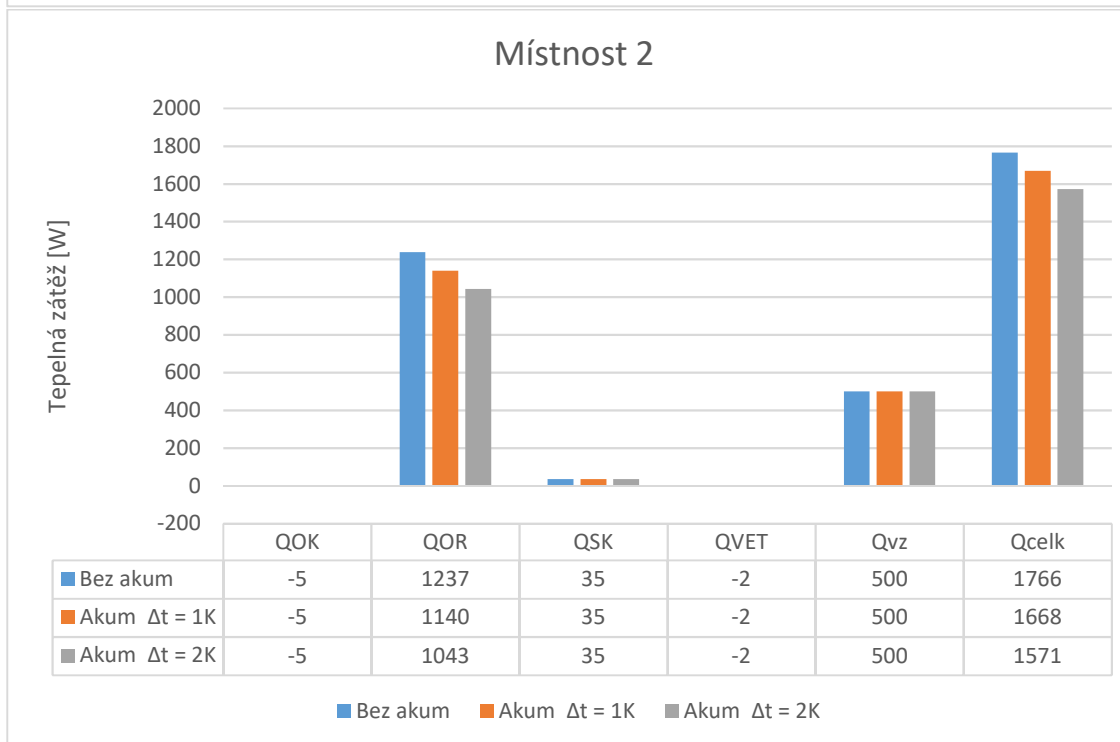
