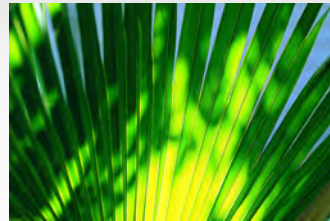




## HCB, VCB, VCB-FB Series 50Hz

Chilled Water Air Handling Units

Air Volume: 750 to 18700 cfm (1274 to 31775 m<sup>3</sup>/hr)



HCB

VCB

# DUNHAM-BUSH

Products that perform...By people who care

# SPECIFICATIONS AND FEATURES

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## General Description

The VCB and HCB series of chilled water blowers are available in thirteen sizes covering 750 to 18700 cfm [1274 to 31775 m<sup>3</sup>/hr]. Each unit has two sections; the coil section which include chilled water coil and filters; the blower and drive package section which can be either vertical or horizontal supply air discharge.

## Casing

- ✦ Constructed of heavy gauge steel sheet and insulated with 1/2" [13mm] thick x 1 1/2 lb per cu.ft [24 kg per cu meter] linacoustic fiberglass.
- ✦ Aesthetically coated with powder coating to provide excellent finish, weatherability and corrosion resistance.
- ✦ Removable panels on the left and right hand side of the unit to provide access to critical parts and components.

## Cooling Coil

Dunham-Bush coils have been designed and tested to assure maximum efficiency of heat transfer between circulating water and air. The two basic criteria for heat transfer on the airside of the coil have been perfected by fin contour and staggered tube configuration.

Coils are circuited to optimize performance and fluid pressure drop limitations. Standard coils are constructed of aluminum fins and 1/2"[13mm] O.D. copper tubes. Casing is made from heavy gauge steel sheet.

Each model can be either 3 or 4 rows deep coil.

Standard coils are suitable for 250 psig [17 bar] working pressure and are tested under water with 350 psig air pressure. The following are available as options for special applications:

- ✦ Pre-coated aluminum fins or copper finned coils
- ✦ Higher design working and test pressures
- ✦ Custom made coils for heating or cooling

## Drive Package and Blowers

### ✦ HCB30 to HCB 95

Units are equipped with direct driven motor blower, statically and dynamically balanced and operate at low rotation per minute to assure smooth and quiet performance.

### ✦ HCB/VCB 145 to VCB 760

Belt driven drive package offers flexibility on various air flow rate and various static pressure application. Single large diameter double inlet double width blowers (AMCA certified) reduce the noise level and eliminate the need for common transition and eliminate air unbalance.

## Filters

VCB / HCB : 1" [25mm] thick washable filters (70% arrestance efficiency).

VCB-FB : 1/2" [13mm] thick washable filters (70% arrestance efficiency).

