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## DUBAI INTERNATIONAL, United Arab Emirates

WMO#: **411940**

Lat: **25.25N** Long: **55.33E** Elev: **10** StdP: **101.2** Time Zone: **4.00 (ARN)** Period: **86-10** WBAN: **99999**

### 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% | | | 0.4% | | 1% | | | | |
| | | 99.6% | 99% | DP | HR | MCDB | DP | HR | MCDB | WS | MCDB | WS | MCDB | MCWS | PCWD | |
| | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) | (o) | |
| (1) | 1 | 12.9 | 13.9 | 0.0 | 3.8 | 29.0 | 2.2 | 4.4 | 27.7 | 10.5 | 20.0 | 9.4 | 20.1 | 2.2 | 170 | (1) |

### 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% | | | | |
| | | | DB | MCWB | DB | MCWB | DB | MCWB | WB | MCDB | WB | MCDB | WB | MCDB | MCWS | PCWD | |
| | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) | (o) | (p) | |
| (2) | 8 | 9.6 | 42.9 | 23.6 | 41.4 | 24.0 | 40.2 | 24.3 | 30.3 | 35.0 | 29.8 | 34.6 | 29.3 | 34.4 | 4.9 | 200 | (2) |

| | Dehumidification DP/MCDB and HR | | | | | | | | | Enthalpy/MCDB | | | | | | Hours 8 to 4 & 12.8/20.6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.4% | | | 1% | | | 2% | | | 0.4% | | 1% | | 2% | | | |
| | DP | HR | MCDB | DP | HR | MCDB | DP | HR | MCDB | Enth | MCDB | Enth | MCDB | Enth | MCDB | | |
| | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) | (o) | (p) | |
| (3) | 29.2 | 25.9 | 33.3 | 28.8 | 25.3 | 33.3 | 28.1 | 24.2 | 33.2 | 102.3 | 35.1 | 99.6 | 34.5 | 97.1 | 34.6 | 292 | (3) |

### Extreme Annual Design Conditions

| | Extreme Annual WS | | | Extreme Max WB | Extreme Annual DB | | | | n-Year Return Period Values of Extreme DB | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Mean | | Standard deviation | | n=5 years | | n=10 years | | n=20 years | | n=50 years | | |
| | 1% | 2.5% | 5% | | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | Min | Max | |
| | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) | (m) | (n) | (o) | (p) | |
| (4) | 9.1 | 8.1 | 7.3 | 32.5 | 10.7 | 45.7 | 1.4 | 0.9 | 9.7 | 46.3 | 8.9 | 46.9 | 8.1 | 47.4 | 7.1 | 48.1 | (4) |

