

CBAW / 4-PIPE COOLING

| Nominal Length ft | Nozzle Size | Primary Air |           |           | Sound NC | Coil Sensible Cooling (Btu/h) |       |         |       |         |       |         |       | Induction ratio | Throw ft.    |             |      |           |            |            |            |
|-------------------|-------------|-------------|-----------|-----------|----------|-------------------------------|-------|---------|-------|---------|-------|---------|-------|-----------------|--------------|-------------|------|-----------|------------|------------|------------|
|                   |             | Inlet Dia.  | Flow Rate | Inlet ΔPS |          | 1.0 GPM                       |       | 2.0 GPM |       | 3.0 GPM |       | 4.0 GPM |       |                 |              |             |      |           |            |            |            |
|                   |             | Inches      | CFM       | (in. H2O) |          | qTOTAL                        | ΔCOIL | qTOTAL  | ΔCOIL | qTOTAL  | ΔCOIL | qTOTAL  | ΔCOIL |                 |              |             |      |           |            |            |            |
| 3                 | B2          | 4           | 8         | 0.27      | 15       | 405                           | 0.30  | 425     | 1.10  | 432     | 2.50  | 435     | 4.00  | 4.4             | 1 - 2 - 6    |             |      |           |            |            |            |
|                   |             |             | 10        | 0.42      | 19       | 484                           |       |         |       |         |       |         |       |                 | 513          | 524         | 528  | 1 - 2 - 8 |            |            |            |
|                   |             |             | 12        | 0.61      | 23       | 556                           |       |         |       |         |       |         |       |                 | 597          | 611         | 617  | 617       | 2 - 4 - 9  |            |            |
|                   |             |             | 14        | 0.83      | 27       | 623                           |       |         |       |         |       |         |       |                 | 675          | 694         | 702  | 702       | 2 - 5 - 11 |            |            |
|                   | B3          | 4           | 14        | 0.23      | 16       | 579                           |       | 619     | 633   | 639     | 639   | 639     | 639   |                 | 3.6          | 2 - 5 - 11  |      |           |            |            |            |
|                   |             |             | 18        | 0.38      | 22       | 696                           |       | 757     | 779   | 788     | 788   | 788     | 788   |                 | 4 - 7 - 12   |             |      |           |            |            |            |
|                   |             |             | 22        | 0.57      | 27       | 800                           |       | 882     | 914   | 927     | 927   | 927     | 927   |                 | 5 - 8 - 13   |             |      |           |            |            |            |
|                   |             |             | 26        | 0.80      | 31       | 892                           |       | 997     | 1038  | 1056    | 1056  | 1056    | 1056  |                 | 7 - 10 - 15  |             |      |           |            |            |            |
|                   | B4          | 4           | 24        | 0.18      | 19       | 770                           |       | 842     | 870   | 882     | 882   | 882     | 882   |                 | 3.0          | 6 - 9 - 14  |      |           |            |            |            |
|                   |             |             | 32        | 0.32      | 26       | 930                           |       | 1043    | 1087  | 1105    | 1105  | 1105    | 1105  |                 | 8 - 12 - 16  |             |      |           |            |            |            |
|                   |             |             | 40        | 0.51      | 31       | 1066                          |       | 1219    | 1281  | 1307    | 1307  | 1307    | 1307  |                 | 10 - 13 - 18 |             |      |           |            |            |            |
|                   |             |             | 48        | 0.71      | 25       | 1181                          |       | 1375    | 1455  | 1490    | 1490  | 1490    | 1490  |                 | 12 - 14 - 20 |             |      |           |            |            |            |
| 4                 | B2          | 4           | 10        | 0.20      | 15       | 502                           | 0.40  | 531     | 1.40  | 541     | 3.20  | 545     | 5.10  | 4.4             | 1 - 2 - 6    |             |      |           |            |            |            |
|                   |             |             | 13        | 0.35      | 20       | 619                           |       |         |       |         |       |         |       |                 | 663          | 680         | 687  | 687       | 1 - 3 - 9  |            |            |
|                   |             |             | 16        | 0.52      | 24       | 723                           |       |         |       |         |       |         |       |                 | 786          | 810         | 820  | 820       | 820        | 2 - 4 - 11 |            |
|                   |             |             | 19        | 0.74      | 28       | 818                           |       |         |       |         |       |         |       |                 | 901          | 933         | 945  | 945       | 945        | 3 - 6 - 13 |            |
|                   | B3          | 4           | 18        | 0.19      | 17       | 734                           |       | 793     | 815   | 824     | 824   | 824     | 824   |                 | 3.6          | 2 - 5 - 12  |      |           |            |            |            |
|                   |             |             | 24        | 0.33      | 24       | 901                           |       | 995     | 1031  | 1045    | 1045  | 1045    | 1045  |                 | 4 - 8 - 14   |             |      |           |            |            |            |
|                   |             |             | 30        | 0.52      | 29       | 1046                          |       | 1178    | 1229  | 1250    | 1250  | 1250    | 1250  |                 | 6 - 10 - 16  |             |      |           |            |            |            |
|                   |             |             | 36        | 0.74      | 33       | 1171                          |       | 1341    | 1410  | 1438    | 1438  | 1438    | 1438  |                 | 8 - 12 - 17  |             |      |           |            |            |            |
|                   | B4          | 4           | 35        | 0.21      | 23       | 1054                          |       | 1184    | 1234  | 1255    | 1255  | 1255    | 1255  |                 | 3.0          | 8 - 12 - 17 |      |           |            |            |            |
|                   |             |             | 45        | 0.35      | 29       | 1232                          |       | 1417    | 1492  | 1523    | 1523  | 1523    | 1523  |                 | 10 - 14 - 19 |             |      |           |            |            |            |
