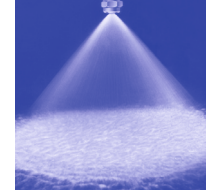




# Axial-flow full cone nozzles Series 419 »FreeFlow«



## FreeFlow

Particularly insensitive to clogging thanks to very large free cross sections.  
Stable spray angle.  
Uniform spray pattern.

### Applications:

Gas washing, spraying over packings, dust control absorption, distillation

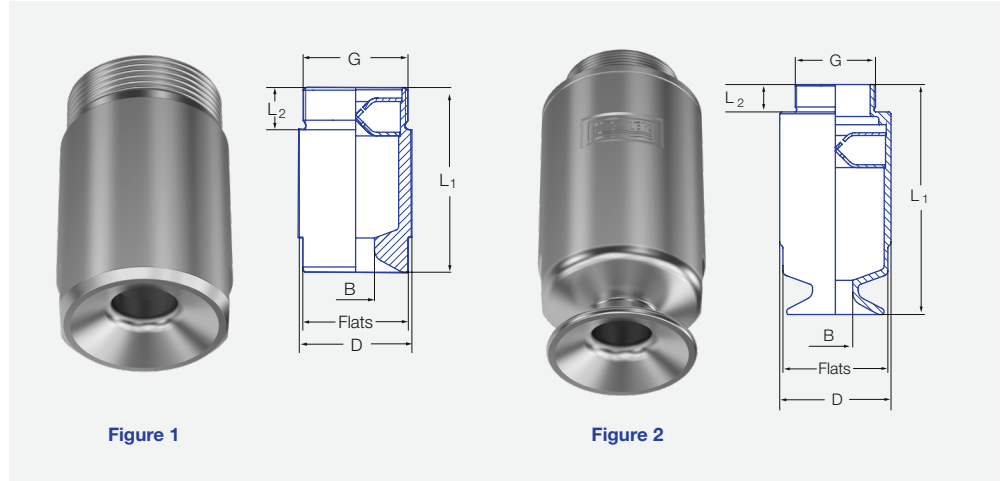


Figure 1

Figure 2

| Spray angle | Type    | Code      | Figure | Dimensions [mm] |                |                |     |       | Weight  |
|-------------|---------|-----------|--------|-----------------|----------------|----------------|-----|-------|---------|
|             |         |           |        | G               | L <sub>1</sub> | L <sub>2</sub> | D   | Flats |         |
| 90° + 120°  | 419.3XX | <b>AV</b> | 1      | 2 BSPP          | 105            | 24             | 64  | 60    | 1,200 g |
|             | 419.4XX | <b>AV</b> | 2      | 2 BSPP          | 163            | 24             | 80  | 75    | 2,000 g |
|             | 419.51X | <b>AV</b> | 2      | 2 BSPP          | 199            | 24             | 102 | 95    | 3,700 g |
|             | 419.54X | <b>AY</b> | 2      | 2 1/2 BSPP      | 202            | 27             | 102 | 95    | 3,800 g |
|             | 419.57X | <b>AY</b> | 2      | 2 1/2 BSPP      | 231            | 27             | 115 | 105   | 5,200 g |
|             | 419.57X | <b>LA</b> | 2      | 3 BSPP          | 233            | 30             | 115 | 105   | 5,200 g |
|             | 419.6XX | <b>LA</b> | 2      | 3 BSPP          | 252            | 30             | 122 | 115   | 5,400 g |