# PHYSICAL SPECIFICATIONS

## Evaporator Units (Vertical and Horizontal Casing Type – HCB-D & VCB-D)

| Model    | Blower Section |                |              |  | Evaporator Section |   |  | Filters |  | Approx. Operating Weight lbs[kg] |
|----------|----------------|----------------|--------------|--|--------------------|---|--|---------|--|----------------------------------|
|          | Blower         |                | Motor Max HP | Air Flow Min - Max cfm[m <sup>3</sup> /hr] | Coil               |   | Water Inlet/Outlet Conn. O.D. inches[mm] | Qty.    | Size inches [mm]                             |                                  |
|          | Qty.           | Dia. X Width   |              |  | Rows Deep          | Face Area ft <sup>2</sup> [m <sup>2</sup> ] |  |         |  |                                  |
| HCB 30D  | 1              | 9x7 (inches)   | 315W         | 750-900 [1274-1529]                        | 3, 4               | 2.2 [0.2]                                   | 1 [25]                                   | 1       | 16x20x1 [406x508x25]                         | 110 [50]                         |
| HCB 40D  | 1              | 9x7 (inches)   | 425W         | 1200-1500 [2039-2549]                      | 3, 4               | 3.2 [0.3]                                   | 1 1/2 [38]                               | 1       | 20x25x1 [508x635x25]                         | 120 [54]                         |
| HCB 50D  | 1              | 9x9 (inches)   | 425W         | 1450-1700 [2464-2889]                      | 3, 4               | 4.2 [0.4]                                   | 1 1/2 [38]                               | 2       | 20x16x1 [508x406x25]                         | 140 [64]                         |
| HCB 81D  | 1              | 10x10 (inches) | 750W         | 2050-2200 [3483-3738]                      | 3, 4               | 4.4 [0.4]                                   | 1 1/2 [38]                               | 2       | 16x20x1 [406x508x25]                         | 275 [125]                        |
| HCB 95D  | 1              | 10x10 (inches) | 750W         | 2300-2600 [3908-4418]                      | 3, 4               | 5.0 [0.5]                                   | 1 1/2 [38]                               | 2       | 20x20x1 [508x508x25]                         | 340 [154]                        |
| HCB 145D | 1              | 12x12 (inches) | 4.0          | 2070-4140 [3517-7035]                      | 3, 4               | 6.9 [0.6]                                   | 1 1/2 [38]                               | 1<br>1  | 20x25x1 [508x635x25]<br>25x25x1 [635x635x25] | 400 [181]                        |
| VCB 145D | 1              | 12x12 (inches) | 4.0          | 2070-4140 [3517-7035]                      | 3, 4               | 6.9 [0.6]                                   | 1 1/2 [38]                               | 2       | 25x25x1 [635x635x25]                         | 474 [215]                        |
| HCB 190D | 1              | 15x15 (inches) | 5.5          | 2760-5520 [4690-9380]                      | 3, 4               | 9.2 [0.9]                                   | 1 1/2 [38]                               | 2       | 25x25x1 [635x635x25]                         | 500 [227]                        |
| VCB 190D | 1              | 15x15 (inches) | 5.5          | 2760-5520 [4690-9380]                      | 3, 4               | 9.2 [0.9]                                   | 1 1/2 [38]                               | 1<br>2  | 25x16x1 [635x406x25]<br>20x25x1 [508x635x25] | 560 [254]                        |
| HCB 250D | 1              | 15x15 (inches) | 10.0         | 3900-7800 [6627-13254]                     | 3, 4               | 13.0 [1.2]                                  | 2 [51]                                   | 1<br>2  | 20x25x1 [508x635x25]<br>25x25x1 [635x635x25] | 680 [308]                        |
| VCB 250D | 1              | 15x15 (inches) | 10.0         | 3900-7800 [6627-13254]                     | 3, 4               | 13.0 [1.2]                                  | 2 [51]                                   | 4       | 20x25x1 [508x635x25]                         | 767 [348]                        |
| VCB 320D | 1              | 18x13 (inches) | 15.0         | 5100-10200 [8666-17332]                    | 3, 4               | 17.0 [1.6]                                  | 2 [51]<br>2 1/2 [64]                     | 3<br>3  | 16x25x1 [406x635x25]<br>20x25x1 [508x635x25] | 920 [417]                        |
| VCB 435D | 1              | 450x450 (mm)   | 15.0         | 6570-13140 [11164-22327]                   | 3, 4               | 21.9 [2.0]                                  | 2 1/2 [64]                               | 3<br>3  | 25x25x1 [635x635x25]<br>20x25x1 [508x635x25] | 1150 [522]                       |
| VCB 480D | 1              | 500x500 (mm)   | 20.0         | 8750-17520 [14868-29770]                   | 3, 4               | 29.2 [2.7]                                  | 2 1/2 [64]                               | 9       | 20x25x1 [508x635x25]                         | 1450 [658]                       |
| VCB 570D | 1              | 500x500 (mm)   | 20.0         | 8750-17520 [14868-29770]                   | 3, 4               | 29.2 [2.7]                                  | 2 1/2 [64]                               | 9       | 20x25x1 [508x635x25]                         | 1600 [726]                       |
| VCB 760D | 1              | 560x560 (mm)   | 30.0         | 10200-20400 [17332-34664]                  | 3, 4               | 34.0 [3.2]                                  | 2 1/2 [64]<br>3 [76]                     | 3<br>6  | 20x25x1 [508x635x25]<br>25x25x1 [635x635x25] | 1900 [862]                       |

Note: Power supply for HCB 30D to 95D is 240-1-50hz.

## Evaporator Free Blow Units (VCB-D-FB)

| Model       | Blower Section |                       |                 |                         | Filter |                                    | Water Inlet / Outlet Connection O.D. inches[mm] |
|-------------|----------------|-----------------------|-----------------|-------------------------|--------|------------------------------------|---|
|             | Blower         |                       | Motor HP (Each) | cfm[m <sup>3</sup> /hr] | Qty.   | Size - inches[mm]                  |   |
|             | Qty.           | Dia. X Width (inches) |                 |                         |        |                                    |   |
| VCB 68D-FB  | 1              | 10 - 10               | 1/2             | 2100 [3568]             | 1      | 20 7/8 x 18 1/8 x 1/2 [530x460x13] | 1 1/2 [38]                                      |
| VCB 95D-FB  | 2              | 9 - 7                 | 1/3             | 2400 [4078]             | 2      | 20 7/8 x 18 1/8 x 1/2 [530x460x13] | 1 1/2 [38]                                      |
| VCB 145D-FB | 2              | 10 - 8                | 1 1/2           | 3500 [5947]             | 2      | 27 3/4 x 18 1/8 x 1/2 [705x460x13] | 1 1/2 [38]                                      |
| VCB 190D-FB | 2              | 10 - 10               | 1 1/2           | 4400 [7476]             | 2      | 32 5/8 x 18 1/8 x 1/2 [829x460x13] | 1 1/2 [38]                                      |

Note : VCB 68D - FB and VCB 95D - FB are 240-1-50hz.



