

TECHNICAL SPECIFICATIONS



PREMIUM 22 SEER2 DUCTLESS HEAT PUMP



FEATURES AND BENEFITS

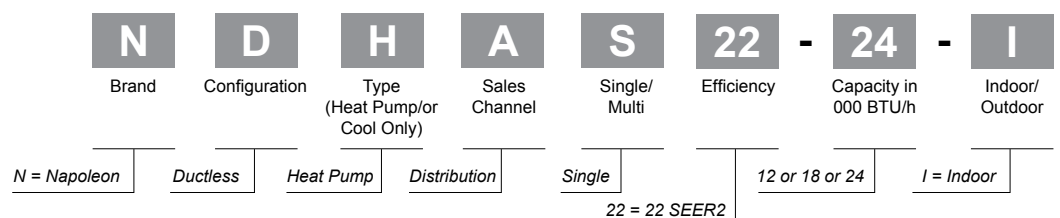
- Efficient and contemporary looking indoor units
- Available capacities : 12,000 BTU/h, 18,000 BTU/h, 24,000 BTU/h
- Energy Star & NEEP certified
- All indoor units compatible to Multizone Outdoor unit
- Operating range -25°C (-13°F) to 50°C (122°F)
- Wi-Fi Capable (NDWC-KT)
- Includes remote control for conveniently adjusting the settings for Sleep Mode, LED light, and room temperature, as well as turning the unit on/off
- Higher efficiency rating, 22 SEER2

ENVIRONMENTALLY RESPONSIBLE

Premium 22 SEER2 Ductless Heat Pumps are ranked among the most energy-efficient and cost-effective ways of heating and cooling a home. Napoleon's ductless heat pumps use a high efficiency direct current compressor motor for a smooth, quiet operation that reduces energy consumption.

NOMENCLATURE

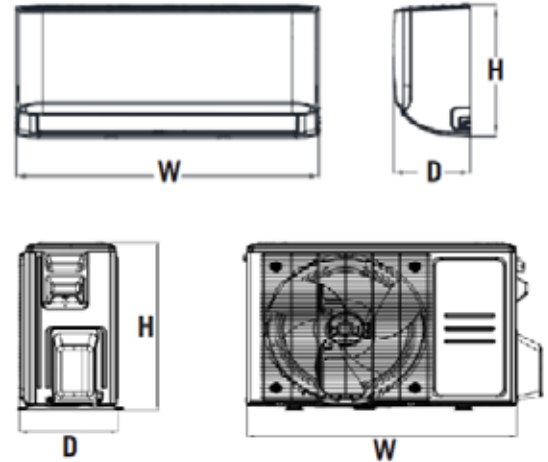
NDHAS22 - 22 SEER2
HEAT PUMP SERIES



DUCTLESS SPECIFICATIONS

DIMENSIONS

| INDOOR UNIT INFORMATION | NDHAS22-12-I | NDHAS22-18-I | NDHAS22-24-I |
|--------------------------|--------------|--------------|--------------|
| Width (mm/in) | 802/31.6 | 1083/42.64 | 1082/42.64 |
| Depth (mm/in) | 200/7.87 | 244/9.61 | 234/9.22 |
| Height (mm/in) | 295/11.61 | 315/13.23 | 337/13.29 |
| Net weight (lb/kg) | 18.7/8.5 | 29.54/13.4 | 29.98/13.6 |
| Gross weight (lb/kg) | 24.25/11 | 37.48/17 | 38.14/17.3 |
| OUTDOOR UNIT INFORMATION | NDHAS22-12-O | NDHAS22-18-O | NDHAS22-24-O |
| Width (mm/in) | 765/30.12 | 890/35.04 | 946/37.24 |
| Depth (mm/in) | 303/11.93 | 342/13.46 | 410/16.14 |
| Height (mm/in) | 555/21.85 | 673/26.5 | 810/31.89 |
| Net weight (lb/kg) | 63.71/28.9 | 94.36/42.8 | 124.78/56.6 |
| Gross weight (lb/kg) | 69/31.3 | 100.97/45.8 | 134.92/61.2 |