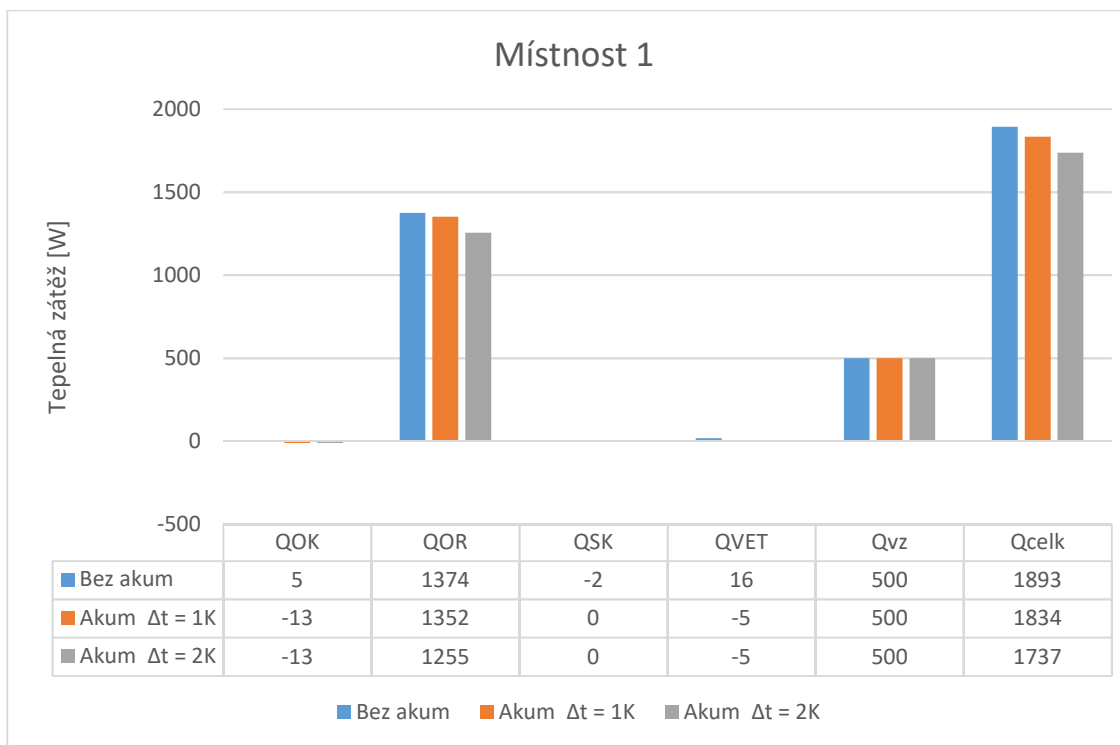
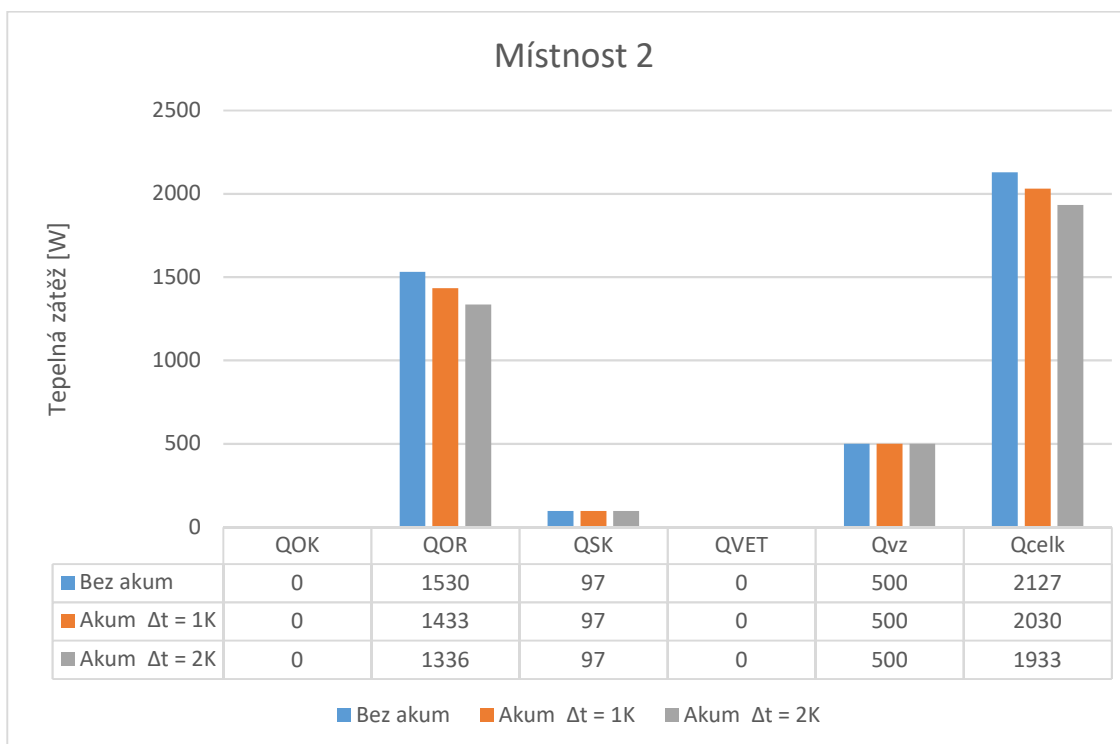