# PERFORMANCE DATA

## Capacity Based On 44°F EWT, 54°F LWT

| Model                | Supply Air<br>cfm<br>[m³/hr] | Coil<br>Row | 80°FDB / 67°FWB |          |                    |                      | 75°FDB / 62°FWB |          |                    |                      | 72°FDB / 60°FWB |          |                    |                      |
|----------------------|------------------------------|-------------|-----------------|----------|--------------------|----------------------|-----------------|----------|--------------------|----------------------|-----------------|----------|--------------------|----------------------|
|                      |                              |             | Capacity (MBH)  |          | Flow Rate<br>USgpm | Press. Drop<br>ft.wg | Capacity (MBH)  |          | Flow Rate<br>USgpm | Press. Drop<br>ft.wg | Capacity (MBH)  |          | Flow Rate<br>USgpm | Press. Drop<br>ft.wg |
|                      |                              |             | Total           | Sensible |                    |                      | Total           | Sensible |                    |                      | Total           | Sensible |                    |                      |
| HCB 30D              | 800<br>[1359]                | 3           | 25.1            | 18.6     | 5.0                | 3.7                  | 17.3            | 16.3     | 3.5                | 1.9                  | 14.5            | 14.5     | 2.9                | 1.4                  |
|                      |                              | 4           | 29.6            | 21.1     | 5.9                | 3.1                  | 20.3            | 18.4     | 4.1                | 1.6                  | 17.0            | 16.5     | 3.4                | 1.2                  |
| HCB 40D              | 1300<br>[2209]               | 3           | 35.9            | 28.2     | 7.2                | 1.7                  | 25.0            | 25.0     | 5.0                | 0.9                  | 21.0            | 21.0     | 4.2                | 0.7                  |
|                      |                              | 4           | 42.7            | 32.1     | 8.6                | 1.5                  | 29.5            | 28.3     | 5.9                | 0.8                  | 24.8            | 24.8     | 5.0                | 0.6                  |
| HCB 50D              | 1550<br>[2634]               | 3           | 43.9            | 34.1     | 8.8                | 1.5                  | 30.4            | 30.4     | 6.1                | 0.8                  | 25.6            | 25.6     | 5.1                | 0.6                  |
|                      |                              | 4           | 56.4            | 40.5     | 11.3               | 2.8                  | 38.7            | 35.3     | 7.8                | 1.5                  | 32.5            | 31.8     | 6.5                | 1.1                  |
| HCB 81D              | 2100<br>[3568]               | 3           | 57.4            | 44.8     | 11.5               | 3.1                  | 40.0            | 40.0     | 8.0                | 1.7                  | 33.8            | 33.8     | 6.8                | 1.2                  |
|                      |                              | 4           | 73.7            | 53.4     | 14.8               | 5.9                  | 50.9            | 46.7     | 10.2               | 3.1                  | 42.8            | 42.0     | 8.6                | 2.3                  |
| HCB 95D              | 2400<br>[4078]               | 3           | 65.6            | 51.2     | 13.1               | 3.2                  | 45.7            | 45.7     | 9.2                | 1.7                  | 38.6            | 38.6     | 7.7                | 1.3                  |
|                      |                              | 4           | 84.2            | 61.0     | 16.9               | 6.1                  | 58.1            | 53.4     | 11.6               | 3.2                  | 48.9            | 48.9     | 9.8                | 2.4                  |
| VCB 145D<br>HCB 145D | 3500<br>[5947]               | 3           | 96.8            | 74.9     | 19.4               | 4.8                  | 67.4            | 66.7     | 13.5               | 2.6                  | 56.9            | 56.9     | 11.4               | 1.9                  |
|                      |                              | 4           | 123.6           | 89.0     | 24.7               | 9.0                  | 85.4            | 77.9     | 17.1               | 4.7                  | 72.0            | 70.2     | 14.4               | 3.5                  |
| VCB 190D<br>HCB 190D | 4400<br>[7476]               | 3           | 129.6           | 97.4     | 25.9               | 7.7                  | 89.8            | 86.2     | 18.0               | 4.1                  | 75.8            | 75.8     | 15.2               | 3.0                  |
|                      |                              | 4           | 163.1           | 115.3    | 32.7               | 13.9                 | 112.6           | 100.4    | 22.5               | 7.3                  | 94.9            | 90.4     | 19.0               | 5.4                  |
| VCB 250D<br>HCB 250D | 6400<br>[10875]              | 3           | 185.8           | 140.6    | 37.2               | 5.7                  | 128.8           | 124.5    | 25.8               | 3.0                  | 108.7           | 108.7    | 21.8               | 2.2                  |
|                      |                              | 4           | 239.5           | 168.4    | 47.9               | 14.8                 | 165.5           | 146.6    | 33.1               | 7.8                  | 139.6           | 131.8    | 27.9               | 5.9                  |
| VCB 320D             | 8000<br>[13594]              | 3           | 235.8           | 177.5    | 47.2               | 5.7                  | 163.4           | 157.2    | 32.7               | 3.0                  | 137.9           | 137.9    | 27.6               | 2.3                  |
|                      |                              | 4           | 280.8           | 203.2    | 56.2               | 5.4                  | 193.8           | 178.2    | 38.8               | 2.8                  | 163.1           | 160.3    | 32.6               | 2.0                  |
| VCB 435D             | 10500<br>[17842]             | 3           | 307.4           | 231.9    | 61.5               | 6.1                  | 213.1           | 205.3    | 42.7               | 3.2                  | 179.8           | 179.8    | 36.0               | 2.4                  |
|                      |                              | 4           | 395.0           | 277.4    | 79.1               | 15.0                 | 272.9           | 241.6    | 54.6               | 7.9                  | 230.0           | 217.2    | 46.0               | 5.9                  |
| VCB 480D             | 12000<br>[20390]             | 3           | 371.3           | 275.0    | 74.3               | 4.8                  | 255.8           | 242.0    | 51.2               | 2.5                  | 215.5           | 215.5    | 43.1               | 1.9                  |
|                      |                              | 4           | 472.4           | 327.2    | 94.6               | 11.9                 | 325.5           | 282.9    | 65.2               | 6.3                  | 273.8           | 254.5    | 54.8               | 4.7                  |
| VCB 570D             | 14000<br>[23789]             | 3           | 409.8           | 309.2    | 82.1               | 5.7                  | 284.1           | 273.8    | 56.9               | 3.0                  | 239.7           | 239.7    | 48.0               | 2.3                  |
|                      |                              | 4           | 526.6           | 369.9    | 105.4              | 14.4                 | 363.9           | 322.1    | 72.9               | 7.6                  | 306.6           | 289.6    | 61.4               | 5.7                  |
| VCB 760D             | 17000<br>[28886]             | 3           | 490.2           | 371.3    | 98.1               | 6.1                  | 340.5           | 330.1    | 68.2               | 3.3                  | 287.5           | 287.5    | 57.6               | 2.4                  |
|                      |                              | 4           | 632.6           | 445.9    | 126.6              | 15.6                 | 437.2           | 388.3    | 87.5               | 8.2                  | 368.8           | 349.7    | 73.8               | 6.1                  |