SYSTEM DATA

| | NDHAS22-12 | NDHAS22-18 | NDHAS22-24 |
|--|---|---|---|
| | NDHAS22-12 Ductless Heat Pump - Shipped in 2 PCS. NDHAS22-12-I, NDHAS22-12-O | NDHAS22-18 Ductless Heat Pump - Shipped in 2 PCS. NDHAS22-18-I, NDHAS22-18-O | NDHAS22-24 Ductless Heat Pump - Shipped in 2 PCS. NDHAS22-24-I, NDHAS22-24-O |
| AHRI Number | 207683230 | 207683231 | 207683232 |
| Indoor SKU | NDHAS22-12-I | NDHAS22-18-I | NDHAS22-24-I |
| Outdoor SKU | NDHAS22-12-O | NDHAS22-18-O | NDHAS22-24-O |
| Cooling Capacity Rated BTU (Range) | 12000 (3600~13300) | 18000 (1980~19500) | 24000 (9200~25000) |
| Heating Capacity Rated BTU (Range) | 12000 (4500~13500) | 18000 (6620~21200) | 26000 (10350~26410) |
| SEER2 | 23.1 | 24 | 21 |
| EER2 | 13 | 13.5 | 13 |
| HSPF2 (Region IV) | 10.5 | 10.5 | 8.5 |
| HSPF2 (Region V) | 8 | 7.9 | 6.3 |
| Heating at 17F (-8.33°C) BTU | 12000 | 14880 | 19960 |
| Heating at 5F (-15°C) BTU | 9500 | 10140 | 17600 |
| Heating at 5F (-15°C) COP | 1.8 | 1.8 | 2.04 |
| Gas Pipe (mm/inch) | 12.7 (1/2) | 12.7 (1/2) | 19 (3/4) |
| Liquid Pipe (mm/in) | 6.35 (1/4) | 6.35 (1/4) | 9.52 (3/8) |
| Max. refrigerant pipe length (m) | 25 | 30 | 50 |
| Max. refrigerant pipe length (ft) | 82.02 | 98.42 | 164.04 |
| Max. difference in level (m) | 10 | 20 | 25 |
| Max. difference in level (ft) | 32.81 | 65.62 | 82.02 |
| Connection Wiring | 14AWG*4, stranded, unshielded | 14AWG*4, stranded, unshielded | 14AWG*4, stranded, unshielded |
| Refrigerant Gas (oz/kg) | R410A 38.1/1.08 | R410A 56.44/1.6 | R410A 82.89/2.35 |
| Additional charge per metre (oz/ft)(g/m) | 0.16/15 | 0.16/15 | 0.32/30 |
| Max Fuse | 15 | 30 | 30 |
| Minimum Circuit Capacity | 13 | 19 | 22 |
| Power Supply | 208/230V,1Ph,60Hz | 208/230V,1Ph,60Hz | 208/230V,1Ph,60Hz |
| Indoor air flow (Hi/Mi/Lo) CFM | 291.35/194.23/153.03 | 530.9/459.09/382.57 | 601.53/459.09/382.57 |
| Indoor noise level (Hi/Mi/Lo) dBA | 42/36/25 | 45.5/41/24.5 | 48/40/28 |
| Outdoor air flow CFM | 1294.12 | 2058.82 | 2235.29 |
| Outdoor noise level dBA | 54.5 | 59 | 62 |
| Indoor (cooling/heating) | 60-90°F / 32-86°F 17-32°C / 0-30°C | 60-90°F / 32-86°F 17-32°C / 0-30°C | 60-90°F / 32-86°F 17-32°C / 0-30°C |
| Outdoor (cooling/heating) | -13-122°F / -13-75°F -15-50°C / -25-24°C | -13-122°F / -13-75°F -15-50°C / -25-24°C | -13-122°F / -13-75°F -15-50°C / -25-24°C |