### Monthly Climatic Design Conditions

| | | | | Annual (d) | Jan (e) | Feb (f) | Mar (g) | Apr (h) | May (i) | Jun (j) | Jul (k) | Aug (l) | Sep (m) | Oct (n) | Nov (o) | Dec (p) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (5) | Temperatures, Degree-Days and Degree-Hours | Tavg | | 28.0 | 19.2 | 20.7 | 23.2 | 27.1 | 31.3 | 33.5 | 35.4 | 35.8 | 33.3 | 29.9 | 25.5 | 21.3 | (5) |
| (6) | | Sd | | | 2.02 | 2.73 | 3.16 | 3.25 | 2.67 | 2.12 | 2.12 | 1.74 | 1.60 | 1.77 | 2.01 | 2.11 | (6) |
| (7) | | HDD10.0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (7) |
| (8) | | HDD18.3 | | 21 | 13 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | (8) |
| (9) | | CDD10.0 | | 6588 | 284 | 299 | 408 | 513 | 661 | 704 | 788 | 800 | 698 | 616 | 464 | 352 | (9) |
| (10) | | CDD18.3 | | 3568 | 39 | 72 | 151 | 263 | 403 | 454 | 529 | 542 | 448 | 358 | 214 | 95 | (10) |
| (11) | | CDH23.3 | | 49383 | 131 | 356 | 1106 | 2972 | 5851 | 7132 | 8696 | 8905 | 6888 | 4807 | 2055 | 487 | (11) |
| (12) | | CDH26.7 | | 30779 | 12 | 87 | 384 | 1425 | 3591 | 4759 | 6216 | 6425 | 4506 | 2602 | 708 | 63 | (12) |
| (13) | Precipitation | PrecAvg | | 94 | 11 | 36 | 22 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 14 | (13) |
| (14) | | PrecMax | | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | (14) |
| (15) | | PrecMin | | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | (15) |
| (16) | | PrecSD | | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | (16) |
| (17) | Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures | 0.4% | DB | | 28.2 | 32.1 | 35.9 | 39.2 | 42.5 | 43.8 | 44.6 | 44.2 | 41.8 | 38.8 | 34.1 | 30.0 | (17) |
| (18) | | | MCWB | | 17.3 | 17.8 | 18.2 | 19.8 | 20.9 | 21.8 | 24.0 | 23.8 | 23.0 | 20.7 | 19.2 | 18.5 | (18) |
| (19) | | 2% | DB | | 26.2 | 29.1 | 32.9 | 36.9 | 40.2 | 41.3 | 42.8 | 42.8 | 40.0 | 36.9 | 32.4 | 28.2 | (19) |
| (20) | | | MCWB | | 17.5 | 17.6 | 18.3 | 19.6 | 21.2 | 22.8 | 24.5 | 24.3 | 23.2 | 21.5 | 20.7 | 19.3 | (20) |
| (21) | | 5% | DB | | 24.8 | 27.1 | 30.7 | 35.0 | 38.8 | 39.9 | 41.1 | 41.1 | 38.8 | 35.5 | 31.2 | 27.1 | (21) |
| (22) | | | MCWB | | 17.5 | 17.5 | 18.3 | 19.7 | 21.6 | 23.3 | 25.2 | 24.9 | 23.9 | 22.5 | 21.3 | 19.4 | (22) |
| (23) | | 10% | DB | | 23.2 | 25.2 | 28.7 | 33.1 | 37.1 | 38.4 | 39.8 | 39.9 | 37.2 | 34.2 | 30.1 | 26.0 | (23) |
| (24) | | | MCWB | | 17.0 | 17.8 | 18.2 | 19.8 | 22.0 | 24.4 | 25.5 | 25.5 | 24.8 | 23.3 | 21.6 | 19.1 | (24) |
| (25) | Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures | 0.4% | WB | | 20.6 | 21.3 | 22.5 | 24.6 | 27.9 | 30.1 | 31.1 | 31.0 | 30.2 | 28.7 | 25.6 | 22.5 | (25) |
| (26) | | | MCDB | | 24.2 | 25.1 | 27.4 | 30.9 | 33.1 | 34.7 | 35.8 | 35.5 | 34.3 | 33.0 | 30.0 | 26.2 | (26) |
| (27) | | 2% | WB | | 19.6 | 20.5 | 21.6 | 23.5 | 26.8 | 29.2 | 30.4 | 30.3 | 29.6 | 27.7 | 24.4 | 21.5 | (27) |
| (28) | | | MCDB | | 23.6 | 24.4 | 26.4 | 29.9 | 32.4 | 34.0 | 35.2 | 35.0 | 33.9 | 31.9 | 29.2 | 25.8 | (28) |
| (29) | | 5% | WB | | 18.8 | 19.7 | 20.9 | 22.7 | 26.0 | 28.7 | 29.8 | 29.8 | 29.1 | 26.9 | 23.6 | 20.7 | (29) |
| (30) | | | MCDB | | 23.0 | 23.9 | 25.8 | 29.1 | 32.2 | 33.7 | 34.8 | 34.7 | 33.5 | 31.5 | 28.5 | 25.2 | (30) |
| (31) | | 10% | WB | | 18.0 | 19.0 | 20.3 | 22.0 | 25.1 | 28.0 | 29.3 | 29.2 | 28.5 | 26.3 | 22.8 | 19.9 | (31) |
| (32) | | | MCDB | | 22.3 | 23.5 | 25.1 | 28.3 | 32.0 | 33.5 | 34.7 | 34.7 | 33.2 | 31.1 | 28.0 | 24.6 | (32) |
| (33) | Mean Daily Temperature Range | | MDBR | | 8.5 | 8.7 | 9.2 | 10.5 | 11.6 | 10.9 | 9.5 | 9.6 | 9.9 | 10.1 | 9.5 | 8.8 | (33) |
| (34) | | 5% DB | MCDBR | | 10.2 | 11.1 | 12.1 | 13.0 | 13.3 | 12.6 | 11.1 | 11.0 | 11.2 | 11.2 | 10.4 | 10.1 | (34) |
| (35) | | | MCWBR | | 4.9 | 5.1 | 5.8 | 6.3 | 6.5 | 6.9 | 6.4 | 6.3 | 6.7 | 6.5 | 5.1 | 4.9 | (35) |
| (36) | | 5% WB | MCDBR | | 8.7 | 8.7 | 9.4 | 10.8 | 11.7 | 10.6 | 9.1 | 9.4 | 9.5 | 9.7 | 9.7 | 9.1 | (36) |
| (37) | | | MCWBR | | 4.8 | 4.8 | 5.2 | 5.8 | 6.3 | 5.9 | 5.6 | 5.7 | 5.5 | 5.5 | 5.0 | 5.0 | (37) |
| (38) | Clear Sky Solar Irradiance | taub | | | 0.463 | 0.508 | 0.547 | 0.558 | 0.596 | 0.675 | 0.792 | 0.684 | 0.585 | 0.499 | 0.463 | 0.451 | (38) |
| (39) | | taud | | | 2.185 | 2.029 | 1.902 | 1.828 | 1.708 | 1.551 | 1.427 | 1.611 | 1.820 | 2.046 | 2.186 | 2.232 | (39) |
| (40) | | Ebn,noon | | | 779 | 771 | 763 | 765 | 734 | 673 | 598 | 664 | 722 | 767 | 772 | 773 | (40) |
| (41) | | Edh,noon | | | 131 | 164 | 195 | 214 | 241 | 280 | 317 | 263 | 209 | 158 | 130 | 121 | (41) |

Nomenclature: See separate page