|                   |             |             | 55        | 0.52      | 34       | 1381                          |       | 1623    | 1723  | 1766    | 1766  | 1766    | 1766  |                 | 12 - 15 - 21 |             |      |           |            |            |            |
|                   |             |             | 65        | 0.69      | 27       | 1508                          |       | 1806    | 1933  | 1987    | 1987  | 1987    | 1987  |                 | 13 - 16 - 23 |             |      |           |            |            |            |
| 5                 | B2          | 4           | 12        | 0.17      | 15       | 596                           | 0.40  | 634     | 1.70  | 648     | 3.90  | 654     | 6.30  | 4.4             | 1 - 2 - 7    |             |      |           |            |            |            |
|                   |             |             | 16        | 0.31      | 20       | 747                           |       |         |       |         |       |         |       |                 | 809          | 833         | 842  | 842       | 842        | 1 - 3 - 10 |            |
|                   |             |             | 20        | 0.48      | 26       | 880                           |       |         |       |         |       |         |       |                 | 970          | 1004        | 1018 | 1018      | 1018       | 1018       | 2 - 5 - 12 |
|                   |             |             | 24        | 0.69      | 30       | 998                           |       |         |       |         |       |         |       |                 | 1118         | 1164        | 1183 | 1183      | 1183       | 1183       | 3 - 7 - 14 |
|                   | B3          | 4           | 24        | 0.20      | 20       | 936                           |       | 1030    | 1066  | 1080    | 1080  | 1080    | 1080  |                 | 3.6          | 3 - 7 - 14  |      |           |            |            |            |
|                   |             |             | 30        | 0.31      | 25       | 1091                          |       | 1224    | 1276  | 1297    | 1297  | 1297    | 1297  |                 | 5 - 9 - 16   |             |      |           |            |            |            |
|                   |             |             | 36        | 0.44      | 29       | 1226                          |       | 1401    | 1471  | 1499    | 1499  | 1499    | 1499  |                 | 7 - 11 - 17  |             |      |           |            |            |            |
|                   |             |             | 42        | 0.60      | 33       | 1346                          |       | 1564    | 1652  | 1688    | 1688  | 1688    | 1688  |                 | 8 - 13 - 19  |             |      |           |            |            |            |
|                   | B4          | 6" oval     | 40        | 0.16      | 15       | 1200                          |       | 1360    | 1424  | 1449    | 1449  | 1449    | 1449  |                 | 3.0          | 8 - 12 - 18 |      |           |            |            |            |
|                   |             |             | 55        | 0.31      | 19       | 1454                          |       | 1706    | 1809  | 1852    | 1852  | 1852    | 1852  |                 | 11 - 15 - 21 |             |      |           |            |            |            |
|                   |             |             | 70        | 0.50      | 25       | 1655                          |       | 1999    | 2145  | 2207    | 2207  | 2207    | 2207  |                 | 14 - 17 - 24 |             |      |           |            |            |            |
|                   |             |             | 85        | 0.74      | 30       | 1819                          |       | 2253    | 2442  | 2525    | 2525  | 2525    | 2525  |                 | 15 - 19 - 27 |             |      |           |            |            |            |
| 6                 | B2          | 4           | 15        | 0.18      | 16       | 726                           | 0.50  | 783     | 2.00  | 804     | 4.60  | 812     | 7.40  | 4.4             | 1 - 2 - 8    |             |      |           |            |            |            |
|                   |             |             | 20        | 0.32      | 23       | 904                           |       |         |       |         |       |         |       |                 | 995          | 1029        | 1043 | 1043      | 1043       | 1043       | 2 - 4 - 11 |
|                   |             |             | 25        | 0.50      | 28       | 1058                          |       |         |       |         |       |         |       |                 | 1188         | 1238        | 1258 | 1258      | 1258       | 1258       | 2 - 5 - 14 |
|                   |             |             | 30        | 0.71      | 32       | 1193                          |       |         |       |         |       |         |       |                 | 1364         | 1431        | 1459 | 1459      | 1459       | 1459       | 4 - 8 - 16 |
|                   | B3          | 4           | 28        | 0.18      | 20       | 1074                          |       | 1196    | 1242  | 1261    | 1261  | 1261    | 1261  |                 | 3.6          | 3 - 7 - 15  |      |           |            |            |            |
|                   |             |             | 36        | 0.29      | 26       | 1270                          |       | 1449    | 1520  | 1548    | 1548  | 1548    | 1548  |                 | 5 - 10 - 17  |             |      |           |            |            |            |
|                   |             |             | 44        | 0.44      | 31       | 1436                          |       | 1676    | 1772  | 1812    | 1812  | 1812    | 1812  |                 | 8 - 12 - 19  |             |      |           |            |            |            |
|                   |             |             | 52        | 0.61      | 35       | 1580                          |       | 1881    | 2005  | 2058    | 2058  | 2058    | 2058  |                 | 9 - 14 - 21  |             |      |           |            |            |            |
|                   | B4          | 6" oval     | 50        | 0.17      | 15       | 1429                          |       | 1657    | 1748  | 1785    | 1785  | 1785    | 1785  |                 | 3.0          | 9 - 14 - 20 |      |           |            |            |            |
|                   |             |             | 70        | 0.34      | 22       | 1725                          |       | 2085    | 2235  | 2299    | 2299  | 2299    | 2299  |                 | 13 - 17 - 24 |             |      |           |            |            |            |
|                   |             |             | 90        | 0.56      | 28       | 1950                          |       | 2439    | 2653  | 2745    | 2745  | 2745    | 2745  |                 | 16 - 19 - 27 |             |      |           |            |            |            |
|                   |             |             | 110       | 0.84      | 32       | 2128                          |       | 2739    | 3016  | 3138    | 3138  | 3138    | 3138  |                 | 17 - 21 - 30 |             |      |           |            |            |            |