COMPRESSOR & PARTS
LIMITED WARRANTY



PERFORMANCE DATA – COOLING

DB – Dry Bulb WB – Wet Bulb TC – Total Net Capacity (1000 Btu/hour) SC – Sensible Capacity (1000 Btu/hour) Input – Total Power (kW)

| COOLING | | | OUTDOOR CONDITIONS (DB) | | | | | | | | | | | | | | | | | | |
|------------------------------|------------------|------------------|-------------------------|-------|---------|-------|--------|--------|-------|-------|--------|--------|-------|--------|--------|-------|--------|--------|-------|-------|-------|
| INDOOR | | | -13°F | -4°F | 0°F | 5°F | 17°F | 25°F | 35°F | 47°F | 55°F | 65°F | 75°F | 80°F | 85°F | 95°F | 105°F | 110°F | 115°F | 122°F | |
| DB | WB | | -25°C | -20°C | -17.8°C | -15°C | -8.3°C | -3.9°C | 1.7°C | 8.3°C | 12.8°C | 18.3°C | 24°C | 26.7°C | 29.4°C | 35°C | 40.5°C | 43.3°C | 46°C | 50°C | |
| NDHAS22-12-I / NDHAS22-012-0 | 65°F (18.3°C) | 54°F (12.2°C) | TC | 10.12 | 10.82 | 10.74 | 10.93 | 11.10 | 11.17 | 11.28 | 11.07 | 11.10 | 11.28 | 11.10 | 11.06 | 11.37 | 11.99 | 11.30 | 10.60 | 9.80 | 8.69 |
| | | | SC | 6.63 | 7.26 | 7.29 | 7.48 | 7.86 | 8.00 | 8.46 | 8.23 | 8.67 | 8.73 | 8.76 | 8.81 | 9.05 | 9.80 | 9.75 | 9.55 | 9.16 | 8.70 |
| | | | Input | 0.57 | 0.66 | 0.67 | 0.72 | 0.74 | 0.77 | 0.79 | 0.83 | 0.86 | 0.90 | 0.94 | 0.99 | 1.09 | 1.23 | 1.20 | 1.16 | 1.19 | 1.20 |
| | 70°F (21.1°C) | 63°F (17.2°C) | TC | 10.58 | 11.33 | 11.32 | 11.44 | 11.59 | 11.84 | 11.79 | 11.69 | 11.60 | 11.79 | 11.72 | 11.73 | 12.09 | 12.49 | 11.84 | 11.22 | 10.29 | 9.12 |
| | | | SC | 6.89 | 7.55 | 7.64 | 7.79 | 8.16 | 8.44 | 8.80 | 8.63 | 9.01 | 9.08 | 9.19 | 9.28 | 9.57 | 10.15 | 10.16 | 10.05 | 9.56 | 9.10 |
| | | | Input | 0.57 | 0.65 | 0.67 | 0.72 | 0.74 | 0.77 | 0.78 | 0.82 | 0.85 | 0.89 | 0.95 | 0.98 | 1.09 | 1.20 | 1.20 | 1.17 | 1.19 | 1.20 |
| | 75°F (23.9°C) | 63°F (17.2°C) | TC | 11.23 | 11.87 | 12.00 | 12.06 | 12.18 | 12.43 | 12.47 | 12.33 | 12.31 | 12.30 | 12.33 | 12.40 | 12.59 | 13.19 | 12.40 | 11.85 | 10.85 | 9.59 |
| | | | SC | 7.28 | 7.88 | 8.07 | 8.16 | 8.52 | 8.82 | 9.25 | 9.06 | 9.51 | 9.42 | 9.63 | 9.76 | 9.93 | 10.67 | 10.59 | 10.56 | 10.02 | 9.53 |
| | | | Input | 0.57 | 0.65 | 0.68 | 0.71 | 0.75 | 0.76 | 0.78 | 0.83 | 0.86 | 0.89 | 0.95 | 0.98 | 1.07 | 1.21 | 1.18 | 1.17 | 1.19 | 1.20 |
