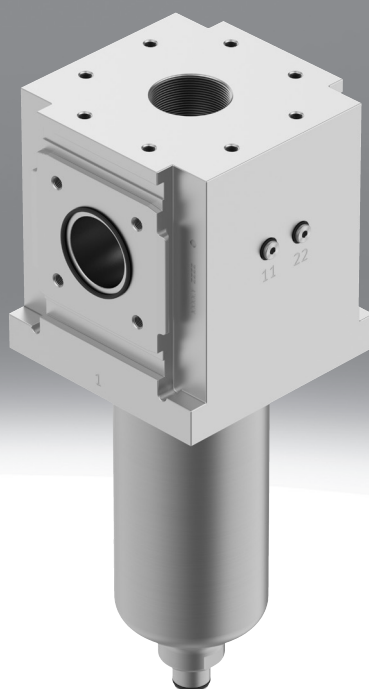


## Micro filter PFML

**FESTO**



### Characteristics

#### At a glance

Micro filters with filter cartridges made of thermally fused microfine borosilicate and stable polyester fibers. Flow direction of the filter cartridges from the inside to the outside.

Condensate drain via connecting thread G1/2 on the underside of the filter bowl, differential pressure monitoring possible via two connecting threads G1/8 on the front and rear.

On/off valves PVEL can be connected to the alternative connection 1 on the top of the micro filter using double nipples or directly using special connecting plates.

- For high-pressure applications
- Sizes: 90 mm, 186 mm
- Grade of filtration: 0.01 µm
- Alternative pneumatic connection 1 on the top of the housing with internal thread

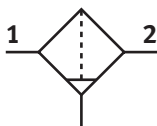
Type code

|      |                |  |
|------|----------------|--|
| 001  | Series         |  |
| PFML | Micro filter   |  |
| 002  | Size           |  |
| 90   | 90 mm          |  |
| 186  | 186 mm         |  |
| 003  | Pressure range |  |
| HP3  | Up to 50 bar   |  |

|     |                |  |
|-----|----------------|--|
| 004 | Flow rate      |  |
|     | Standard       |  |
| H   | High flow rate |  |
| 005 | Filter design  |  |
| A   | 0.01 µm        |  |
| 006 | Bowl type      |  |
| ST  | Steel          |  |

## Datasheet

## General technical data



|                                 |                                               |                    |
|---------------------------------|-----------------------------------------------|--------------------|
| Size                            | 90                                            | 186                |
| Flow rate                       | Standard [L]                                  | High flow rate [H] |
| Type of mounting                | In-line installation                          |                    |
| Mounting position               | Vertical $\pm 5^\circ$                        |                    |
| Structural design               | Fiber filter                                  |                    |
| Grade of filtration             | 0.01 $\mu\text{m}$                            |                    |
| Filter efficiency               | 99.99998%                                     |                    |
| Air quality class at the output | Compressed air as per ISO 8573-1:2010 [1:4:2] |                    |
| Condensate drain                | Manual                                        |                    |
| Max. condensate volume          | 200 $\text{cm}^3$                             | 400 $\text{cm}^3$  |
| Volume                          | 3                                             | 6.7                |

## Operating and environmental conditions

|                                                            |                                                              |     |
|------------------------------------------------------------|--------------------------------------------------------------|-----|
| Size                                                       | 90                                                           | 186 |
| Operating pressure                                         | 0 ... 5 MPa                                                  |     |
| Operating pressure                                         | 0 ... 50 bar                                                 |     |
| Operating medium                                           | Compressed air as per ISO 8573-1:2010 [2:4:4]<br>Inert gases |     |
| Information on operating and pilot media                   | Operation with oil lubrication not possible                  |     |
| Ambient temperature                                        | 5 ... 60°C                                                   |     |
| Temperature of medium                                      | 5 ... 60°C                                                   |     |
| Storage temperature                                        | -10 ... 60°C                                                 |     |
| Corrosion resistance class (CRC) <sup>1)</sup>             | 2 - Moderate corrosion stress                                |     |
| CE marking (see declaration of conformity) <sup>2)</sup>   | as per EU pressure equipment directive                       |     |
| UKCA marking (see declaration of conformity) <sup>3)</sup> | according to UK regulations for pressure equipment           |     |
| For use in the food industry <sup>4)</sup>                 | See supplementary material information                       |     |

1) For more information, visit [www.festo.com/x/topic/kbk](http://www.festo.com/x/topic/kbk)

2) More information [www.festo.com/catalogue/pfml](http://www.festo.com/catalogue/pfml) → Support/Downloads.

3) More information [www.festo.com/catalogue/pfml](http://www.festo.com/catalogue/pfml) → Support/Downloads.

