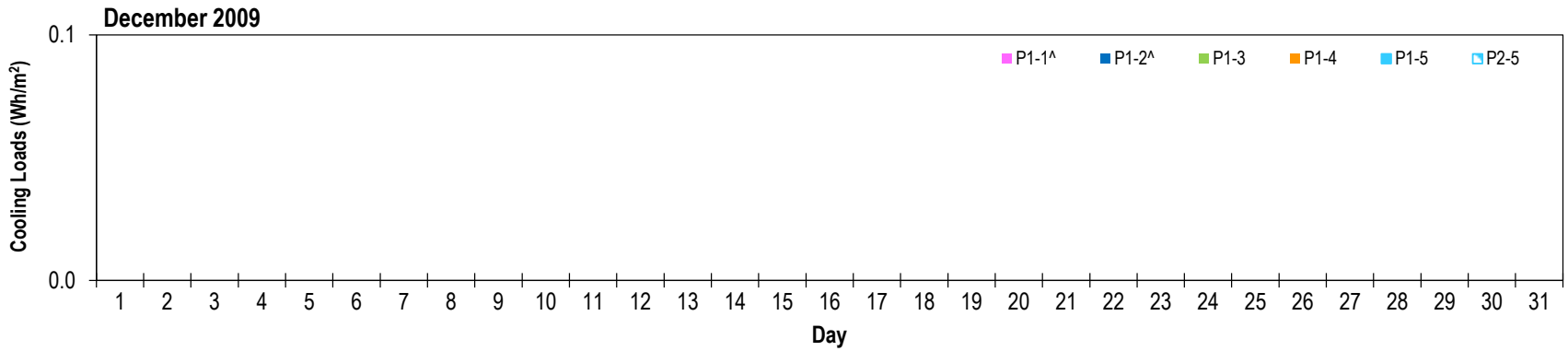

June 2010
2nd fl, Heat Flux (W/m2)
80
60
40
20
0
-20
-40
P2-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day

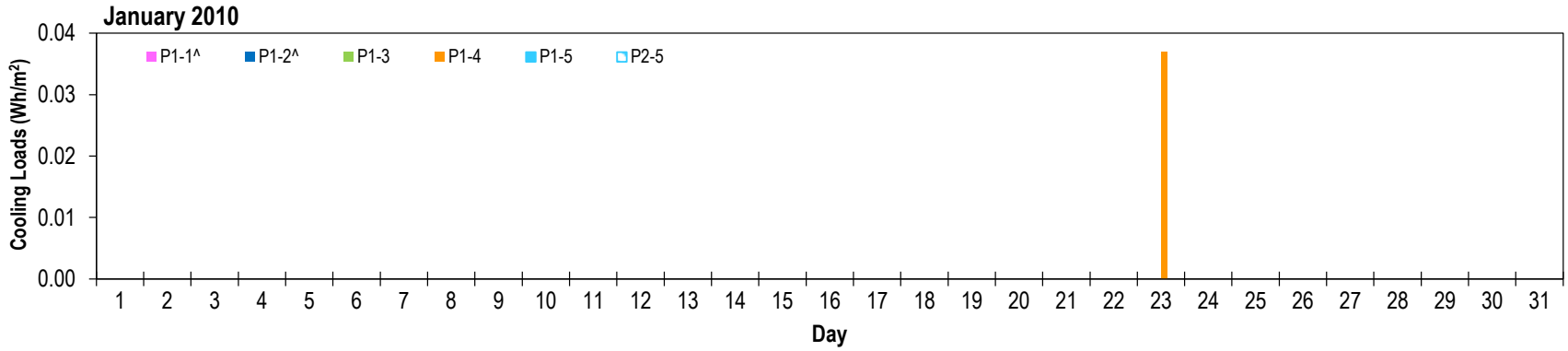

July 2010
1st fl, Heat Flux (W/m2)
80
60
40
20
0
-20
P1-1^
P1-2^
P1-3
P1-4
P1-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

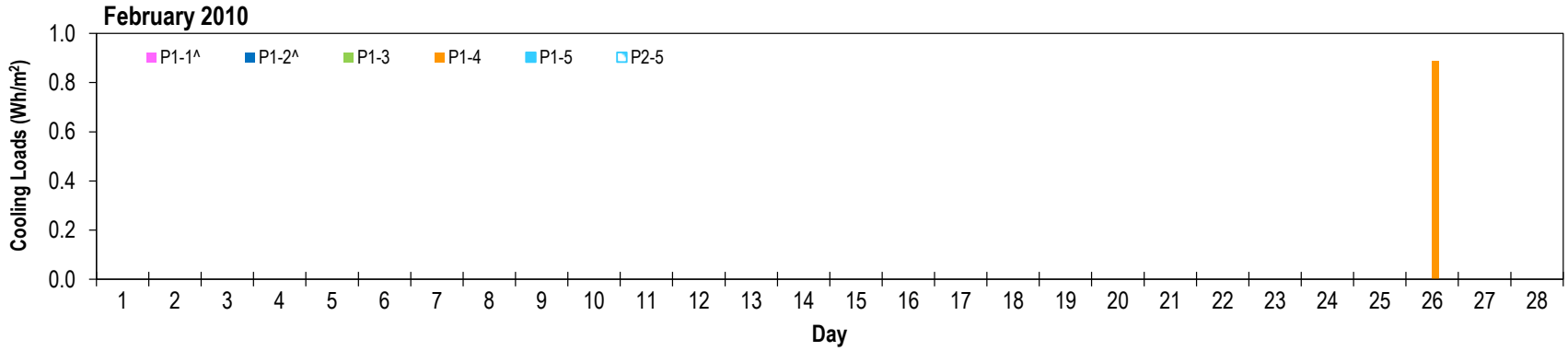

July 2010
2nd fl, Heat Flux (W/m2)
P2-5
Day
August 2010
1st fl, Heat Flux (W/m2)
P1-1^
P1-2^
P1-3
P1-4
P1-5
Day
August 2010
2nd fl, Heat Flux (W/m2)
P2-5
Day

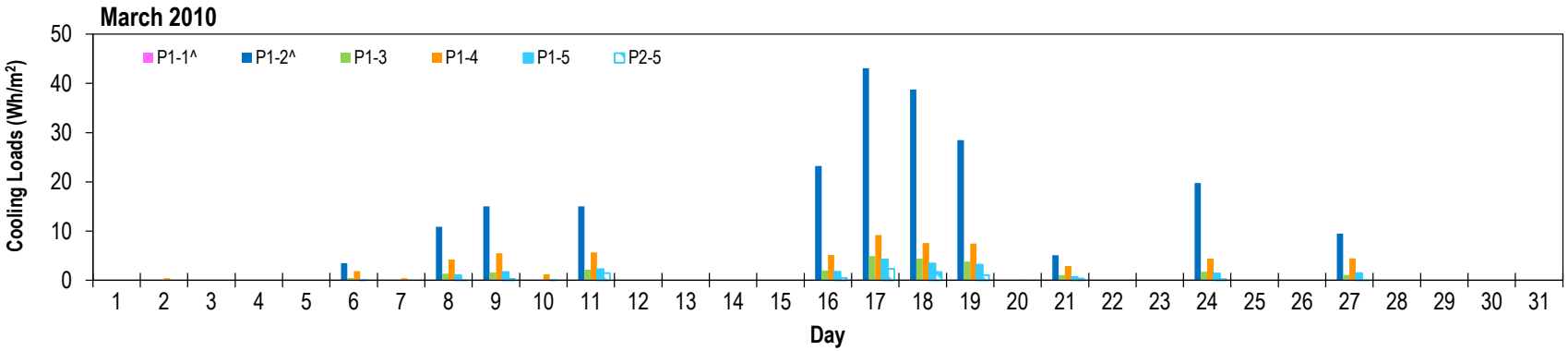
Cooling loads (Wh/m$^2$). Refer to Figures 25 thru 28 for sensor location.

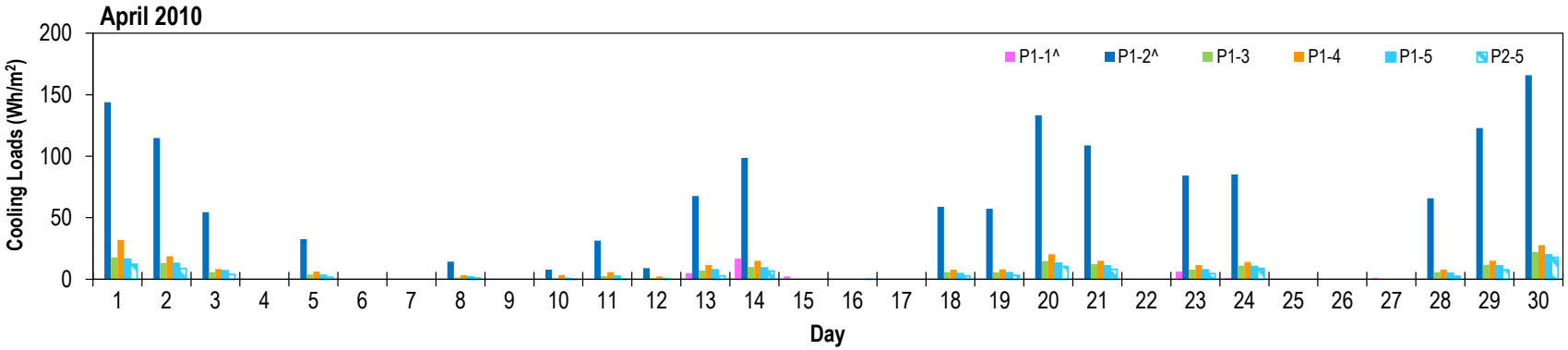


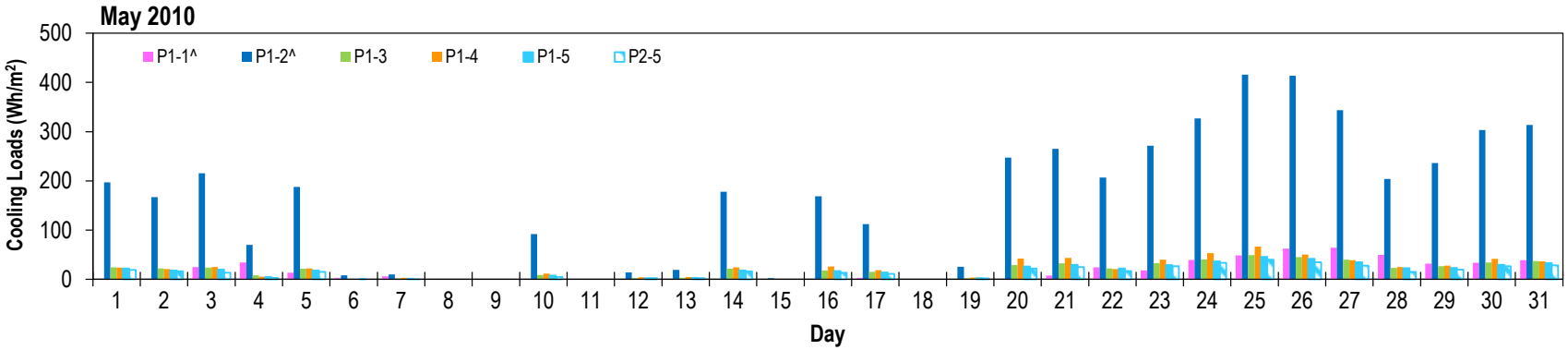

December 2009
Cooling Loads (Wh/m²)
0.1
0.0
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

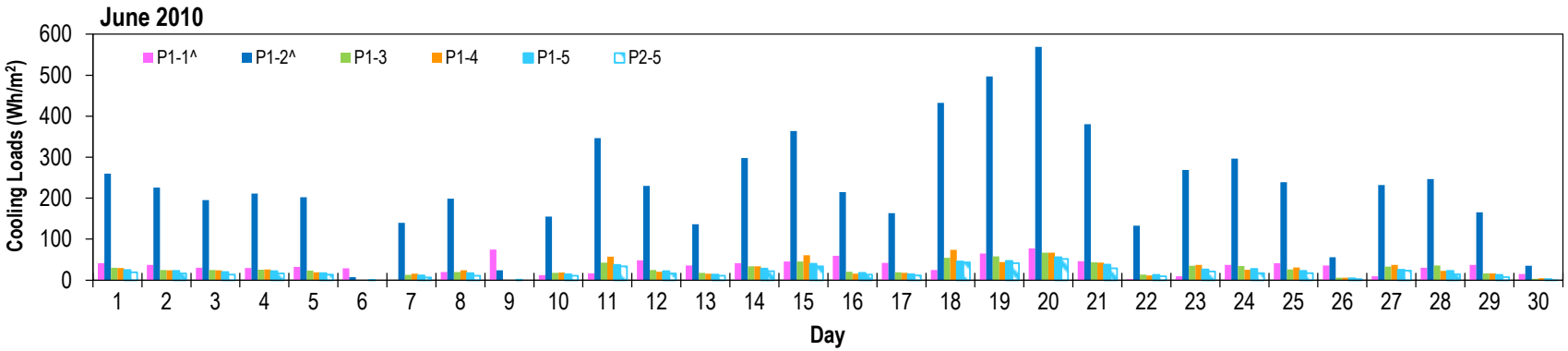

January 2010
Cooling Loads (Wh/m²)
0.04
0.03
0.02
0.01
0.00
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

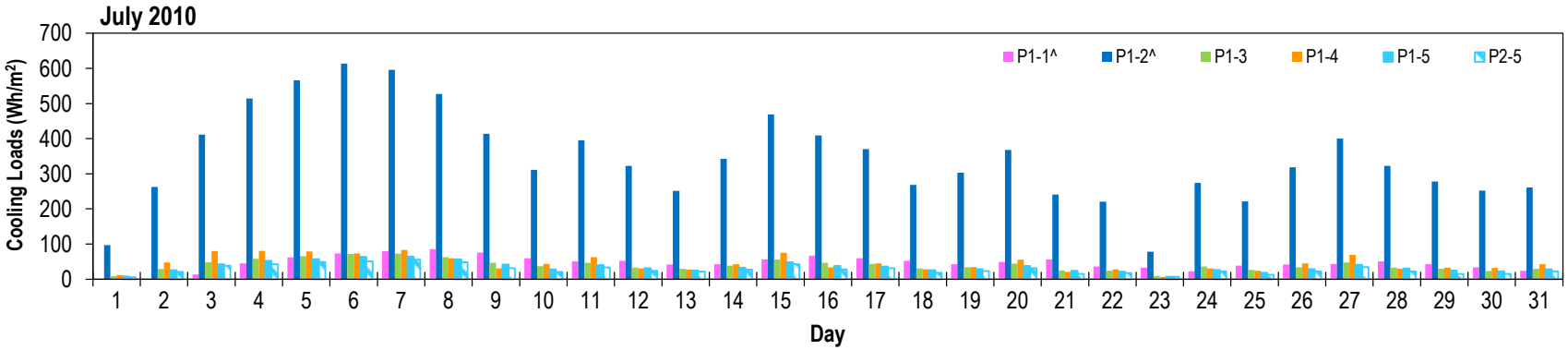

February 2010
Cooling Loads (Wh/m²)
1.0
0.8
0.6
0.4
0.2
0.0
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day

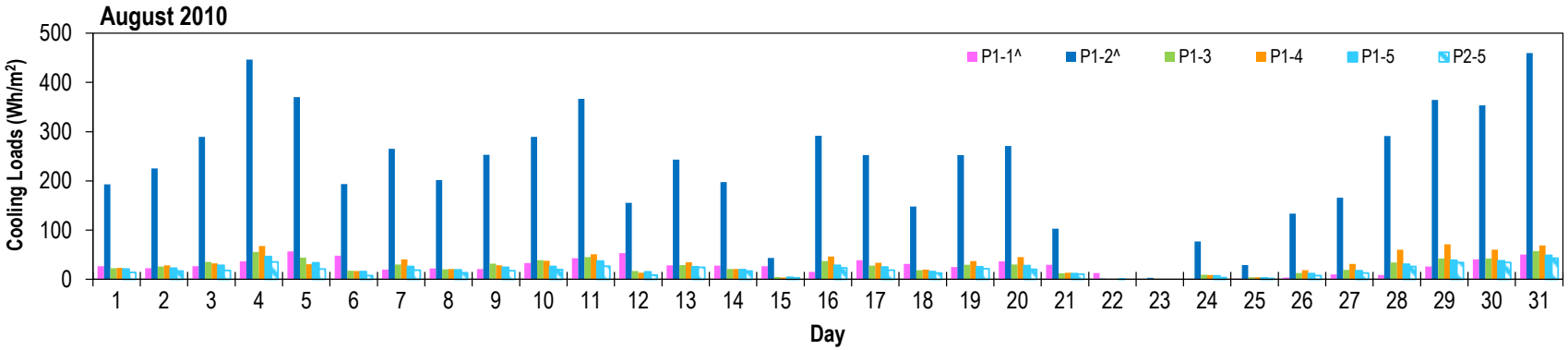

March 2010
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
Cooling Loads (Wh/m²)
Day


April 2010
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
Cooling Loads (Wh/m²)
Day

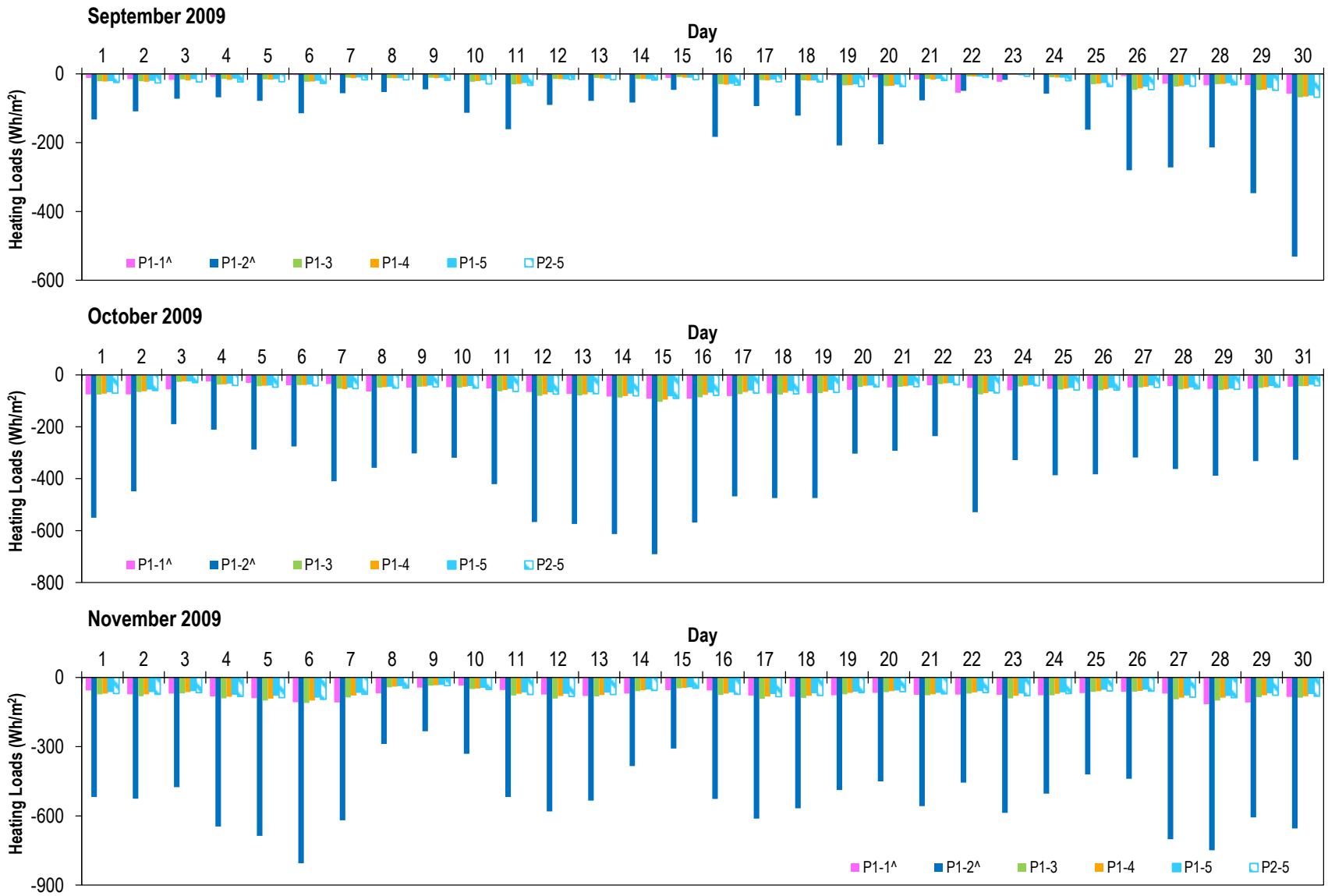

May 2010
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
Cooling Loads (Wh/m²)
Day

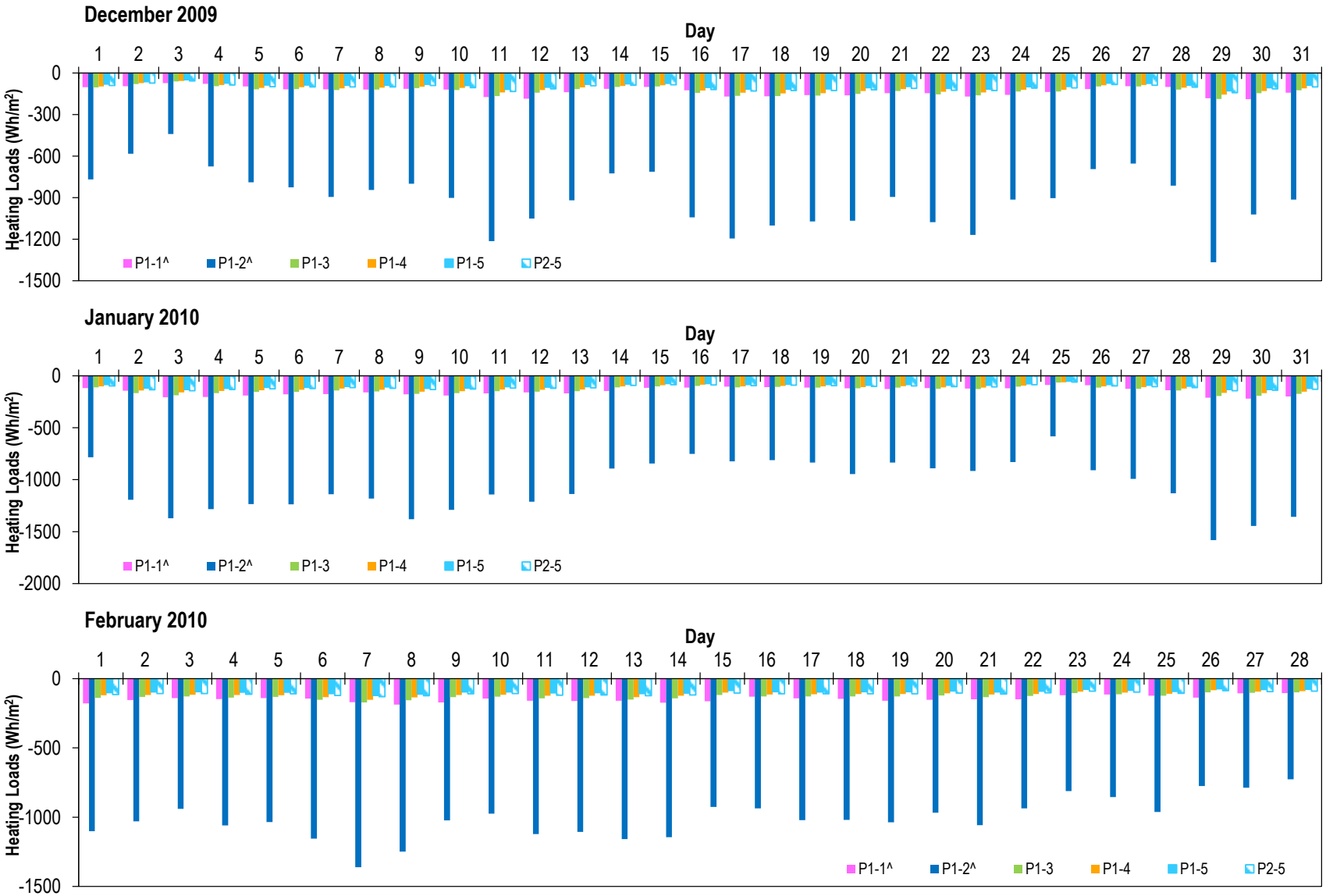

June 2010
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
Cooling Loads (Wh/m²)
Day

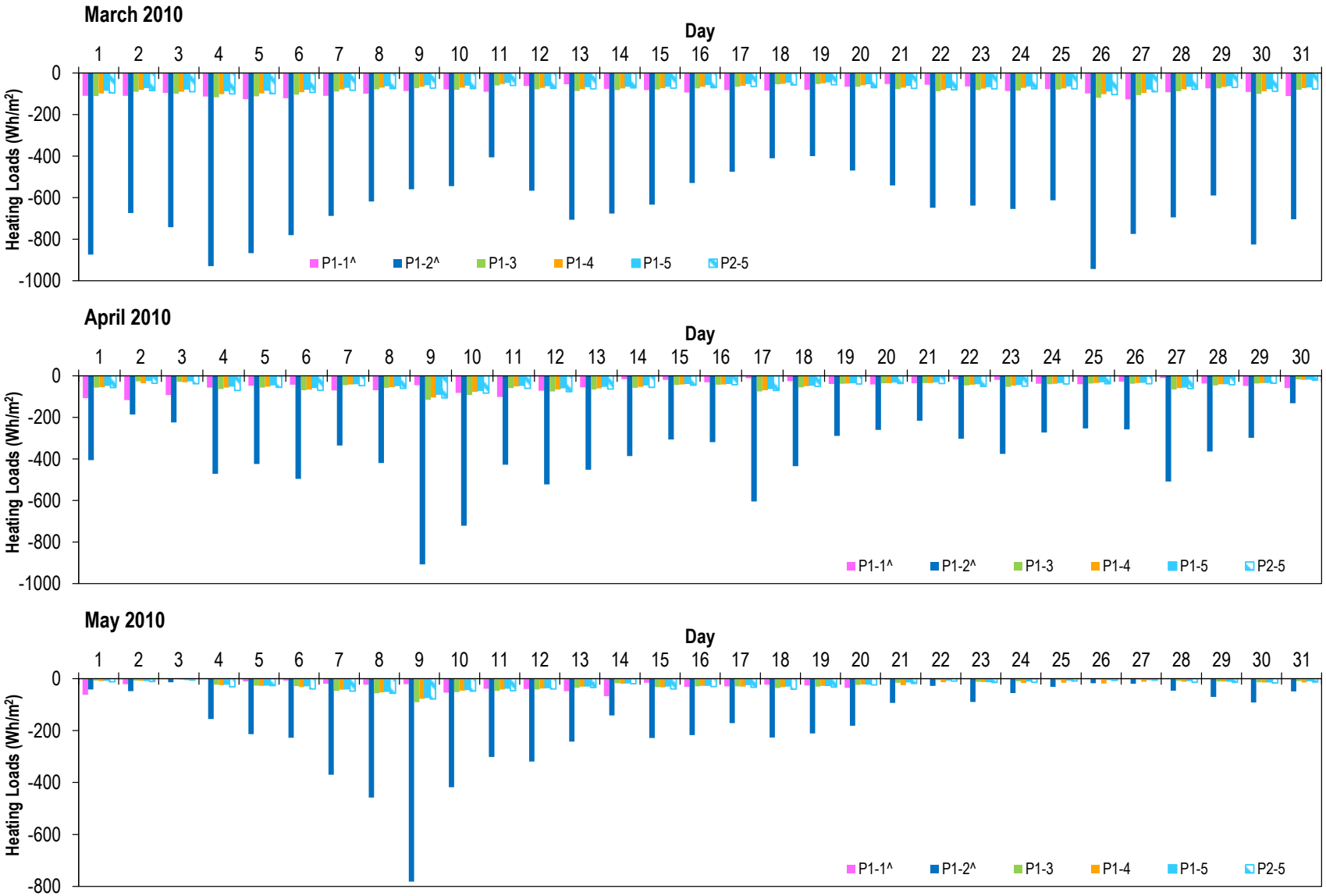

July 2010
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
Cooling Loads (Wh/m²)
Day

