

# Pneumatic atomizing nozzles, full cone, pressure principle, internal mixing Series 166.1



## Features:

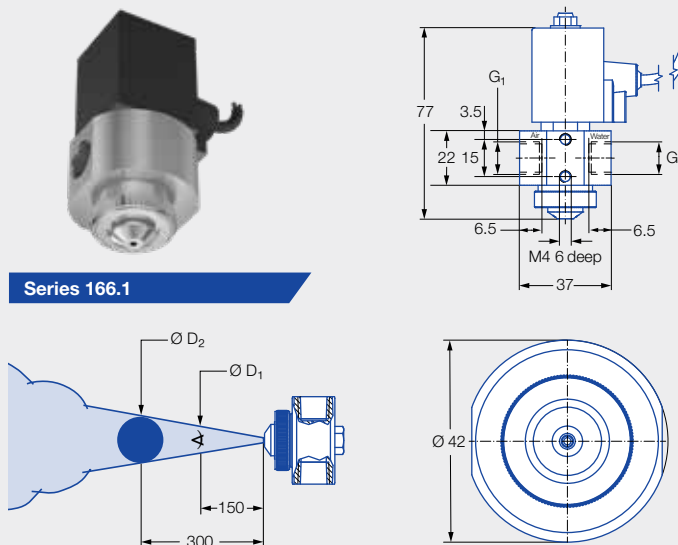
- Version with magnetic valve
- Fine full cone atomization
- Liquid pressure principle
- Internal mixing

## Applications:

- Humidification of air
- Cooling

## Technical data:

- Operating pressure: 0–6 bar
- Voltage: 24 V DC
- Power: 8 W
- Switching frequency: Approx. 500/min
- Protective system: IP 67
- Ambient temperature: +10 °C/+50 °C
- Cable length: 1,000 mm
- Material of gasket: EPDM



Series 166.1

| Air connection G <sub>1</sub> | Water connection G <sub>2</sub> | Weight [g] |
|-------------------------------|---------------------------------|------------|
| 1/4 BSPP                      | 1/4 BSPP                        | 410        |