| | 80°F (26.7°C) | 67°F (19.4°C) | TC | 11.95 | 12.44 | 12.63 | 12.83 | 12.93 | 13.11 | 13.26 | 12.98 | 13.00 | 13.02 | 13.04 | 13.06 | 13.39 | 13.74 | 13.09 | 12.37 | 11.43 | 10.11 |
| | | | SC | 7.69 | 8.21 | 8.44 | 8.63 | 9.00 | 9.24 | 9.79 | 9.49 | 9.98 | 9.91 | 10.12 | 10.22 | 10.50 | 11.05 | 11.13 | 10.96 | 10.49 | 9.99 |
| | | | Input | 0.58 | 0.64 | 0.67 | 0.71 | 0.75 | 0.77 | 0.80 | 0.83 | 0.86 | 0.90 | 0.95 | 0.99 | 1.14 | 1.19 | 1.19 | 1.17 | 1.19 | 1.18 |
| NDHAS22-18-I / NDHAS22-18-0 | 65°F (18.3°C) | 54°F (12.2°C) | TC | 15.81 | 16.89 | 16.63 | 17.01 | 17.48 | 17.25 | 17.55 | 17.53 | 17.89 | 18.21 | 18.53 | 18.85 | 18.03 | 16.57 | 16.52 | 15.23 | 14.16 | 12.92 |
| | | | SC | 9.96 | 11.03 | 11.43 | 11.94 | 12.23 | 12.17 | 12.52 | 12.75 | 13.94 | 14.16 | 14.50 | 14.83 | 13.97 | 13.49 | 13.89 | 13.54 | 13.23 | 12.87 |
| | | | Input | 0.57 | 0.66 | 0.68 | 0.73 | 0.77 | 0.81 | 0.90 | 1.00 | 1.06 | 1.11 | 1.17 | 1.24 | 1.45 | 1.65 | 1.72 | 1.64 | 1.72 | 1.76 |
| | 70°F (21.1°C) | 59°F (15°C) | TC | 16.73 | 17.80 | 17.61 | 17.95 | 18.43 | 18.35 | 18.64 | 18.30 | 18.82 | 19.09 | 19.69 | 19.88 | 18.86 | 17.61 | 17.25 | 16.10 | 14.89 | 13.73 |
| | | | SC | 10.48 | 11.55 | 12.03 | 12.53 | 12.84 | 12.86 | 13.21 | 13.25 | 14.59 | 14.77 | 15.32 | 15.57 | 14.53 | 14.25 | 14.42 | 14.23 | 13.85 | 13.63 |
| | | | Input | 0.57 | 0.66 | 0.68 | 0.73 | 0.77 | 0.82 | 0.90 | 0.99 | 1.05 | 1.11 | 1.17 | 1.23 | 1.45 | 1.65 | 1.69 | 1.65 | 1.72 | 1.79 |
| | 75°F (23.9°C) | 63°F (17.2°C) | TC | 17.69 | 18.54 | 18.50 | 18.89 | 19.30 | 19.44 | 19.70 | 19.32 | 19.64 | 20.29 | 20.62 | 20.91 | 20.02 | 18.65 | 17.96 | 16.88 | 15.74 | 14.40 |
| | | | SC | 11.01 | 11.96 | 12.56 | 13.10 | 13.38 | 13.55 | 13.89 | 13.92 | 15.14 | 15.62 | 15.96 | 16.27 | 15.33 | 15.01 | 14.94 | 14.82 | 14.55 | 14.25 |
| | | | Input | 0.58 | 0.65 | 0.68 | 0.72 | 0.77 | 0.83 | 0.91 | 0.99 | 1.05 | 1.12 | 1.17 | 1.23 | 1.46 | 1.68 | 1.69 | 1.65 | 1.71 | 1.79 |
| | 80°F (26.7°C) | 67°F (19.4°C) | TC | 18.60 | 19.37 | 19.68 | 19.97 | 20.23 | 20.42 | 20.58 | 20.29 | 20.72 | 21.13 | 21.57 | 22.01 | 20.85 | 19.68 | 18.75 | 17.71 | 16.55 | 15.13 |