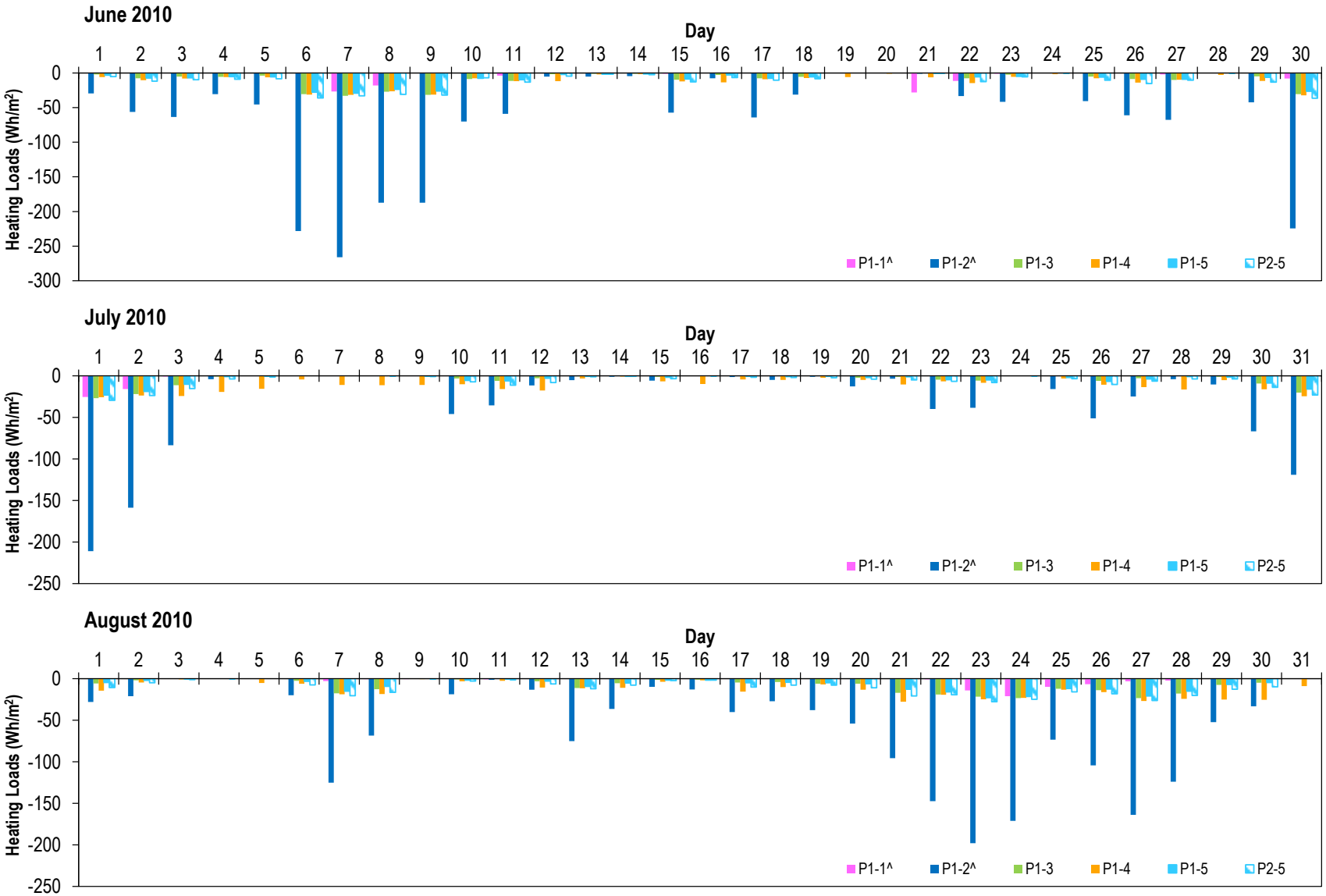

August 2010
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
Cooling Loads (Wh/m²)
Day

Heating loads (Wh/m$^2$). Refer to Figures 25 thru 28 for sensor location.



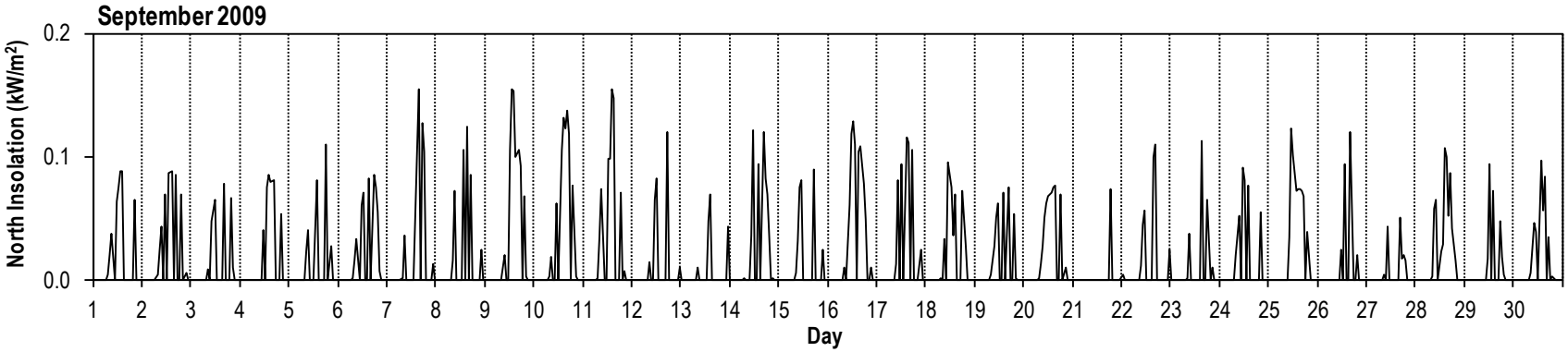

December 2009
Day
Heating Loads (Wh/m²)
0
-300
-600
-900
-1200
-1500
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
January 2010
Day
Heating Loads (Wh/m²)
0
-500
-1000
-1500
-2000
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
February 2010
Day
Heating Loads (Wh/m²)
0
-500
-1000
-1500
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5

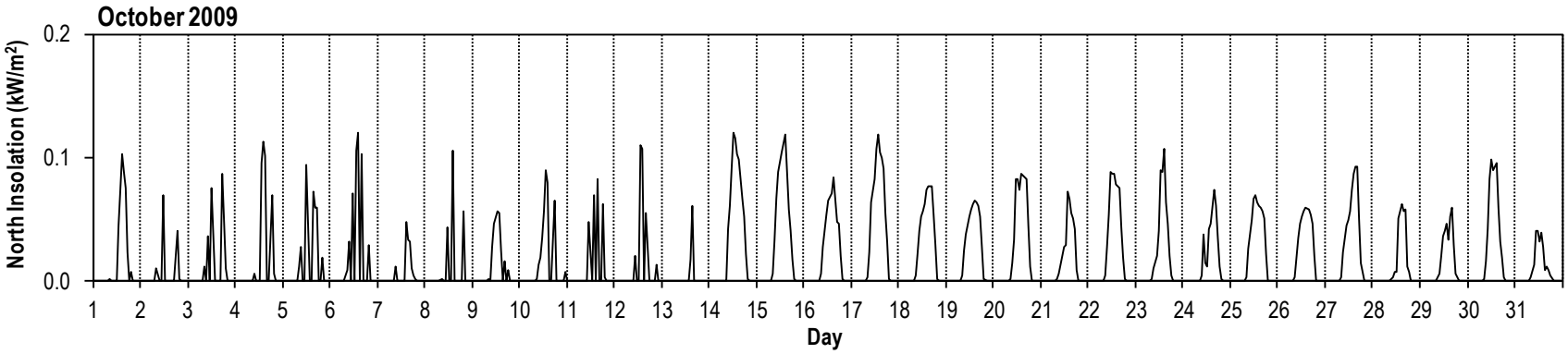

March 2010
Day
Heating Loads (Wh/m²)
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
April 2010
Day
Heating Loads (Wh/m²)
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
May 2010
Day
Heating Loads (Wh/m²)
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5

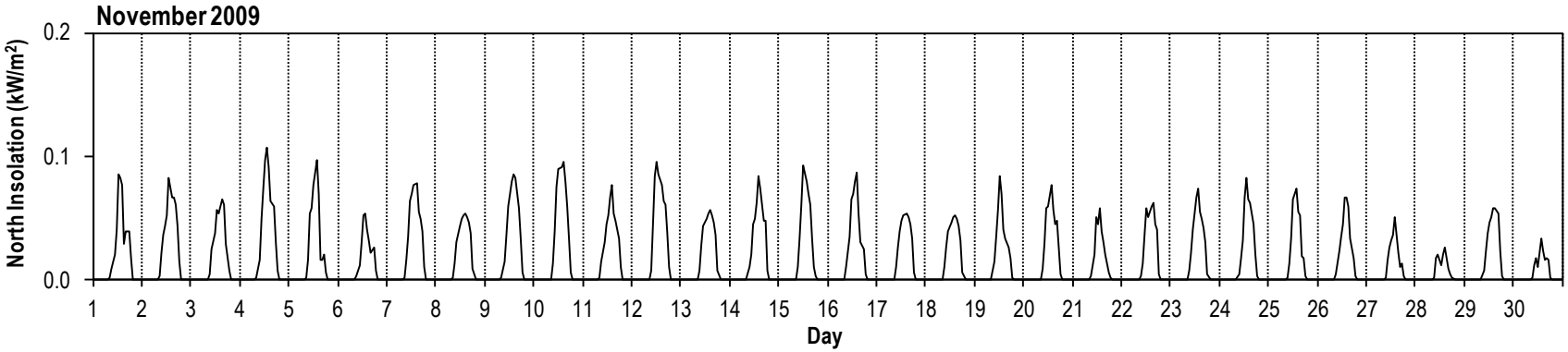

June 2010
Day
Heating Loads (Wh/m²)
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
July 2010
Day
Heating Loads (Wh/m²)
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5
August 2010
Day
Heating Loads (Wh/m²)
P1-1^
P1-2^
P1-3
P1-4
P1-5
P2-5

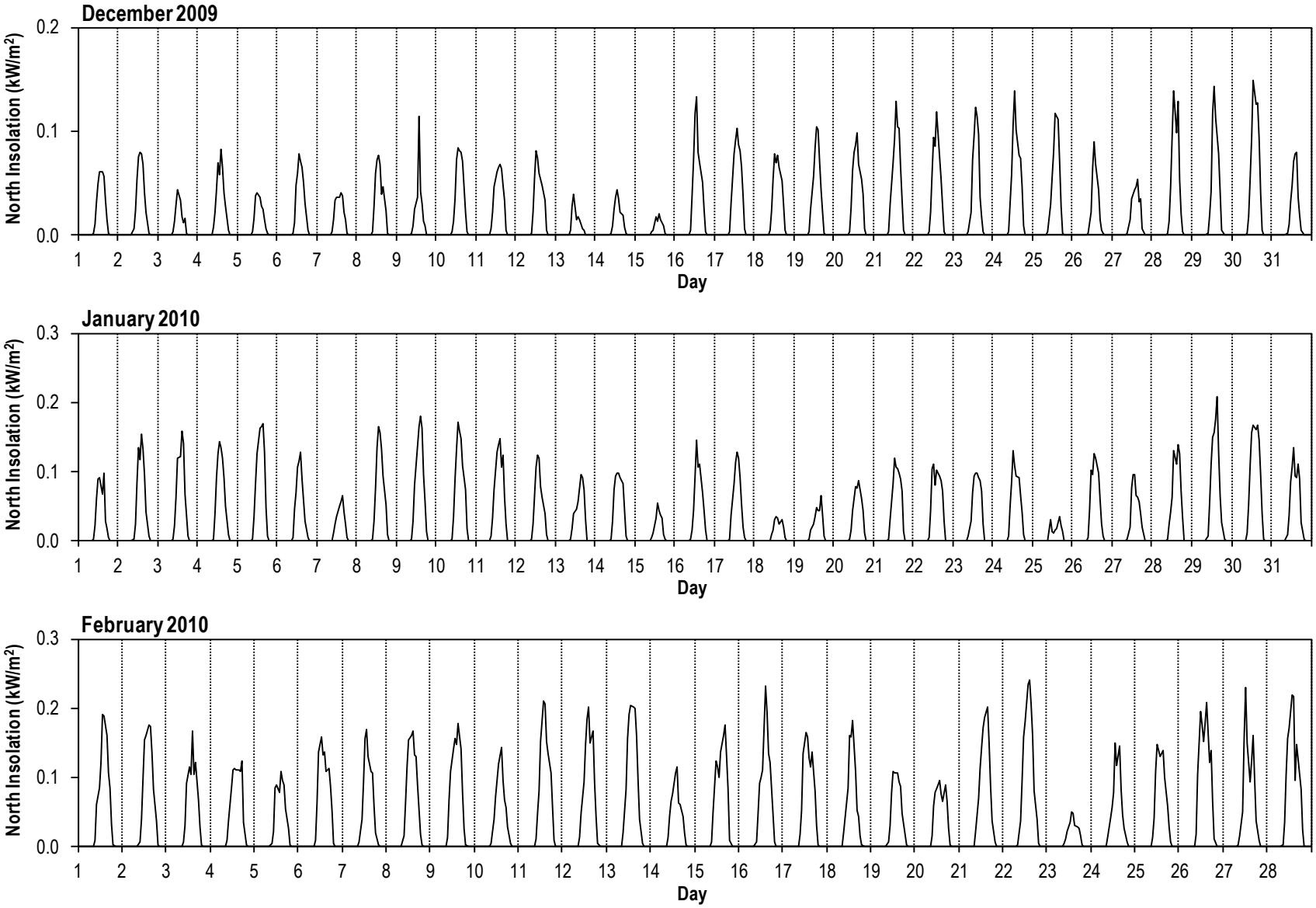
# Appendix E: Solar Radiation

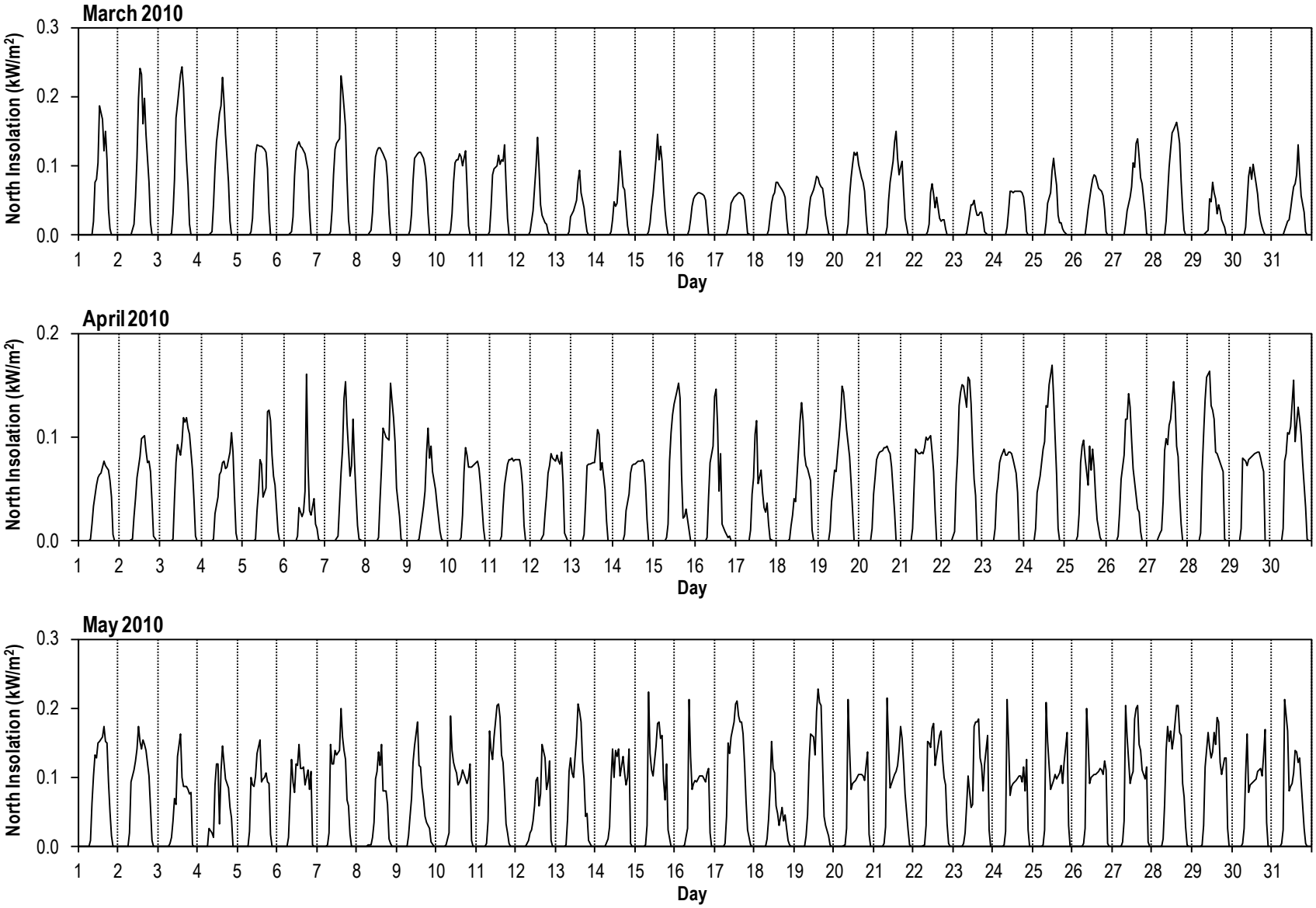
North insolation (KW/m$^2$)

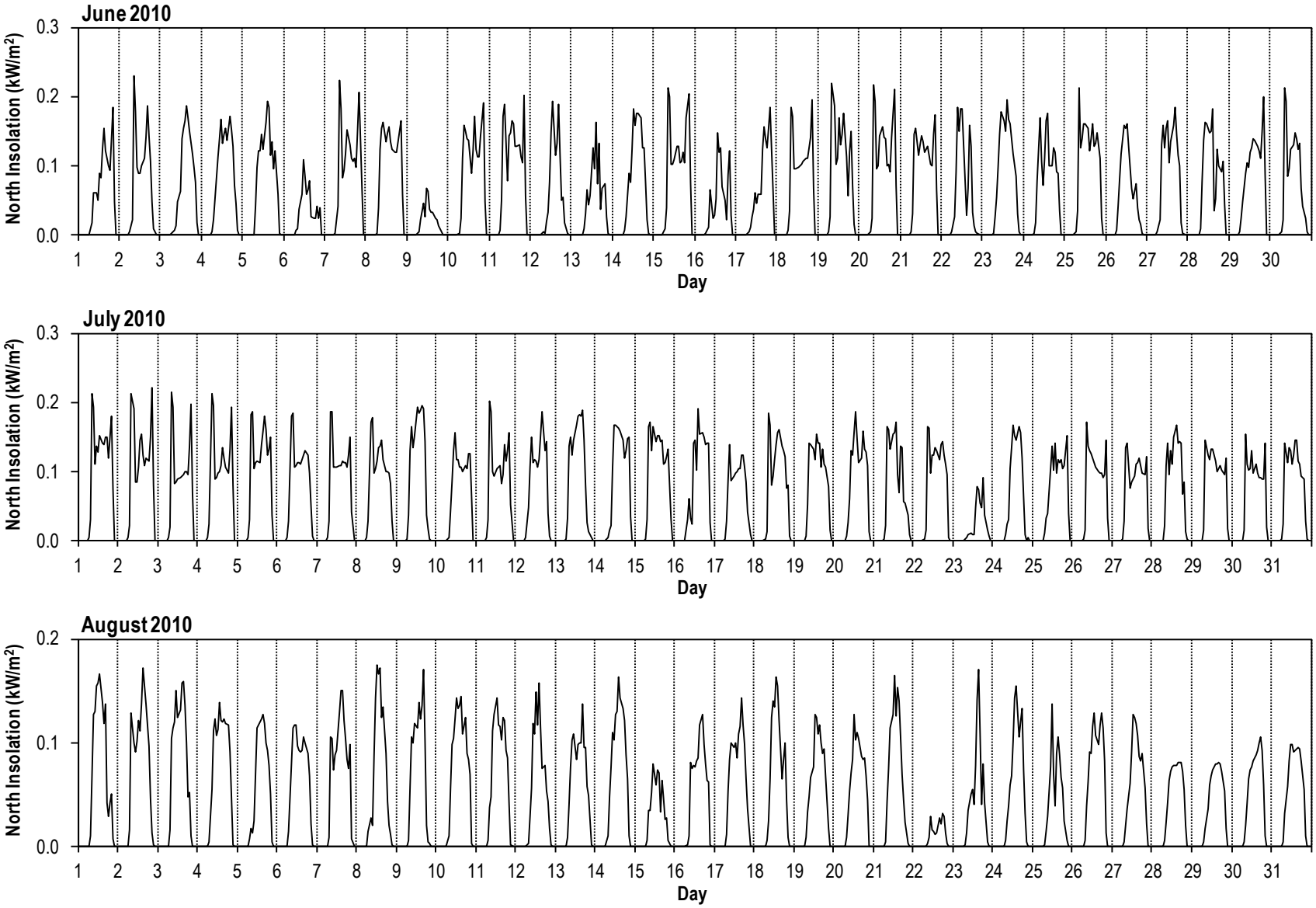


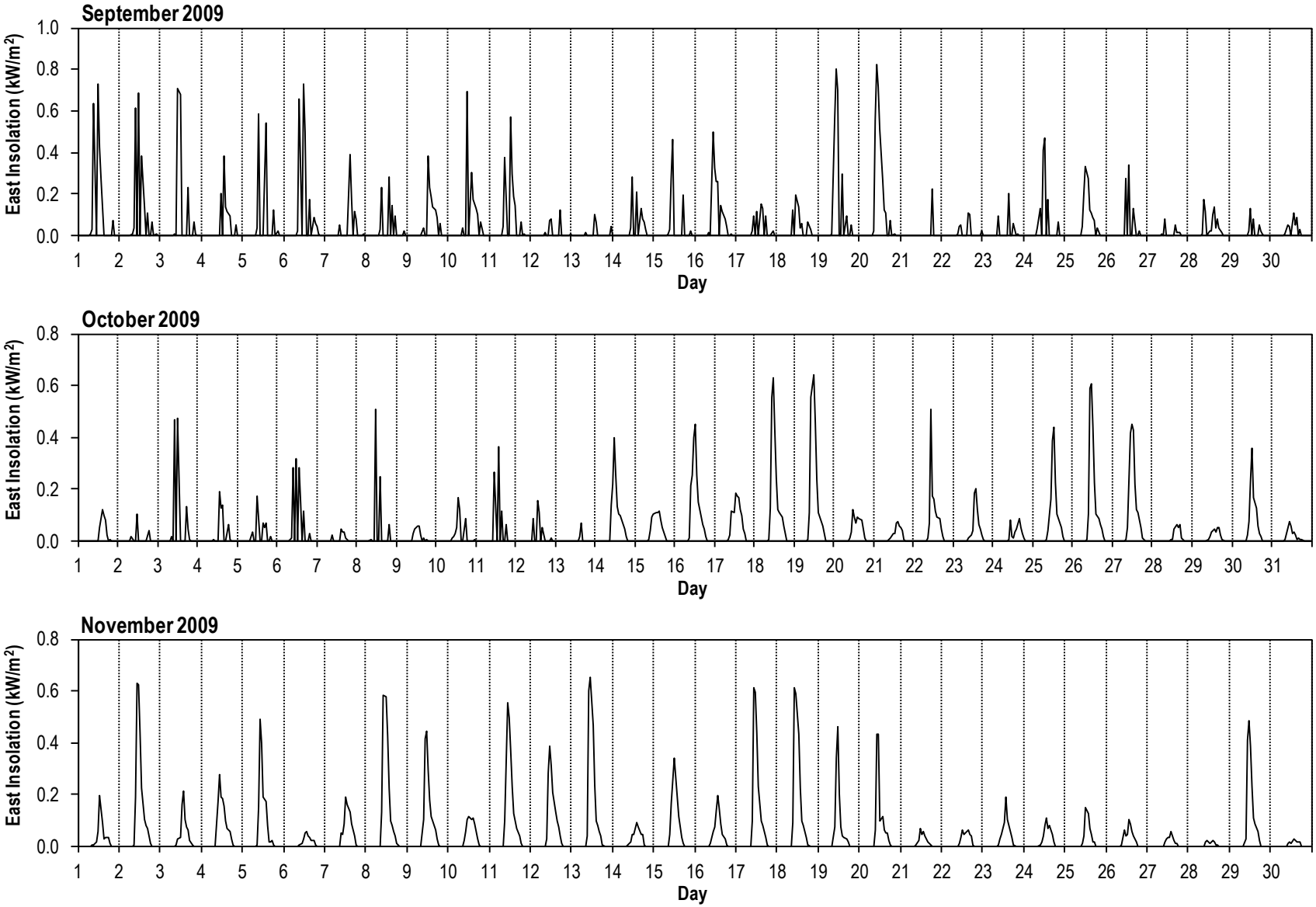



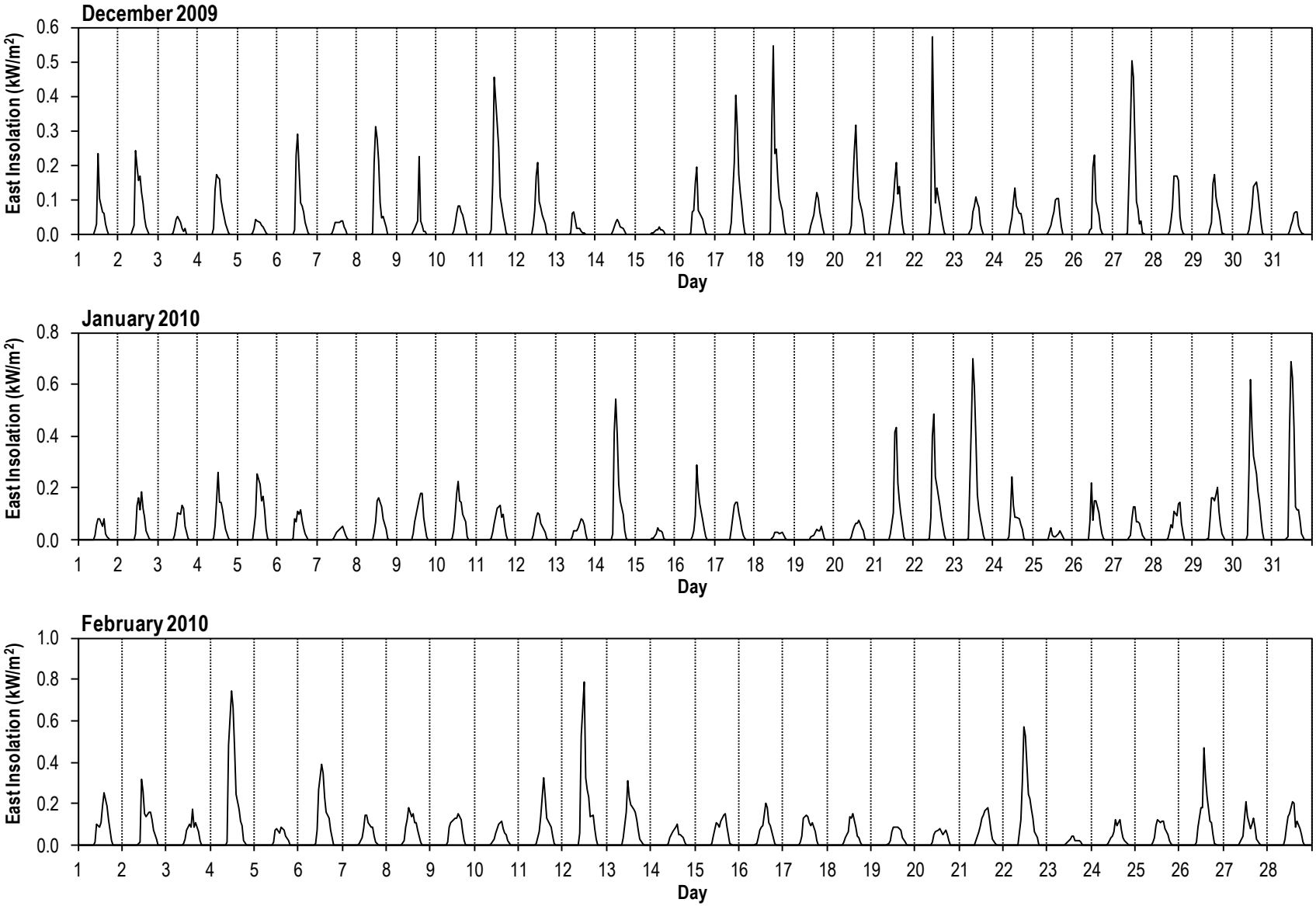

December 2009
North Insolation (kW/m²)
0.0
0.1
0.2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
January 2010
North Insolation (kW/m²)
0.0
0.1
0.2
0.3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
February 2010
North Insolation (kW/m²)
0.0
0.1
0.2
0.3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day

