

iSeries Low Ambient Cooling Performance

Cooling Application Limits:

Outdoor Temperature: -15°F to +122°F
 Indoor Temperature: +50°F to +90°F

There are many applications that require cooling when outdoor temperatures are below 50°F – computer equipment rooms, wine cellars and display cases among others. The Unico iSeries line of products is perfect for these applications.

Unico laboratory testing has shown that iSeries ductless indoor units can achieve 100% of rated capacity at outdoor temperatures down to +5°F, and at least 65% of rated capacity down to -15°F. At more moderate temperatures, the system can achieve greater than 100% of rated capacity, as shown in *Figure 1*.

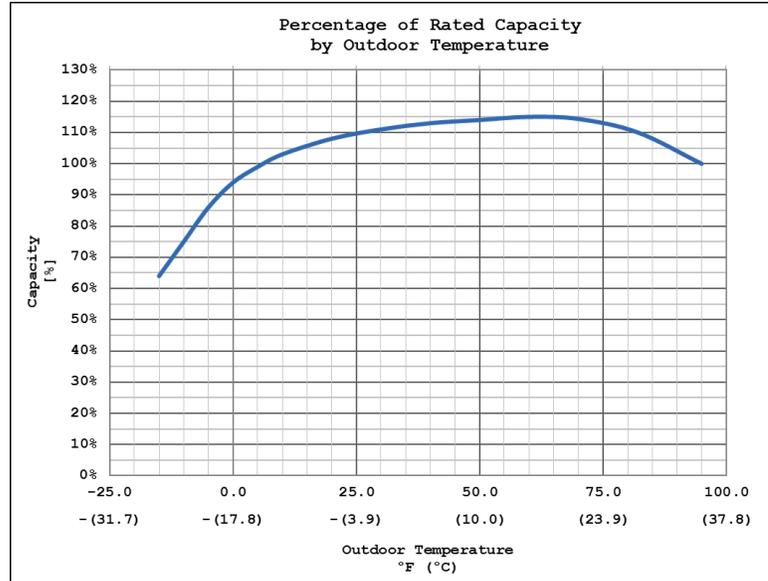


Figure 1. Data Based on testing of the IS24G065 with IS24MPB.

A wind protection baffle is not required on iSeries systems.

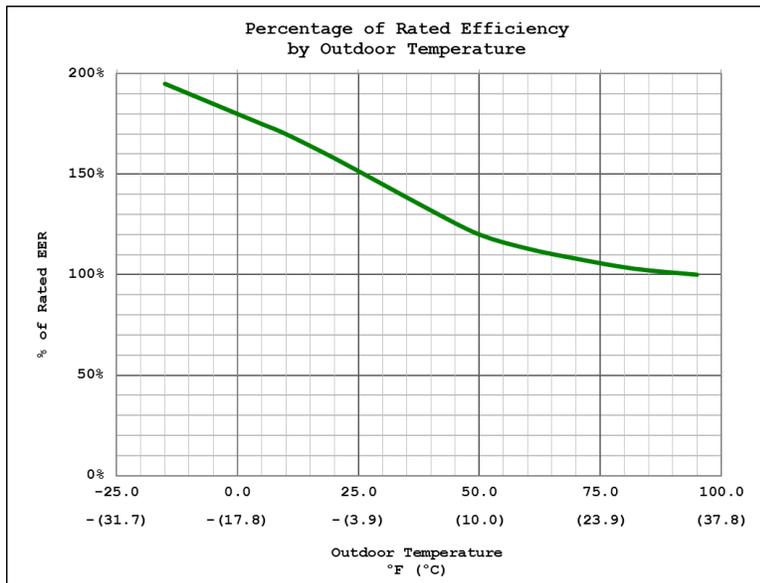


Figure 2. Typical efficiency(EER) based on outdoor temperature.

Low-ambient cooling with the iSeries is efficient. As shown in *Figure 2*, the Energy Efficiency Ratio(EER) of the product at -15°F is nearly double the rated value at 95°F. For temperatures below 67°F, EER is a better indicator of efficiency than SEER because SEER is only based on performance between temperatures of 67°F and 95°F.