Note: Reference page U91 for operational conditions used for performance notes

CBAW / 4-PIPE HEATING

| Nominal Length ft | Nozzle Size | Primary Air |           |           | Sound NC | Coil Heating (Btu/h) |       |         |       |         |       |         |       | Induction ratio | Throw ft. |      |      |            |
|-------------------|-------------|-------------|-----------|-----------|----------|----------------------|-------|---------|-------|---------|-------|---------|-------|-----------------|-----------|------|------|------------|
|                   |             | Inlet Dia.  | Flow Rate | Inlet ΔPS |          | 1.0 GPM              |       | 2.0 GPM |       | 3.0 GPM |       | 4.0 GPM |       |                 |           |      |      |            |
|                   |             | Inches      | CFM       | (in. H2O) |          | qTOTAL               | ΔCOIL | qTOTAL  | ΔCOIL | qTOTAL  | ΔCOIL | qTOTAL  | ΔCOIL |                 |           |      |      |            |
| 3                 | B2          | 4           | 8         | 0.27      | 15       | 938                  | 0.09  | 984     | 0.36  | 1001    | 0.82  | 1007    | 1.31  | 4.4             | 1 - 2 - 6 |      |      |            |
|                   |             |             | 10        | 0.42      | 19       | 1121                 |       |         |       |         |       |         |       |                 | 1189      | 1214 | 1223 | 1 - 2 - 8  |
|                   |             |             | 12        | 0.61      | 23       | 1288                 |       |         |       |         |       |         |       |                 | 1381      | 1416 | 1428 | 2 - 4 - 9  |
|                   |             |             | 14        | 0.83      | 27       | 1443                 |       |         |       |         |       |         |       |                 | 1563      | 1607 | 1625 | 2 - 5 - 11 |
|                   | B3          | 4           | 14        | 0.23      | 16       | 1340                 |       | 1432    |       | 1466    |       | 1479    |       | 2 - 5 - 11      |           |      |      |            |
|                   |             |             | 18        | 0.38      | 22       | 1612                 |       | 1751    |       | 1804    |       | 1825    |       | 4 - 7 - 12      |           |      |      |            |
|                   |             |             | 22        | 0.57      | 27       | 1852                 |       | 2042    |       | 2116    |       | 2146    |       | 5 - 8 - 13      |           |      |      |            |
|                   |             |             | 26        | 0.80      | 31       | 2064                 |       | 2308    |       | 2404    |       | 2444    |       | 7 - 10 - 15     |           |      |      |            |
|                   | B4          | 4           | 24        | 0.18      | 19       | 1782                 |       | 1950    |       | 2015    |       | 2041    |       | 6 - 9 - 14      |           |      |      |            |
|                   |             |             | 32        | 0.32      | 26       | 2154                 |       | 2414    |       | 2516    |       | 2559    |       | 8 - 12 - 16     |           |      |      |            |
|                   |             |             | 40        | 0.51      | 31       | 2468                 |       | 2822    |       | 2965    |       | 3025    |       | 10 - 13 - 18    |           |      |      |            |
|                   |             |             | 48        | 0.71      | 25       | 2734                 |       | 3183    |       | 3369    |       | 3448    |       | 12 - 14 - 20    |           |      |      |            |
| 4                 | B2          | 4           | 10        | 0.20      | 15       | 1163                 | 0.12  | 1228    | 0.47  | 1252    | 1.06  | 1262    | 1.70  | 4.4             | 1 - 2 - 6 |      |      |            |
|                   |             |             | 13        | 0.35      | 20       | 1432                 |       |         |       |         |       |         |       |                 | 1536      | 1574 | 1589 | 1 - 3 - 9  |
|                   |             |             | 16        | 0.52      | 24       | 1674                 |       |         |       |         |       |         |       |                 | 1820      | 1875 | 1897 | 2 - 4 - 11 |
|                   |             |             | 19        | 0.74      | 28       | 1893                 |       |         |       |         |       |         |       |                 | 2086      | 2159 | 2188 | 3 - 6 - 13 |
|                   | B3          | 4           | 18        | 0.19      | 17       | 1698                 |       | 1835    |       | 1887    |       | 1907    |       | 2 - 5 - 12      |           |      |      |            |
|                   |             |             | 24        | 0.33      | 24       | 2085                 |       | 2303    |       | 2386    |       | 2420    |       | 4 - 8 - 14      |           |      |      |            |
|                   |             |             | 30        | 0.52      | 29       | 2421                 |       | 2726    |       | 2844    |       | 2893    |       | 6 - 10 - 16     |           |      |      |            |
|                   |             |             | 36        | 0.74      | 33       | 2710                 |       | 3105    |       | 3264    |       | 3329    |       | 8 - 12 - 17     |           |      |      |            |
|                   | B4          | 4           | 35        | 0.21      | 23       | 2440                 |       | 2740    |       | 2856    |       | 2905    |       | 8 - 12 - 17     |           |      |      |            |
|                   |             |             | 45        | 0.35      | 29       | 2851                 |       | 3281    |       | 3454    |       | 3526    |       | 10 - 14 - 19    |           |      |      |            |
|                   |             |             | 55        | 0.52      | 34       | 3196                 |       | 3756    |       | 3989    |       | 4087    |       | 12 - 15 - 21    |           |      |      |            |
|                   |             |             | 65        | 0.69      | 27       | 3490                 |       | 4181    |       | 4475    |       | 4601    |       | 13 - 16 - 23    |           |      |      |            |
| 5                 | B2          | 4           | 12        | 0.17      | 15       | 1380                 | 0.14  | 1468    | 0.58  | 1501    | 1.29  | 1513    | 2.08  | 4.4             | 1 - 2 - 7 |      |      |            |
|                   |             |             | 16        | 0.31      | 20       | 1729                 |       |         |       |         |       |         |       |                 | 1874      | 1928 | 1949 | 1 - 3 - 10 |
|                   |             |             | 20        | 0.48      | 26       | 2038                 |       |         |       |         |       |         |       |                 | 2246      | 2325 | 2356 | 2 - 5 - 12 |
|                   |             |             | 24        | 0.69      | 30       | 2311                 |       |         |       |         |       |         |       |                 | 2588      | 2696 | 2738 | 3 - 7 - 14 |
|                   | B3          | 4           | 24        | 0.20      | 20       | 2167                 |       | 2385    |       | 2467    |       | 2499    |       | 3 - 7 - 14      |           |      |      |            |
|                   |             |             | 30        | 0.31      | 25       | 2525                 |       | 2833    |       | 2954    |       | 3002    |       | 5 - 9 - 16      |           |      |      |            |
|                   |             |             | 36        | 0.44      | 29       | 2839                 |       | 3243    |       | 3404    |       | 3470    |       | 7 - 11 - 17     |           |      |      |            |
|                   |             |             | 42        | 0.60      | 33       | 3117                 |       | 3620    |       | 3823    |       | 3908    |       | 8 - 13 - 19     |           |      |      |            |
|                   | B4          | 6" oval     | 40        | 0.16      | 15       | 2778                 |       | 3149    |       | 3296    |       | 3355    |       | 8 - 12 - 18     |           |      |      |            |
|                   |             |             | 55        | 0.31      | 19       | 3367                 |       | 3949    |       | 4186    |       | 4287    |       | 11 - 15 - 21    |           |      |      |            |
|                   |             |             | 70        | 0.50      | 25       | 3832                 |       | 4628    |       | 4966    |       | 5109    |       | 14 - 17 - 24    |           |      |      |            |
|                   |             |             | 85        | 0.74      | 30       | 4212                 |       | 5216    |       | 5654    |       | 5844    |       | 15 - 19 - 27    |           |      |      |            |
| 6                 | B2          | 4           | 15        | 0.18      | 16       | 1682                 | 0.17  | 1813    | 0.69  | 1861    | 1.54  | 1880    | 2.47  | 4.4             | 1 - 2 - 8 |      |      |            |
|                   |             |             | 20        | 0.32      | 23       | 2092                 |       |         |       |         |       |         |       |                 | 2304      | 2383 | 2415 | 2 - 4 - 11 |
|                   |             |             | 25        | 0.50      | 28       | 2449                 |       |         |       |         |       |         |       |                 | 2750      | 2865 | 2912 | 2 - 5 - 14 |
|                   |             |             | 30        | 0.71      | 32       | 2761                 |       |         |       |         |       |         |       |                 | 3157      | 3313 | 3377 | 4 - 8 - 16 |
|                   | B3          | 4           | 28        | 0.18      | 20       | 2486                 |       | 2769    |       | 2875    |       | 2919    |       | 3 - 7 - 15      |           |      |      |            |
|                   |             |             | 36        | 0.29      | 26       | 2940                 |       | 3355    |       | 3518    |       | 3584    |       | 5 - 10 - 17     |           |      |      |            |
|                   |             |             | 44        | 0.44      | 31       | 3325                 |       | 3879    |       | 4103    |       | 4195    |       | 8 - 12 - 19     |           |      |      |            |
|                   |             |             | 52        | 0.61      | 35       | 3657                 |       | 4355    |       | 4642    |       | 4763    |       | 9 - 14 - 21     |           |      |      |            |
|                   | B4          | 6" oval     | 50        | 0.17      | 15       | 3308                 |       | 3835    |       | 4046    |       | 4132    |       | 9 - 14 - 20     |           |      |      |            |
|                   |             |             | 70        | 0.34      | 22       | 3993                 |       | 4825    |       | 5174    |       | 5322    |       | 13 - 17 - 24    |           |      |      |            |
|                   |             |             | 90        | 0.56      | 28       | 4515                 |       | 5647    |       | 6142    |       | 6355    |       | 16 - 19 - 27    |           |      |      |            |
|                   |             |             | 110       | 0.84      | 32       | 4925                 |       | 6340    |       | 6982    |       | 7265    |       | 17 - 21 - 30    |           |      |      |            |

