

# THW

## Tangential Inlet/Wide Spray Band

### DESIGN FEATURES

- Large free passage
- Clog-resistant; nozzles have no internal parts
- Wide spray band
- Female connection
- Flanged connection available
- U.S. Patent 4,231,524
- Inlet and outlet are in-line

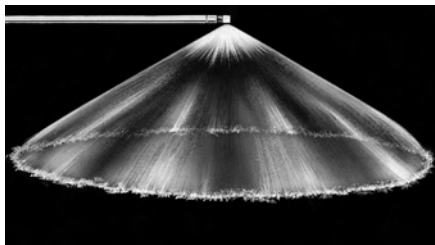
### SPRAY CHARACTERISTICS

**Spray pattern:** Hollow Cone  
**Spray angle:** Wide  
**Flow rates:** 4.11 to 564 gpm

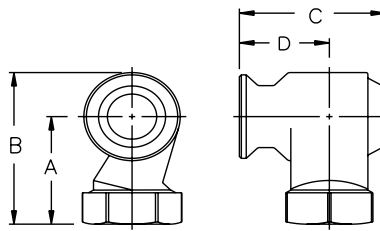


Metal

**Silicon carbide requests require review prior to quote/order acceptance.**  
**Please contact BETE for information.**



Hollow Cone - Wide Angle



**Dimensions are approximate. Check with BETE for critical dimension applications.**

### THW Flow Rates and Dimensions

*Hollow Cone, Wide Spray Angles, 1" to 3" Pipe Sizes*

| Female<br>Pipe<br>Size | Nozzle<br>Number | Spray Ang. |           |           | K<br>Factor | GALLONS PER MINUTE @ PSI |          |          |           |           |           |           |           | Approx.<br>Orifice<br>Dia. (in.) | Free<br>Pass.<br>Dia. (in.) | Dimensions<br>(in.) |      |      |      | Wt.<br>(lbs.) |
|------------------------|------------------|------------|-----------|-----------|-------------|--------------------------|----------|----------|-----------|-----------|-----------|-----------|-----------|----------------------------------|-----------------------------|---------------------|------|------|------|---------------|
|                        |                  | 5<br>PSI   | 15<br>PSI | 40<br>PSI |             | 3<br>PSI                 | 5<br>PSI | 7<br>PSI | 10<br>PSI | 15<br>PSI | 20<br>PSI | 30<br>PSI | 40<br>PSI |                                  |                             | A                   | B    | C    | D    |               |
| 1                      | THFW1508         | 100°       | 100°      | 100°      | 2.37        | 4.11                     | 5.30     | 6.27     | 7.50      | 9.19      | 10.6      | 13.0      | 15.0      | 0.34                             | 0.34                        | 2.31                | 3.12 | 2.31 | 1.38 | 0.40          |
|                        | THFW1808         | 115°       | 115°      | 115°      | 2.85        | 4.93                     | 6.36     | 7.53     | 9.00      | 11.0      | 12.7      | 15.6      | 18.0      | 0.38                             | 0.38                        |                     |      |      |      |               |
|                        | THFW2308         | 120°       | 120°      | 120°      | 3.64        | 6.30                     | 8.13     | 9.62     | 11.5      | 14.1      | 16.3      | 19.9      | 23.0      | 0.44                             | 0.44                        |                     |      |      |      |               |
|                        | THFW2708         | 120°       | 120°      | 120°      | 4.27        | 7.39                     | 9.55     | 11.3     | 13.5      | 16.5      | 19.1      | 23.4      | 27.0      | 0.47                             | 0.47                        |                     |      |      |      |               |
|                        | THFW3208         | 120°       | 120°      | 120°      | 5.06        | 8.76                     | 11.3     | 13.4     | 16.05     | 19.6      | 22.6      | 27.7      | 32.0      | 0.44                             | 0.44                        |                     |      |      |      |               |
|                        | THFW3808         | 120°       | 120°      | 120°      | 6.01        | 10.4                     | 13.4     | 15.9     | 19.0      | 23.3      | 26.9      | 32.9      | 38.0      | 0.60                             | 0.60                        |                     |      |      |      |               |