| Spray angle*   | Ordering no.   | Mat. no. | Code      |           |            | B Ø [mm] | E Ø [mm] | V̇ [l/min] |                                     |       |       |       | Spray diameter D at p = 1 bar |            |              |
|----------------|----------------|----------|-----------|-----------|------------|----------|----------|------------|-------------------------------------|-------|-------|-------|-------------------------------|------------|--------------|
|                |                |          | 1Y        | 2 BSPP    | 2 1/2 BSPP |          |          | 3 BSPP     | p [bar] (p <sub>max</sub> = 10 bar) |       |       |       |                               | H = 500 mm | H = 1,000 mm |
|                |                |          |           |           |            |          |          |            | 0.3                                 | 0.5   | 1.0   | 2.0   | 5.0                           |            |              |
| 90°            | <b>419.366</b> | ○        | <b>AV</b> | -         | -          | 19.0     | 17.5     | 117        | 144                                 | 189   | 250   | 361   | 1,000                         | 2,000      |              |
|                | <b>419.396</b> | ○        | <b>AV</b> | -         | -          | 21.2     | 17.5     | 140        | 172                                 | 227   | 300   | 433   | 1,000                         | 2,000      |              |
|                | <b>419.446</b> | ○        | <b>AV</b> | -         | -          | 24.0     | 20.5     | 187        | 230                                 | 303   | 400   | 577   | 1,000                         | 2,000      |              |
|                | <b>419.486</b> | ○        | <b>AV</b> | -         | -          | 29.0     | 20.5     | 234        | 287                                 | 379   | 500   | 721   | 1,000                         | 2,000      |              |
|                | <b>419.516</b> | ○        | <b>AV</b> | <b>AY</b> | -          | 29.2     | 24.1     | 281        | 345                                 | 455   | 600   | 866   | 1,000                         | 2,000      |              |
|                | <b>419.546</b> | ○        | <b>AV</b> | -         | -          | 33.0     | 24.1     | 332        | 408                                 | 538   | 710   | 1,024 | 1,000                         | 2,000      |              |
|                | <b>419.576</b> | ○        | -         | <b>AY</b> | <b>LA</b>  | 35.0     | 27.2     | 398        | 488                                 | 644   | 850   | 1,226 | 1,000                         | 2,000      |              |
|                | <b>419.606</b> | ○        | -         | -         | <b>LA</b>  | 37.5     | 30.1     | 468        | 574                                 | 758   | 1,000 | 1,443 | 1,000                         | 2,000      |              |
| <b>419.626</b> | ○              | -        | -         | <b>LA</b> | 43.0       | 30.1     | 585      | 718        | 947                                 | 1,250 | 1,803 | 1,000 | 2,000                         |            |              |
| 120°           | <b>419.368</b> | ○        | <b>AV</b> | -         | -          | 21.0     | 17.4     | 117        | 144                                 | 189   | 250   | 361   | 1,700                         | 2,900      |              |
|                | <b>419.398</b> | ○        | <b>AV</b> | -         | -          | 24.2     | 17.4     | 140        | 172                                 | 227   | 300   | 433   | 1,700                         | 2,900      |              |
|                | <b>419.448</b> | ○        | <b>AV</b> | -         | -          | 24.5     | 20.5     | 187        | 230                                 | 303   | 400   | 577   | 1,700                         | 2,900      |              |
|                | <b>419.488</b> | ○        | <b>AV</b> | -         | -          | 29.5     | 20.5     | 234        | 287                                 | 379   | 500   | 721   | 1,700                         | 2,900      |              |
|                | <b>419.518</b> | ○        | <b>AV</b> | <b>AY</b> | -          | 29.2     | 24.1     | 281        | 345                                 | 455   | 600   | 866   | 1,700                         | 2,900      |              |
|                | <b>419.548</b> | ○        | <b>AV</b> | -         | -          | 34.0     | 24.1     | 332        | 408                                 | 538   | 710   | 1,024 | 1,700                         | 2,900      |              |
|                | <b>419.578</b> | ○        | -         | <b>AY</b> | <b>LA</b>  | 35.0     | 28.6     | 398        | 488                                 | 644   | 850   | 1,226 | 1,700                         | 2,900      |              |
|                | <b>419.608</b> | ○        | -         | -         | <b>LA</b>  | 38.0     | 32.2     | 468        | 574                                 | 758   | 1,000 | 1,443 | 1,700                         | 2,900      |              |
| <b>419.628</b> | ○              | -        | -         | <b>LA</b> | 43.5       | 32.2     | 585      | 718        | 947                                 | 1,250 | 1,803 | 1,700 | 2,900                         |            |              |

B = bore diameter · E = narrowest free cross section · \* Spray angle at 1 bar

**Example for ordering:** Type **419.366** + Material no. **1Y** + Code **AV** = Ordering no. **419.366.1Y.AV**