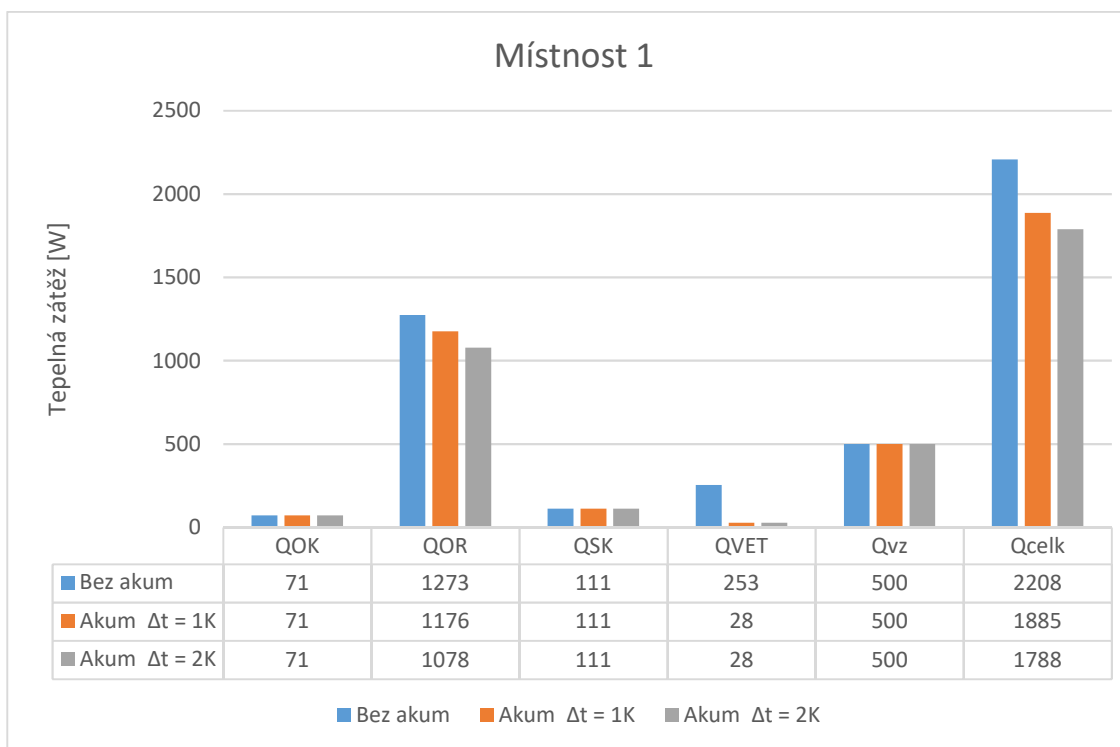