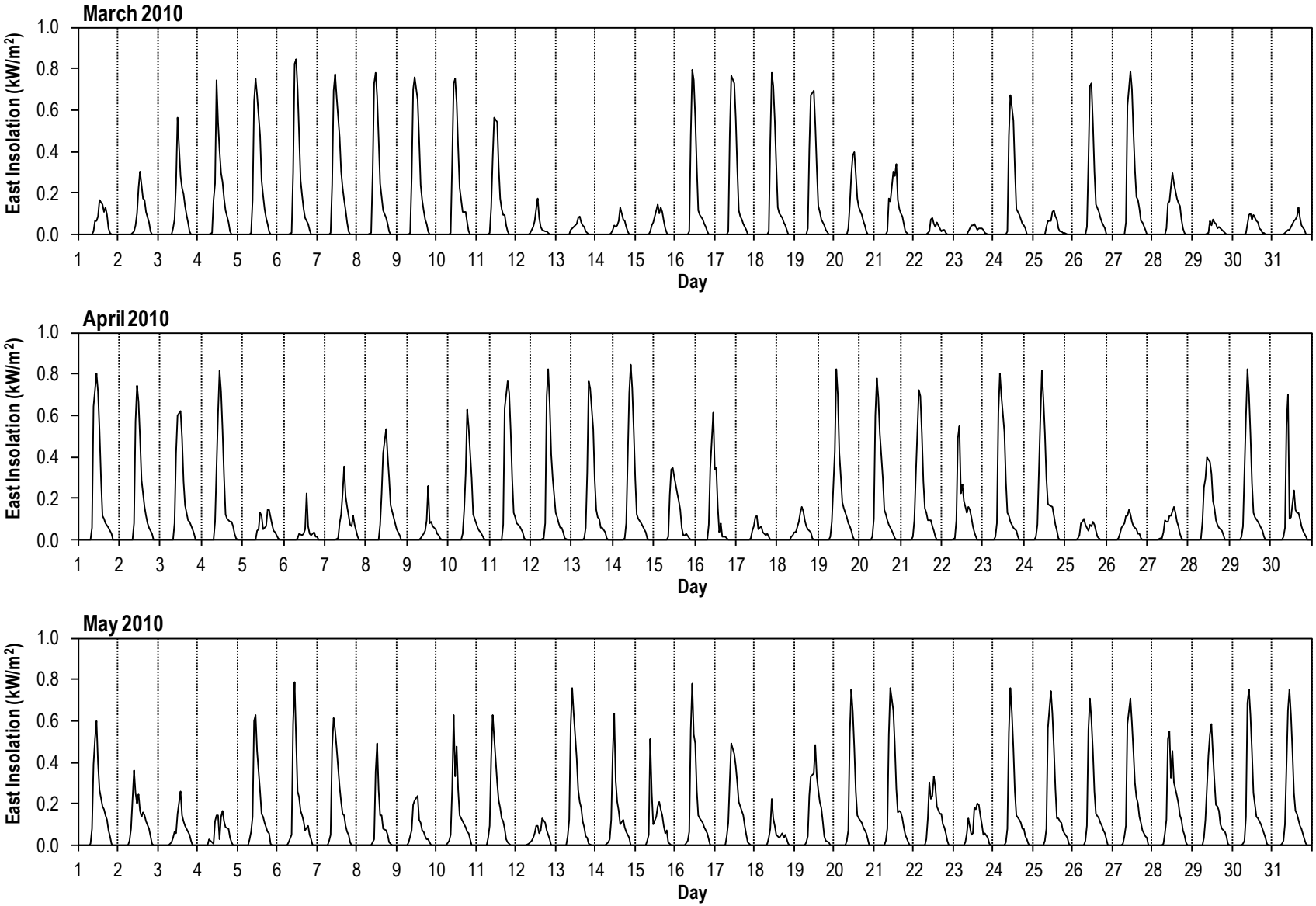

March 2010
North Insolation (kW/m²)
0.0
0.1
0.2
0.3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
April 2010
North Insolation (kW/m²)
0.0
0.1
0.2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day
May 2010
North Insolation (kW/m²)
0.0
0.1
0.2
0.3
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

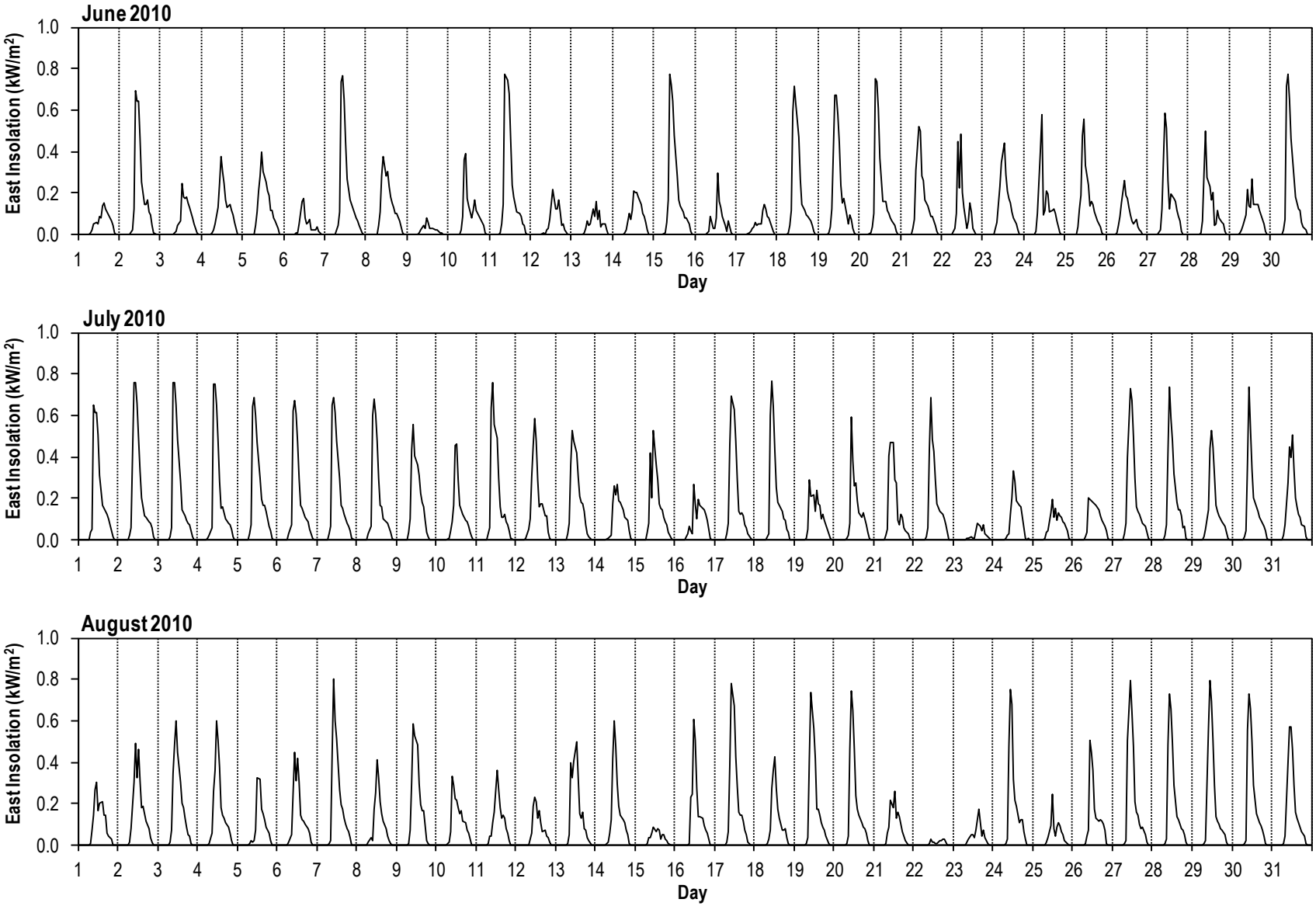

June 2010
North Insolation (kW/m²)
0.3
0.2
0.1
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day
July 2010
North Insolation (kW/m²)
0.3
0.2
0.1
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
August 2010
North Insolation (kW/m²)
0.2
0.1
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

East insolation (KW/m$^2$)

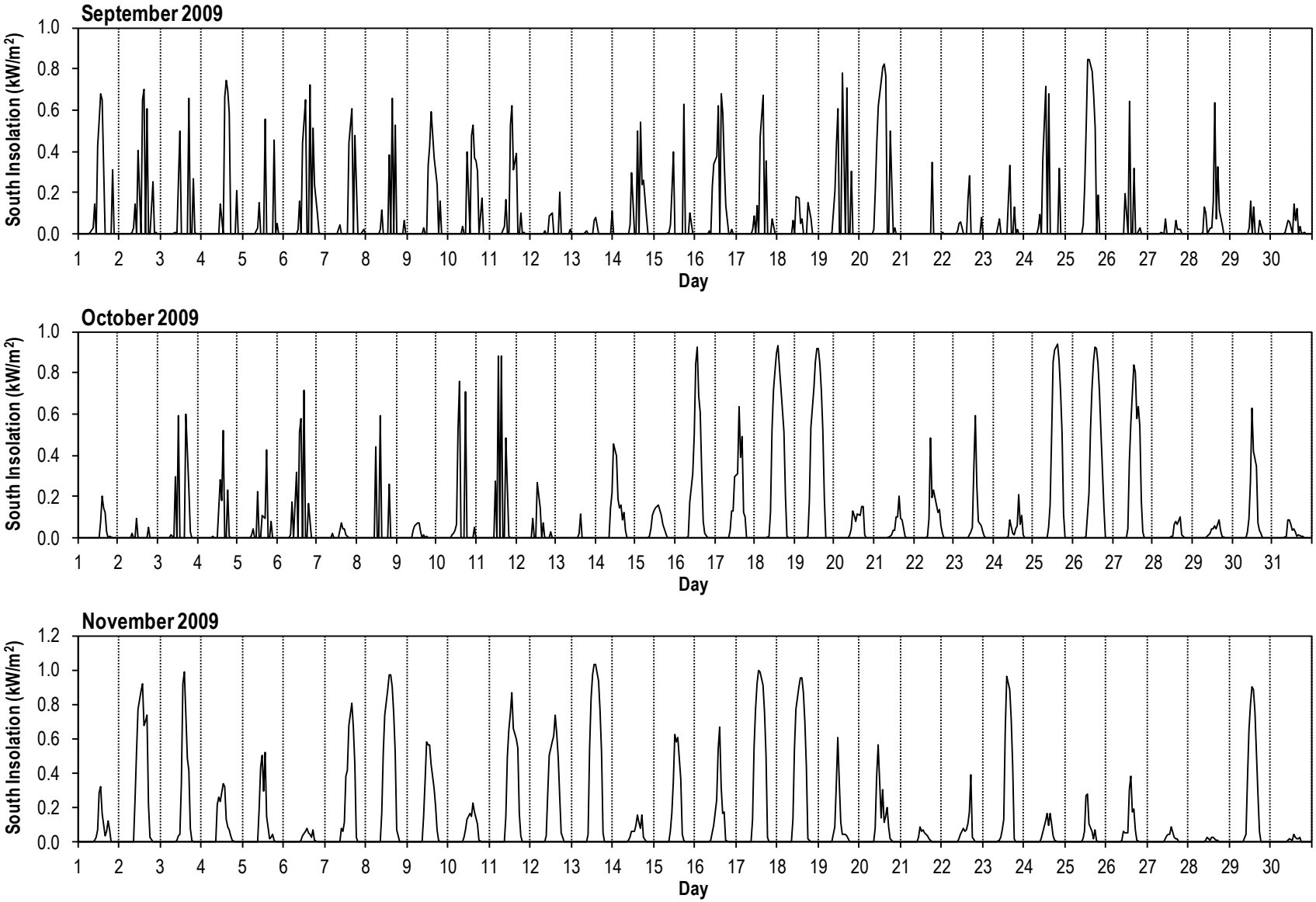


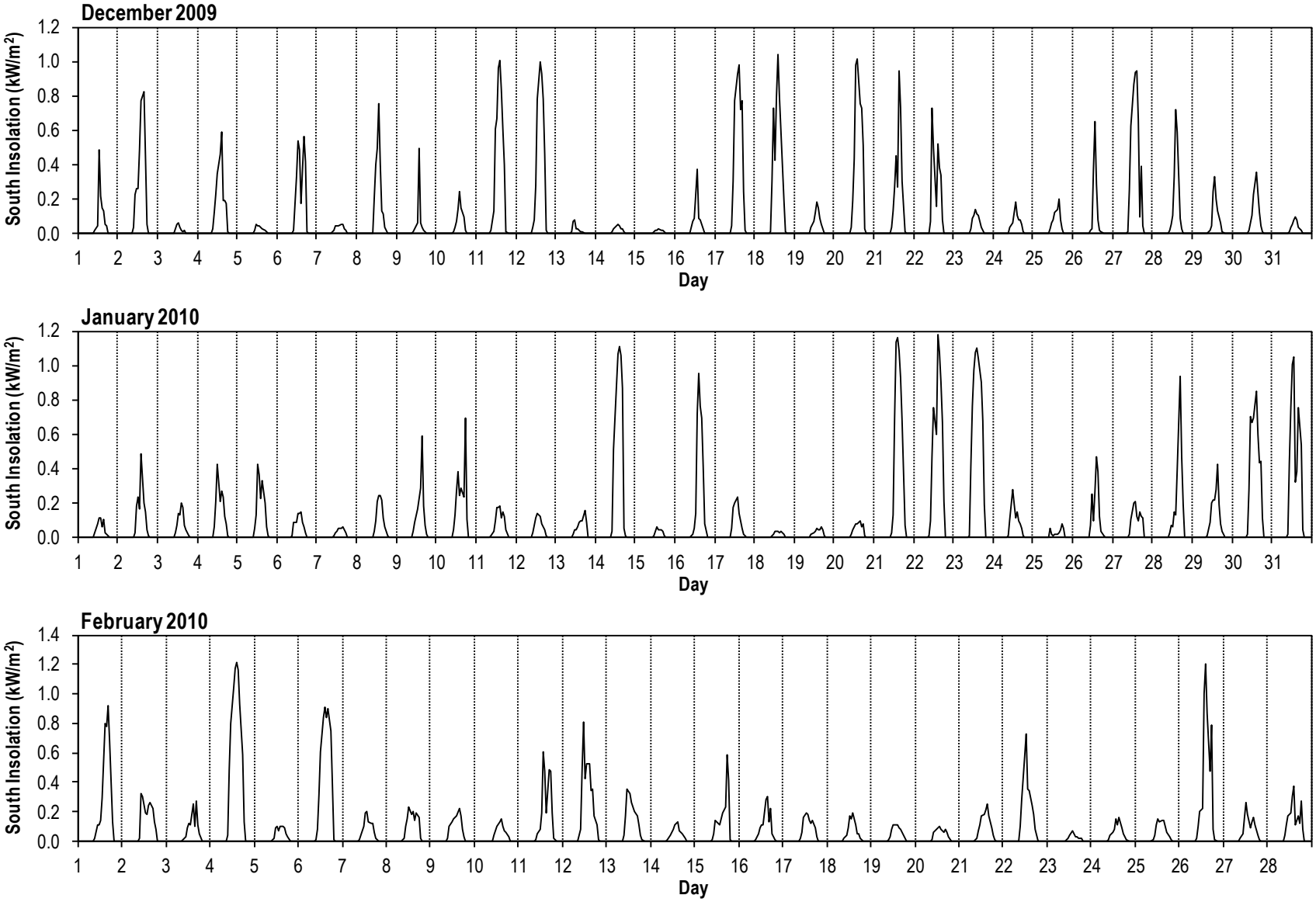

December 2009
East Insolation (kW/m²)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
January 2010
East Insolation (kW/m²)
0.0
0.2
0.4
0.6
0.8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
February 2010
East Insolation (kW/m²)
0.0
0.2
0.4
0.6
0.8
1.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day

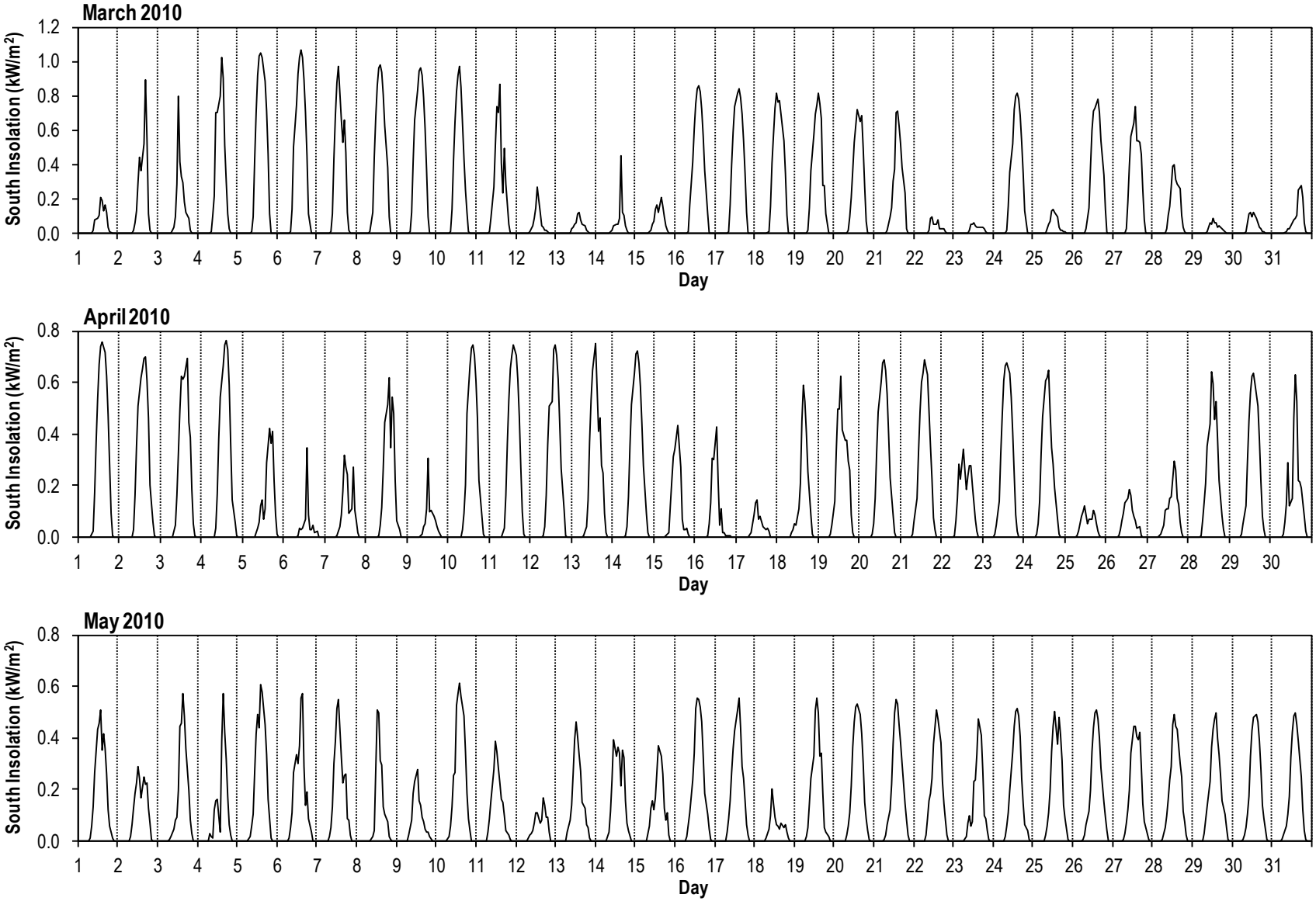

March 2010
April 2010
May 2010
East Insolation (kW/m²)
Day
0.0
0.2
0.4
0.6
0.8
1.0

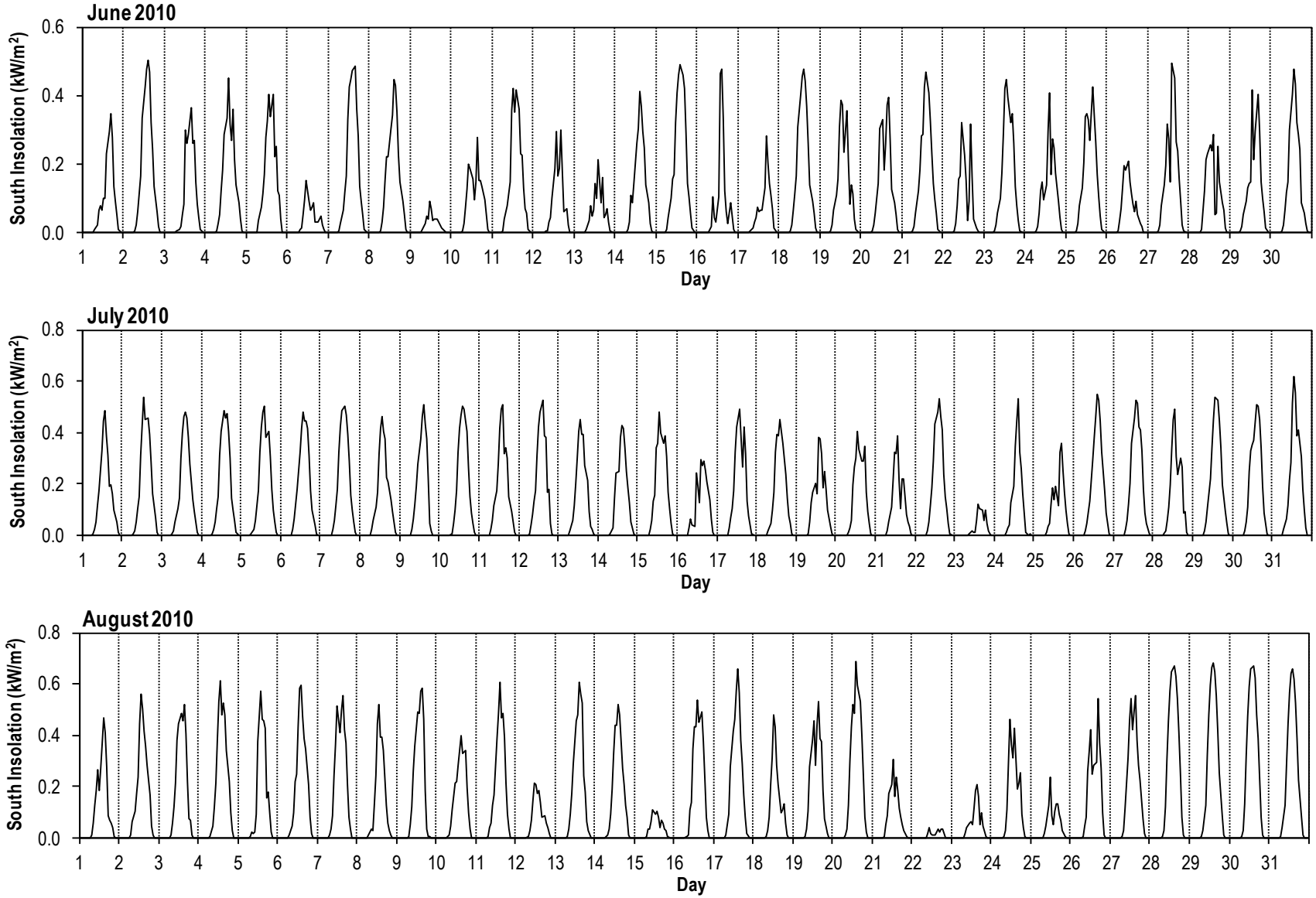

June 2010
East Insolation (kW/m²)
Day
July 2010
East Insolation (kW/m²)
Day
August 2010
East Insolation (kW/m²)
Day

South insolation (KW/m$^2$)