| | | | SC | 11.51 | 12.42 | 13.31 | 13.78 | 13.94 | 14.15 | 14.43 | 14.53 | 15.87 | 16.19 | 16.59 | 17.03 | 15.87 | 15.74 | 15.49 | 15.48 | 15.22 | 14.89 |
| | | | Input | 0.59 | 0.65 | 0.69 | 0.72 | 0.77 | 0.83 | 0.91 | 0.99 | 1.05 | 1.10 | 1.17 | 1.24 | 1.57 | 1.68 | 1.67 | 1.64 | 1.71 | 1.80 |
| NDHAS22-24-I / NDHAS22-24-0 | 65°F (18.3°C) | 54°F (12.2°C) | TC | 24.26 | 25.51 | 26.03 | 26.11 | 27.32 | 27.75 | 28.05 | 26.87 | 27.12 | 26.93 | 26.22 | 26.08 | 26.72 | 28.11 | 26.20 | 25.01 | 23.52 | 21.30 |
| | | | SC | 15.17 | 16.64 | 17.45 | 18.14 | 19.73 | 19.51 | 20.59 | 19.62 | 20.62 | 20.68 | 20.77 | 20.94 | 21.07 | 22.44 | 21.86 | 21.95 | 22.22 | 21.21 |
| | | | Input | 1.15 | 1.31 | 1.41 | 1.43 | 1.55 | 1.59 | 1.69 | 1.75 | 1.80 | 1.88 | 1.88 | 1.95 | 2.43 | 3.24 | 3.11 | 3.13 | 3.27 | 3.28 |
| | 70°F (21.1°C) | 59°F (15°C) | TC | 25.35 | 26.74 | 27.43 | 27.51 | 28.98 | 29.03 | 29.62 | 28.38 | 28.28 | 28.43 | 27.80 | 27.74 | 28.09 | 29.31 | 27.47 | 26.27 | 24.86 | 22.35 |
| | | | SC | 15.78 | 17.35 | 18.27 | 18.99 | 20.83 | 20.28 | 21.61 | 20.60 | 21.37 | 21.72 | 21.90 | 22.16 | 22.02 | 23.29 | 22.79 | 22.91 | 23.38 | 22.17 |
| | | | Input | 1.14 | 1.30 | 1.40 | 1.43 | 1.56 | 1.60 | 1.70 | 1.74 | 1.79 | 1.87 | 1.90 | 1.95 | 2.43 | 3.23 | 3.13 | 3.12 | 3.30 | 3.27 |
| | 75°F (23.9°C) | 63°F (17.2°C) | TC | 26.82 | 28.00 | 28.76 | 29.20 | 30.50 | 30.24 | 31.08 | 29.84 | 29.76 | 29.99 | 29.32 | 29.23 | 29.73 | 30.72 | 28.73 | 27.59 | 26.14 | 23.72 |
| | | | SC | 16.60 | 18.07 | 19.04 | 20.07 | 21.81 | 21.03 | 22.54 | 21.55 | 22.37 | 22.77 | 22.99 | 23.24 | 23.18 | 24.29 | 23.69 | 23.94 | 24.47 | 23.44 |
| | | | Input | 1.14 | 1.28 | 1.39 | 1.43 | 1.56 | 1.57 | 1.70 | 1.75 | 1.81 | 1.87 | 1.90 | 1.97 | 2.44 | 3.21 | 3.12 | 3.14 | 3.28 | 3.30 |
| | 80°F (26.7°C) | 67°F (19.4°C) | TC | 28.50 | 29.69 | 30.17 | 30.61 | 31.77 | 32.10 | 32.44 | 31.61 | 31.43 | 31.24 | 31.06 | 30.87 | 31.49 | 32.21 | 30.47 | 28.99 | 27.29 | 24.87 |
| | | | SC | 17.56 | 19.06 | 19.89 | 20.91 | 22.59 | 22.18 | 23.42 | 22.70 | 23.51 | 23.59 | 24.23 | 24.39 | 24.44 | 25.31 | 24.98 | 24.99 | 25.38 | 24.47 |
| | | | Input | 1.17 | 1.30 | 1.37 | 1.44 | 1.53 | 1.60 | 1.67 | 1.75 | 1.80 | 1.85 | 1.90 | 1.96 | 2.99 | 3.18 | 3.12 | 3.11 | 3.23 | 3.31 |