4) More information [www.festo.com/catalogue/pfml](http://www.festo.com/catalogue/pfml) → Support/Downloads.

## Standard flow rate

|                                                             |              |                    |
|-------------------------------------------------------------|--------------|--------------------|
| Size                                                        | 90           | 186                |
| Flow rate                                                   | Standard [L] | High flow rate [H] |
| Min. standard flow rate for air quality class <sup>1)</sup> | –            | 3,406 l/min        |
| Max. standard flow rate for air quality class <sup>2)</sup> | 10,220 l/min | 18,980 l/min       |

1) at  $p_1 = 6 \text{ bar}$

2) at  $p_1 = 6 \text{ bar}$

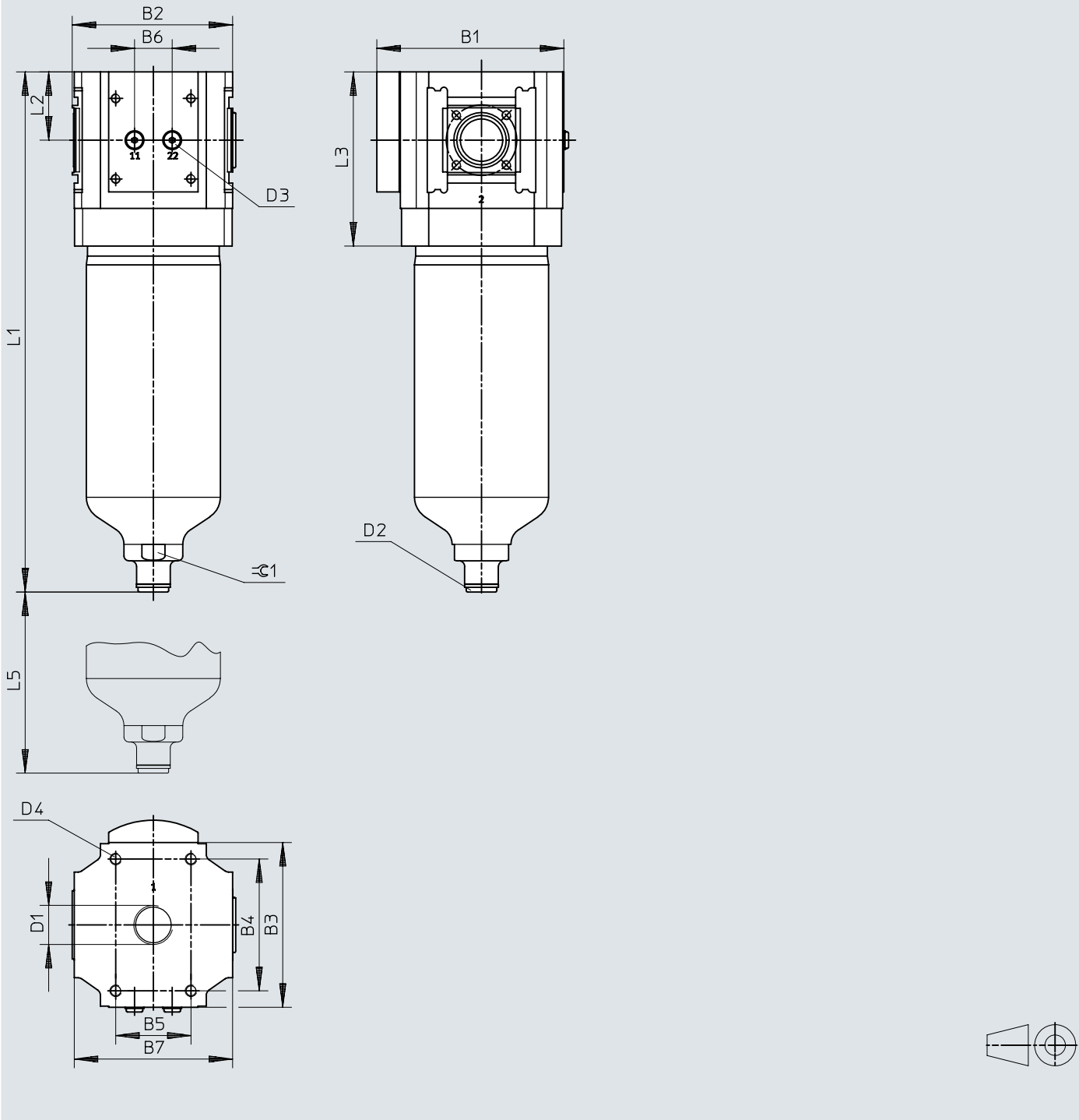
## Materials

|                                |                            |
|--------------------------------|----------------------------|
| Housing material               | Wrought aluminum alloy     |
| Material of bowl               | high-alloy stainless steel |
| Compressed air filter material | Borosilicate glass fiber   |
| Seals material                 | NBR                        |
| Note on materials              | RoHS compliant             |
| LABS (PWIS) conformity         | VDMA24364 Zone III         |