### NOTES:

1.) To correct for different air flow, use this multiplier:

| Air Flow Variation | Total Capacity | Sensible Capacity |
|--------------------|----------------|-------------------|
| 0.9                | 0.93           | 0.92              |
| 1.0                | 1.00           | 1.00              |
| 1.1                | 1.07           | 1.08              |

2.) To correct for altitude, use this multiplier:

| Altitude Above Sea Level - ft | Cooling Capacity |
|-------------------------------|------------------|
| 0                             | 1.00             |
| 2000                          | 0.98             |
| 3000                          | 0.97             |
| 4000                          | 0.96             |
| 5000                          | 0.95             |
| 6000                          | 0.93             |
| 7000                          | 0.92             |

# BLOWER PERFORMANCE

## Available External Static Pressure (in.wg)

### A) HCB 30D to 95D

| HCB 30D       |      | HCB 40D       |      | HCB 50D       |      | HCB / VCB 81D   |      | HCB / VCB 95D   |      |
|---------------|------|---------------|------|---------------|------|-----------------|------|-----------------|------|
| DD 9/7 - 315W |      | DD 9/7 - 425W |      | DD 9/9 - 425W |      | DD 10/10 - 750W |      | DD 10/10 - 750W |      |
| cfm           | ESP  | cfm           | ESP  | cfm           | ESP  | cfm             | ESP  | cfm             | ESP  |
| 750           | 0.74 | 1200          | 0.68 | 1450          | 0.54 | 2050            | 0.84 | 2300            | 0.52 |
| 800           | 0.72 | 1300          | 0.56 | 1550          | 0.41 | 2100            | 0.82 | 2400            | 0.47 |
| 850           | 0.69 | 1400          | 0.39 | 1650          | 0.23 | 2150            | 0.76 | 2500            | 0.27 |
| 900           | 0.66 | 1500          | 0.18 | 1700          | 0.08 | 2200            | 0.70 | 2600            | 0.11 |