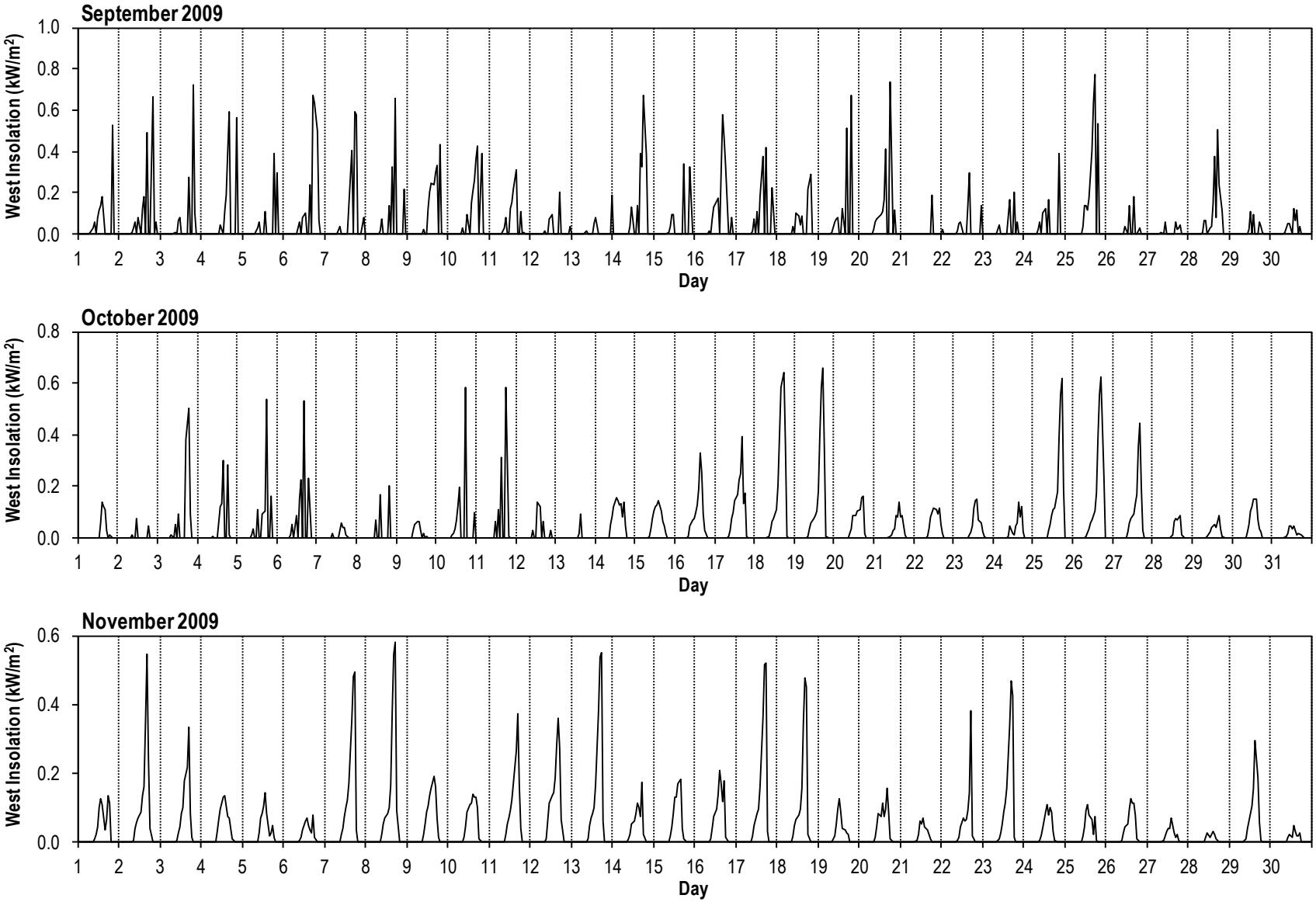


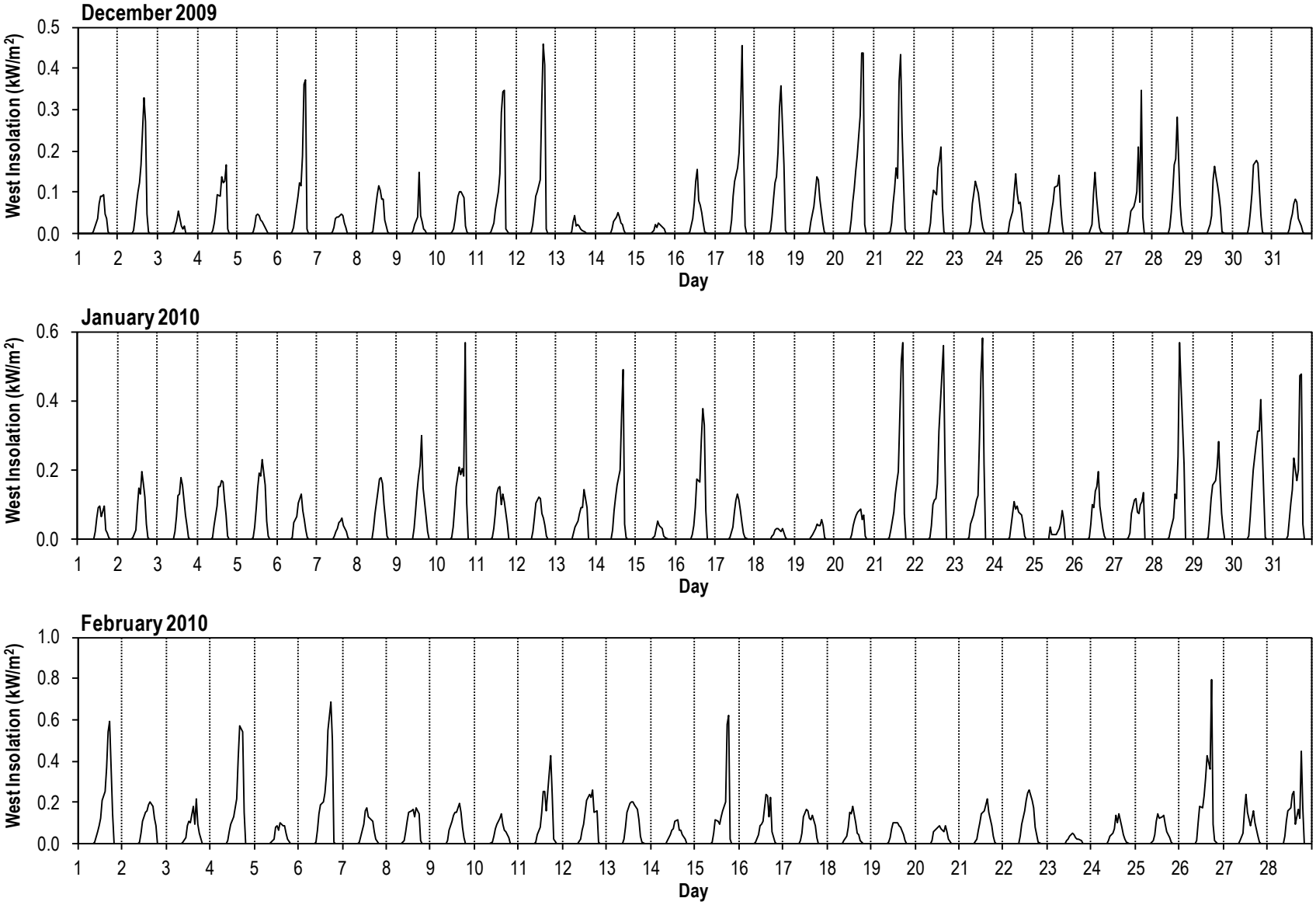

December 2009
South Insolation (kW/m2)
Day
January 2010
South Insolation (kW/m2)
Day
February 2010
South Insolation (kW/m2)
Day

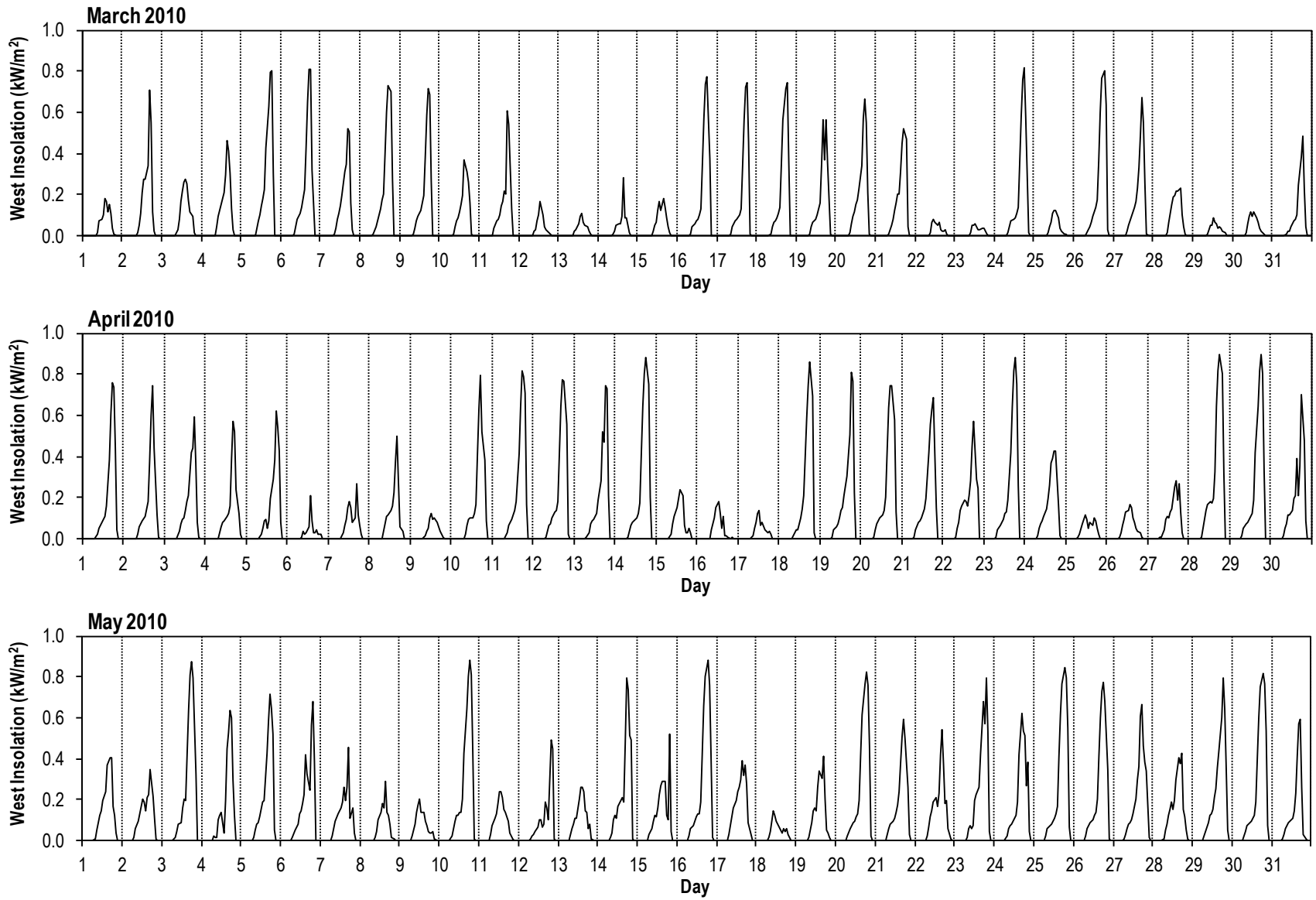

March 2010
South Insolation (kW/m2)
Day
April 2010
South Insolation (kW/m2)
Day
May 2010
South Insolation (kW/m2)
Day

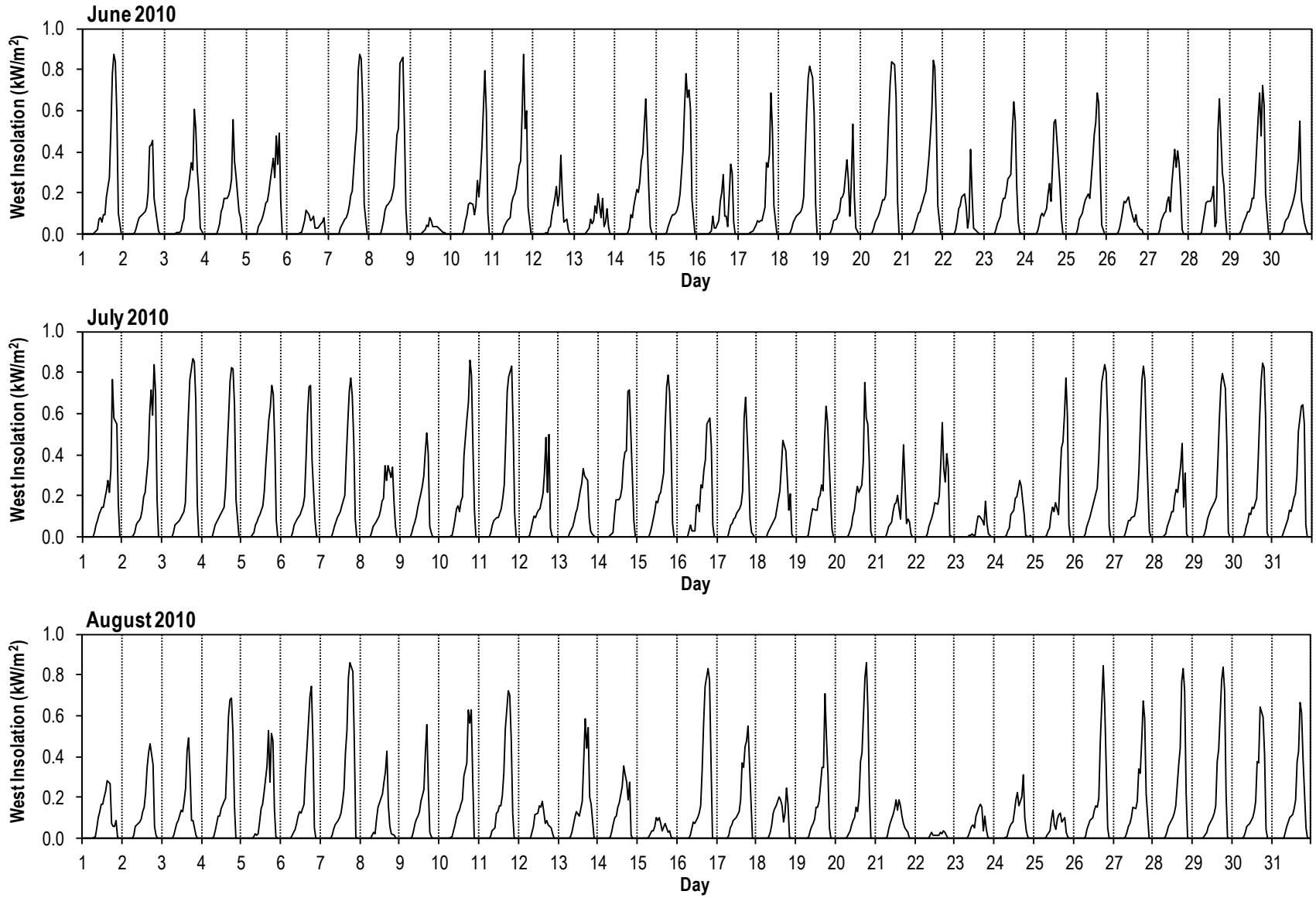

June 2010
South Insolation (kW/m2)
0.0
0.2
0.4
0.6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Day
July 2010
South Insolation (kW/m2)
0.0
0.2
0.4
0.6
0.8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
August 2010
South Insolation (kW/m2)
0.0
0.2
0.4
0.6
0.8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day

West insolation (KW/m$^2$)



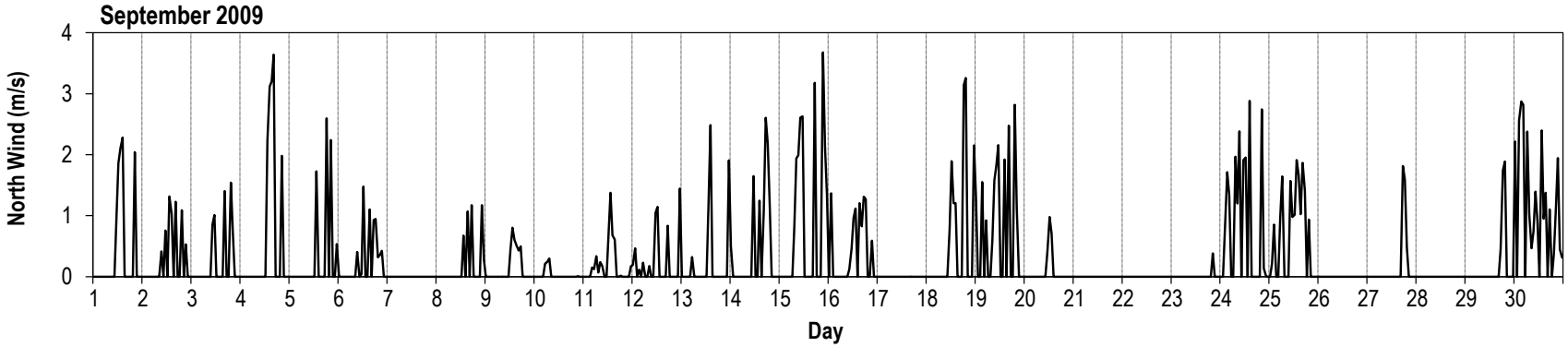

December 2009
West Insolation (kW/m2)
0.0
0.1
0.2
0.3
0.4
0.5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
January 2010
West Insolation (kW/m2)
0.0
0.2
0.4
0.6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
February 2010
West Insolation (kW/m2)
0.0
0.2
0.4
0.6
0.8
1.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day

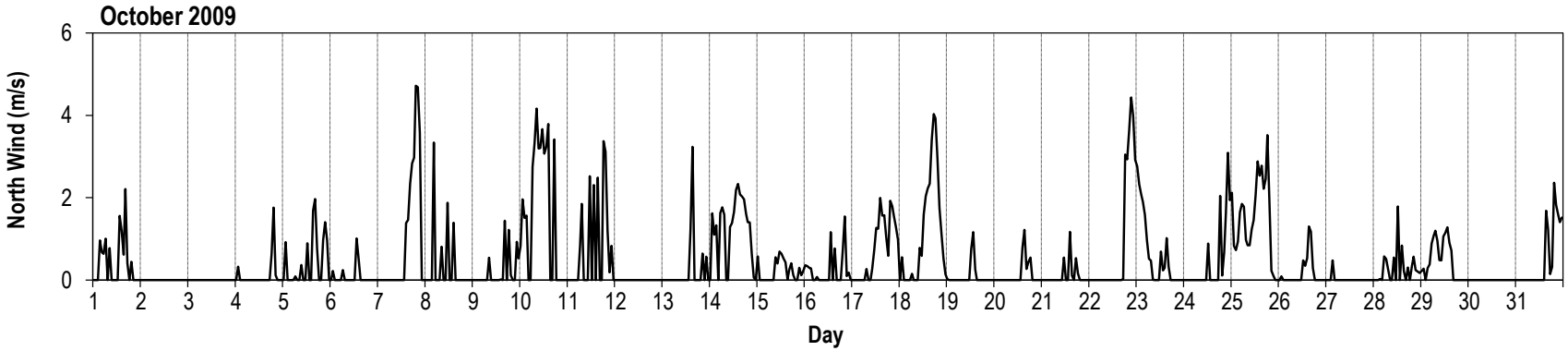

March 2010
April 2010
May 2010
West Insolation (kW/m2)
Day
0.0
0.2
0.4
0.6
0.8
1.0

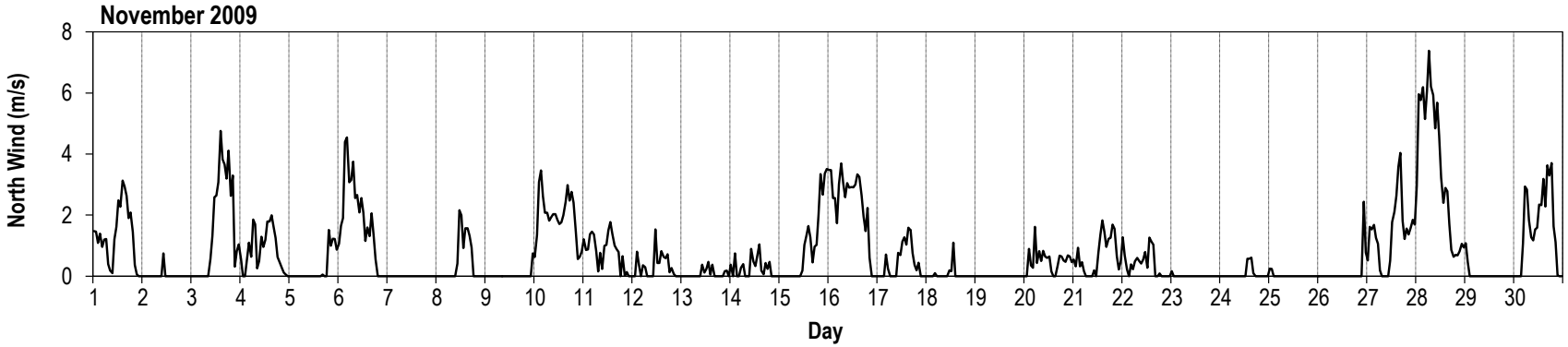

June 2010
July 2010
August 2010
West Insolation (kW/m2)
Day
0.0
0.2
0.4
0.6
0.8
1.0

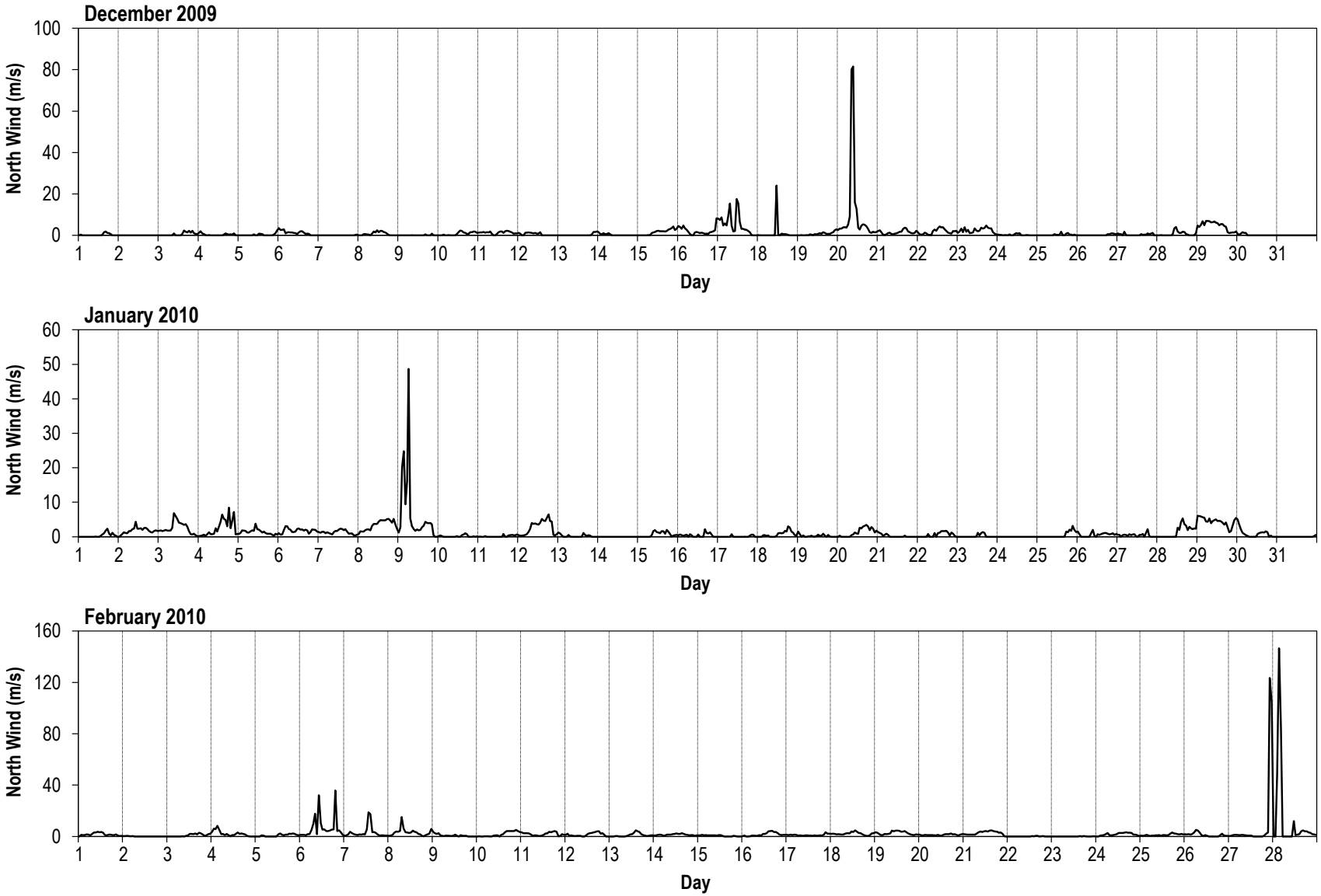
# Appendix F: Wind Speed

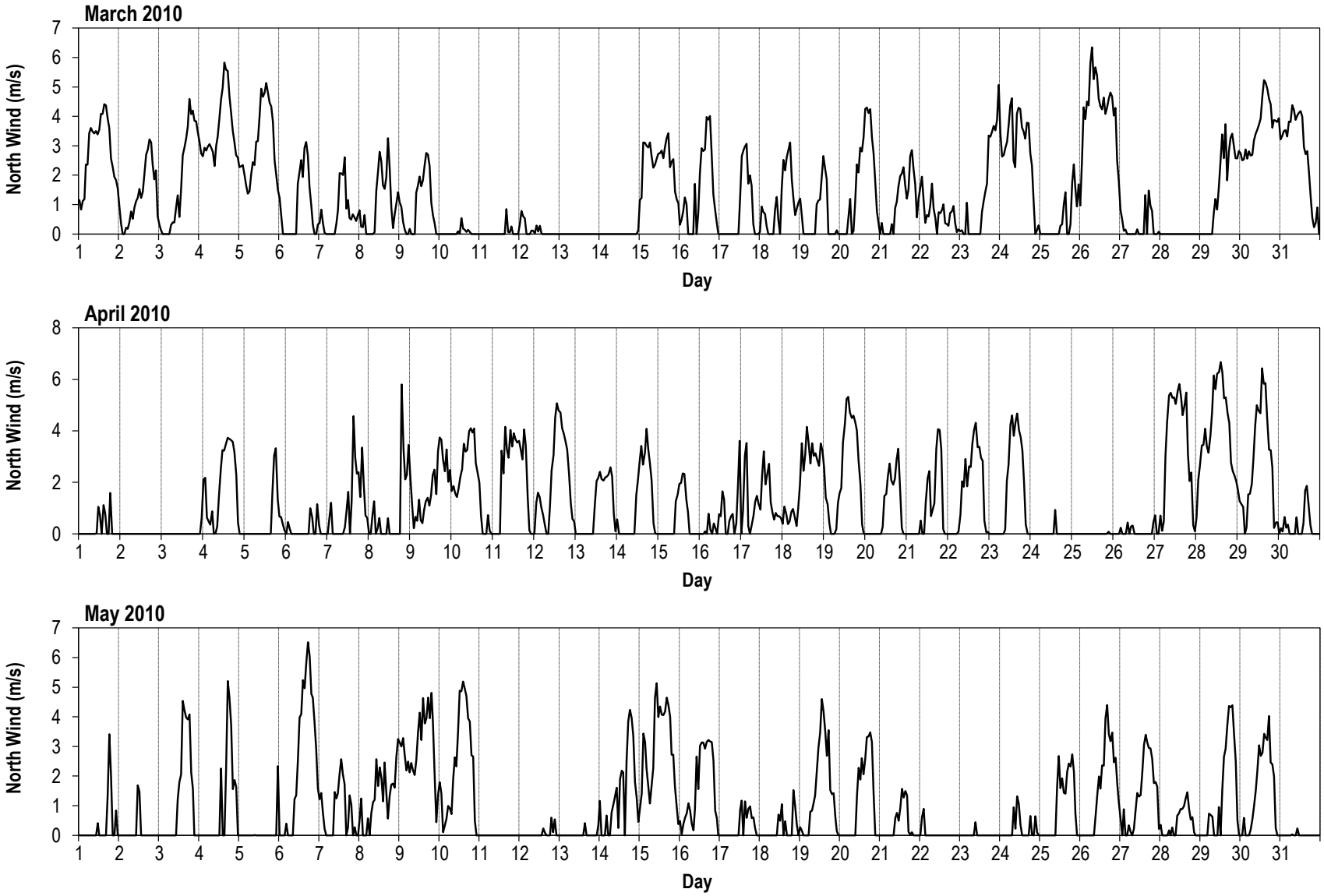
North wind (m/s)