|  |           | Case 1a |      |       |           |       |      |       |  |
|--|-----------|---------|------|-------|-----------|-------|------|-------|--|
|  | Room 1    |         |      |       | Room 2    |       |      |       |  |
|  | Orientace | 180°    |      | Jih   | Orientace | 0°    |      | Sever |  |
|  | Měsíc     | Datum   | Čas  | Q max | Měsíc     | Datum | Čas  | Q max |  |
| <b>Bez akumulace</b>                         | Leden     | 25      | 12 h | 1628  | Leden     | 27    | 14 h | 781   |  |
|  | Únor      | 24      | 12 h | 1605  | Únor      | 23    | 13 h | 1047  |  |
|  | Březen    | 27      | 11 h | 1712  | Březen    | 25    | 12 h | 1392  |  |
|  | Duben     | 6       | 11 h | 1456  | Duben     | 19    | 11 h | 1582  |  |
|  | Květen    | 28      | 13 h | 1409  | Květen    | 28    | 12 h | 1737  |  |
|  | Červen    | 23      | 14 h | 1535  | Červen    | 21    | 12 h | 1699  |  |
|  | Červenec  | 2       | 14 h | 1757  | Červenec  | 11    | 13 h | 1766  |  |
|  | Srpen     | 26      | 12 h | 1836  | Srpen     | 2     | 13 h | 1694  |  |
|  | Září      | 25      | 13 h | 1832  | Září      | 15    | 12 h | 1519  |  |
|  | Říjen     | 16      | 13 h | 1893  | Říjen     | 1     | 12 h | 1152  |  |
|  | Listopad  | 25      | 12 h | 1780  | Listopad  | 7     | 12 h | 944   |  |
|  | Prosinec  | 23      | 12 h | 1668  | Prosinec  | 19    | 12 h | 712   |  |
| <b>Akumulace <math>\Delta t = 1</math> K</b> | Leden     | 25      | 11 h | 1831  | Leden     | 27    | 14 h | 684   |  |
|  | Únor      | 24      | 11 h | 1754  | Únor      | 23    | 13 h | 950   |  |
|  | Březen    | 13      | 11 h | 1761  | Březen    | 25    | 12 h | 1295  |  |
|  | Duben     | 6       | 11 h | 1531  | Duben     | 19    | 11 h | 1485  |  |
|  | Květen    | 28      | 12 h | 1494  | Květen    | 28    | 12 h | 1640  |  |
|  | Červen    | 21      | 12 h | 1448  | Červen    | 21    | 12 h | 1602  |  |
|  | Červenec  | 11      | 13 h | 1531  | Červenec  | 11    | 13 h | 1668  |  |
|  | Srpen     | 26      | 11 h | 1597  | Srpen     | 2     | 13 h | 1597  |  |
|  | Září      | 28      | 12 h | 1737  | Září      | 15    | 12 h | 1421  |  |
|  | Říjen     | 17      | 12 h | 1834  | Říjen     | 1     | 12 h | 1055  |  |
|  | Listopad  | 25      | 12 h | 1802  | Listopad  | 7     | 12 h | 846   |  |
|  | Prosinec  | 23      | 12 h | 1770  | Prosinec  | 19    | 12 h | 615   |  |
| <b>Akumulace <math>\Delta t = 2</math> K</b> | Leden     | 25      | 11 h | 1734  | Leden     | 27    | 14 h | 587   |  |
|  | Únor      | 24      | 11 h | 1657  | Únor      | 23    | 13 h | 852   |  |
|  | Březen    | 13      | 11 h | 1663  | Březen    | 25    | 12 h | 1198  |  |
|  | Duben     | 6       | 11 h | 1434  | Duben     | 19    | 11 h | 1387  |  |
|  | Květen    | 28      | 12 h | 1454  | Květen    | 28    | 12 h | 1542  |  |
|  | Červen    | 6       | 14 h | 1400  | Červen    | 21    | 12 h | 1505  |  |
|  | Červenec  | 11      | 13 h | 1434  | Červenec  | 11    | 13 h | 1571  |  |
|  | Srpen     | 26      | 11 h | 1499  | Srpen     | 2     | 13 h | 1499  |  |
|  | Září      | 28      | 12 h | 1640  | Září      | 15    | 12 h | 1324  |  |
|  | Říjen     | 17      | 12 h | 1737  | Říjen     | 1     | 12 h | 958   |  |
|  | Listopad  | 25      | 12 h | 1705  | Listopad  | 7     | 12 h | 749   |  |
|  | Prosinec  | 23      | 12 h | 1673  | Prosinec  | 19    | 12 h | 517   |  |