| 1 1/4                  | THFW3210         | 120°       | 120°      | 120°      | 5.06        | 8.76                     | 11.3     | 13.4     | 16.0      | 19.6      | 22.6      | 27.7      | 32.0      | 0.55                             | 0.55                        | 2.88                | 3.85 | 2.88 | 1.75 | 1.20          |
|                        | THFW3810         | 125°       | 125°      | 125°      | 6.01        | 10.4                     | 13.4     | 15.9     | 19.0      | 23.3      | 26.9      | 32.9      | 38.0      | 0.63                             | 0.63                        |                     |      |      |      |               |
|                        | THFW4110         | 125°       | 125°      | 125°      | 6.48        | 11.2                     | 14.5     | 17.2     | 20.5      | 25.1      | 29.0      | 35.5      | 41.0      | 0.66                             | 0.66                        |                     |      |      |      |               |
|                        | THFW5210         | 125°       | 125°      | 125°      | 8.22        | 14.2                     | 18.4     | 21.8     | 26.0      | 31.8      | 36.8      | 45.0      | 52.0      | 0.78                             | 0.78                        |                     |      |      |      |               |
|                        | THFW7010         | 125°       | 125°      | 125°      | 11.1        | 19.2                     | 24.7     | 29.3     | 35.0      | 42.9      | 49.5      | 60.6      | 70.0      | 1.03                             | 0.89                        |                     |      |      |      |               |
| 1 1/2                  | THFW6112         | 110°       | 110°      | 110°      | 9.65        | 16.7                     | 21.6     | 25.5     | 30.5      | 37.4      | 43.1      | 52.8      | 61.0      | 0.77                             | 0.77                        | 2.94                | 4.09 | 3.62 | 2.30 | 2.20          |
|                        | THFW7012         | 112°       | 115°      | 115°      | 11.1        | 19.2                     | 24.7     | 29.3     | 35.0      | 42.9      | 49.5      | 60.6      | 70.0      | 0.84                             | 0.84                        |                     |      |      |      |               |
|                        | THFW7712         | 117°       | 120°      | 120°      | 12.2        | 21.1                     | 27.2     | 32.2     | 38.5      | 47.2      | 54.4      | 66.7      | 77.0      | 0.92                             | 0.92                        |                     |      |      |      |               |
|                        | THFW9012         | 117°       | 120°      | 120°      | 14.2        | 24.6                     | 31.8     | 37.6     | 45.0      | 55.1      | 63.6      | 77.9      | 90.0      | 1.03                             | 1.03                        |                     |      |      |      |               |
|                        | THFW12712        | 117°       | 120°      | 120°      | 20.1        | 34.8                     | 44.9     | 53.1     | 63.5      | 77.8      | 89.8      | 110       | 127       | 1.30                             | 1.06                        |                     |      |      |      |               |
|                        | THFW14512        | 117°       | 120°      | 120°      | 22.9        | 39.7                     | 51.3     | 60.7     | 72.5      | 88.8      | 103       | 126       | 145       | 1.42                             | 1.06                        |                     |      |      |      |               |

$$\text{Flow Rate (GPM)} = K \sqrt{\text{PSI}}$$

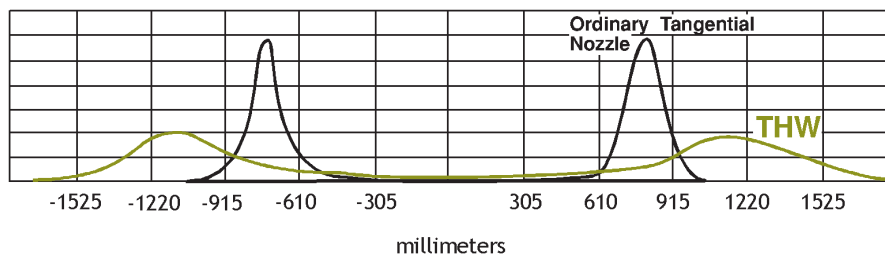
**Standard Materials: Brass, Carbon Steel and 316 Stainless Steel.**

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.