Note: Reference page U91 for operational conditions used for performance notes

CBAW / 2-PIPE COOLING

| Nominal Length ft | Nozzle Size | Primary Air       |               |                     | Sound NC | Coil Sensible Cooling (Btu/h) |       |         |       |         |       |         |       | Induction ratio | Throw ft. |      |      |              |
|-------------------|-------------|-------------------|---------------|---------------------|----------|-------------------------------|-------|---------|-------|---------|-------|---------|-------|-----------------|-----------|------|------|--------------|
|                   |             | Inlet Dia. Inches | Flow Rate CFM | Inlet ΔPS (in. H2O) |          | 1.0 GPM                       |       | 2.0 GPM |       | 3.0 GPM |       | 4.0 GPM |       |                 |           |      |      |              |
|                   |             |                   |               |                     |          | qTOTAL                        | ΔCOIL | qTOTAL  | ΔCOIL | qTOTAL  | ΔCOIL | qTOTAL  | ΔCOIL |                 |           |      |      |              |
| 3                 | B2          | 4                 | 8             | 0.27                | 15       | 432                           | 0.40  | 454     | 1.50  | 461     | 3.30  | 464     | 5.40  | 4.4             | 1 - 2 - 6 |      |      |              |
|                   |             |                   | 10            | 0.42                | 19       | 516                           |       |         |       |         |       |         |       |                 | 548       | 559  | 564  | 1 - 2 - 8    |
|                   |             |                   | 12            | 0.61                | 23       | 593                           |       |         |       |         |       |         |       |                 | 637       | 652  | 658  | 2 - 4 - 9    |
|                   |             |                   | 14            | 0.83                | 27       | 665                           |       |         |       |         |       |         |       |                 | 720       | 741  | 749  | 2 - 5 - 11   |
|                   | B3          | 4                 | 14            | 0.23                | 16       | 617                           |       |         |       |         |       |         |       |                 | 660       | 676  | 682  | 2 - 5 - 11   |
|                   |             |                   | 18            | 0.38                | 22       | 743                           |       |         |       |         |       |         |       |                 | 807       | 831  | 841  | 4 - 7 - 12   |
|                   |             |                   | 22            | 0.57                | 27       | 853                           |       |         |       |         |       |         |       |                 | 941       | 975  | 989  | 5 - 8 - 13   |
|                   |             |                   | 26            | 0.80                | 31       | 951                           |       |         |       |         |       |         |       |                 | 1064      | 1108 | 1126 | 7 - 10 - 15  |
|                   | B4          | 4                 | 24            | 0.18                | 19       | 821                           |       |         |       |         |       |         |       |                 | 899       | 928  | 941  | 6 - 9 - 14   |
|                   |             |                   | 32            | 0.32                | 26       | 992                           |       |         |       |         |       |         |       |                 | 1112      | 1159 | 1179 | 8 - 12 - 16  |
|                   |             |                   | 40            | 0.51                | 31       | 1137                          |       |         |       |         |       |         |       |                 | 1300      | 1366 | 1394 | 10 - 13 - 18 |
|                   |             |                   | 48            | 0.71                | 25       | 1260                          |       |         |       |         |       |         |       |                 | 1467      | 1552 | 1589 | 12 - 14 - 20 |
| 4                 | B2          | 4                 | 10            | 0.20                | 15       | 536                           | 0.50  | 566     | 1.90  | 577     | 4.30  | 581     | 7.00  | 4.4             | 1 - 2 - 6 |      |      |              |
|                   |             |                   | 13            | 0.35                | 20       | 660                           |       |         |       |         |       |         |       |                 | 708       | 725  | 732  | 1 - 3 - 9    |
|                   |             |                   | 16            | 0.52                | 24       | 771                           |       |         |       |         |       |         |       |                 | 839       | 864  | 874  | 2 - 4 - 11   |
|                   |             |                   | 19            | 0.74                | 28       | 872                           |       |         |       |         |       |         |       |                 | 961       | 995  | 1008 | 3 - 6 - 13   |
|                   | B3          | 4                 | 18            | 0.19                | 17       | 783                           |       |         |       |         |       |         |       |                 | 846       | 869  | 879  | 2 - 5 - 12   |
|                   |             |                   | 24            | 0.33                | 24       | 961                           |       |         |       |         |       |         |       |                 | 1061      | 1099 | 1115 | 4 - 8 - 14   |
|                   |             |                   | 30            | 0.52                | 29       | 1115                          |       |         |       |         |       |         |       |                 | 1256      | 1311 | 1333 | 6 - 10 - 16  |
|                   |             |                   | 36            | 0.74                | 33       | 1249                          |       |         |       |         |       |         |       |                 | 1431      | 1504 | 1534 | 8 - 12 - 17  |
|                   | B4          | 4                 | 35            | 0.21                | 23       | 1124                          |       |         |       |         |       |         |       |                 | 1263      | 1316 | 1338 | 8 - 12 - 17  |
|                   |             |                   | 45            | 0.35                | 29       | 1314                          |       |         |       |         |       |         |       |                 | 1512      | 1591 | 1625 | 10 - 14 - 19 |