|  |                 | Case 2a   |           |          |             |                 |           |          |          |             |
|--|-----------------|-----------|-----------|----------|-------------|-----------------|-----------|----------|----------|-------------|
|  | Room 1          |           |           |          | Room 2      |                 |           |          |          |             |
|  | Orientace       | 270°      |           | Jih      | Orientace   | 90°             |           | Sever    |          |             |
|  | Měsíc           | Datum     | Čas       | Q max    | Měsíc       | Datum           | Čas       | Q max    |          |             |
| <b>Bez akumulace</b>                         | Leden           | 24        | 15        | h        | 1047        | Leden           | 24        | 9        | h        | 1344        |
|  | Únor            | 24        | 16        | h        | 1197        | Únor            | 24        | 9        | h        | 1600        |
|  | Březen          | 26        | 16        | h        | 1822        | Březen          | 31        | 8        | h        | 1916        |
|  | Duben           | 26        | 16        | h        | 1813        | Duben           | 26        | 8        | h        | 1968        |
|  | Květen          | 31        | 16        | h        | 1989        | Květen          | 21        | 8        | h        | 1989        |
|  | Červen          | 30        | 16        | h        | 2139        | Červen          | 30        | 8        | h        | 2093        |
|  | <b>Červenec</b> | <b>26</b> | <b>16</b> | <b>h</b> | <b>2208</b> | <b>Červenec</b> | <b>10</b> | <b>8</b> | <b>h</b> | <b>2127</b> |
|  | Srpen           | 26        | 16        | h        | 2129        | Srpen           | 11        | 8        | h        | 2050        |
|  | Září            | 2         | 16        | h        | 2086        | Září            | 1         | 8        | h        | 1928        |
|  | Říjen           | 16        | 16        | h        | 1743        | Říjen           | 6         | 9        | h        | 1599        |
|  | Listopad        | 25        | 15        | h        | 1217        | Listopad        | 30        | 9        | h        | 1182        |
|  | Prosinec        | 23        | 15        | h        | 1034        | Prosinec        | 24        | 9        | h        | 1018        |
| <b>Akumulace <math>\Delta t = 1</math> K</b> | Leden           | 24        | 16        | h        | 1157        | Leden           | 24        | 9        | h        | 1247        |
|  | Únor            | 24        | 16        | h        | 1349        | Únor            | 24        | 9        | h        | 1503        |
|  | Březen          | 26        | 16        | h        | 1679        | Březen          | 31        | 8        | h        | 1818        |
|  | Duben           | 26        | 16        | h        | 1716        | Duben           | 26        | 8        | h        | 1871        |
|  | Květen          | 31        | 16        | h        | 1825        | Květen          | 21        | 8        | h        | 1892        |
|  | Červen          | 30        | 16        | h        | 1865        | Červen          | 30        | 8        | h        | 1996        |
|  | <b>Červenec</b> | <b>26</b> | <b>16</b> | <b>h</b> | <b>1885</b> | <b>Červenec</b> | <b>10</b> | <b>8</b> | <b>h</b> | <b>2030</b> |
|  | Srpen           | 26        | 16        | h        | 1850        | Srpen           | 11        | 8        | h        | 1953        |
|  | Září            | 2         | 16        | h        | 1790        | Září            | 1         | 8        | h        | 1831        |
|  | Říjen           | 5         | 16        | h        | 1631        | Říjen           | 6         | 9        | h        | 1502        |
|  | Listopad        | 9         | 16        | h        | 1234        | Listopad        | 30        | 9        | h        | 1085        |
|  | Prosinec        | 23        | 15        | h        | 1071        | Prosinec        | 24        | 9        | h        | 920         |
| <b>Akumulace <math>\Delta t = 2</math> K</b> | Leden           | 24        | 16        | h        | 1060        | Leden           | 24        | 9        | h        | 1149        |
|  | Únor            | 24        | 16        | h        | 1252        | Únor            | 24        | 9        | h        | 1406        |
|  | Březen          | 26        | 16        | h        | 1582        | Březen          | 31        | 8        | h        | 1721        |
|  | Duben           | 26        | 16        | h        | 1619        | Duben           | 26        | 8        | h        | 1774        |
|  | Květen          | 31        | 16        | h        | 1728        | Květen          | 21        | 8        | h        | 1795        |
|  | Červen          | 30        | 16        | h        | 1768        | Červen          | 30        | 8        | h        | 1899        |
|  | <b>Červenec</b> | <b>26</b> | <b>16</b> | <b>h</b> | <b>1788</b> | <b>Červenec</b> | <b>10</b> | <b>8</b> | <b>h</b> | <b>1933</b> |
|  | Srpen           | 26        | 16        | h        | 1753        | Srpen           | 11        | 8        | h        | 1856        |
|  | Září            | 2         | 16        | h        | 1693        | Září            | 1         | 8        | h        | 1734        |
|  | Říjen           | 5         | 16        | h        | 1534        | Říjen           | 6         | 9        | h        | 1404        |
|  | Listopad        | 9         | 16        | h        | 1137        | Listopad        | 30        | 9        | h        | 988         |
|  | Prosinec        | 23        | 15        | h        | 974         | Prosinec        | 24        | 9        | h        | 823         |