# BLOWER PERFORMANCE

## B) HCB / VCB 145D to 760D

| RPM                   | Air flow in cfm |       |       |       |       |       |       |       |       |       | Fan Model           |
|-----------------------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------------|
|                       | ESP             | BHP   | ESP   | BHP   | ESP   | BHP   | ESP   | BHP   | ESP   | BHP   |                     |
| <b>VCB / HCB 145D</b> |                 |       |       |       |       |       |       |       |       |       |                     |
|                       | 3100            |       | 3300  |       | 3500  |       | 3700  |       | 3900  |       | 12 – 12<br>(Inches) |
| 800                   | 0.39            | 1.05  | 0.34  | 1.15  | 0.28  | 1.27  | 0.19  | 1.38  | 0.10  | 1.50  |                     |
| 900                   | 0.68            | 1.26  | 0.63  | 1.38  | 0.58  | 1.50  | 0.50  | 1.65  | 0.43  | 1.78  |                     |
| 1000                  | 1.01            | 1.51  | 0.96  | 1.64  | 0.90  | 1.77  | 0.82  | 1.92  | 0.76  | 2.08  |                     |
| 1100                  | 1.32            | 1.77  | 1.31  | 1.93  | 1.27  | 2.08  | 1.18  | 2.24  | 1.11  | 2.40  |                     |
| <b>VCB / HCB 190D</b> |                 |       |       |       |       |       |       |       |       |       |                     |
|                       | 3800            |       | 4100  |       | 4400  |       | 4700  |       | 5000  |       | 15 – 15<br>(Inches) |
| 700                   | 0.50            | 1.18  | 0.42  | 1.31  | 0.37  | 1.47  | 0.31  | 1.64  | 0.24  | 1.80  |                     |
| 800                   | 0.82            | 1.47  | 0.76  | 1.62  | 0.71  | 1.80  | 0.64  | 1.98  | 0.57  | 2.17  |                     |
| 900                   | 1.18            | 1.84  | 1.13  | 2.01  | 1.08  | 2.17  | 1.03  | 2.36  | 0.96  | 2.59  |                     |
| 1000                  | 1.54            | 2.23  | 1.51  | 2.41  | 1.48  | 2.64  | 1.44  | 2.86  | 1.37  | 3.04  |                     |
| <b>VCB / HCB 250D</b> |                 |       |       |       |       |       |       |       |       |       |                     |
|                       | 5600            |       | 6000  |       | 6400  |       | 6800  |       | 7200  |       | 15 – 15<br>(Inches) |
| 900                   | 1.12            | 3.07  | 1.06  | 3.45  | 0.99  | 3.79  | 0.82  | 4.20  | 0.31  | 4.68  |                     |
| 950                   | 1.33            | 3.34  | 1.27  | 3.71  | 1.20  | 4.12  | 1.12  | 4.50  | 0.92  | 4.95  |                     |
| 1000                  | 1.56            | 3.61  | 1.48  | 3.99  | 1.42  | 4.41  | 1.34  | 4.87  | 1.28  | 5.31  |                     |
| 1050                  | 1.79            | 3.87  | 1.72  | 4.29  | 1.65  | 4.75  | 1.57  | 5.20  | 1.5   | 5.71  |                     |
| <b>VCB 320D</b>       |                 |       |       |       |       |       |       |       |       |       |                     |
|                       | 6600            |       | 7300  |       | 8000  |       | 8700  |       | 9400  |       | 18 – 13<br>(Inches) |
| 850                   | 1.77            | 4.36  | 1.59  | 5.00  | 1.43  | 5.67  | 1.25  | 6.39  | 0.6   | 7.29  |                     |
| 900                   | 2.07            | 4.81  | 1.93  | 5.46  | 1.75  | 6.26  | 1.61  | 6.98  | 1.28  | 7.84  |                     |