|                   |             |                   | 55            | 0.52                | 34       | 1473                          |       |         |       |         |       |         |       |                 | 1731      | 1838 | 1883 | 12 - 15 - 21 |
|                   |             |                   | 65            | 0.69                | 27       | 1608                          |       |         |       |         |       |         |       |                 | 1927      | 2062 | 2120 | 13 - 16 - 23 |
| 5                 | B2          | 4                 | 12            | 0.17                | 15       | 636                           | 0.60  | 676     | 2.40  | 692     | 5.30  | 697     | 8.50  | 4.4             | 1 - 2 - 7 |      |      |              |
|                   |             |                   | 16            | 0.31                | 20       | 797                           |       |         |       |         |       |         |       |                 | 863       | 889  | 898  | 1 - 3 - 10   |
|                   |             |                   | 20            | 0.48                | 26       | 939                           |       |         |       |         |       |         |       |                 | 1035      | 1071 | 1086 | 2 - 5 - 12   |
|                   |             |                   | 24            | 0.69                | 30       | 1065                          |       |         |       |         |       |         |       |                 | 1192      | 1242 | 1262 | 3 - 7 - 14   |
|                   | B3          | 4                 | 24            | 0.20                | 20       | 999                           |       |         |       |         |       |         |       |                 | 1099      | 1137 | 1152 | 3 - 7 - 14   |
|                   |             |                   | 30            | 0.31                | 25       | 1163                          |       |         |       |         |       |         |       |                 | 1306      | 1361 | 1383 | 5 - 9 - 16   |
|                   |             |                   | 36            | 0.44                | 29       | 1308                          |       |         |       |         |       |         |       |                 | 1495      | 1569 | 1599 | 7 - 11 - 17  |
|                   |             |                   | 42            | 0.60                | 33       | 1436                          |       |         |       |         |       |         |       |                 | 1668      | 1762 | 1801 | 8 - 13 - 19  |
|                   | B4          | 6" oval           | 40            | 0.16                | 15       | 1280                          |       |         |       |         |       |         |       |                 | 1451      | 1519 | 1546 | 8 - 12 - 18  |
|                   |             |                   | 55            | 0.31                | 19       | 1551                          |       |         |       |         |       |         |       |                 | 1820      | 1929 | 1975 | 11 - 15 - 21 |
|                   |             |                   | 70            | 0.50                | 25       | 1766                          |       |         |       |         |       |         |       |                 | 2133      | 2288 | 2354 | 14 - 17 - 24 |
|                   |             |                   | 85            | 0.74                | 30       | 1941                          |       |         |       |         |       |         |       |                 | 2404      | 2605 | 2693 | 15 - 19 - 27 |
| 6                 | B2          | 4                 | 15            | 0.18                | 16       | 775                           | 0.70  | 835     | 2.80  | 858     | 6.30  | 866     | 10.00 | 4.4             | 1 - 2 - 8 |      |      |              |
|                   |             |                   | 20            | 0.32                | 23       | 964                           |       |         |       |         |       |         |       |                 | 1062      | 1098 | 1113 | 2 - 4 - 11   |
|                   |             |                   | 25            | 0.50                | 28       | 1128                          |       |         |       |         |       |         |       |                 | 1267      | 1320 | 1342 | 2 - 5 - 14   |
|                   |             |                   | 30            | 0.71                | 32       | 1272                          |       |         |       |         |       |         |       |                 | 1455      | 1527 | 1556 | 4 - 8 - 16   |
|                   | B3          | 4                 | 28            | 0.18                | 20       | 1146                          |       |         |       |         |       |         |       |                 | 1276      | 1325 | 1345 | 3 - 7 - 15   |
|                   |             |                   | 36            | 0.29                | 26       | 1355                          |       |         |       |         |       |         |       |                 | 1546      | 1621 | 1652 | 5 - 10 - 17  |
|                   |             |                   | 44            | 0.44                | 31       | 1532                          |       |         |       |         |       |         |       |                 | 1788      | 1891 | 1933 | 8 - 12 - 19  |
|                   |             |                   | 52            | 0.61                | 35       | 1685                          |       |         |       |         |       |         |       |                 | 2007      | 2139 | 2195 | 9 - 14 - 21  |
|                   | B4          | 6" oval           | 50            | 0.17                | 15       | 1524                          |       |         |       |         |       |         |       |                 | 1767      | 1864 | 1904 | 9 - 14 - 20  |
|                   |             |                   | 70            | 0.34                | 22       | 1840                          |       |         |       |         |       |         |       |                 | 2223      | 2384 | 2452 | 13 - 17 - 24 |
|                   |             |                   | 90            | 0.56                | 28       | 2080                          |       |         |       |         |       |         |       |                 | 2602      | 2830 | 2928 | 16 - 19 - 27 |
|                   |             |                   | 110           | 0.84                | 32       | 2269                          |       |         |       |         |       |         |       |                 | 2922      | 3217 | 3348 | 17 - 21 - 30 |