DP\_IDA\_case 1a: D:\Dokumenty\OneDrive\Diplomová práce\DP\_IDA\_case 1a.idm (Cooling-Report)



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## Cooling Load Report

| Project      |  | Building                 |                                       |
|--------------|--|--------------------------|---------------------------------------|
| Customer     |  | Model floor area         | 28.5 m <sup>2</sup>                   |
| Created by   | Hai Nguyen Dac                             | Model volume             | 77.0 m <sup>3</sup>                   |
| Location     | Denver (Int. Airport)_725650 (ASHRAE 2013) | Model ground area        | 0.0 m <sup>2</sup>                    |
| Climate file | DRYCOLDTMY                                 | Model envelope area      | 16.2 m <sup>2</sup>                   |
| Case         | DP_IDA_case 1a                             | Window/Envelope          | 31.1 %                                |
| Simulated    | 10. 6. 2018 16:13:18                       | Average U-value          | 1.262 W/(m <sup>2</sup> K)            |
|              |  | Envelope area per Volume | 0.2105 m <sup>2</sup> /m <sup>3</sup> |

### Zone Cooling Loads

| Zone   | Group | Area, m <sup>2</sup> | Heat removed*, W | Time         | Room unit cool, W | Dry vent cool**, W | Temp., °C | Sup airflow, L/s |
|--------|-------|----------------------|------------------|--------------|-------------------|--------------------|-----------|------------------|
| r1     | 1     | 12.0                 | 1336.0           | 17 Oct 15:10 | 1393.0            | 1388.0             | 25.0      | 26.0             |
| Chodba | 1     | 4.5                  | 272.8            | 01 Oct 07:19 | 0.0               | 520.6              | 20.0      | 10.9             |
| r2     | 1     | 12.0                 | 744.3            | 02 Jul 11:06 | 986.5             | 1388.0             | 25.0      | 25.8             |

\* Maximum heat (incl. latent) removed by air and room units  
 \*\* Maximum sensible heat removed by mechanical supply air

### Air Handling Unit Cooling Loads

| Air Handling Unit | Cooling*, W | Time | AHU cold recovery, W |
|-------------------|-------------|------|----------------------|
| AHU               | 0.0         |      | 0.0                  |

\* Total (sensible and latent) coil load


### Total for Building

|              | Max., kW | Time         |
|--------------|----------|--------------|
| Zone cooling | 2.2      |              |
| AHU cooling  | 0.0      |              |
| Total        | 2.2      | 02 Sep 14:38 |

[+ Click to show zone level diagrams](#)

**IDA Indoor Climate and Energy**  
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DP\_IDA\_case 2a: D:\Dokumenty\OneDrive\Diplomová práce\DP\_IDA\_case 2a.idm (Cooling-Report)



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## Cooling Load Report

| Project      |  | Building                 |                                       |
|--------------|--|--------------------------|---------------------------------------|
| Customer     |  | Model floor area         | 28.5 m <sup>2</sup>                   |
| Created by   | Hai Nguyen Dac                             | Model volume             | 77.0 m <sup>3</sup>                   |
| Location     | Denver (Int. Airport)_725650 (ASHRAE 2013) | Model ground area        | 0.0 m <sup>2</sup>                    |
| Climate file | DRYCOLDTMY                                 | Model envelope area      | 16.2 m <sup>2</sup>                   |
| Case         | DP_IDA_case 2a                             | Window/Envelope          | 31.1 %                                |
| Simulated    | 9. 6. 2018 22:34:08                        | Average U-value          | 1.655 W/(m <sup>2</sup> K)            |
|              |  | Envelope area per Volume | 0.2105 m <sup>2</sup> /m <sup>3</sup> |

### Zone Cooling Loads

| Zone   | Group | Area, m <sup>2</sup> | Heat removed*, W | Time         | Room unit cool, W | Dry vent cool**, W | Temp., °C | Sup airflow, L/s |
|--------|-------|----------------------|------------------|--------------|-------------------|--------------------|-----------|------------------|
| r2     | 1     | 12.0                 | 1470.0           | 02 Jul 10:40 | 1606.0            | 1388.0             | 25.0      | 26.0             |
| Chodba | 1     | 4.5                  | 276.4            | 01 Oct 07:19 | 0.0               | 520.7              | 21.9      | 10.8             |
| r1     | 1     | 12.0                 | 1254.0           | 02 Jul 07:20 | 1445.0            | 1388.0             | 25.3      | 26.8             |

\* Maximum heat (incl. latent) removed by air and room units  
 \*\* Maximum sensible heat removed by mechanical supply air

### Air Handling Unit Cooling Loads

| Air Handling Unit | Cooling*, W | Time | AHU cold recovery, W |
|-------------------|-------------|------|----------------------|
| AHU               | 0.0         |      | 0.0                  |

\* Total (sensible and latent) coil load

### Total for Building

|              | Max., kW | Time         |
|--------------|----------|--------------|
| Zone cooling | 2.8      |              |
| AHU cooling  | 0.0      |              |
| Total        | 2.8      | 02 Jul 11:03 |

[+ Click to show zone level diagrams](#)

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