| 950                   | 2.37            | 5.23  | 2.28  | 6.02  | 2.10  | 6.77  | 1.92  | 7.65  | 1.76  | 8.47  |                     |
| 1000                  | 2.70            | 5.70  | 2.61  | 6.55  | 2.47  | 7.33  | 2.29  | 8.32  | 2.08  | 9.22  |                     |
| <b>VCB 435D</b>       |                 |       |       |       |       |       |       |       |       |       |                     |
|                       | 9000            |       | 9750  |       | 10500 |       | 11250 |       | 12000 |       | 450 – 450<br>(mm)   |
| 650                   | 0.71            | 4.06  | 0.56  | 4.60  | 0.42  | 5.17  | 0.24  | 5.76  | 0.05  | 6.39  |                     |
| 700                   | 0.98            | 4.53  | 0.82  | 5.13  | 0.71  | 5.76  | 0.54  | 6.39  | 0.36  | 7.10  |                     |
| 750                   | 1.27            | 5.07  | 1.13  | 5.67  | 1.00  | 6.35  | 0.84  | 7.05  | 0.67  | 7.80  |                     |
| 800                   | 1.55            | 5.63  | 1.44  | 6.29  | 1.32  | 7.01  | 1.17  | 7.79  | 1.01  | 8.59  |                     |
| <b>VCB 480D</b>       |                 |       |       |       |       |       |       |       |       |       |                     |
|                       | 8000            |       | 10000 |       | 12000 |       | 14000 |       | 16000 |       | 500 – 500<br>(mm)   |
| 650                   | 1.20            | 3.54  | 1.06  | 4.71  | 0.83  | 6.09  | 0.50  | 7.72  | 0.07  | 9.58  |                     |
| 700                   | 1.46            | 4.06  | 1.33  | 5.31  | 1.13  | 6.81  | 0.82  | 8.58  | 0.42  | 10.60 |                     |
| 750                   | 1.72            | 4.64  | 1.62  | 5.99  | 1.44  | 7.60  | 1.15  | 9.50  | 0.79  | 11.68 |                     |
| 800                   | 1.98            | 5.27  | 1.93  | 6.73  | 1.76  | 8.46  | 1.50  | 10.48 | 1.15  | 12.80 |                     |
| <b>VCB 570D</b>       |                 |       |       |       |       |       |       |       |       |       |                     |
|                       | 12000           |       | 13000 |       | 14000 |       | 15000 |       | 16000 |       | 500 – 500<br>(mm)   |
| 650                   | 0.83            | 6.09  | 0.67  | 6.89  | 0.50  | 7.72  | 0.31  | 8.65  | 0.07  | 9.58  |                     |
| 700                   | 1.13            | 6.81  | 0.98  | 7.68  | 0.82  | 8.58  | 0.65  | 9.57  | 0.42  | 10.60 |                     |
| 750                   | 1.44            | 7.60  | 1.30  | 8.51  | 1.15  | 9.50  | 0.99  | 10.56 | 0.79  | 11.68 |                     |
| 800                   | 1.76            | 8.46  | 1.97  | 10.40 | 1.50  | 10.48 | 1.34  | 11.60 | 1.15  | 12.80 |                     |
| <b>VCB 760D</b>       |                 |       |       |       |       |       |       |       |       |       |                     |
|                       | 15300           |       | 16150 |       | 17000 |       | 17850 |       | 18700 |       | 560 – 560<br>(mm)   |
| 550                   | 0.60            | 7.04  | 0.50  | 7.65  | 0.39  | 8.30  | 0.25  | 8.97  | 0.12  | 9.66  |                     |
| 600                   | 0.94            | 8.02  | 0.83  | 8.67  | 0.73  | 9.41  | 0.61  | 10.15 | 0.49  | 10.92 |                     |
| 650                   | 1.30            | 9.09  | 1.21  | 9.83  | 1.10  | 10.59 | 0.98  | 11.41 | 0.87  | 12.27 |                     |
| 700                   | 1.67            | 10.27 | 1.58  | 11.02 | 1.49  | 11.86 | 1.38  | 12.75 | 1.26  | 13.65 |                     |