Note: Reference page U91 for operational conditions used for performance notes

CBAW / 2-PIPE HEATING

| Nominal Length ft | Nozzle Size | Primary Air |           |           | Sound NC | Coil Heating (Btu/h) |       |         |       |         |       |              |       | Induction ratio | Throw ft. |      |      |            |
|-------------------|-------------|-------------|-----------|-----------|----------|----------------------|-------|---------|-------|---------|-------|--------------|-------|-----------------|-----------|------|------|------------|
|                   |             | Inlet Dia.  | Flow Rate | Inlet ΔPS |          | 1.0 GPM              |       | 2.0 GPM |       | 3.0 GPM |       | 4.0 GPM      |       |                 |           |      |      |            |
|                   |             | Inches      | CFM       | (in. H2O) |          | qTOTAL               | ΔCOIL | qTOTAL  | ΔCOIL | qTOTAL  | ΔCOIL | qTOTAL       | ΔCOIL |                 |           |      |      |            |
| 3                 | B2          | 4           | 8         | 0.27      | 15       | 1201                 | 0.37  | 1.49    | 1260  | 1.49    | 1281  | 3.35         | 1289  | 5.37            | 1 - 2 - 6 |      |      |            |
|                   |             |             | 10        | 0.42      | 19       | 1435                 |       |         |       |         |       |              |       |                 | 1521      | 1553 | 1566 | 1 - 2 - 8  |
|                   |             |             | 12        | 0.61      | 23       | 1648                 |       |         |       |         |       |              |       |                 | 1768      | 1812 | 1828 | 2 - 4 - 9  |
|                   |             |             | 14        | 0.83      | 27       | 1846                 |       |         |       |         |       |              |       |                 | 2000      | 2057 | 2079 | 2 - 5 - 11 |
|                   | B3          | 4           | 14        | 0.23      | 16       | 1715                 |       |         | 1833  | 1877    | 1893  | 2 - 5 - 11   |       |                 |           |      |      |            |
|                   |             |             | 18        | 0.38      | 22       | 2063                 |       |         | 2242  | 2309    | 2336  | 4 - 7 - 12   |       |                 |           |      |      |            |
|                   |             |             | 22        | 0.57      | 27       | 2371                 |       |         | 2614  | 2708    | 2746  | 5 - 8 - 13   |       |                 |           |      |      |            |
|                   |             |             | 26        | 0.80      | 31       | 2642                 |       |         | 2955  | 3077    | 3128  | 7 - 10 - 15  |       |                 |           |      |      |            |
|                   | B4          | 4           | 24        | 0.18      | 19       | 2280                 |       |         | 2496  | 2579    | 2613  | 6 - 9 - 14   |       |                 |           |      |      |            |
|                   |             |             | 32        | 0.32      | 26       | 2757                 |       |         | 3090  | 3220    | 3275  | 8 - 12 - 16  |       |                 |           |      |      |            |
|                   |             |             | 40        | 0.51      | 31       | 3159                 |       |         | 3612  | 3795    | 3872  | 10 - 13 - 18 |       |                 |           |      |      |            |
|                   |             |             | 48        | 0.71      | 25       | 3499                 |       |         | 4074  | 4312    | 4414  | 12 - 14 - 20 |       |                 |           |      |      |            |
| 4                 | B2          | 4           | 10        | 0.20      | 15       | 1489                 | 0.48  | 1.93    | 1572  | 1.93    | 1603  | 4.34         | 1615  | 6.96            | 1 - 2 - 6 |      |      |            |
|                   |             |             | 13        | 0.35      | 20       | 1833                 |       |         |       |         |       |              |       |                 | 1966      | 2015 | 2034 | 1 - 3 - 9  |
|                   |             |             | 16        | 0.52      | 24       | 2143                 |       |         |       |         |       |              |       |                 | 2330      | 2401 | 2429 | 2 - 4 - 11 |
|                   |             |             | 19        | 0.74      | 28       | 2424                 |       |         |       |         |       |              |       |                 | 2670      | 2763 | 2800 | 3 - 6 - 13 |
|                   | B3          | 4           | 18        | 0.19      | 17       | 2174                 |       |         | 2349  | 2415    | 2441  | 2 - 5 - 12   |       |                 |           |      |      |            |
|                   |             |             | 24        | 0.33      | 24       | 2669                 |       |         | 2948  | 3054    | 3097  | 4 - 8 - 14   |       |                 |           |      |      |            |
|                   |             |             | 30        | 0.52      | 29       | 3099                 |       |         | 3489  | 3641    | 3703  | 6 - 10 - 16  |       |                 |           |      |      |            |
|                   |             |             | 36        | 0.74      | 33       | 3469                 |       |         | 3975  | 4178    | 4261  | 8 - 12 - 17  |       |                 |           |      |      |            |
|                   | B4          | 4           | 35        | 0.21      | 23       | 3123                 |       |         | 3507  | 3656    | 3718  | 8 - 12 - 17  |       |                 |           |      |      |            |
|                   |             |             | 45        | 0.35      | 29       | 3650                 |       |         | 4199  | 4421    | 4513  | 10 - 14 - 19 |       |                 |           |      |      |            |