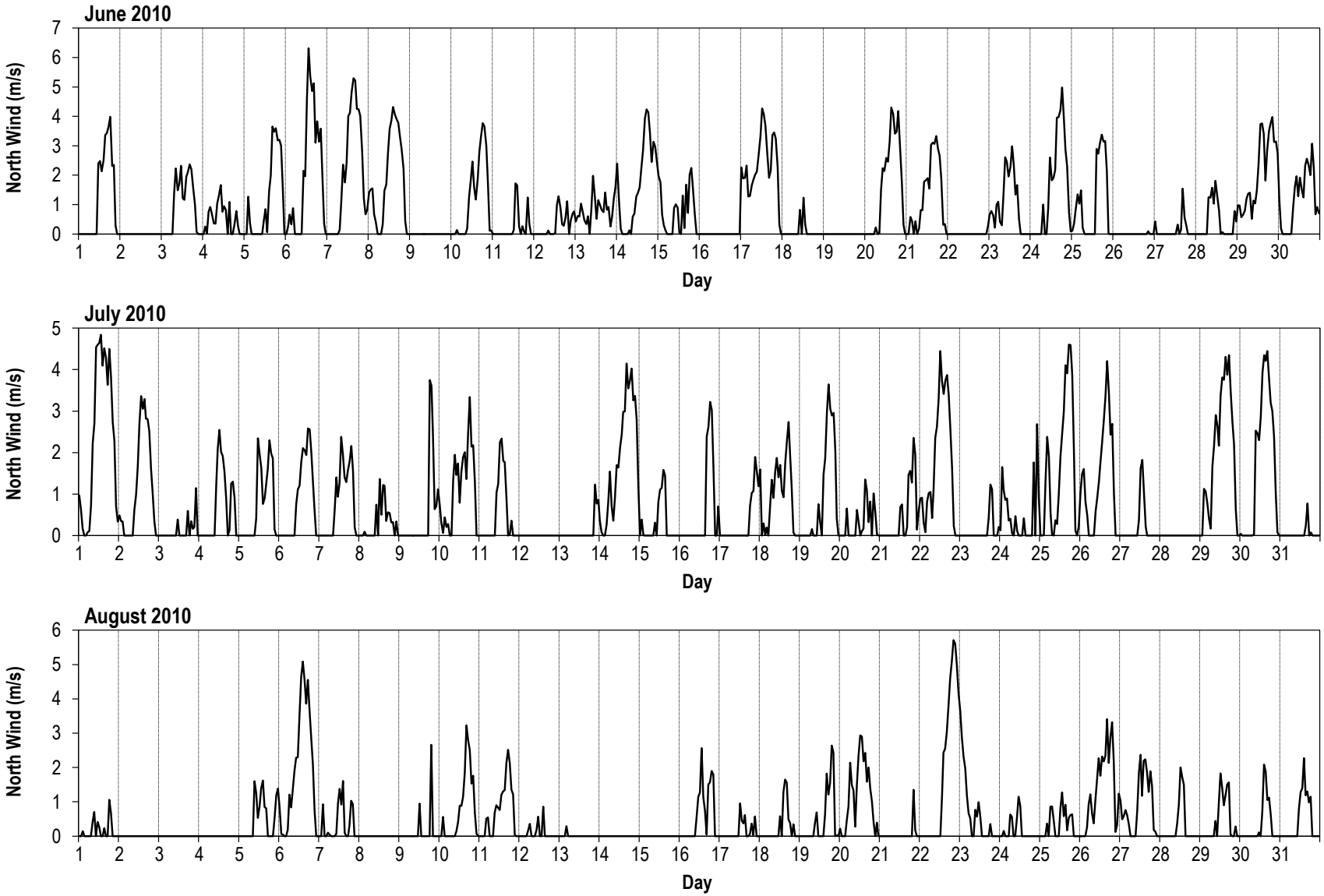


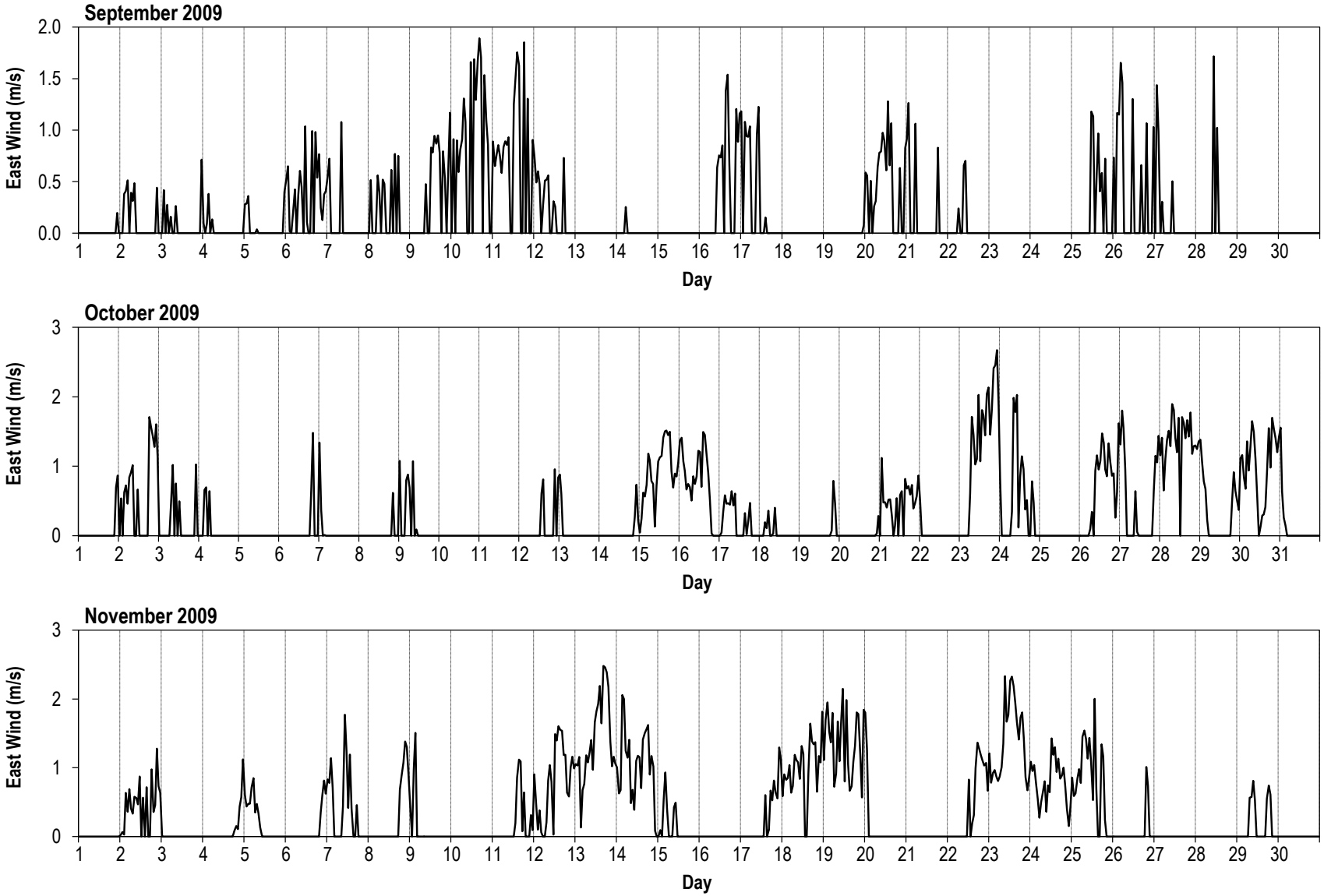



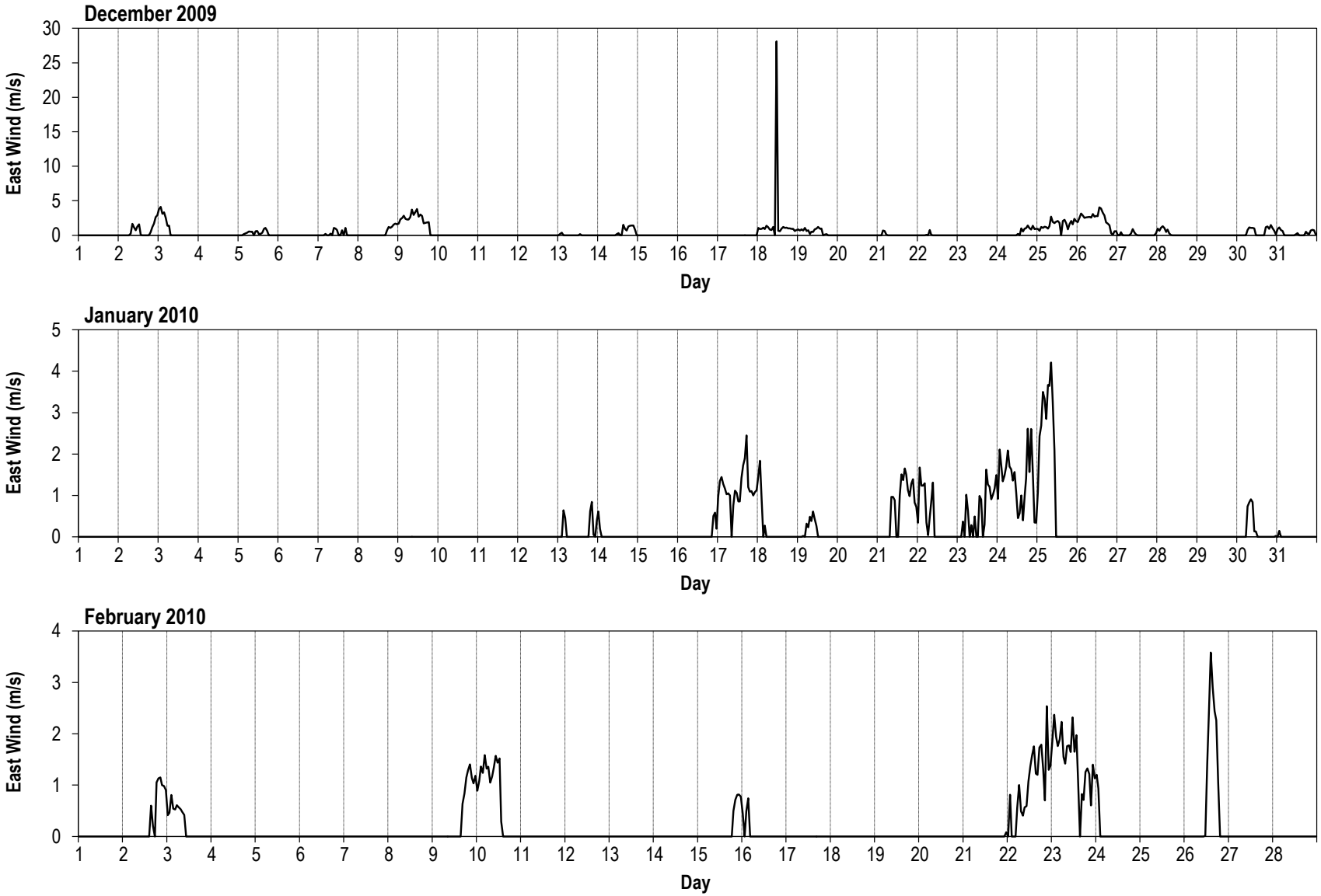

December 2009
North Wind (m/s)
Day
January 2010
North Wind (m/s)
Day
February 2010
North Wind (m/s)
Day

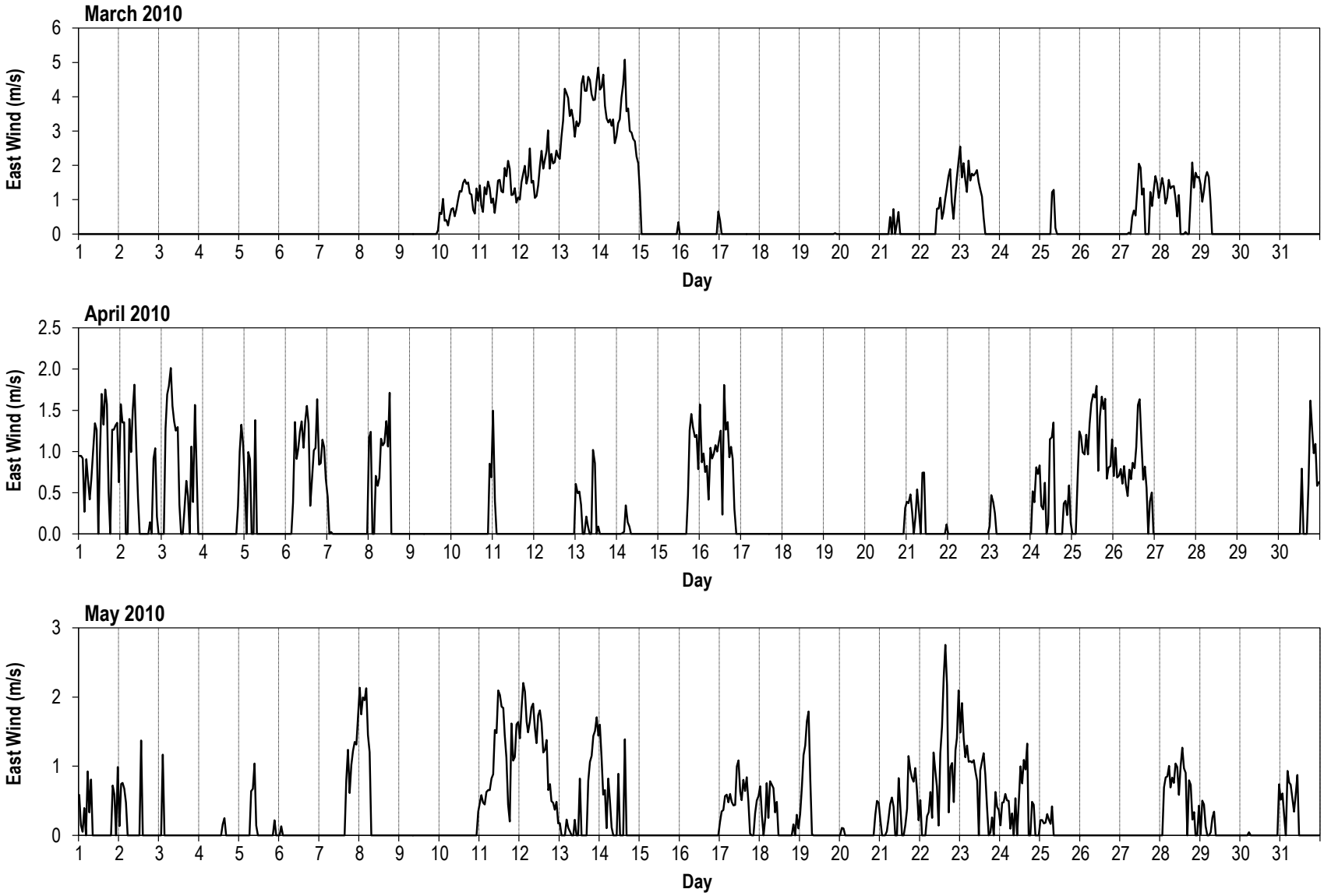

March 2010
North Wind (m/s)
Day
April 2010
North Wind (m/s)
Day
May 2010
North Wind (m/s)
Day

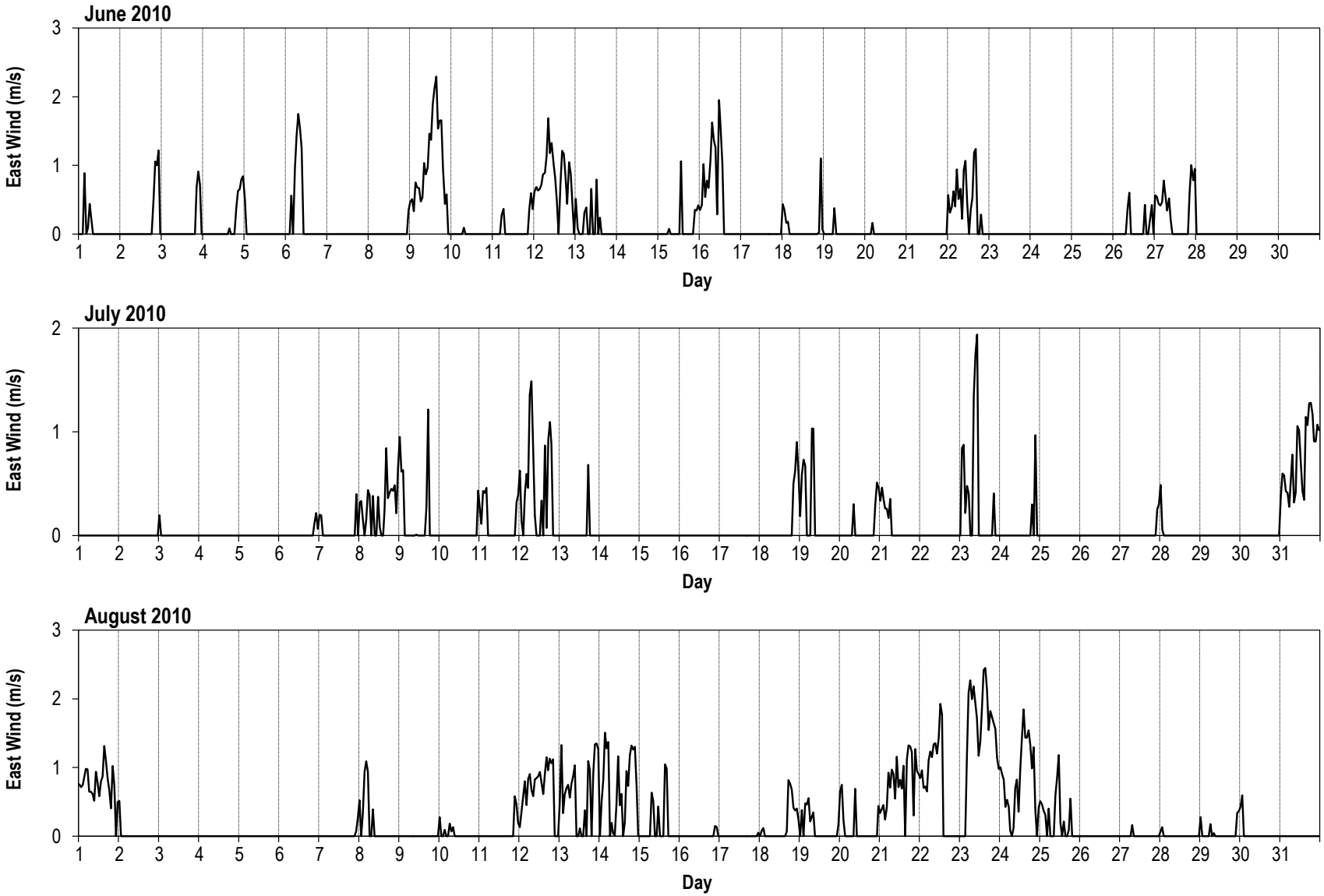

June 2010
North Wind (m/s)
Day
July 2010
North Wind (m/s)
Day
August 2010
North Wind (m/s)
Day

East wind (m/s)

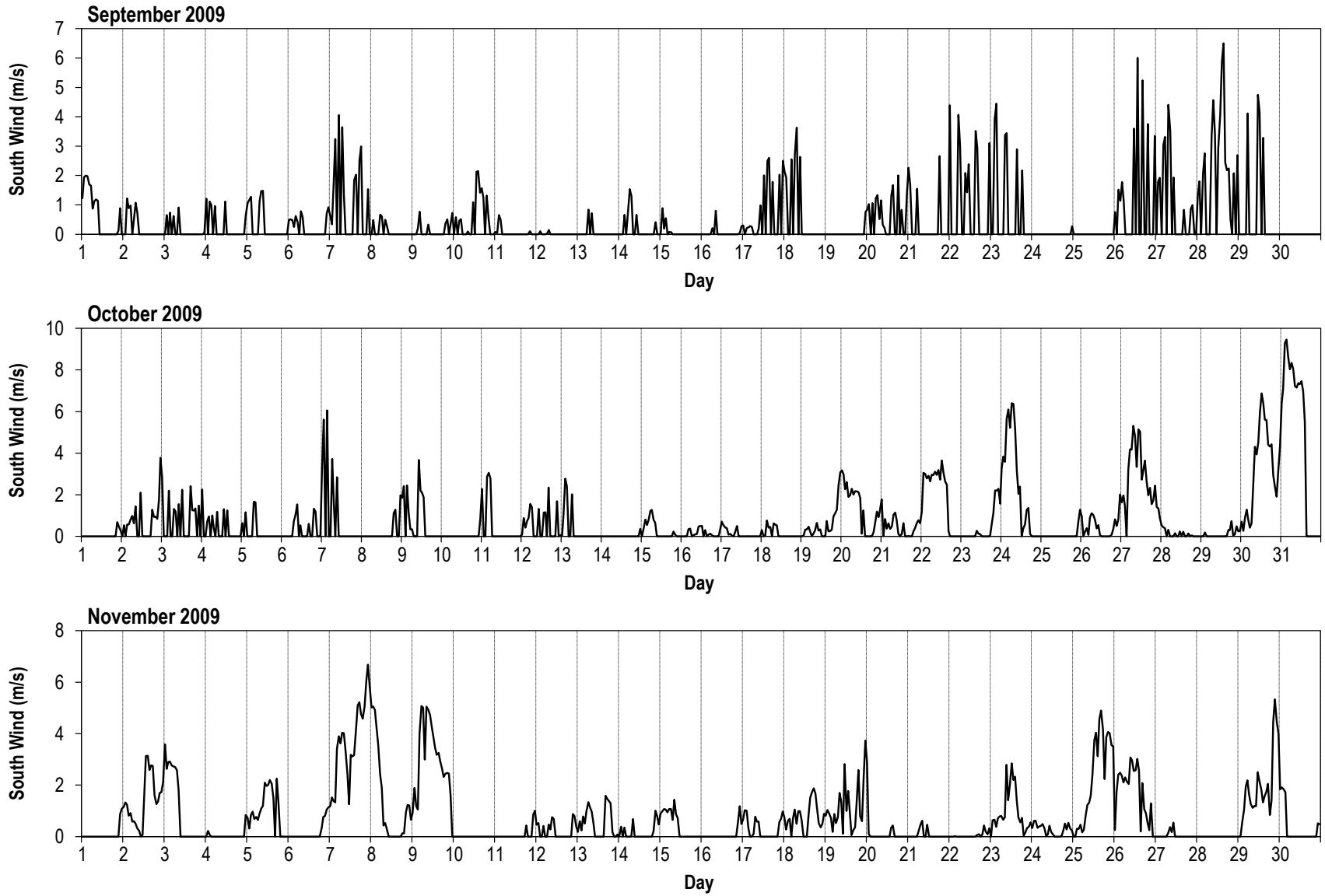

September 2009
East Wind (m/s)
Day
October 2009
East Wind (m/s)
Day
November 2009
East Wind (m/s)
Day

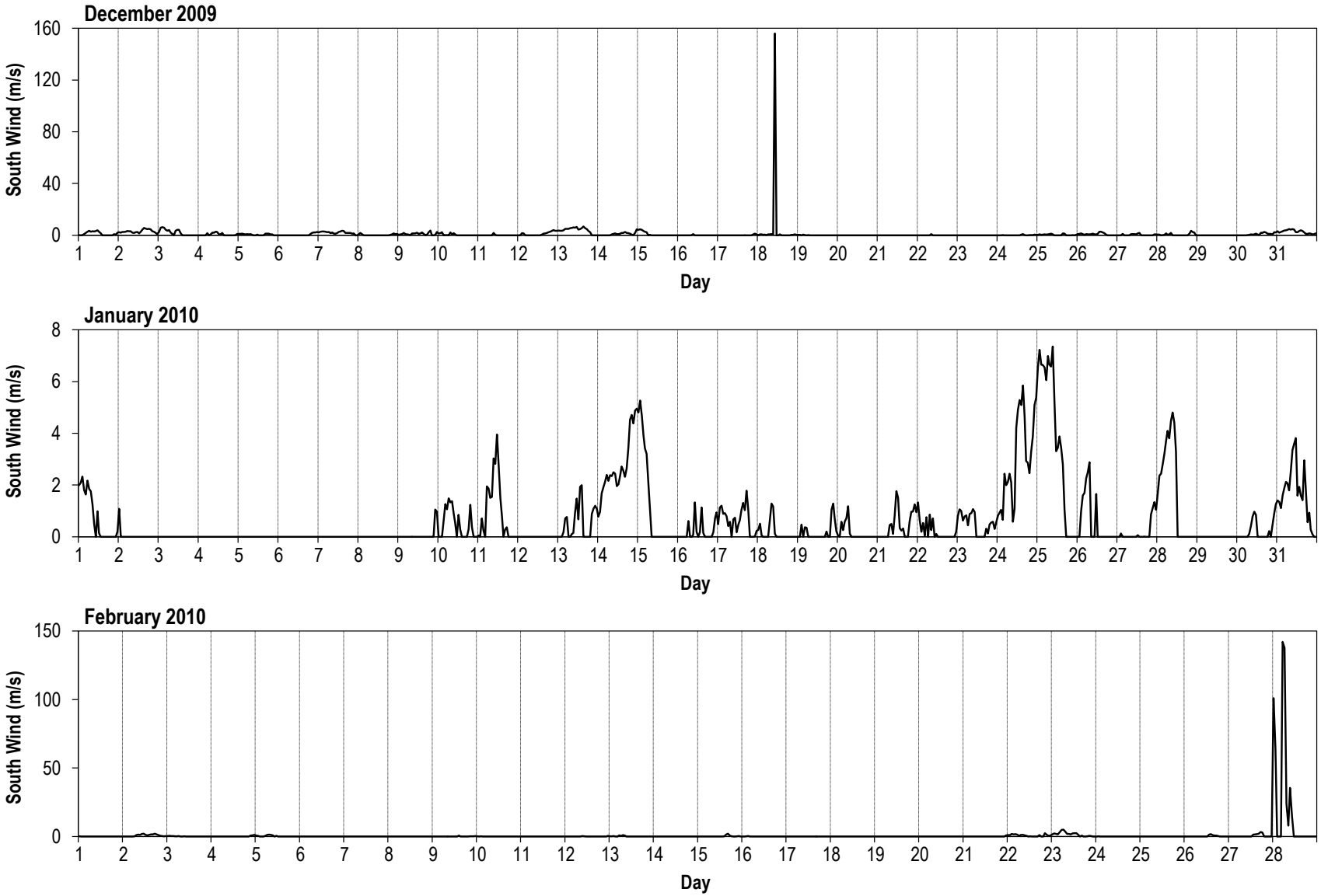

December 2009
East Wind (m/s)
Day
January 2010
East Wind (m/s)
Day
February 2010
East Wind (m/s)
Day

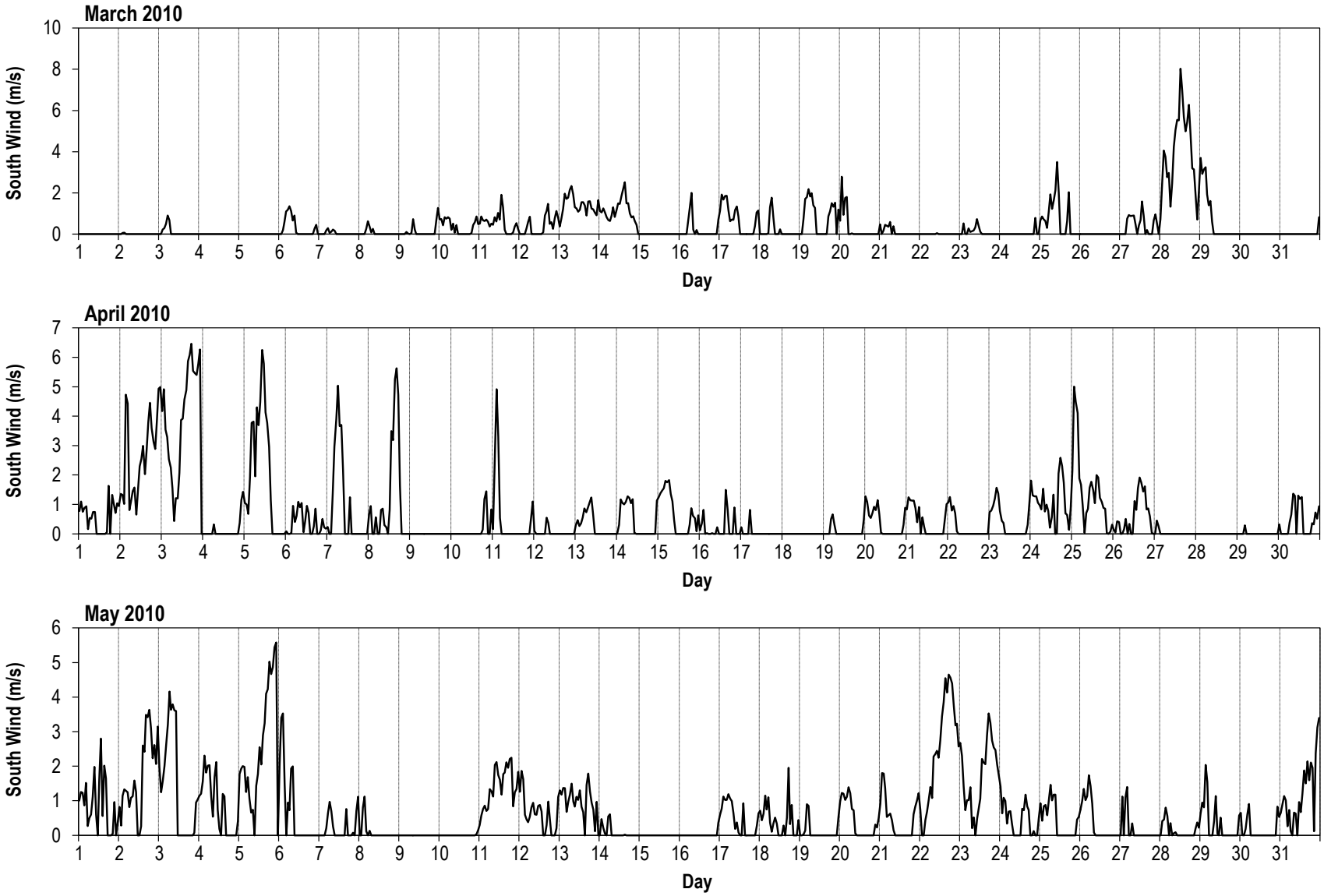

March 2010
East Wind (m/s)
Day
April 2010
East Wind (m/s)
Day
May 2010
East Wind (m/s)
Day