Notes: 1. Values based on four row wet and standard washable filter.  
2. For three row of wet coil, add 0.08" wg of external static pressure.

## DIMENSIONAL DATA

### Evaporator Free Blow Unit (VCB-D-FB)

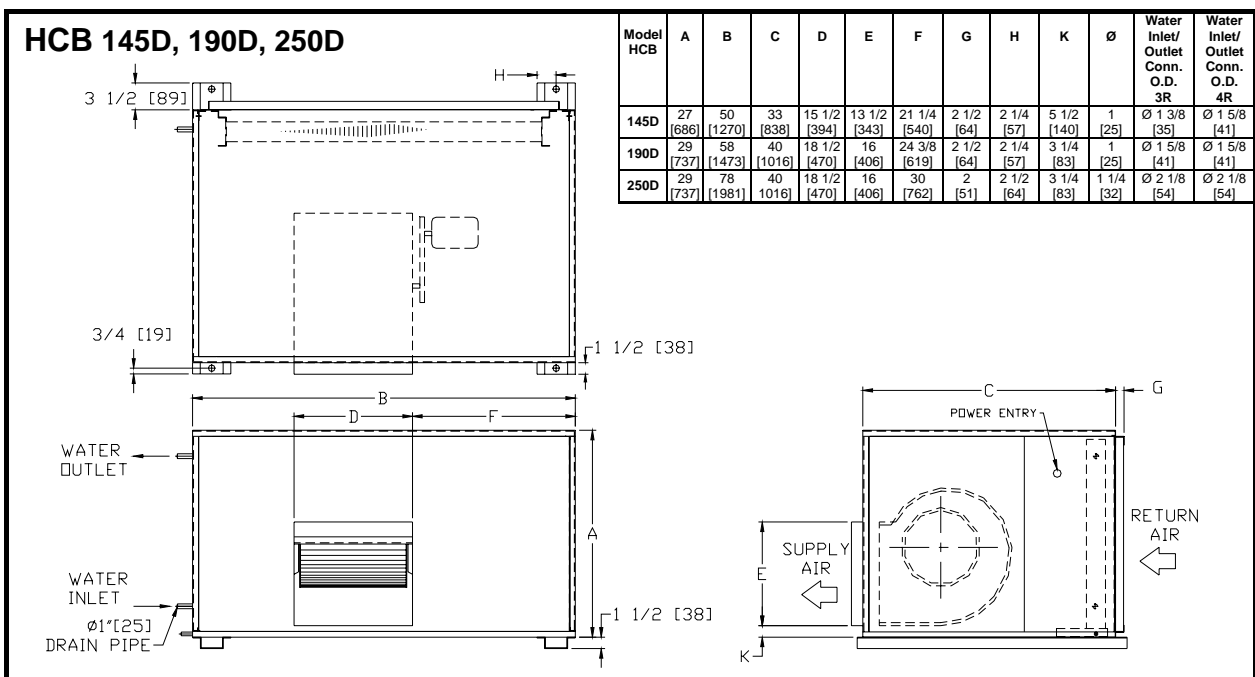
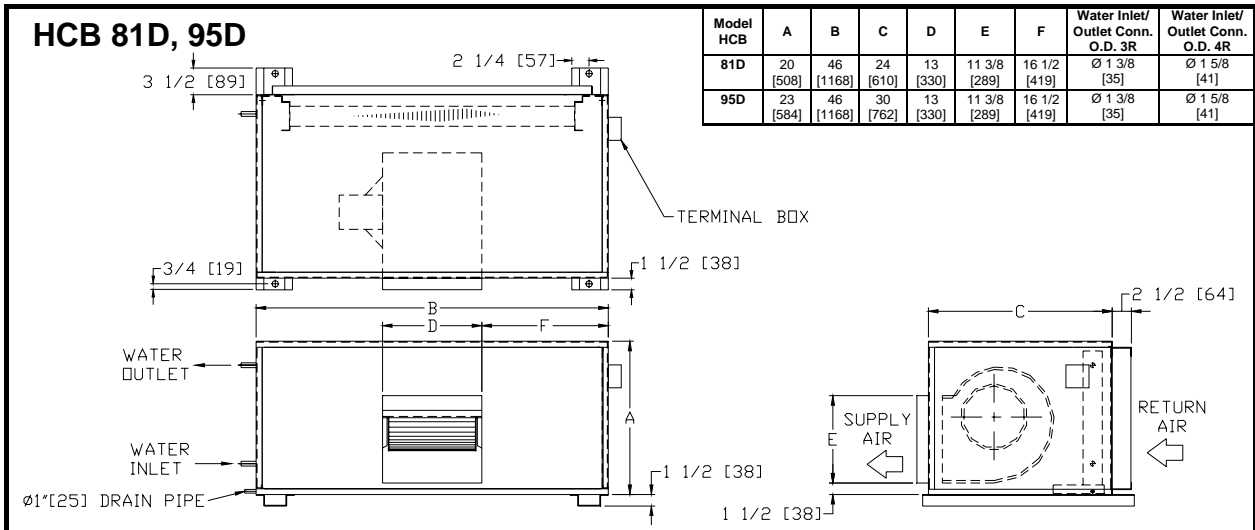
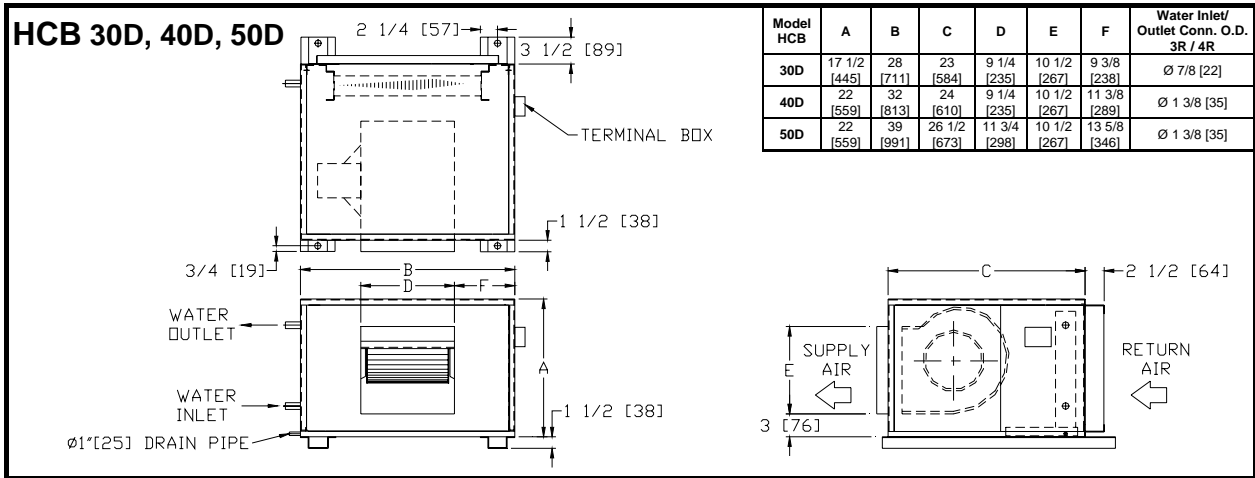
**VCB 68D-FB, 95D-FB, 145D-FB, 190D-FB**