|                   |             |             | 55        | 0.52      | 34       | 4091                 |       |         | 4808  | 5106    | 5232  | 12 - 15 - 21 |       |                 |           |      |      |            |
|                   |             |             | 65        | 0.69      | 27       | 4467                 |       |         | 5352  | 5728    | 5889  | 13 - 16 - 23 |       |                 |           |      |      |            |
| 5                 | B2          | 4           | 12        | 0.17      | 15       | 1766                 | 0.59  | 2.37    | 1879  | 2.37    | 1921  | 5.33         | 1937  | 8.54            | 1 - 2 - 7 |      |      |            |
|                   |             |             | 16        | 0.31      | 20       | 2213                 |       |         |       |         |       |              |       |                 | 2398      | 2468 | 2495 | 1 - 3 - 10 |
|                   |             |             | 20        | 0.48      | 26       | 2608                 |       |         |       |         |       |              |       |                 | 2875      | 2975 | 3016 | 2 - 5 - 12 |
|                   |             |             | 24        | 0.69      | 30       | 2958                 |       |         |       |         |       |              |       |                 | 3312      | 3450 | 3505 | 3 - 7 - 14 |
|                   | B3          | 4           | 24        | 0.20      | 20       | 2774                 |       |         | 3053  | 3157    | 3199  | 3 - 7 - 14   |       |                 |           |      |      |            |
|                   |             |             | 30        | 0.31      | 25       | 3232                 |       |         | 3627  | 3781    | 3843  | 5 - 9 - 16   |       |                 |           |      |      |            |
|                   |             |             | 36        | 0.44      | 29       | 3633                 |       |         | 4152  | 4357    | 4442  | 7 - 11 - 17  |       |                 |           |      |      |            |
|                   |             |             | 42        | 0.60      | 33       | 3990                 |       |         | 4634  | 4893    | 5003  | 8 - 13 - 19  |       |                 |           |      |      |            |
|                   | B4          | 6" oval     | 40        | 0.16      | 15       | 3556                 |       |         | 4031  | 4219    | 4295  | 8 - 12 - 18  |       |                 |           |      |      |            |
|                   |             |             | 55        | 0.31      | 19       | 4309                 |       |         | 5054  | 5359    | 5487  | 11 - 15 - 21 |       |                 |           |      |      |            |
|                   |             |             | 70        | 0.50      | 25       | 4905                 |       |         | 5924  | 6356    | 6540  | 14 - 17 - 24 |       |                 |           |      |      |            |
|                   |             |             | 85        | 0.74      | 30       | 5391                 |       |         | 6677  | 7237    | 7481  | 15 - 19 - 27 |       |                 |           |      |      |            |
| 6                 | B2          | 4           | 15        | 0.18      | 16       | 2152                 | 0.69  | 2.78    | 2320  | 2.78    | 2383  | 6.25         | 2407  | 10.03           | 1 - 2 - 8 |      |      |            |
|                   |             |             | 20        | 0.32      | 23       | 2678                 |       |         |       |         |       |              |       |                 | 2949      | 3050 | 3091 | 2 - 4 - 11 |
|                   |             |             | 25        | 0.50      | 28       | 3134                 |       |         |       |         |       |              |       |                 | 3519      | 3667 | 3727 | 2 - 5 - 14 |
|                   |             |             | 30        | 0.71      | 32       | 3534                 |       |         |       |         |       |              |       |                 | 4041      | 4241 | 4322 | 4 - 8 - 16 |
|                   | B3          | 4           | 28        | 0.18      | 20       | 3182                 |       |         | 3544  | 3680    | 3736  | 3 - 7 - 15   |       |                 |           |      |      |            |
|                   |             |             | 36        | 0.29      | 26       | 3763                 |       |         | 4294  | 4503    | 4588  | 5 - 10 - 17  |       |                 |           |      |      |            |
|                   |             |             | 44        | 0.44      | 31       | 4255                 |       |         | 4966  | 5252    | 5370  | 8 - 12 - 19  |       |                 |           |      |      |            |
|                   |             |             | 52        | 0.61      | 35       | 4680                 |       |         | 5574  | 5942    | 6096  | 9 - 14 - 21  |       |                 |           |      |      |            |
|                   | B4          | 6" oval     | 50        | 0.17      | 15       | 4234                 |       |         | 4909  | 5179    | 5289  | 9 - 14 - 20  |       |                 |           |      |      |            |
|                   |             |             | 70        | 0.34      | 22       | 5112                 |       |         | 6176  | 6623    | 6812  | 13 - 17 - 24 |       |                 |           |      |      |            |
|                   |             |             | 90        | 0.56      | 28       | 5779                 |       |         | 7228  | 7861    | 8134  | 16 - 19 - 27 |       |                 |           |      |      |            |
|                   |             |             | 110       | 0.84      | 32       | 6304                 |       |         | 8116  | 8937    | 9299  | 17 - 21 - 30 |       |                 |           |      |      |            |