PERFORMANCE DATA — HEATING

DB – Dry Bulb

TC – Total Net Capacity (1000 Btu/hour)

SC – Sensible Capacity (1000 Btu/hour)

Input – Total Power (kW)

| HEATING | | OUTDOOR CONDITIONS (DB) | | | | | | | | | | | | | | |
|-----------------------------|------------------|-------------------------|-------|---------|-------|---------|--------|--------|--------|-------|-------|-------|-------|-------|--------|-------|
| INDOOR CONDITIONS DB | | -13°F | -4°F | 0°F | 5°F | 10°F | 17°F | 20°F | 25°F | 32°F | 35°F | 40°F | 47°F | 50°F | 57°F | |
| | | -25°C | -20°C | -17.8°C | -15°C | -12.2°C | -8.3°C | -6.7°C | -3.9°C | 0°C | 1.7°C | 4.4°C | 8.3°C | 10°C | 13.9°C | |
| NDHAS22-12-I / NDHAS22-12-O | 60°F (15.6°C) | TC | 6.79 | 7.55 | 7.87 | 8.17 | 9.30 | 10.44 | 11.22 | 11.93 | 12.67 | 13.24 | 13.96 | 14.61 | 15.04 | 15.34 |
| | | Input | 1.17 | 1.11 | 1.09 | 1.07 | 1.13 | 1.17 | 1.22 | 1.25 | 1.28 | 1.31 | 1.29 | 1.25 | 1.21 | 1.19 |
| | 65°F (18.3°C) | TC | 6.58 | 7.29 | 7.61 | 7.97 | 9.03 | 10.19 | 10.84 | 11.56 | 12.31 | 12.90 | 13.49 | 14.19 | 14.54 | 14.94 |
| | | Input | 1.20 | 1.13 | 1.12 | 1.09 | 1.16 | 1.20 | 1.26 | 1.28 | 1.32 | 1.35 | 1.32 | 1.29 | 1.25 | 1.22 |
| | 70°F (21.1°C) | TC | 6.37 | 7.08 | 7.39 | 7.70 | 8.81 | 9.84 | 10.54 | 11.21 | 11.90 | 12.52 | 13.13 | 13.80 | 14.12 | 14.49 |
| | | Input | 1.23 | 1.17 | 1.14 | 1.11 | 1.19 | 1.24 | 1.28 | 1.32 | 1.36 | 1.38 | 1.35 | 1.33 | 1.29 | 1.26 |
| | 75°F (23.9°C) | TC | 6.10 | 6.82 | 7.08 | 7.35 | 8.44 | 9.43 | 10.17 | 10.71 | 11.39 | 11.95 | 12.61 | 13.30 | 13.62 | 13.97 |
| | | Input | 1.26 | 1.20 | 1.18 | 1.15 | 1.22 | 1.27 | 1.31 | 1.37 | 1.40 | 1.43 | 1.39 | 1.37 | 1.33 | 1.30 |
| NDHAS22-18-I / NDHAS22-18-O | 60°F (15.6°C) | TC | 11.34 | 12.72 | 13.32 | 13.72 | 15.72 | 17.48 | 18.16 | 18.83 | 19.60 | 20.18 | 22.23 | 23.96 | 24.44 | 25.21 |