See *Table 1* to determine the expected capacity and efficiency of your system at temperatures between +60°F and -15°F.

For installation instructions and indoor-outdoor unit combinations, consult Bulletins 30-121 and 30-122.

The combination of performance and efficiency demonstrated by the Unico iSeries at low outdoor temperatures makes it ideal for any application where low ambient cooling is required.

| Extended Performance Data for Low-Ambient Cooling Applications | | | | | | | | | | | | | | |
|--|--|------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Outdoor Temperature | | | -15°F | -10°F | -5°F | 0°F | 5°F | 10°F | 20°F | 30°F | 40°F | 50°F | 60°F | |
| IS18G050 | U1218L-1EC2A* | Capacity | Btuh | 8,600 | 10,100 | 11,600 | 12,600 | 13,300 | 13,900 | 14,500 | 14,900 | 15,200 | 15,300 | 15,500 |
| | | Efficiency | Btu/W-hr | 14.3 | 13.9 | 13.5 | 13.2 | 12.8 | 12.4 | 11.6 | 10.6 | 9.7 | 8.8 | 8.3 |
| | Ducted Indoor Units | Capacity | Btuh | 8,600 | 10,100 | 11,600 | 12,600 | 13,300 | 13,900 | 14,500 | 14,900 | 15,200 | 15,300 | 15,500 |
| | | Efficiency | Btu/W-hr | 14.4 | 14.0 | 13.6 | 13.3 | 12.9 | 12.5 | 11.6 | 10.7 | 9.7 | 8.8 | 8.3 |
| | Mixed Ducted and Non-Ducted Indoor Units | Capacity | Btuh | 9,000 | 10,600 | 12,100 | 13,300 | 14,000 | 14,600 | 15,300 | 15,700 | 16,000 | 16,100 | 16,300 |
| | | Efficiency | Btu/W-hr | 15.0 | 14.6 | 14.2 | 13.8 | 13.5 | 13.1 | 12.1 | 11.1 | 10.1 | 9.2 | 8.7 |
| | Non-Ducted Indoor Units | Capacity | Btuh | 9,500 | 11,100 | 12,700 | 13,900 | 14,700 | 15,200 | 16,000 | 16,400 | 16,700 | 16,900 | 17,000 |
| | | Efficiency | Btu/W-hr | 15.7 | 15.3 | 14.9 | 14.5 | 14.1 | 13.7 | 12.7 | 11.7 | 10.6 | 9.7 | 9.1 |
| IS24G065 | M2430CL1-A + M2430BL1-EA2 | Capacity | Btuh | 11,900 | 13,900 | 15,900 | 17,400 | 18,400 | 19,100 | 20,000 | 20,600 | 21,000 | 21,200 | 21,300 |
| | | Efficiency | Btu/W-hr | 15.8 | 15.4 | 15.0 | 14.6 | 14.2 | 13.8 | 12.8 | 11.8 | 10.7 | 9.7 | 9.2 |
| | Ducted Indoor Units | Capacity | Btuh | 12,700 | 14,900 | 17,100 | 18,700 | 19,700 | 20,400 | 21,400 | 22,000 | 22,400 | 22,600 | 22,800 |
| | | Efficiency | Btu/W-hr | 16.8 | 16.4 | 16.0 | 15.5 | 15.1 | 14.7 | 13.6 | 12.5 | 11.4 | 10.3 | 9.7 |
| | Mixed Ducted and Non-Ducted Indoor Units | Capacity | Btuh | 13,400 | 15,700 | 18,000 | 19,600 | 20,700 | 21,500 | 22,600 | 23,200 | 23,600 | 23,800 | 24,000 |
| | | Efficiency | Btu/W-hr | 19.3 | 18.8 | 18.3 | 17.8 | 17.3 | 16.8 | 15.6 | 14.3 | 13.0 | 11.8 | 11.1 |