Note: Reference page U91 for operational conditions used for performance notes

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PERFORMANCE DATA

**NOTES:**

1. All performance data based on test performed in accordance with ASHRAE Standard 200-2015
2.  $\Delta P_s$  values are measured in inches of water
3. NC values are based on room absorption of 10 dB. A dash (-) indicates an NC value less than 15.
4. Throw values are based on isothermal supply air and represent throw distances to terminal velocities of 150, 100 and 50 fpm respectively
5.  $\Delta P_{Coil}$  values are measured in feet of water.  $\Delta P_{Coil}$  values in shaded cells indicate use of a two circuit coil. All other values represent a single circuit coil.
6. Induction ratio is multiplied by the volume flow rate of primary air to estimate the volume flow rate of room air entrained through the coil

**Cooling performance:**

- Cooling capacity listed (qTOTAL) is the total sensible heat removal by the beam’s integral coil. It does not include any contribution or offset by the primary air.
- Capacity is based on 18°F  $\Delta T$  between the induced air and the chilled water supply. Table 1 provides correction factors for other temperature differentials.
- Primary air sensible cooling contribution can be calculated by the following equation:

$$q_{SENSPA} = 1.085 \times CFM_{PA} \times (T_{ROOM} - T_{PA})$$

- Primary air latent cooling can be calculated by the following equation:

$$q_{LATENT} = 0.69 \times CFM_{PA} \times (W_{ROOM} - W_{PA})$$

where  $W_{ROOM}$  and  $W_{PA}$  are the humidity ratio of the room and primary air respectively expressed in Grains of moisture per pound dry air

TABLE 4: CORRECTION FOR ( $\Delta T$ ) BETWEEN ENTERING AIR AND ENTERING CHILLED WATER

|                          |      |      |      |      |             |      |      |      |
|--------------------------|------|------|------|------|-------------|------|------|------|
| Actual $\Delta T$        | 10   | 12   | 14   | 16   | <b>18</b>   | 20   | 22   | 24   |
| Multiply Table Value by: | 0.56 | 0.67 | 0.78 | 0.89 | <b>1.00</b> | 1.11 | 1.22 | 1.33 |

**Heating performance:**

- Heating capacity listed (qTOTAL) is the sensible heat removal by the beam’s integral coil. It does not include any contribution or offset by the primary air
- Capacity is based on 50°F  $\Delta T$  between the induced air and the chilled water supply. Table 2 provides correction factors for other temperature differentials.
- Primary air sensible heating offset (or contribution) can be calculated by the following equation:

$$q_{SENSPA} = 1.085 \times CFM_{PA} \times (T_{PA} - T_{ROOM})$$

if the primary air temperature is lower than that of the room, it will offset the coil’s heating

if the primary air temperature is higher than that of the room, it will contribute to the coil’s heating

TABLE 2: CORRECTION FOR ( $\Delta T$ ) BETWEEN ENTERING AIR AND ENTERING CHILLED WATER

|                          |      |      |      |             |      |      |      |      |      |      |      |
|--------------------------|------|------|------|-------------|------|------|------|------|------|------|------|
| Actual $\Delta T$        | 20   | 30   | 40   | <b>50</b>   | 60   | 70   | 80   | 90   | 100  | 110  | 120  |
| Multiply Table Value by: | 0.40 | 0.60 | 0.80 | <b>1.00</b> | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.20 | 2.40 |

**Legend:**

$\Delta P_s$  = Unit Inlet Pressure [in wg]

$q_{SENSPA}$  = Sensible Capacity, Primary Air [Btu/h]

$T_{ROOM}$  = Temperature Room Air [°F]

qCoil = Sensible Capacity, Coil [Btu/h]

$CFM_{PA}$  = Air Flowrate, Primary Air [CFM]

$q_{SENSPA}$  = Latent Capacity, Primary Air [Btu/h]

$\Delta Coil$  = Water coil pressure drop [ft wg]

$T_{PA}$  = Temperature Primary Air [°F]