| | | Input | 1.61 | 1.52 | 1.49 | 1.44 | 1.62 | 1.81 | 1.85 | 1.86 | 1.90 | 1.91 | 1.80 | 1.74 | 1.68 | 1.64 |
| | 65°F (18.3°C) | TC | 11.06 | 12.36 | 12.96 | 13.39 | 15.19 | 16.99 | 17.72 | 18.34 | 18.94 | 19.59 | 21.48 | 23.31 | 23.84 | 24.40 |
| | | Input | 1.65 | 1.56 | 1.52 | 1.48 | 1.65 | 1.85 | 1.89 | 1.90 | 1.95 | 1.96 | 1.83 | 1.78 | 1.72 | 1.68 |
| | 70°F (21.1°C) | TC | 10.79 | 11.99 | 12.55 | 13.03 | 14.70 | 16.51 | 17.14 | 17.73 | 18.38 | 18.98 | 20.83 | 22.54 | 23.12 | 23.67 |
| | | Input | 1.68 | 1.60 | 1.56 | 1.53 | 1.71 | 1.90 | 1.93 | 1.96 | 1.99 | 2.02 | 1.89 | 1.82 | 1.77 | 1.73 |
| | 75°F (23.9°C) | TC | 10.37 | 11.57 | 12.00 | 12.45 | 14.11 | 15.81 | 16.44 | 17.10 | 17.69 | 18.19 | 19.92 | 21.60 | 22.31 | 22.72 |
| | | Input | 1.73 | 1.65 | 1.61 | 1.58 | 1.76 | 1.95 | 1.99 | 2.02 | 2.06 | 2.08 | 1.94 | 1.88 | 1.82 | 1.79 |
| NDHAS22-24-I / NDHAS22-24-O | 60°F (15.6°C) | TC | 13.92 | 15.44 | 16.12 | 16.75 | 18.83 | 20.96 | 21.26 | 21.83 | 22.23 | 22.40 | 27.83 | 33.76 | 34.45 | 35.79 |
| | | Input | 2.90 | 2.76 | 2.68 | 2.64 | 2.59 | 2.59 | 2.60 | 2.63 | 2.62 | 2.64 | 2.85 | 3.00 | 2.91 | 2.87 |
| | 65°F (18.3°C) | TC | 13.54 | 14.93 | 15.62 | 16.25 | 18.19 | 20.35 | 20.72 | 21.23 | 21.48 | 21.83 | 27.01 | 32.84 | 33.58 | 34.78 |
| | | Input | 2.97 | 2.82 | 2.73 | 2.69 | 2.66 | 2.65 | 2.66 | 2.70 | 2.70 | 2.72 | 2.92 | 3.07 | 3.00 | 2.93 |
| | 70°F (21.1°C) | TC | 13.09 | 14.54 | 15.11 | 15.80 | 17.66 | 19.71 | 20.12 | 20.51 | 20.89 | 21.26 | 26.20 | 32.00 | 32.72 | 33.60 |
| | | Input | 3.03 | 2.89 | 2.82 | 2.75 | 2.73 | 2.72 | 2.74 | 2.76 | 2.78 | 2.79 | 2.98 | 3.16 | 3.07 | 3.00 |
| | 75°F (23.9°C) | TC | 12.55 | 13.96 | 14.55 | 15.19 | 16.88 | 18.89 | 19.39 | 19.61 | 20.04 | 20.41 | 25.23 | 30.88 | 31.55 | 32.16 |
| | | Input | 3.14 | 2.98 | 2.90 | 2.83 | 2.81 | 2.80 | 2.84 | 2.84 | 2.87 | 2.89 | 3.05 | 3.24 | 3.16 | 3.10 |