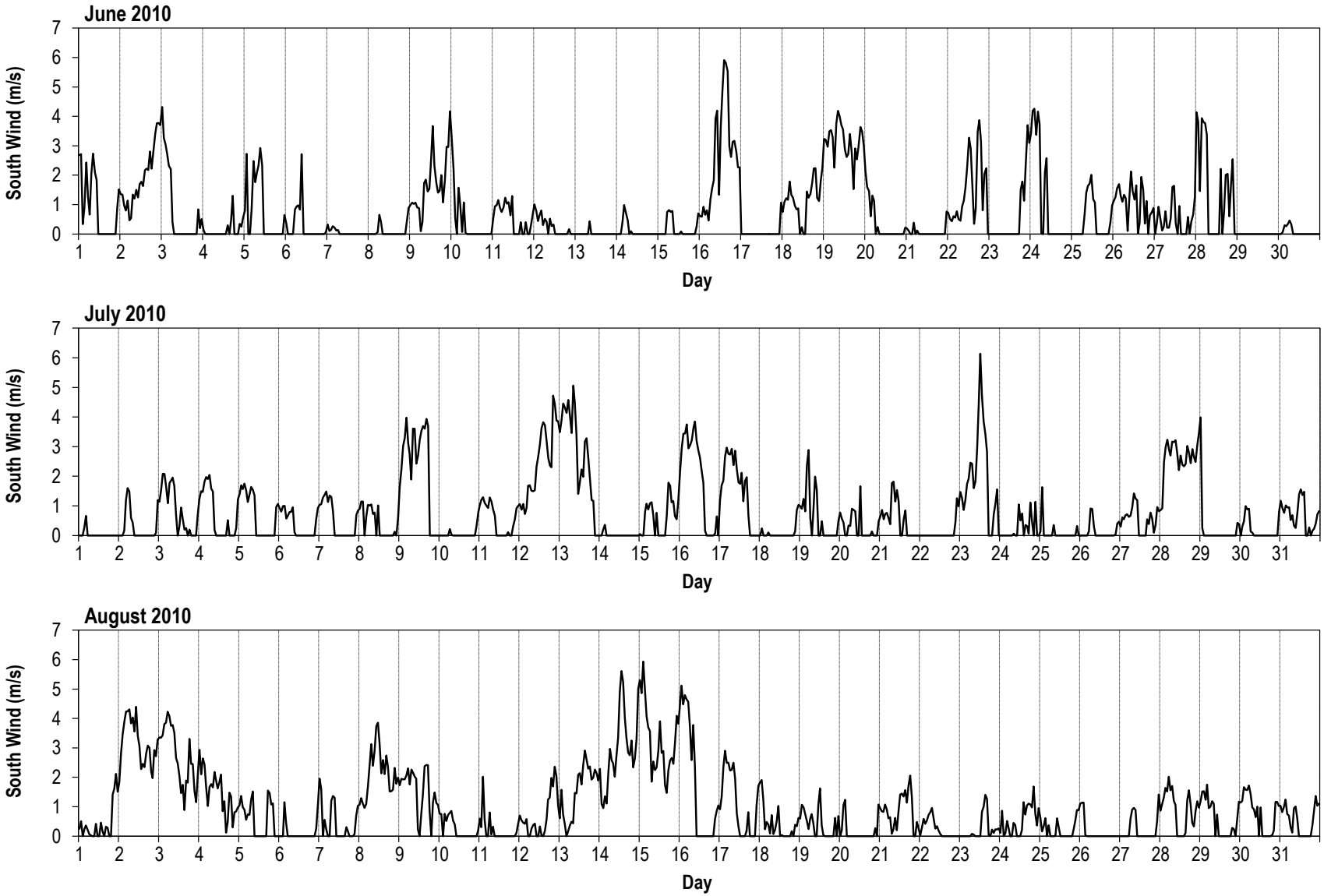

June 2010
East Wind (m/s)
Day
July 2010
East Wind (m/s)
Day
August 2010
East Wind (m/s)
Day

South wind (m/s)

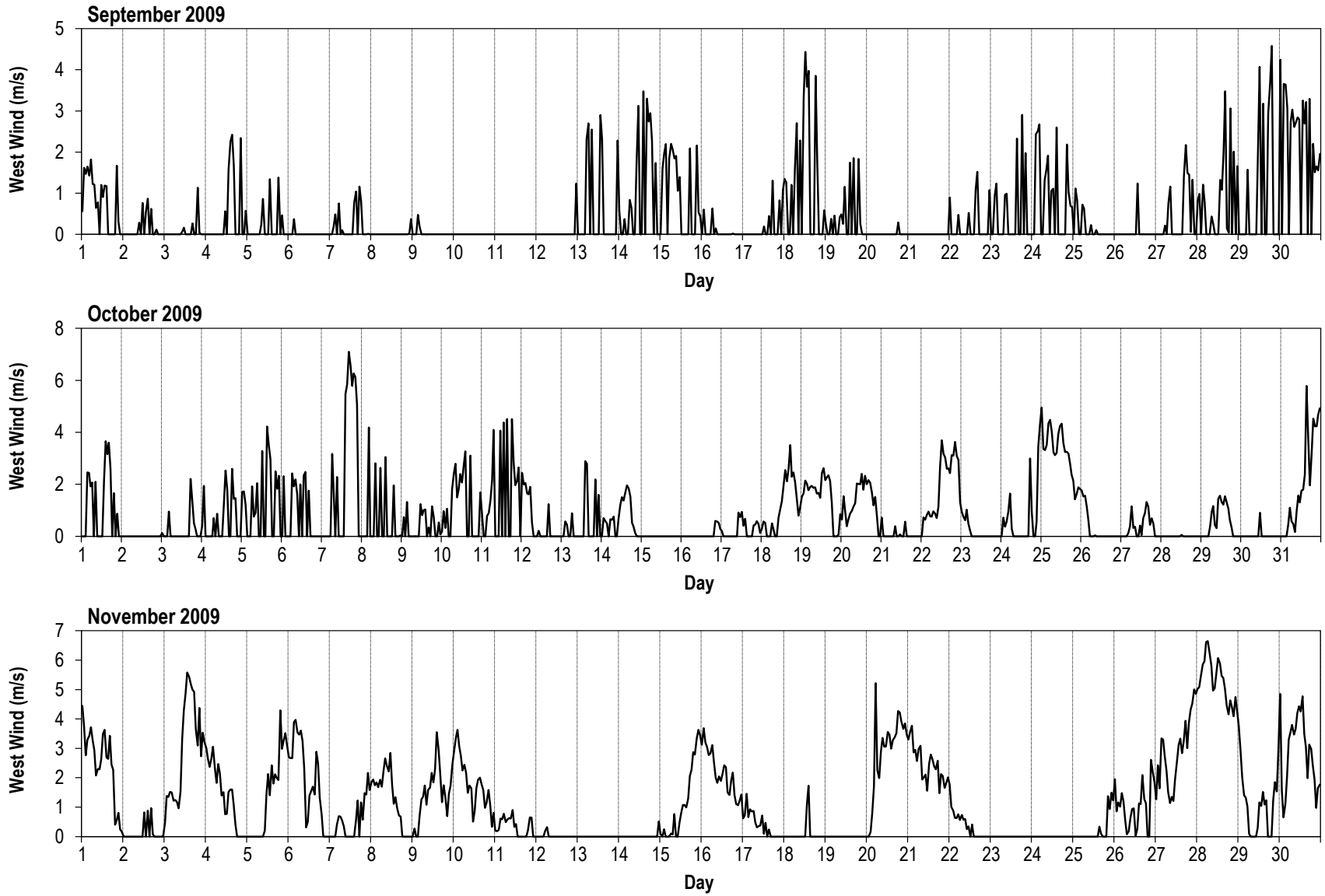


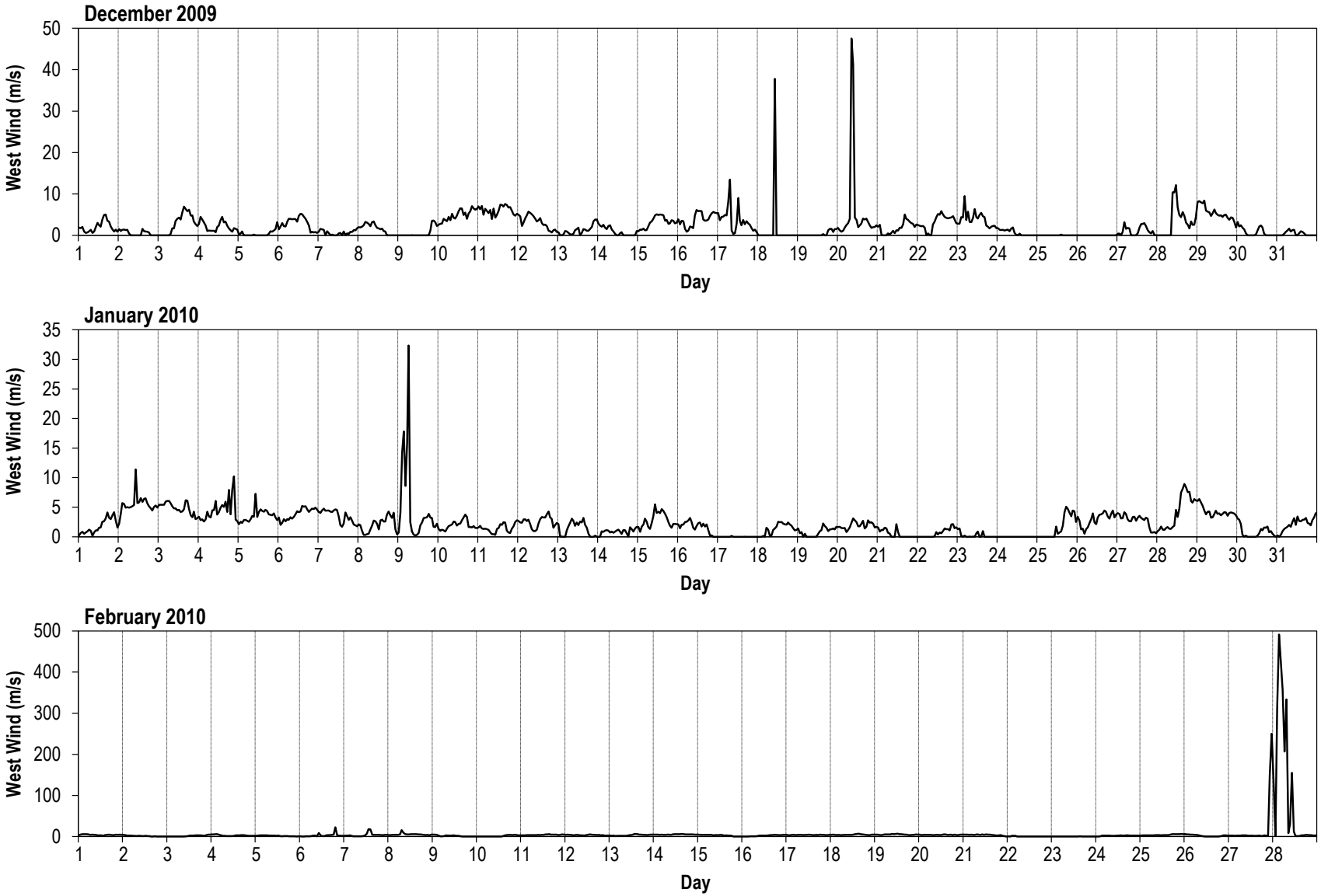

December 2009
South Wind (m/s)
160
120
80
40
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
January 2010
South Wind (m/s)
8
6
4
2
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
February 2010
South Wind (m/s)
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day

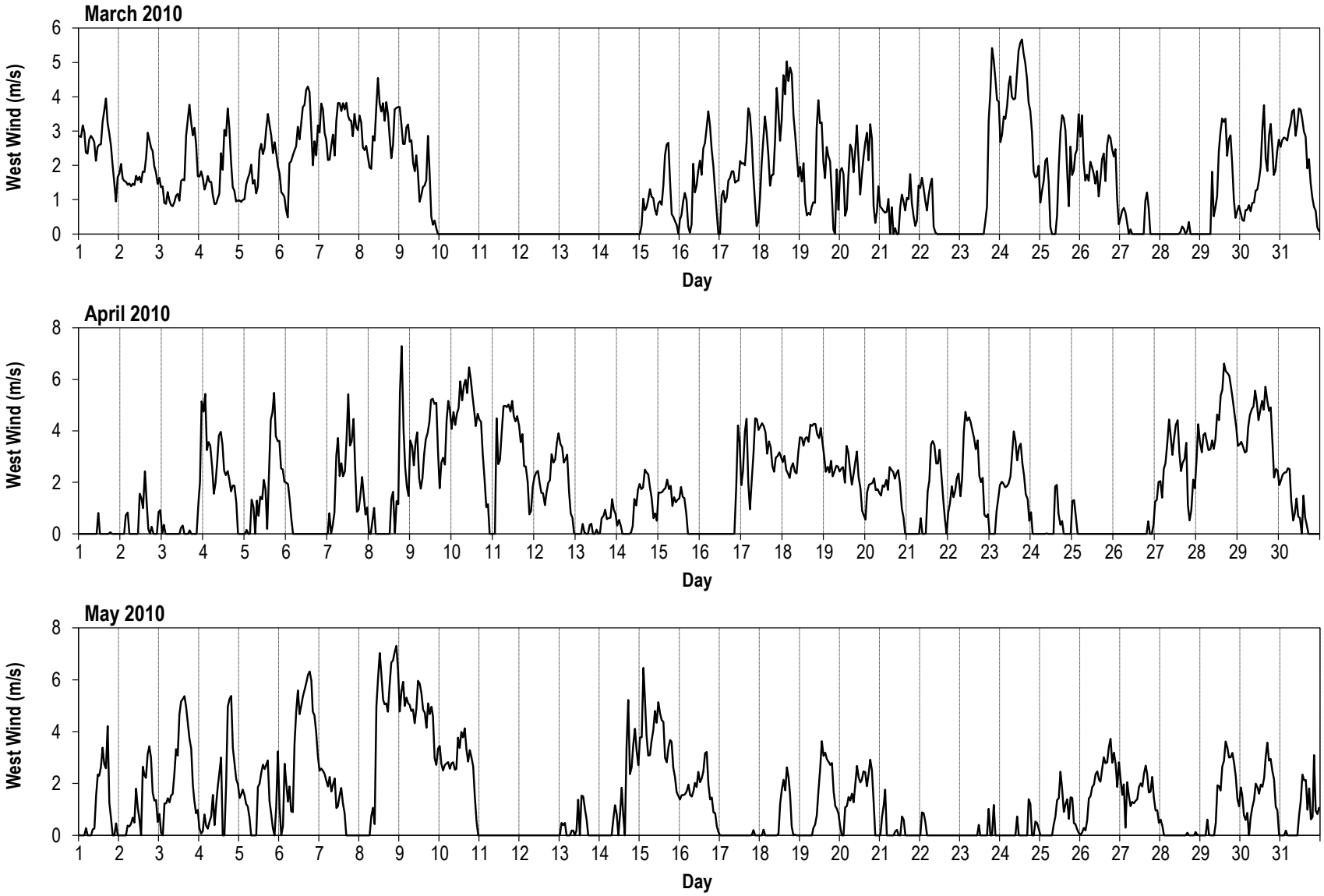

March 2010
South Wind (m/s)
Day
April 2010
South Wind (m/s)
Day
May 2010
South Wind (m/s)
Day

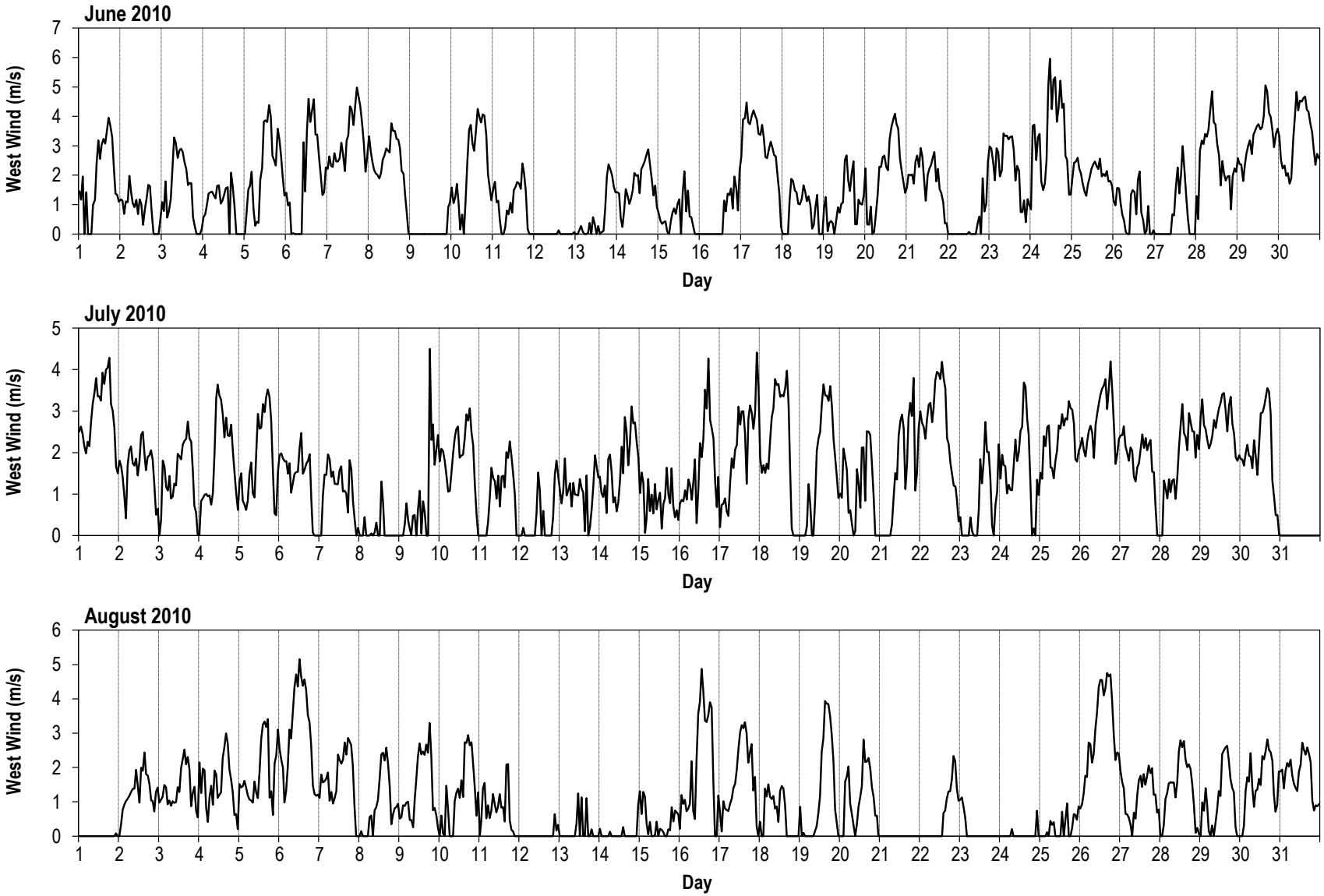

June 2010
South Wind (m/s)
Day
July 2010
South Wind (m/s)
Day
August 2010
South Wind (m/s)
Day

West wind (m/s)

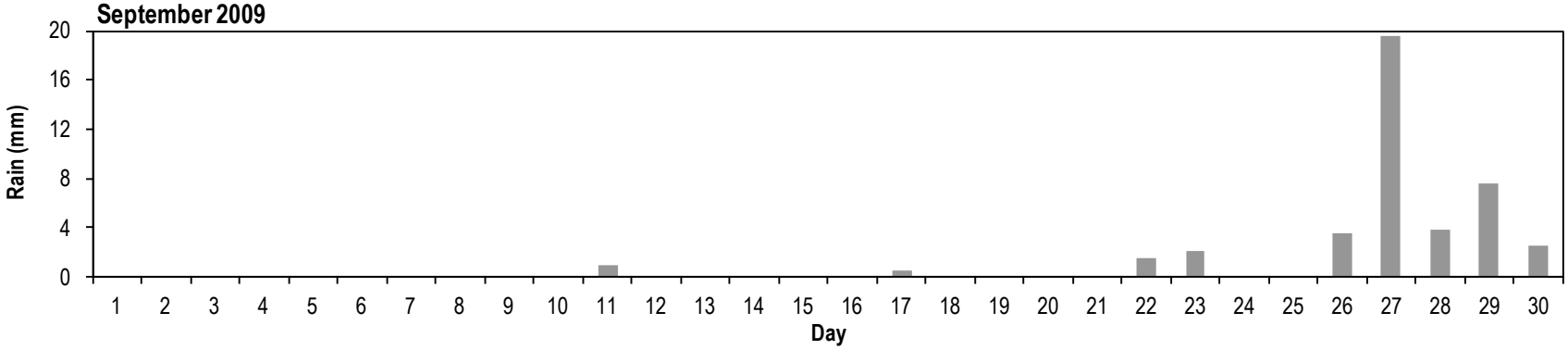

September 2009
West Wind (m/s)
Day
October 2009
West Wind (m/s)
Day
November 2009
West Wind (m/s)
Day

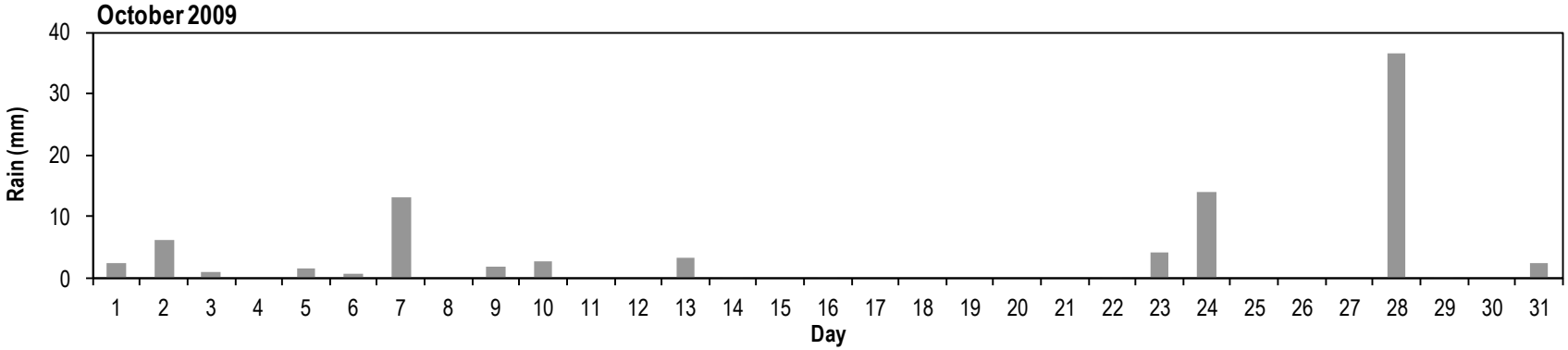

December 2009
West Wind (m/s)
Day
January 2010
West Wind (m/s)
Day
February 2010
West Wind (m/s)
Day

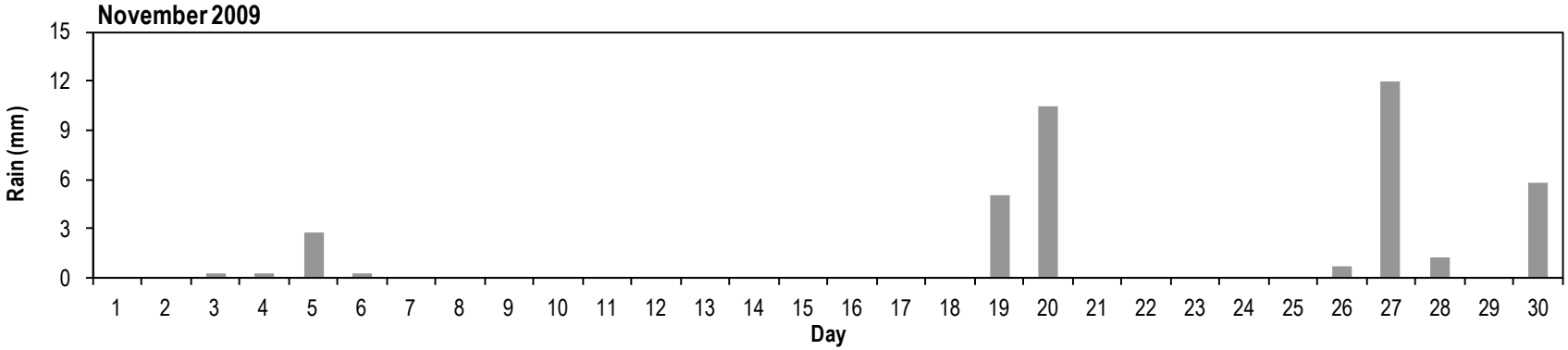

March 2010
West Wind (m/s)
Day
April 2010
West Wind (m/s)
Day
May 2010
West Wind (m/s)
Day

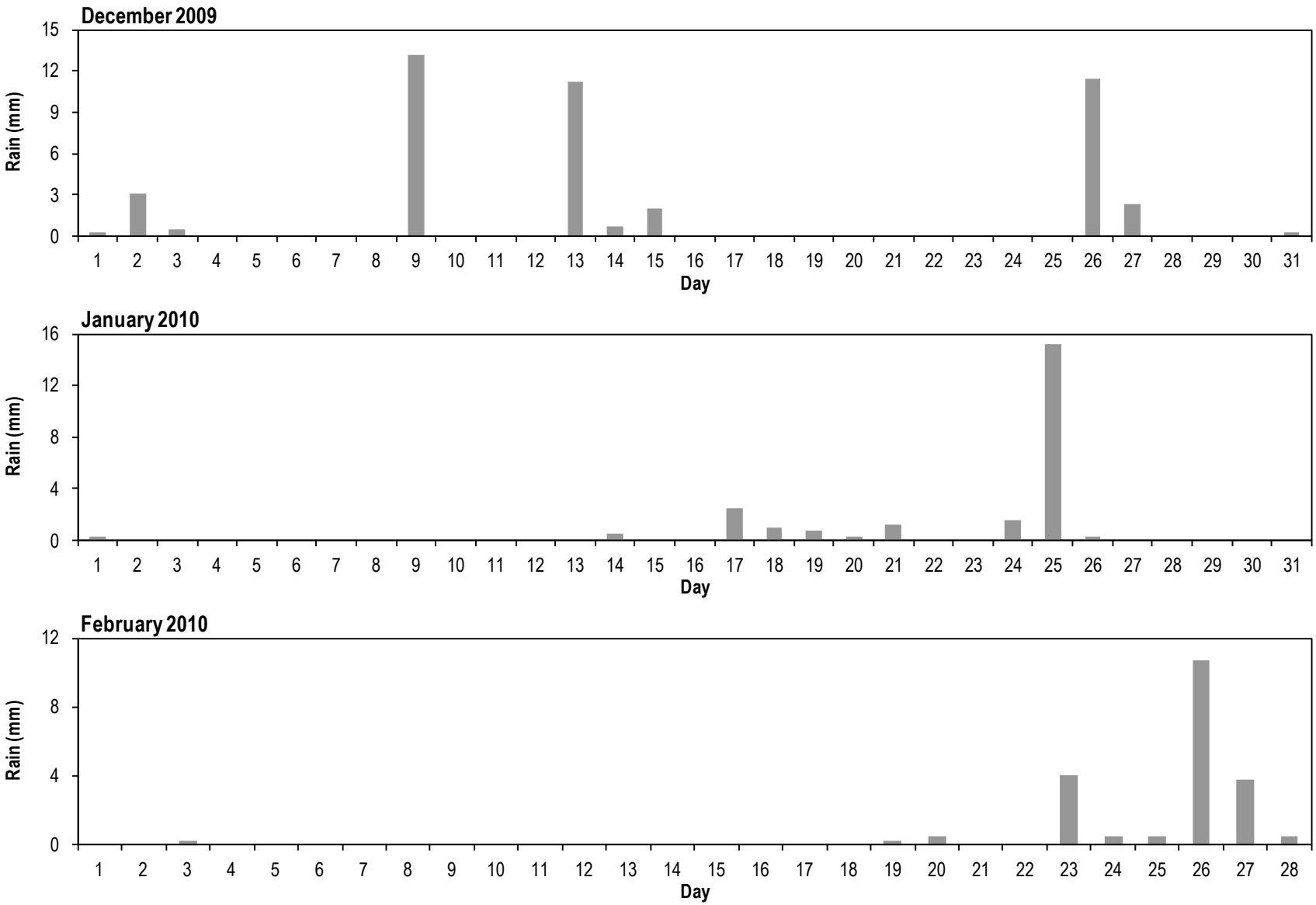

June 2010
West Wind (m/s)
Day
July 2010
West Wind (m/s)
Day
August 2010
West Wind (m/s)
Day

