

**CASE STUDY APPLICATION:**

**Commercial Testing Laboratory**

**PRODUCT SPOTLIGHT:**

**DOAS’s Modulating Capacity – Precise IAQ**

A RuppAir Dedicated Outdoor Air System (DOAS) unit was commissioned this past February for a commercial laboratory in Maryland. The existing space conditions prior to the installation were poor, with overpowering Formaldehyde smell. The DOAS quickly and significantly improved the indoor air quality by bringing in 100% fresh outside air with precise conditioning.

Over 3 months of continuous operation since commissioning:

- Maintained space temperature within the 68°F and 73°F set points 97% of the time
- Space temperatures never exceeded +/- 2°F of the range
- Cooling with reheat functionality maintained the space relative humidity below the desired 58% RH set point 97% of the time

DOAS’s operation has spanned February through early May. Traditional On/Off units have difficulty meeting the lower demands of this transition season due to excessive cycling. DOAS’s modulating heating and cooling capabilities turn down to meet this “shoulder season” demand.

- Combined heating and cooling runtimes of 38 and 13 days, respectively
- Average compressor speed at 38% of full speed
- Average compressor runtime of 70 minutes – cycling reduction protects the unit and extends its useful life

**CONCLUSION:**

RuppAir’s DOAS unit met the laboratory’s tight space conditioning demands while also delivering fresh outside air. The employees commented on the drastic difference in indoor air quality and the manager was very happy with the improvement.

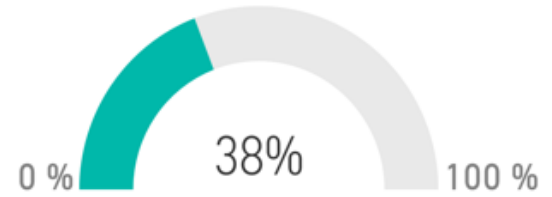
Space Set Points: Heating - 68 °F | Cooling - 73 °F



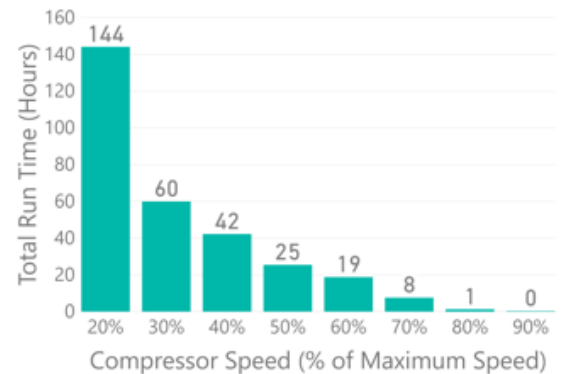
**Space Conditions**

- Cool - 67°F
- Warm - 73°F
- Warm - 74°F
- Within Set Points

**Percent of Time at Space Condition Since Commissioning**



**Average Compressor Speed**



**Compressor Speed Distribution**



**Installed DOAS at the Laboratory**