Silicon Carbide, Flanged

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prior to quote/order acceptance.  
Please contact BETE for information.



Dimensions are approximate. Check with BETE for critical dimension applications.

### THW Flow Rates and Dimensions

Hollow Cone, Wide Spray Angles, 1" to 3" Pipe Sizes

| Female<br>Pipe<br>Size | Nozzle<br>Number | Spray Ang. |           |           | K<br>Factor | GALLONS PER MINUTE @ PSI |          |          |           |           |           |           |           | Approx.<br>Orifice<br>Dia. (in.) | Free<br>Pass.<br>Dia. (in.) | Dimensions<br>(in.) |      |      |      | Wt.<br>(lbs.) |
|------------------------|------------------|------------|-----------|-----------|-------------|--------------------------|----------|----------|-----------|-----------|-----------|-----------|-----------|----------------------------------|-----------------------------|---------------------|------|------|------|---------------|
|                        |                  | 5<br>PSI   | 15<br>PSI | 40<br>PSI |             | 3<br>PSI                 | 5<br>PSI | 7<br>PSI | 10<br>PSI | 15<br>PSI | 20<br>PSI | 30<br>PSI | 40<br>PSI |                                  |                             | A                   | B    | C    | D    |               |
| 2                      | THFW8516         | 112°       | 115°      | 115°      | 13.4        | 23.3                     | 30.1     | 35.6     | 42.5      | 52.1      | 60.1      | 73.6      | 85.0      | 0.86                             | 0.86                        | 3.62                | 5.10 | 4.50 | 2.78 | 4.00          |
|                        | THFW10516        | 120°       | 122°      | 122°      | 16.6        | 28.8                     | 37.1     | 43.9     | 52.5      | 64.3      | 74.2      | 90.9      | 105       | 1.00                             | 1.00                        |                     |      |      |      |               |
|                        | THFW12516        | 119°       | 122°      | 122°      | 19.8        | 34.2                     | 44.2     | 52.3     | 62.5      | 76.5      | 88.4      | 108       | 125       | 1.14                             | 1.14                        |                     |      |      |      |               |
|                        | THFW14516        | 122°       | 125°      | 125°      | 22.9        | 39.7                     | 51.3     | 60.7     | 72.5      | 88.8      | 103       | 126       | 145       | 1.27                             | 1.27                        |                     |      |      |      |               |
|                        | THFW17016        | 125°       | 125°      | 125°      | 26.9        | 46.6                     | 60.1     | 71.1     | 85.0      | 104       | 120       | 147       | 170       | 1.39                             | 1.39                        |                     |      |      |      |               |
|                        | THFW19216        | 125°       | 125°      | 125°      | 30.4        | 52.6                     | 67.9     | 80.3     | 96.0      | 118       | 136       | 166       | 192       | 1.52                             | 1.44                        |                     |      |      |      |               |
|                        | THFW20516        | 125°       | 125°      | 125°      | 32.4        | 56.1                     | 72.5     | 85.8     | 103       | 126       | 145       | 178       | 205       | 1.63                             | 1.44                        |                     |      |      |      |               |
| 2 1/2                  | THFW23016        | 125°       | 125°      | 125°      | 36.4        | 63.0                     | 81.3     | 96.2     | 115       | 141       | 163       | 199       | 230       | 1.75                             | 1.44                        | 4.94                | 6.77 | 5.62 | 3.47 | 6.40          |
|                        | THFW17020        | 117°       | 120°      | 120°      | 26.9        | 46.6                     | 60.1     | 71.1     | 85.0      | 104       | 120       | 147       | 170       | 1.33                             | 1.33                        |                     |      |      |      |               |
|                        | THFW19020        | 117°       | 120°      | 120°      | 30.0        | 52.0                     | 67.2     | 79.5     | 95.0      | 116       | 134       | 165       | 190       | 1.42                             | 1.42                        |                     |      |      |      |               |
|                        | THFW20520        | 117°       | 120°      | 120°      | 32.4        | 56.1                     | 72.5     | 85.8     | 103       | 126       | 145       | 178       | 205       | 1.47                             | 1.47                        |                     |      |      |      |               |