| | Non-Ducted Indoor Units | Capacity | Btuh | 14,000 | 16,500 | 18,900 | 20,600 | 21,700 | 22,600 | 23,700 | 24,400 | 24,800 | 25,000 | 25,300 |
| | | Efficiency | Btu/W-hr | 21.7 | 21.1 | 20.6 | 20.0 | 19.5 | 18.9 | 17.6 | 16.1 | 14.7 | 13.3 | 12.5 |
| IS30G080 | M2430CL1-A + M2430BL1-EA2 | Capacity | Btuh | 15,200 | 17,800 | 20,400 | 22,300 | 23,500 | 24,500 | 25,700 | 26,400 | 26,800 | 27,100 | 27,300 |
| | | Efficiency | Btu/W-hr | 15.2 | 14.8 | 14.4 | 14.0 | 13.6 | 13.2 | 12.3 | 11.3 | 10.2 | 9.3 | 8.8 |
| | Ducted Indoor Units | Capacity | Btuh | 15,100 | 17,700 | 20,200 | 22,100 | 23,300 | 24,300 | 25,400 | 26,100 | 26,600 | 26,900 | 27,100 |
| | | Efficiency | Btu/W-hr | 15.1 | 14.7 | 14.3 | 13.9 | 13.5 | 13.1 | 12.2 | 11.2 | 10.2 | 9.3 | 8.7 |
| | Mixed Ducted and Non-Ducted Indoor Units | Capacity | Btuh | 16,400 | 19,200 | 22,100 | 24,100 | 25,400 | 26,400 | 27,700 | 28,500 | 29,000 | 29,200 | 29,500 |
| | | Efficiency | Btu/W-hr | 17.7 | 17.2 | 16.8 | 16.3 | 15.9 | 15.4 | 14.3 | 13.1 | 12.0 | 10.9 | 10.2 |
| | Non-Ducted Indoor Units | Capacity | Btuh | 17,700 | 20,800 | 23,900 | 26,100 | 27,500 | 28,600 | 30,000 | 30,800 | 31,400 | 31,600 | 31,900 |
| | | Efficiency | Btu/W-hr | 20.4 | 19.9 | 19.4 | 18.9 | 18.3 | 17.8 | 16.5 | 15.2 | 13.8 | 12.6 | 11.8 |
| IS36G110 | M3036CL1-A + M3036BL1-EA2 | Capacity | Btuh | 18,600 | 21,900 | 25,100 | 27,400 | 28,900 | 30,000 | 31,500 | 32,400 | 32,900 | 33,200 | 33,500 |
| | | Efficiency | Btu/W-hr | 14.5 | 14.1 | 13.7 | 13.4 | 13.0 | 12.6 | 11.7 | 10.8 | 9.8 | 8.9 | 8.4 |
| | Ducted Indoor Units | Capacity | Btuh | 18,800 | 22,000 | 25,200 | 27,600 | 29,100 | 30,200 | 31,700 | 32,600 | 33,200 | 33,500 | 33,800 |
| | | Efficiency | Btu/W-hr | 14.6 | 14.2 | 13.8 | 13.5 | 13.1 | 12.7 | 11.8 | 10.8 | 9.9 | 9.0 | 8.4 |
| | Mixed Ducted and Non-Ducted Indoor Units | Capacity | Btuh | 20,600 | 24,100 | 27,600 | 30,200 | 31,800 | 33,100 | 34,700 | 35,700 | 36,300 | 36,700 | 37,000 |
| | | Efficiency | Btu/W-hr | 16.3 | 15.9 | 15.5 | 15.1 | 14.7 | 14.2 | 13.2 | 12.1 | 11.0 | 10.0 | 9.4 |
| | Non-Ducted Indoor Units | Capacity | Btuh | 22,400 | 26,200 | 30,100 | 32,900 | 34,600 | 36,000 | 37,800 | 38,800 | 39,500 | 39,900 | 40,200 |
| | | Efficiency | Btu/W-hr | 18.1 | 17.6 | 17.2 | 16.7 | 16.2 | 15.8 | 14.6 | 13.4 | 12.2 | 11.1 | 10.5 |

Table 1. Extended Performance Data for Low-Ambient Cooling Applications by Outdoor Temperature.

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