| Spray angle | Ordering no.  |          | Narrowest free cross section Ø [mm] | Liquid pressure p [bar] |               |                           |             |               |                           |             |               |                           |             |               |                           | Spray dimensions |               |                       |                       |
|-------------|---------------|----------|-------------------------------------|-------------------------|---------------|---------------------------|-------------|---------------|---------------------------|-------------|---------------|---------------------------|-------------|---------------|---------------------------|------------------|---------------|-----------------------|-----------------------|
|             | Type          | Mat. no. |                                     | 0.7                     |               |                           | 1.5         |               |                           | 3.0         |               |                           | 4.0         |               |                           | p air [bar]      | p water [bar] | Ø D <sub>1</sub> [mm] | Ø D <sub>2</sub> [mm] |
|             |               | 16       |                                     | p air [bar]             | ṽ water [l/h] | ṽ <sub>n</sub> air [m³/h] | p air [bar] | ṽ water [l/h] | ṽ <sub>n</sub> air [m³/h] | p air [bar] | ṽ water [l/h] | ṽ <sub>n</sub> air [m³/h] | p air [bar] | ṽ water [l/h] | ṽ <sub>n</sub> air [m³/h] |                  |               |                       |                       |
| 20°         | 166.115.xx.A2 | ●        | 0.5                                 | 0.4                     | 5.9           | 0.3                       | 1.4         | 5.8           | 0.8                       | 2.4         | 9.1           | 1.1                       | 3.0         | 11.0          | 1.2                       | 0.8              | 0.7           | 60                    | 100                   |
|             |               |          |                                     | 0.8                     | 3.8           | 0.6                       | 1.8         | 4.1           | 1.0                       | 2.8         | 7.5           | 1.2                       | 3.4         | 9.6           | 1.4                       | 1.8              | 1.5           | 60                    | 95                    |
|             |               |          |                                     | 1.2                     | 1.7           | 0.9                       | 2.2         | 2.2           | 1.4                       | 3.2         | 5.9           | 1.5                       | 3.8         | 8.2           | 1.6                       | 2.6              | 2.0           | 60                    | 100                   |
|             |               |          |                                     | –                       | –             | –                         | 2.6         | 1.2           | 1.7                       | 3.6         | 4.4           | 1.8                       | 4.2         | 6.8           | 1.9                       | 3.2              | 3.0           | 55                    | 95                    |
|             |               |          |                                     | –                       | –             | –                         | –           | –             | –                         | 4.0         | 2.9           | 2.1                       | 4.6         | 5.5           | 2.2                       | 4.4              | 4.0           | 55                    | 100                   |
|             |               |          |                                     | –                       | –             | –                         | –           | –             | –                         | 4.4         | 2.0           | 2.5                       | 5.0         | 4.1           | 2.5                       | –                | –             | –                     | –                     |
|             |               |          |                                     | –                       | –             | –                         | –           | –             | –                         | 4.8         | 1.1           | 2.8                       | 5.4         | 2.9           | 2.8                       | –                | –             | –                     | –                     |
|             |               |          |                                     | –                       | –             | –                         | –           | –             | –                         | 5.2         | 0.4           | 3.0                       | 5.8         | 2.1           | 3.1                       | –                | –             | –                     | –                     |
|             | 166.125.xx.A2 | ●        | 0.5                                 | 0.8                     | 4.7           | 1.5                       | 1.2         | 7.0           | 1.8                       | 2.8         | 9.1           | 3.3                       | 3.4         | 10.6          | 3.9                       | 1.4              | 0.7           | 55                    | 90                    |
|             |               |          |                                     | 1.2                     | 4.4           | 1.9                       | 1.6         | 6.6           | 2.2                       | 3.2         | 8.7           | 3.7                       | 3.8         | 10.3          | 4.3                       | 2.2              | 1.5           | 55                    | 95                    |
|             |               |          |                                     | 1.6                     | 4.0           | 2.3                       | 2.0         | 6.2           | 2.6                       | 3.6         | 8.4           | 4.1                       | 4.2         | 9.9           | 4.6                       | 2.8              | 2.0           | 55                    | 100                   |
|             |               |          |                                     | 2.0                     | 3.5           | 2.6                       | 2.4         | 5.8           | 3.0                       | 4.0         | 8.0           | 4.5                       | 4.6         | 9.6           | 5.0                       | 3.4              | 3.0           | 60                    | 100                   |
|             |               |          |                                     | 2.4                     | 3.0           | 3.0                       | 2.8         | 5.4           | 3.4                       | 4.4         | 7.7           | 4.8                       | 5.0         | 9.3           | 5.4                       | 4.2              | 4.0           | 60                    | 100                   |
|             |               |          |                                     | 2.8                     | 2.7           | 3.2                       | 3.2         | 4.9           | 3.7                       | 4.8         | 7.3           | 5.2                       | 5.4         | 8.9           | 5.8                       | –                | –             | –                     | –                     |
|             |               |          |                                     | 3.2                     | 2.0           | 3.7                       | 3.6         | 4.4           | 4.1                       | 5.2         | 7.0           | 5.6                       | 5.8         | 8.6           | 6.1                       | –                | –             | –                     | –                     |
|             |               |          |                                     | 3.6                     | 1.6           | 4.1                       | 4.0         | 3.9           | 4.5                       | 5.6         | 6.6           | 5.9                       | –           | –             | –                         | –                | –             | –                     | –                     |
|             |               |          |                                     | 4.0                     | 1.3           | 4.5                       | 4.4         | 3.5           | 4.8                       | 6.0         | 6.2           | 6.3                       | –           | –             | –                         | –                | –             | –                     | –                     |
|             |               |          |                                     | 4.4                     | 1.0           | 4.9                       | 4.8         | 3.1           | 5.2                       | –           | –             | –                         | –           | –             | –                         | –                | –             | –                     | –                     |
|             |               |          |                                     | 4.8                     | 0.6           | 5.2                       | 5.2         | 2.7           | 5.6                       | –           | –             | –                         | –           | –             | –                         | –                | –             | –                     | –                     |
|             |               |          |                                     | –                       | –             | –                         | 5.6         | 2.3           | 5.9                       | –           | –             | –                         | –           | –             | –                         | –                | –             | –                     | –                     |
|             |               |          |                                     | –                       | –             | –                         | 6.0         | 1.9           | 6.3                       | –           | –             | –                         | –           | –             | –                         | –                | –             | –                     | –                     |