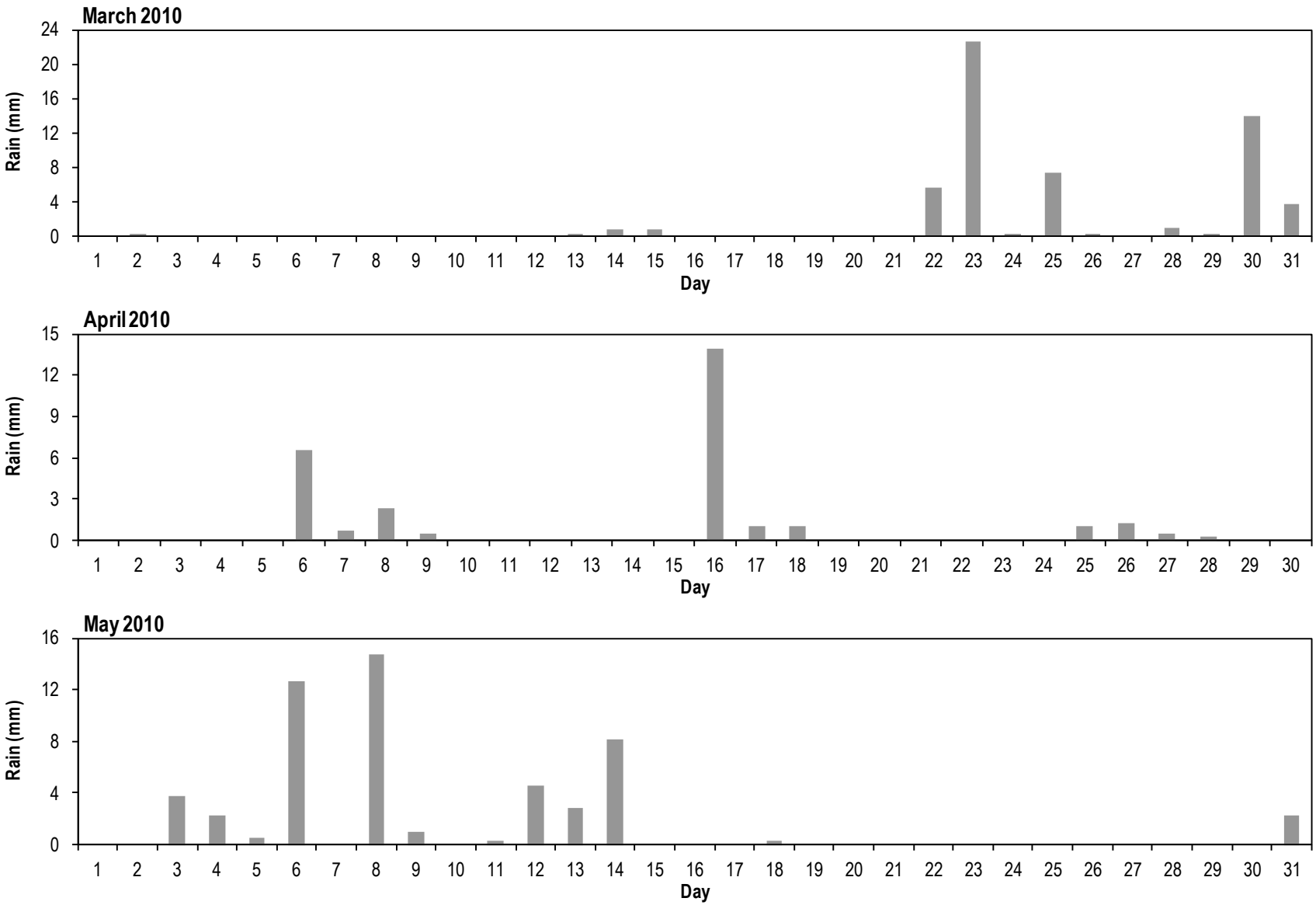
# Appendix G: Rain

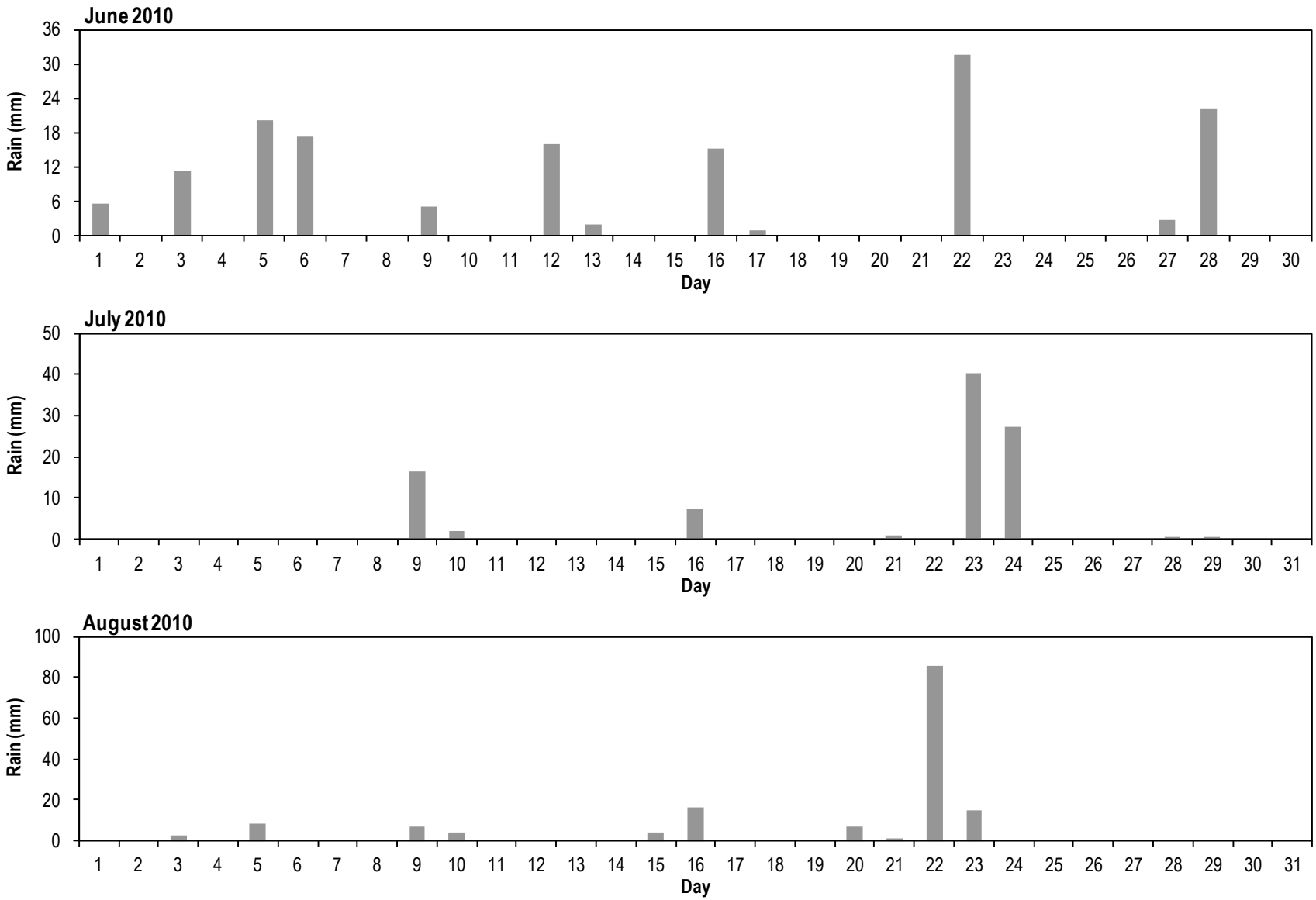


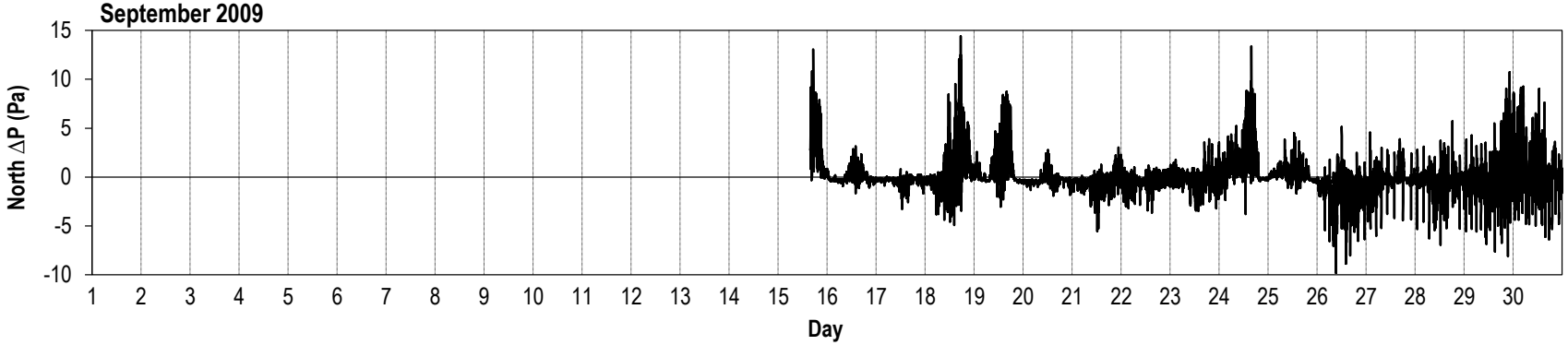

December 2009
Rain (mm)
Day
January 2010
Rain (mm)
Day
February 2010
Rain (mm)
Day

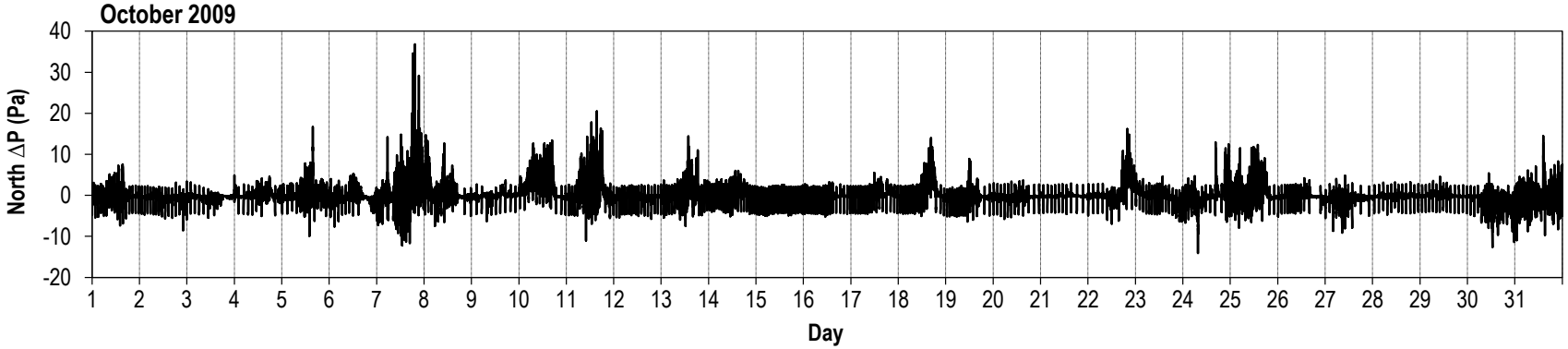

March 2010
Rain (mm)
Day
April 2010
Rain (mm)
Day
May 2010
Rain (mm)
Day

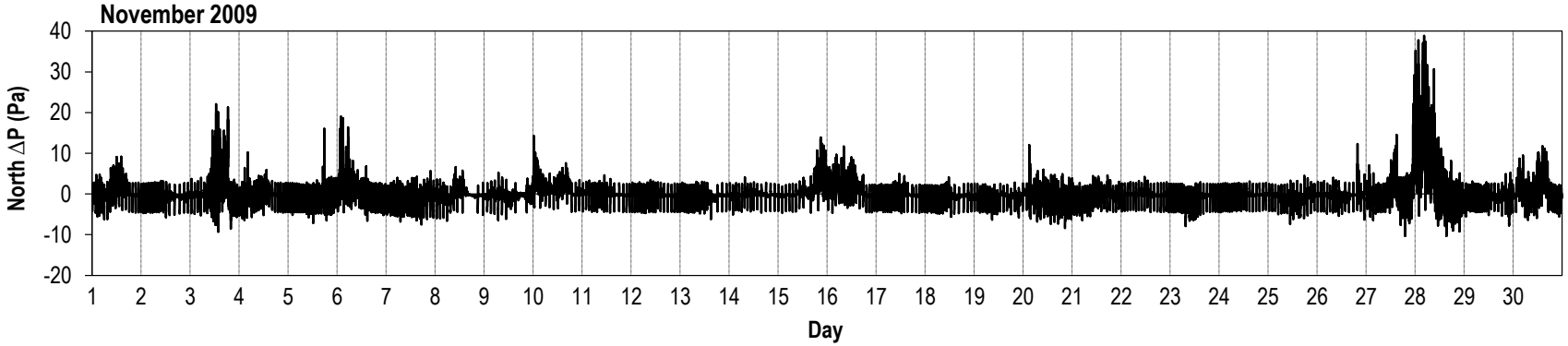

June 2010
Rain (mm)
Day
July 2010
Rain (mm)
Day
August 2010
Rain (mm)
Day

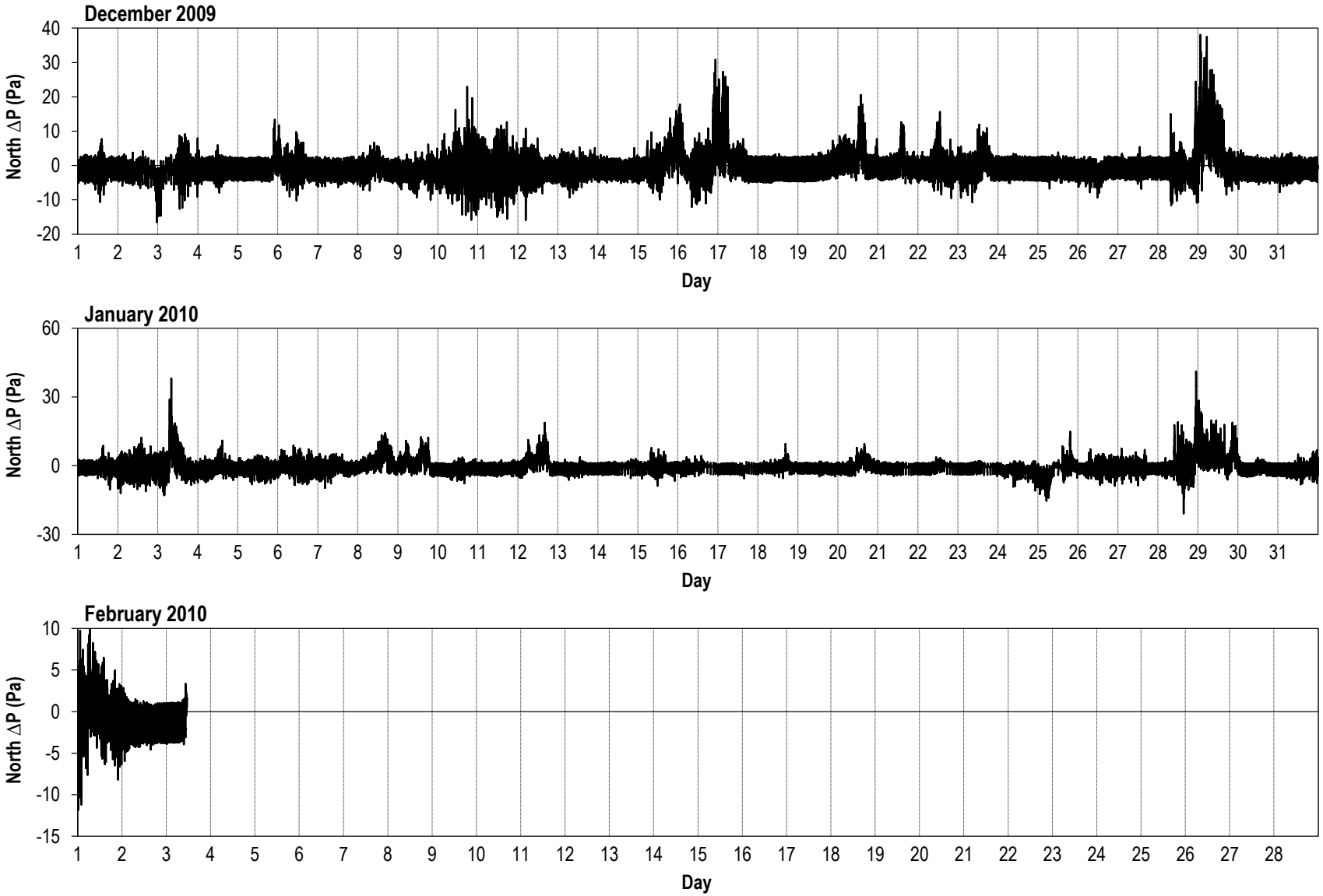
# Appendix H: Pressure Differential

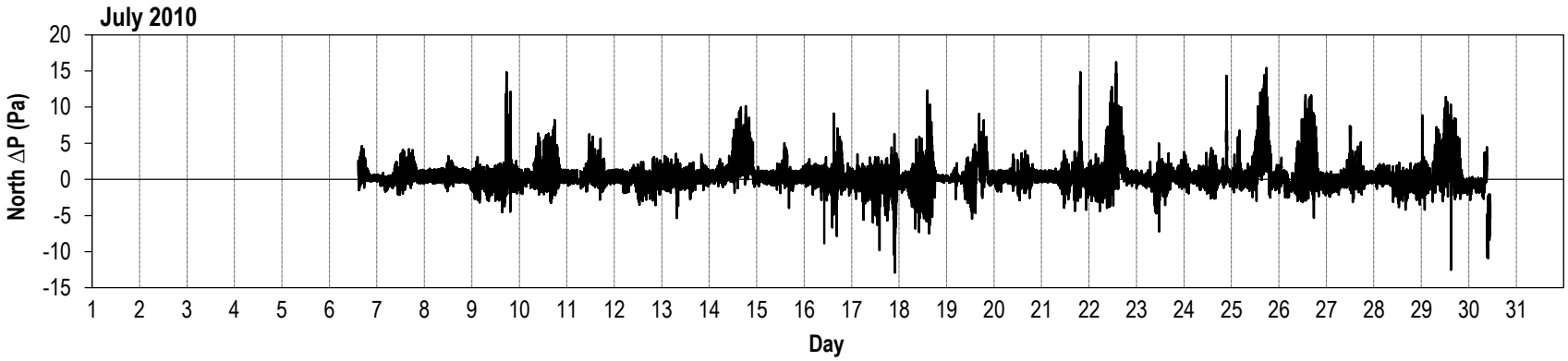
Pressure differential (Pa) across the north side of the test hut



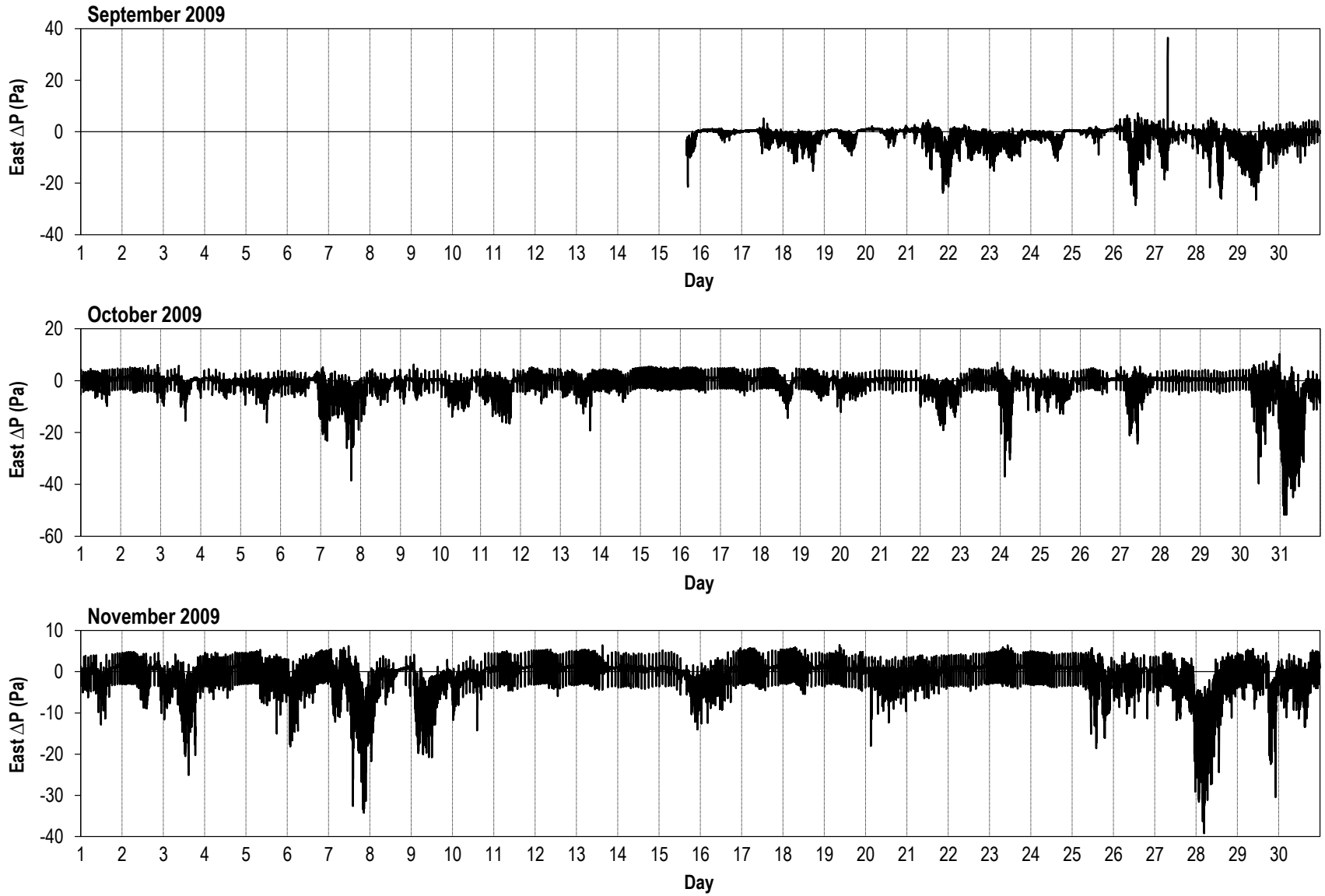

December 2009
North ΔP (Pa)
Day
January 2010
North ΔP (Pa)
Day
February 2010
North ΔP (Pa)
Day

