

Design conditions for AKRON/CANTON, OH, USA

Station Information

| Station name | WMO# | Lat | Long | Elev | StdP | Hours +/- UTC | Time zone code | Period |
|---------------------|---------------|---------------|---------------|------------|--------------|---------------|----------------|-------------|
| 1a | 1b | 1c | 1d | 1e | 1f | 1g | 1h | 1i |
| AKRON/CANTON | 725210 | 40.92N | 81.42W | 377 | 96.88 | -5.00 | NAE | 7201 |

Annual Heating and Humidification Design Conditions

| Coldest month | Heating DB | | Humidification DP/MCDB and HR | | | | | | Coldest month WS/MCDB | | | | MCWS/PCWD to 99.6% DB | |
|---------------|--------------|--------------|-------------------------------|------------|--------------|--------------|------------|--------------|-----------------------|-------------|-------------|-------------|-----------------------|------------|
| | 99.6% | 99% | 99.6% | | | 99% | | | 0.4% | | 1% | | MCWS | PCWD |
| | DP | HR | MCDB | DP | HR | MCDB | WS | MCDB | WS | MCDB | | | | |
| 2 | 3a | 3b | 4a | 4b | 4c | 4d | 4e | 4f | 5a | 5b | 5c | 5d | 6a | 6b |
| 1 | -17.7 | -14.7 | -21.9 | 0.6 | -17.0 | -18.8 | 0.7 | -14.0 | 12.0 | -0.7 | 11.2 | -3.3 | 4.8 | 240 |

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

| Hottest month | Hottest month DB range | Cooling DB/MCWB | | | | | | Evaporation WB/MCDB | | | | | | MCWS/PCWD to 0.4% DB | |
|---------------|------------------------|-----------------|-------------|-------------|-------------|-------------|-------------|---------------------|-------------|-------------|-------------|-------------|-------------|----------------------|------------|
| | | 0.4% | | 1% | | 2% | | 0.4% | | 1% | | 2% | | MCWS | PCWD |
| | | DB | MCWB | DB | MCWB | DB | MCWB | WB | MCDB | WB | MCDB | WB | MCDB | | |
| 7 | 8 | 9a | 9b | 9c | 9d | 9e | 9f | 10a | 10b | 10c | 10d | 10e | 10f | 11a | 11b |
| 7 | 10.3 | 31.2 | 22.8 | 29.6 | 21.9 | 28.3 | 21.1 | 24.1 | 29.3 | 23.2 | 27.9 | 22.4 | 26.5 | 4.7 | 230 |

| Dehumidification DP/MCDB and HR | | | | | | | | | Enthalpy/MCDB | | | | | |
|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|-------------|-------------|-------------|-------------|-------------|
| DP | 0.4% | | 1% | | 2% | | 0.4% | | 1% | | 2% | | Enth | MCDB |
| | HR | MCDB | DP | HR | MCDB | DP | HR | MCDB | Enth | MCDB | Enth | MCDB | | |
| 12a | 12b | 12c | 12d | 12e | 12f | 12g | 12h | 12i | 13a | 13b | 13c | 13d | 13e | 13f |
| 22.5 | 18.0 | 26.8 | 21.7 | 17.1 | 25.9 | 20.9 | 16.3 | 25.0 | 74.3 | 29.3 | 70.6 | 27.8 | 67.5 | 26.6 |

Extreme Annual Design Conditions

| Extreme Annual WS | | | Extreme Max WB | Extreme Annual DB | | | | | | n-Year Return Period Values of Extreme DB | | | | | |
|-------------------|------------|------------|----------------|-------------------|--------------|--------------------|------------|-------------|--------------|---|--------------|-------------|--------------|-------------|--------------|
| 1% | 2.5% | 5% | | Mean | | Standard deviation | | n=5 years | | n=10 years | | n=20 years | | n=50 years | |
| Max | Min | Max | | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min |
| 14a | 14b | 14c | 15 | 16a | 16b | 16c | 16d | 17a | 17b | 17c | 17d | 17e | 17f | 17g | 17h |
| 10.4 | 8.8 | 8.1 | 28.0 | 33.4 | -21.7 | 1.8 | 4.5 | 34.7 | -24.9 | 35.7 | -27.6 | 36.8 | -30.1 | 38.1 | -33.4 |

Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures

| % | Jan | | Feb | | Mar | | Apr | | May | | Jun | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | DB | MCWB | DB | MCWB | DB | MCWB | DB | MCWB | DB | MCWB | DB | MCWB |
| | 18a | 18b | 18c | 18d | 18e | 18f | 18g | 18h | 18i | 18j | 18k | 18l |
| 0.4% | 14.5 | 12.1 | 16.2 | 11.2 | 23.4 | 14.6 | 26.8 | 16.7 | 29.5 | 19.6 | 32.0 | 22.4 |
| 1% | 12.9 | 11.1 | 14.5 | 10.4 | 21.4 | 13.4 | 25.5 | 16.4 | 28.5 | 19.4 | 30.9 | 22.3 |
| 2% | 11.4 | 9.6 | 12.9 | 9.6 | 19.6 | 12.7 | 24.0 | 15.9 | 27.5 | 19.1 | 30.0 | 21.8 |

| % | Jul | | Aug | | Sep | | Oct | | Nov | | Dec | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | DB | MCWB | DB | MCWB | DB | MCWB | DB | MCWB | DB | MCWB | DB | MCWB |
| | 18m | 18n | 18o | 18p | 18q | 18r | 18s | 18t | 18u | 18v | 18w | 18x |
| 0.4% | 33.6 | 23.2 | 32.8 | 23.6 | 30.0 | 22.2 | 24.8 | 17.7 | 20.8 | 15.6 | 16.7 | 13.5 |
| 1% | 32.4 | 23.5 | 31.6 | 22.9 | 28.9 | 21.8 | 23.6 | 17.1 | 19.4 | 14.5 | 15.1 | 12.3 |
| 2% | 31.5 | 23.3 | 30.4 | 22.5 | 27.8 | 21.2 | 22.5 | 16.4 | 18.1 | 13.9 | 14.0 | 11.8 |

Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures

| % | Jan | | Feb | | Mar | | Apr | | May | | Jun | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | WB | MCDB | WB | MCDB | WB | MCDB | WB | MCDB | WB | MCDB | WB | MCDB |
| | 19a | 19b | 19c | 19d | 19e | 19f | 19g | 19h | 19i | 19j | 19k | 19l |
| 0.4% | 12.7 | 14.0 | 12.9 | 14.9 | 15.8 | 20.7 | 18.4 | 24.1 | 22.7 | 26.6 | 24.4 | 29.9 |
| 1% | 11.5 | 12.8 | 11.5 | 13.3 | 14.9 | 19.1 | 17.6 | 23.3 | 21.7 | 25.8 | 23.7 | 29.0 |
| 2% | 9.8 | 11.3 | 10.2 | 12.1 | 13.8 | 17.9 | 16.7 | 22.3 | 20.7 | 25.2 | 23.1 | 28.0 |

| % | Jul | | Aug | | Sep | | Oct | | Nov | | Dec | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | WB | MCDB | WB | MCDB | WB | MCDB | WB | MCDB | WB | MCDB | WB | MCDB |
| | 19m | 19n | 19o | 19p | 19q | 19r | 19s | 19t | 19u | 19v | 19w | 19x |
| 0.4% | 25.7 | 30.8 | 25.0 | 30.4 | 23.4 | 28.1 | 19.1 | 22.2 | 16.7 | 19.3 | 14.4 | 16.0 |
| 1% | 25.0 | 30.2 | 24.3 | 29.4 | 22.8 | 27.4 | 18.3 | 21.5 | 15.7 | 18.1 | 13.3 | 14.7 |
| 2% | 24.3 | 29.6 | 23.7 | 28.5 | 22.2 | 26.4 | 17.6 | 21.0 | 15.0 | 17.3 | 12.0 | 13.7 |

Monthly Mean Daily Temperature Range

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|
| 20a | 20b | 20c | 20d | 20e | 20f | 20g | 20h | 20i | 20j | 20k | 20l |
| 7.5 | 8.1 | 9.4 | 10.6 | 10.6 | 10.4 | 10.3 | 10.0 | 9.9 | 9.6 | 7.7 | 6.9 |

WMO# World Meteorological Organization number Lat Latitude, °
 Elev Elevation, m StdP Standard pressure at station elevation, kPa Long Longitude, °
 DB Dry bulb temperature, °C DP Dew point temperature, °C WB Wet bulb temperature, °C
 WS Wind speed, m/s Enth Enthalpy, kJ/kg HR Humidity ratio, grams of moisture per kilogram of dry air
 MCDB Mean coincident dry bulb temperature, °C MCWB Mean coincident wet bulb temperature, °C MCWS Mean coincident wind speed, m/s
 PCWD Prevailing coincident wind direction, °, 0 = North, 90 = East