| Spray angle | Ordering no.  |          | Narrowest free cross section Ø [mm] | Liquid pressure p [bar] |               |              |             |               |              |             |               |              |             |               |              | Spray dimensions |               |                       |                       |
|-------------|---------------|----------|-------------------------------------|-------------------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|------------------|---------------|-----------------------|-----------------------|
|             | Type          | Mat. no. |                                     | 0.7                     |               |              | 1.5         |               |              | 3.0         |               |              | 4.0         |               |              | p air [bar]      | p water [bar] | Ø D <sub>1</sub> [mm] | Ø D <sub>2</sub> [mm] |
|             |               | 16       |                                     | p air [bar]             | ṽ water [l/h] | ṽ air [m³/h] | p air [bar] | ṽ water [l/h] | ṽ air [m³/h] | p air [bar] | ṽ water [l/h] | ṽ air [m³/h] | p air [bar] | ṽ water [l/h] | ṽ air [m³/h] |                  |               |                       |                       |
| 20°         | 166.134.xx.A2 | ●        | 0.7                                 | 1.2                     | <b>13.2</b>   | 2.7          | 2.0         | <b>19.4</b>   | 3.9          | 3.0         | <b>28.3</b>   | 5.2          | 3.8         | <b>32.6</b>   | 6.2          | 1.8              | 0.7           | 55                    | 95                    |
|             |               |          |                                     | 1.6                     | <b>12.4</b>   | 3.3          | 2.4         | <b>18.1</b>   | 4.4          | 3.4         | <b>27.5</b>   | 5.7          | 4.2         | <b>32.0</b>   | 6.8          | 2.8              | 1.5           | 60                    | 105                   |
|             |               |          |                                     | 2.0                     | <b>11.8</b>   | 3.9          | 2.8         | <b>17.3</b>   | 4.9          | 3.8         | <b>26.7</b>   | 6.3          | 4.6         | <b>31.3</b>   | 7.3          | 3.8              | 2.0           | 60                    | 105                   |
|             |               |          |                                     | 2.4                     | <b>11.4</b>   | 4.4          | 3.2         | <b>16.7</b>   | 5.5          | 4.2         | <b>25.9</b>   | 6.8          | 5.0         | <b>30.6</b>   | 7.8          | 5.2              | 3.0           | 65                    | 110                   |
|             |               |          |                                     | 2.8                     | <b>11.1</b>   | 4.9          | 3.6         | <b>16.1</b>   | 6.0          | 4.6         | <b>25.0</b>   | 7.3          | 5.4         | <b>29.9</b>   | 8.4          | 6.0              | 4.0           | 65                    | 110                   |
|             |               |          |                                     | 3.2                     | <b>10.8</b>   | 5.5          | 4.0         | <b>15.6</b>   | 6.5          | 5.0         | <b>24.2</b>   | 7.8          | 5.8         | <b>29.3</b>   | 8.9          | –                | –             | –                     | –                     |
|             |               |          |                                     | 3.6                     | <b>10.6</b>   | 6.0          | 4.4         | <b>15.2</b>   | 7.0          | 5.4         | <b>23.6</b>   | 8.4          | –           | –             | –            | –                | –             | –                     | –                     |
|             |               |          |                                     | 4.0                     | <b>10.4</b>   | 6.5          | 4.8         | <b>15.0</b>   | 7.6          | 5.8         | <b>23.1</b>   | 8.9          | –           | –             | –            | –                | –             | –                     | –                     |
|             |               |          |                                     | 4.4                     | <b>10.1</b>   | 7.0          | 5.2         | <b>14.6</b>   | 8.1          | –           | –             | –            | –           | –             | –            | –                | –             | –                     | –                     |
|             |               |          |                                     | 4.8                     | <b>9.9</b>    | 7.6          | 5.6         | <b>14.1</b>   | 8.6          | –           | –             | –            | –           | –             | –            | –                | –             | –                     | –                     |
|             |               |          |                                     | 5.2                     | <b>9.5</b>    | 8.1          | 6.0         | <b>13.8</b>   | 9.1          | –           | –             | –            | –           | –             | –            | –                | –             | –                     | –                     |