|                        | THFW23020        | 123°       | 125°      | 125°      | 36.4        | 63.0                     | 81.3     | 96.2     | 115       | 141       | 163       | 199       | 230       | 1.58                             | 1.58                        |                     |      |      |      |               |
|                        | THFW28020        | 128°       | 130°      | 130°      | 44.3        | 76.7                     | 99.0     | 117      | 140       | 171       | 198       | 242       | 280       | 1.81                             | 1.75                        |                     |      |      |      |               |
|                        | THFW32020        | 128°       | 130°      | 130°      | 50.6        | 87.6                     | 113      | 134      | 160       | 196       | 226       | 277       | 320       | 2.02                             | 1.75                        |                     |      |      |      |               |
| 3                      | THFW34020        | 128°       | 130°      | 130°      | 53.8        | 93.1                     | 120      | 142      | 170       | 208       | 240       | 294       | 340       | 2.09                             | 1.75                        | 5.72                | 7.88 | 6.81 | 4.28 | 9.00          |
|                        | THFW43520        | 128°       | 130°      | 130°      | 68.8        | 119                      | 154      | 182      | 218       | 266       | 308       | 377       | 435       | 2.44                             | 1.75                        |                     |      |      |      |               |
|                        | THFW18524        | 122°       | 122°      | 122°      | 29.3        | 50.7                     | 65.4     | 77.4     | 92.5      | 113       | 131       | 160       | 185       | 1.28                             | 1.28                        |                     |      |      |      |               |
|                        | THFW23024        | 122°       | 122°      | 122°      | 36.4        | 63.0                     | 81.3     | 96.2     | 115       | 141       | 163       | 199       | 230       | 1.44                             | 1.44                        |                     |      |      |      |               |
|                        | THFW28024        | 122°       | 122°      | 122°      | 44.3        | 76.7                     | 99.0     | 117      | 140       | 171       | 198       | 242       | 280       | 1.63                             | 1.63                        |                     |      |      |      |               |
|                        | THFW32024        | 125°       | 125°      | 125°      | 50.6        | 87.6                     | 113      | 134      | 160       | 196       | 226       | 277       | 320       | 1.78                             | 1.78                        |                     |      |      |      |               |
|                        | THFW34024        | 125°       | 125°      | 125°      | 53.8        | 93.1                     | 120      | 142      | 170       | 208       | 240       | 294       | 340       | 1.84                             | 1.84                        |                     |      |      |      |               |
|                        | THFW41224        | 128°       | 130°      | 130°      | 65.1        | 113                      | 146      | 172      | 206       | 252       | 291       | 357       | 412       | 2.11                             | 2.11                        | 5.72                | 7.88 | 6.81 | 4.28 | 9.00          |
|                        | THFW46924        | 129°       | 132°      | 135°      | 74.2        | 128                      | 166      | 196      | 235       | 287       | 332       | 406       | 469       | 2.28                             | 2.13                        |                     |      |      |      |               |
|                        | THFW52624        | 129°       | 132°      | 135°      | 83.2        | 144                      | 186      | 220      | 263       | 322       | 372       | 456       | 526       | 2.48                             | 2.13                        |                     |      |      |      |               |
|                        | THFW56424        | 129°       | 132°      | 135°      | 89.2        | 154                      | 199      | 236      | 282       | 345       | 399       | 488       | 564       | 2.59                             | 2.13                        |                     |      |      |      |               |

$$\text{Flow Rate (GPM)} = K \sqrt{\text{PSI}}$$

Standard Materials: Brass, Carbon Steel and 316 Stainless Steel.

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.



WHIRL

CALL 413-772-0846  
Call for the name of your nearest BETE representative.