| Model VCB | A         | B        | C         |
|-----------|-----------|----------|-----------|
| 68D-FB    | 48 [1219] | 22 [559] | 79 [2007] |
| 95D-FB    | 48 [1219] | 22 [559] | 79 [2007] |
| 145D-FB   | 61 [1549] | 24 [610] | 81 [2057] |
| 190D-FB   | 72 [1829] | 30 [762] | 86 [2184] |

Notes: 1.) All dimensions are in inches[mm].  
2.) Units shown are right hand piping connection.  
3.) Standard water inlet and outlet comes with BS males threaded connection.

# DIMENSIONAL DATA

## Evaporator Units (Horizontal Casing Type – HCB-D)



- Notes: 1.) All dimensions are in inches[mm].  
 2.) Units shown are right hand piping connection.  
 3.) Standard water inlet and outlet comes with BS males threaded connection.

# DIMENSIONAL DATA

## Evaporator Units (Vertical Casing Type – VCB-D)

**VCB 145D, 190D, 250D**

| Model VCB | A             | B             | C        | D            | E            | F            | G            | H            | Water Inlet/Outlet Conn. O.D.-3R | Water Inlet/Outlet Conn. O.D.-4R |
|-----------|---------------|---------------|----------|--------------|--------------|--------------|--------------|--------------|----------------------------------|----------------------------------|
| 145D      | 54 1/2 [1384] | 52 [1321]     | 25 [635] | 15 1/2 [394] | 13 1/2 [343] | 14 3/4 [375] | 27 1/4 [692] | 27 1/4 [692] | Ø 1 3/8 [35]                     | Ø 1 5/8 [41]                     |
| 190D      | 57 1/2 [1461] | 58 1/2 [1486] | 28 [711] | 18 5/8 [473] | 16 [406]     | 15 [381]     | 28 3/4 [730] | 28 3/4 [730] | Ø 1 5/8 [41]                     | Ø 1 5/8 [41]                     |
| 250D      | 58 3/4 [1492] | 81 1/2 [2070] | 28 [711] | 18 5/8 [473] | 16 [406]     | 24 3/4 [629] | 28 3/4 [730] | 30 [762]     | Ø 2 1/8 [54]                     | Ø 2 1/8 [54]                     |

**VCB 320D, 435D**

| Model VCB | A         | B         | C         | D            | E            | F            | Water Inlet/Outlet Conn. O.D.-3R | Water Inlet/Outlet Conn. O.D.-4R |
|-----------|-----------|-----------|-----------|--------------|--------------|--------------|----------------------------------|----------------------------------|
| 320D      | 38 [965]  | 84 [2134] | 45 [1143] | 17 [432]     | 19 [483]     | 33 1/2 [851] | Ø 2 1/8 [54]                     | Ø 2 5/8 [67]                     |
| 435D      | 48 [1219] | 84 [2134] | 45 [1143] | 22 1/2 [572] | 22 1/2 [572] | 37 [940]     | Ø 2 5/8 [67]                     | Ø 2 5/8 [67]                     |

**VCB 480D, 570D, 760D**

| Model VCB | A         | B         | C         | D        | E        | F        | Water Inlet/Outlet Conn. O.D.-3R | Water Inlet/Outlet Conn. O.D.-4R |
|-----------|-----------|-----------|-----------|----------|----------|----------|----------------------------------|----------------------------------|
| 480D      | 68 [1727] | 84 [2134] | 66 [1676] | 25 [635] | 25 [635] | 34 [864] | Ø 2 5/8 [67]                     | Ø 2 5/8 [67]                     |
| 570D      | 68 [1727] | 84 [2134] | 66 [1676] | 25 [635] | 25 [635] | 34 [864] | Ø 2 5/8 [67]                     | Ø 2 [51]                         |
| 760D      | 78 [1981] | 84 [2134] | 66 [1676] | 28 [711] | 28 [711] | 34 [864] | Ø 2 5/8 [67]                     | Ø 3 1/8 [79]                     |

- Notes :
- 1.) All dimensions are in inches[mm].
  - 2.) Units shown are right hand piping connection.
  - 3.) Standard water inlet and outlet comes with BS males threaded connection.



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