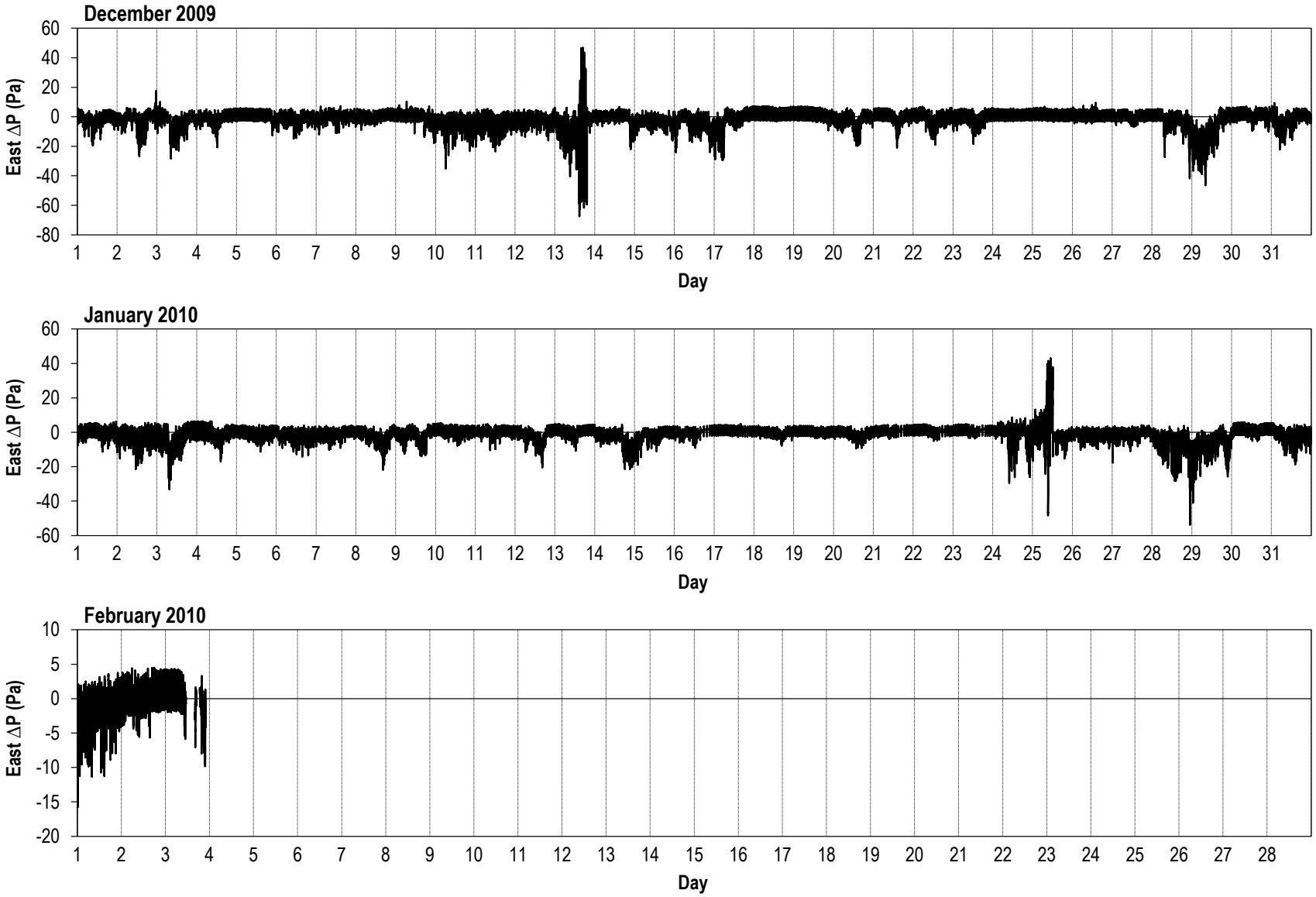


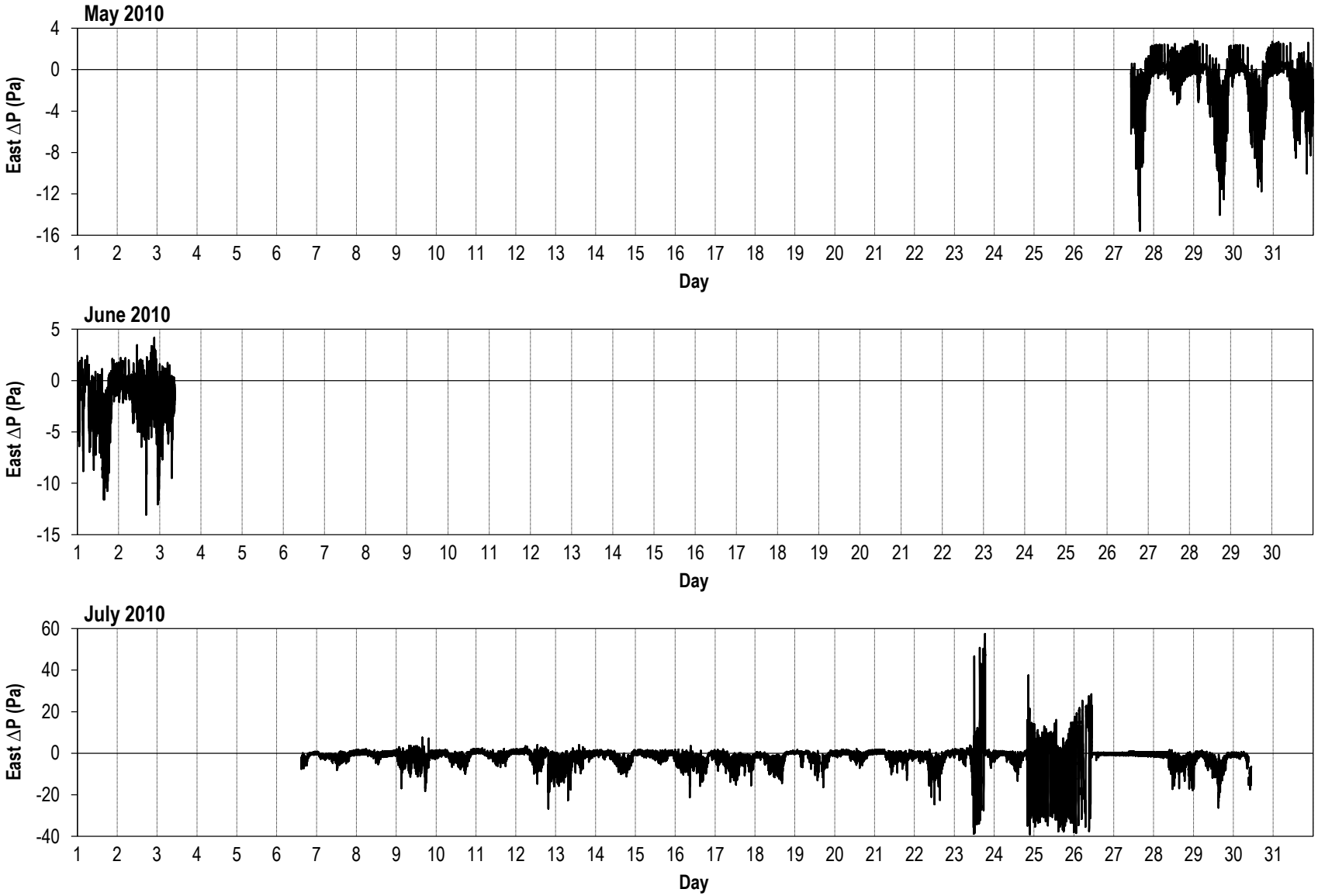

Notes:

a. Data missing due to equipment malfunction.
b. July measurements obtained while Syracuse University pressurized the test hut to characterize the air leakage of wall panels are not included in the graph above.

Pressure differential (Pa) across the east side of the test hut




December 2009
East ΔP (Pa)
Day
January 2010
East ΔP (Pa)
Day
February 2010
East ΔP (Pa)
Day

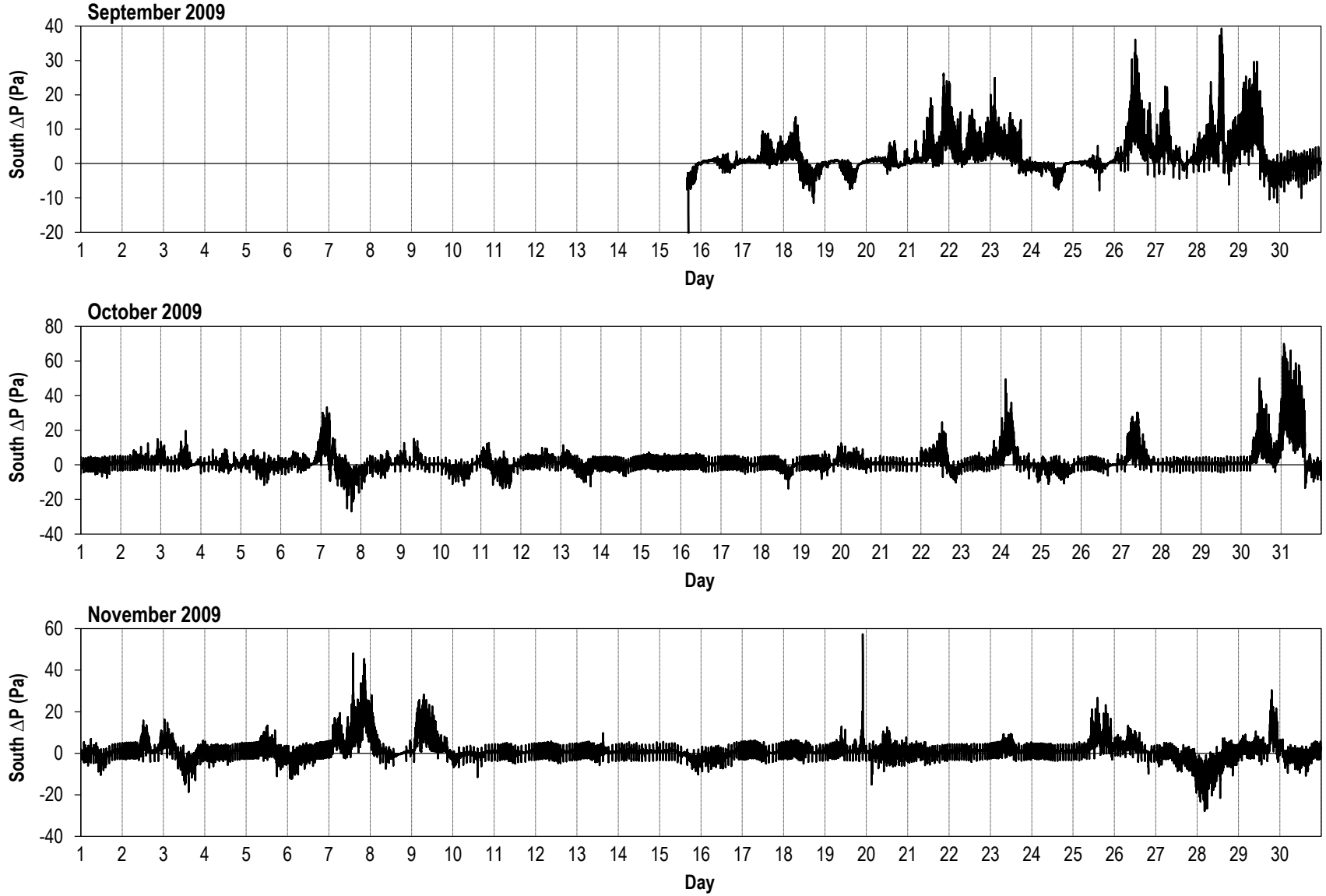


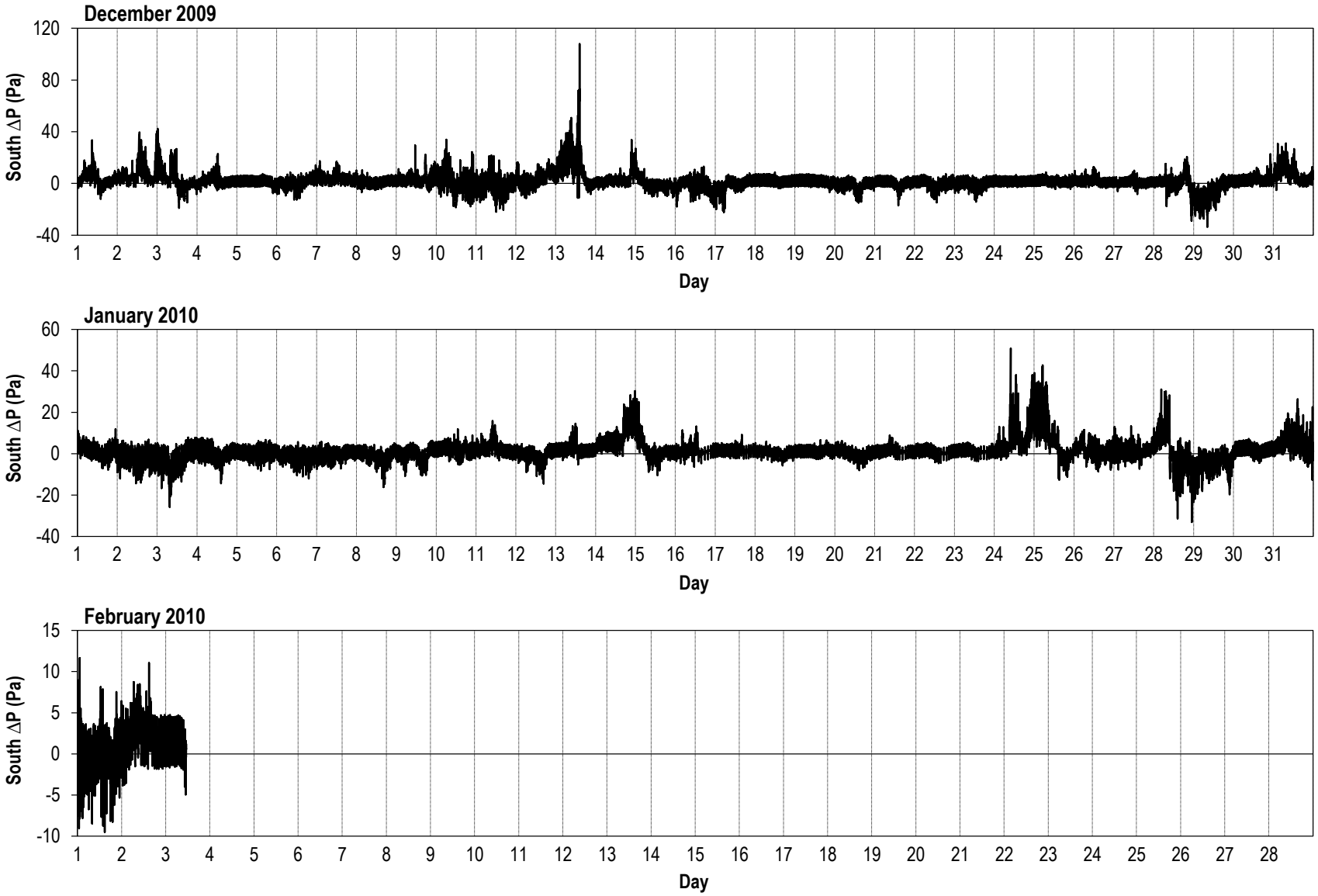

Notes:

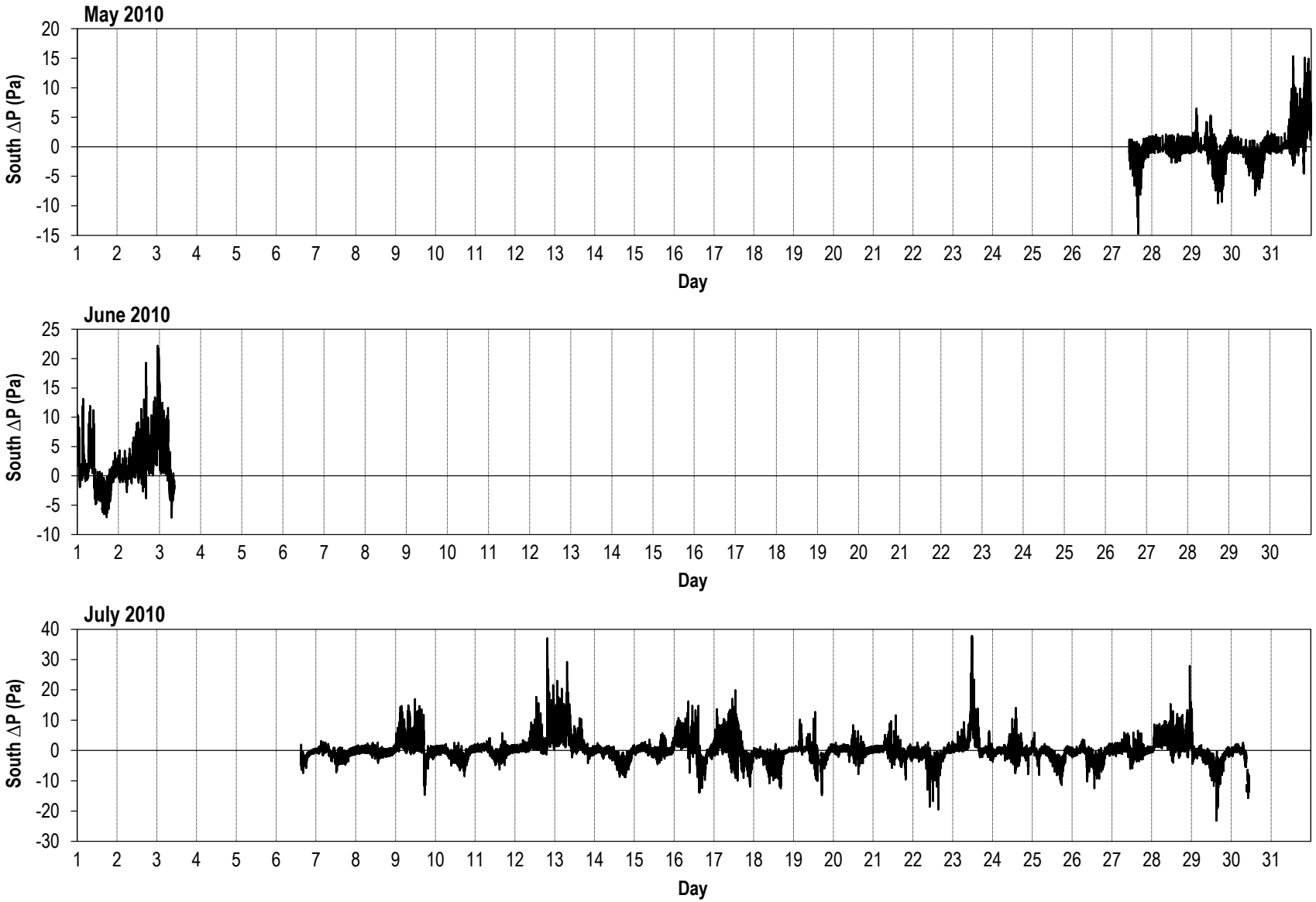
a. Data missing due to equipment malfunction.

b. July measurements obtained while Syracuse University pressurized the test hut to characterize the air leakage of wall panels are not included in the graph above.

Pressure differential (Pa) across the south side of the test hut



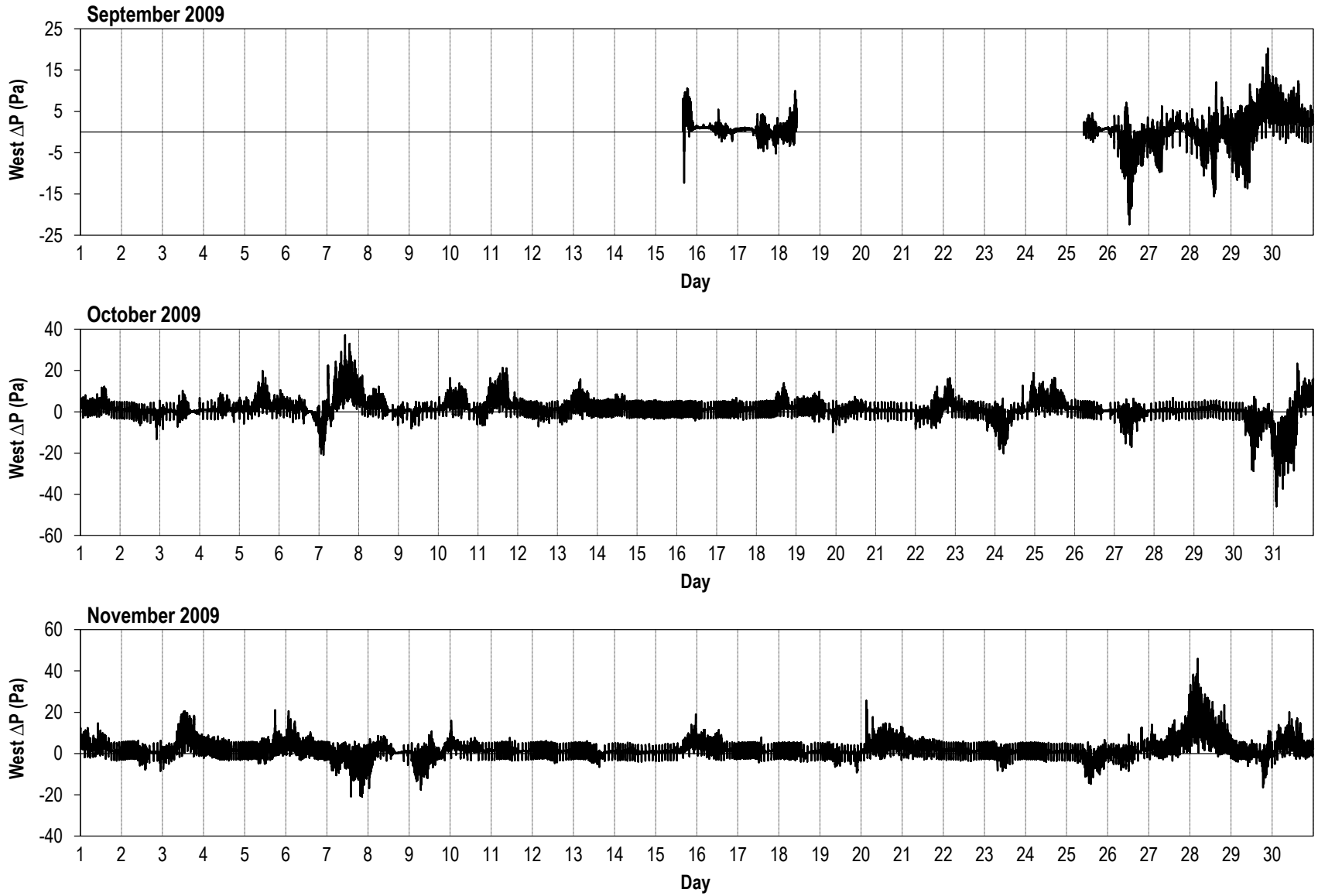

December 2009
South ΔP (Pa)
120
80
40
0
-40
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
January 2010
South ΔP (Pa)
60
40
20
0
-20
-40
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
February 2010
South ΔP (Pa)
15
10
5
0
-5
-10
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day

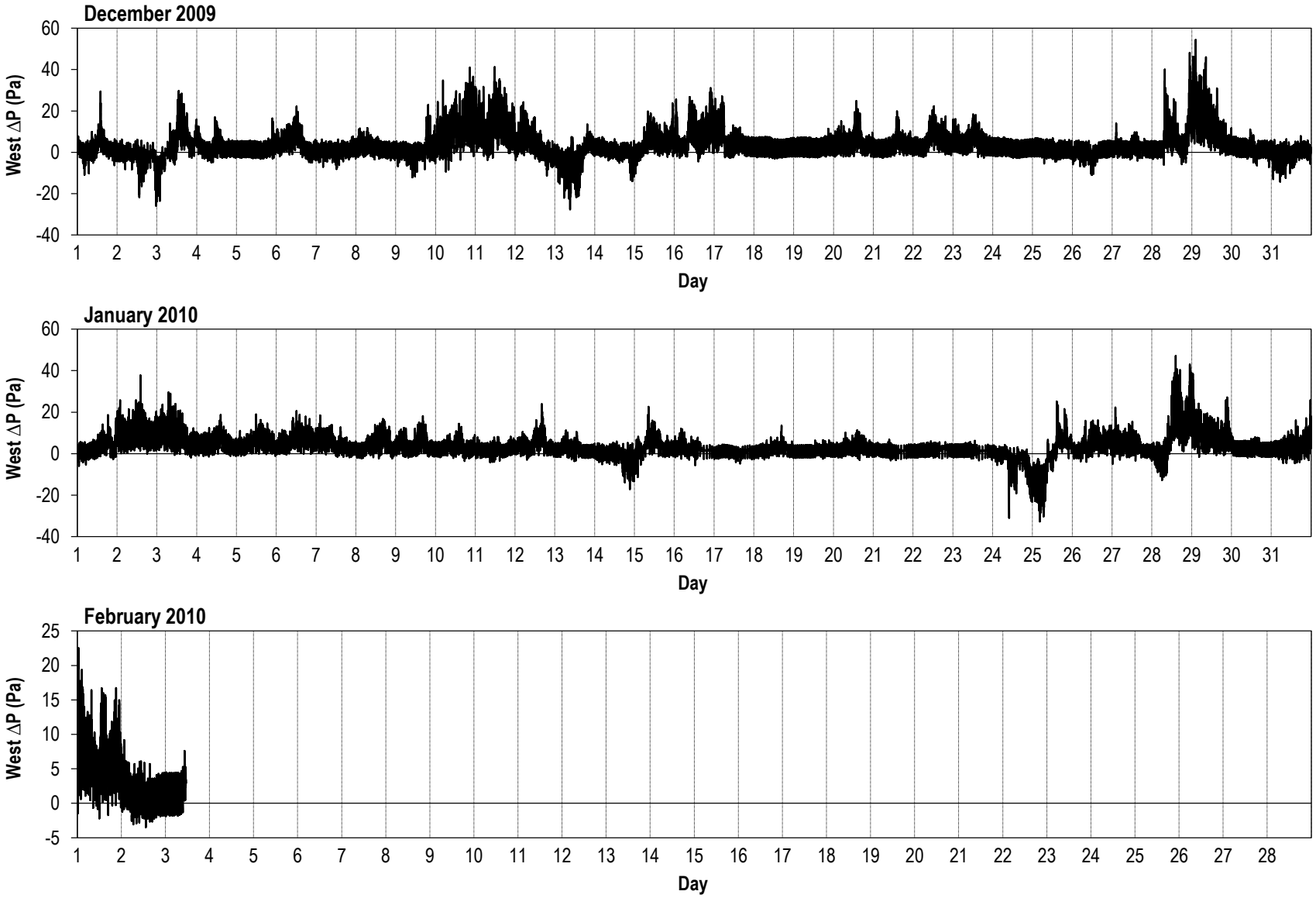


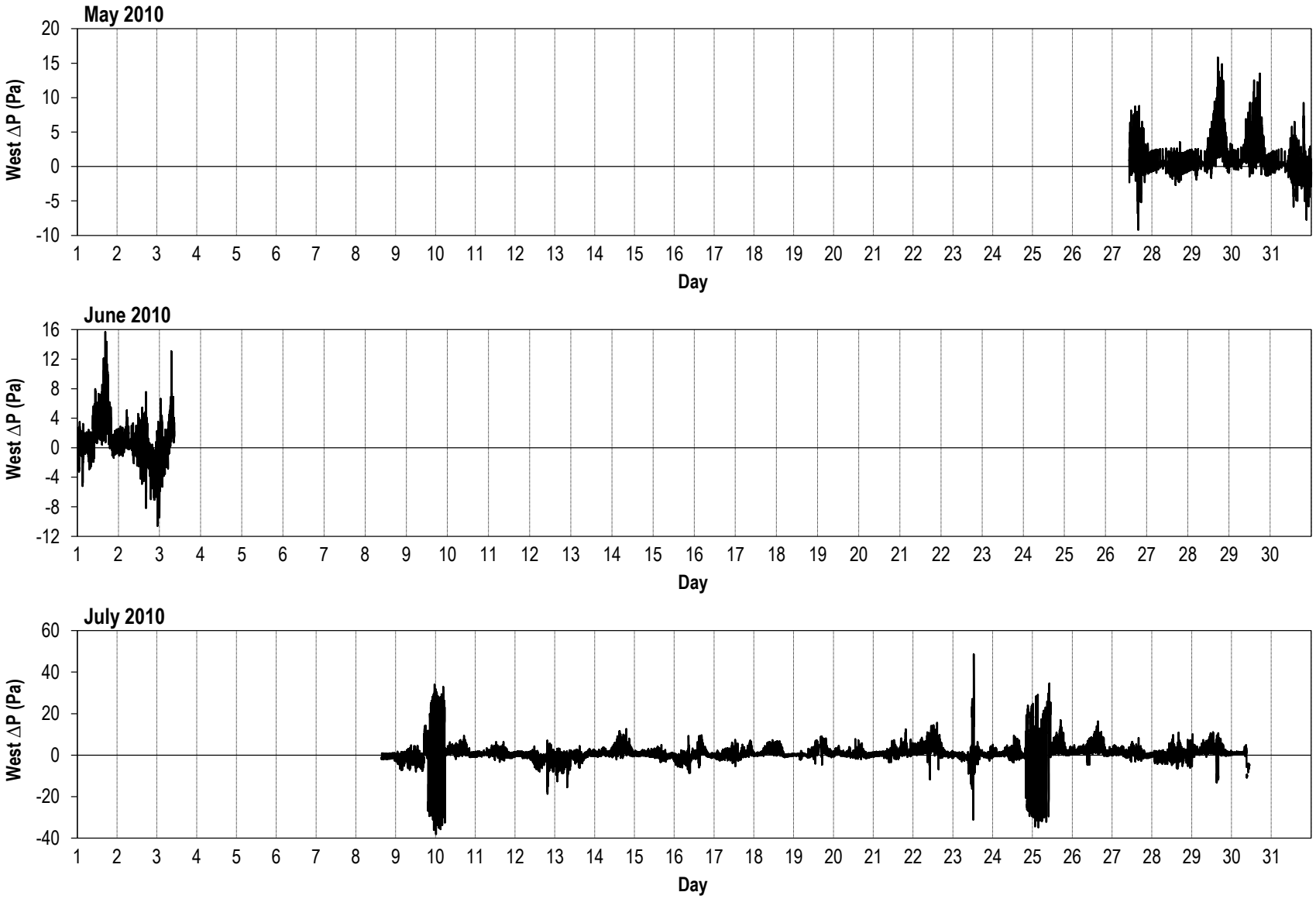

Notes:

a. Data missing due to equipment malfunction.
b. July measurements obtained while Syracuse University pressurized the test hut to characterize the air leakage of wall panels are not included in the graph above.

Pressure differential (Pa) across the west side of the test hut




December 2009
West ΔP (Pa)
60
40
20
0
-20
-40
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
January 2010
West ΔP (Pa)
60
40
20
0
-20
-40
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Day
February 2010
West ΔP (Pa)
25
20
15
10
5
0
-5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Day




Notes:

a. Data missing due to equipment malfunction.
b. July measurements obtained while Syracuse University pressurized the test hut to characterize the air leakage of wall panels are not included in the graph above.