|             |               |          |                                     | 5.6                     | <b>9.0</b>    | 8.6          | –           | –             | –            | –           | –             | –            | –           | –             | –            | –                | –             | –                     | –                     |
|             |               |          |                                     | 6.0                     | <b>8.5</b>    | 9.2          | –           | –             | –            | –           | –             | –            | –           | –             | –            | –                | –             | –                     | –                     |
|             | 166.142.xx.A2 | ●        | 2.5                                 | 1.4                     | <b>24.2</b>   | 5.1          | 1.6         | <b>53.4</b>   | 4.7          | 3.2         | <b>70.8</b>   | 8.0          | 3.8         | <b>93.2</b>   | 9.2          | 0.8              | 0.7           | 60                    | 100                   |
|             |               |          |                                     | 1.8                     | <b>20.4</b>   | 6.3          | 2.0         | <b>42.6</b>   | 5.9          | 3.6         | <b>62.5</b>   | 9.2          | 4.2         | <b>83.1</b>   | 10.1         | 1.6              | 1.5           | 65                    | 105                   |
|             |               |          |                                     | 2.2                     | <b>20.0</b>   | 7.2          | 2.4         | <b>35.3</b>   | 7.2          | 4.0         | <b>55.7</b>   | 10.6         | 4.6         | <b>75.3</b>   | 11.3         | 3.0              | 2.0           | 60                    | 105                   |
|             |               |          |                                     | 2.6                     | <b>19.3</b>   | 8.2          | 2.8         | <b>30.4</b>   | 8.4          | 4.4         | <b>49.3</b>   | 11.7         | 5.0         | <b>69.0</b>   | 12.5         | 4.0              | 3.0           | 65                    | 110                   |
|             |               |          |                                     | 3.0                     | <b>17.6</b>   | 9.3          | 3.2         | <b>28.6</b>   | 9.5          | 4.8         | <b>44.6</b>   | 12.9         | 5.4         | <b>63.4</b>   | 13.7         | 6.0              | 4.0           | 65                    | 110                   |
|             |               |          |                                     | 3.4                     | <b>16.5</b>   | 10.4         | 3.6         | <b>28.2</b>   | 10.5         | 5.2         | <b>41.9</b>   | 14.1         | 5.8         | <b>57.5</b>   | 14.9         | –                | –             | –                     | –                     |
|             |               |          |                                     | 3.8                     | <b>17.0</b>   | 11.4         | 4.0         | <b>27.3</b>   | 11.5         | 5.6         | <b>40.4</b>   | 15.1         | –           | –             | –            | –                | –             | –                     | –                     |
|             |               |          |                                     | 4.2                     | <b>16.3</b>   | 12.4         | 4.4         | <b>25.9</b>   | 12.5         | 6.0         | <b>39.7</b>   | 16.1         | –           | –             | –            | –                | –             | –                     | –                     |
|             |               |          |                                     | 4.6                     | <b>15.1</b>   | 13.3         | 4.8         | <b>24.3</b>   | 13.5         | –           | –             | –            | –           | –             | –            | –                | –             | –                     | –                     |
|             |               |          |                                     | 5.0                     | <b>14.0</b>   | 14.3         | 5.2         | <b>22.3</b>   | 14.6         | –           | –             | –            | –           | –             | –            | –                | –             | –                     | –                     |
|             |               |          |                                     | 5.4                     | <b>13.1</b>   | 15.3         | 5.6         | <b>21.8</b>   | 15.7         | –           | –             | –            | –           | –             | –            | –                | –             | –                     | –                     |
|             |               |          |                                     | 5.8                     | <b>12.4</b>   | 16.2         | 6.0         | <b>21.4</b>   | 16.7         | –           | –             | –            | –           | –             | –            | –                | –             | –                     | –                     |

Ordering Type + Material no. = Ordering no.  
 example: 166.134.xx.A2 + 16 = 166.134.16.A2