# Dimensions

Dimensions – PFML-90-HP3-AST

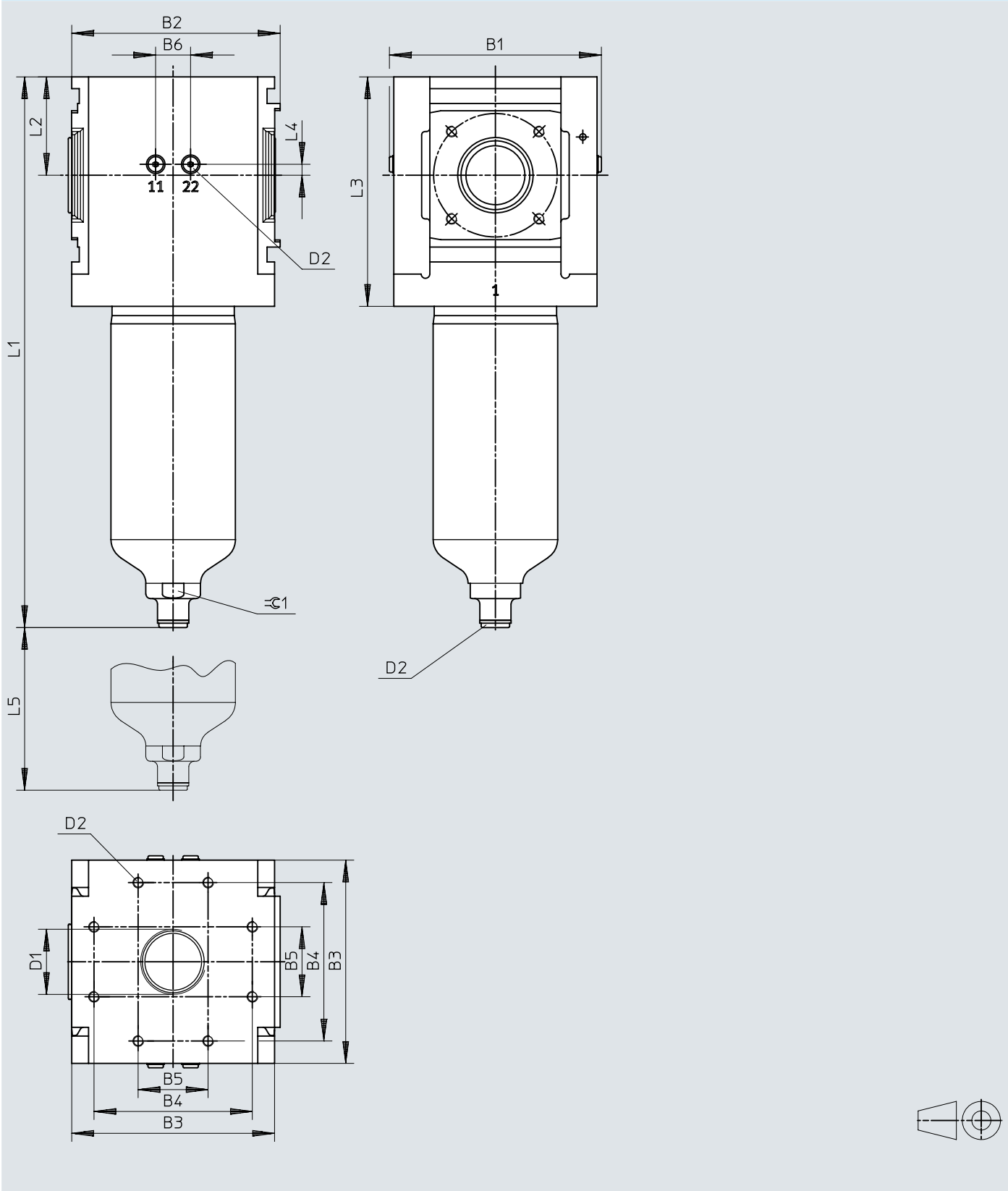
Download CAD data [www.festo.com](http://www.festo.com)



|                 | B1  | B2  | B3  | B4  | B5 | B6 | B7  | D1 | D2   | D3   | D4  | L1  | L2 | L3  | L5<br>min. | ≈ 1 |
|-----------------|-----|-----|-----|-----|----|----|-----|----|------|------|-----|-----|----|-----|------------|-----|
| PFML-90-HP3-AST | 159 | 137 | 140 | 112 | 64 | 32 | 135 | G1 | G1/2 | G1/8 | M10 | 442 | 58 | 148 | 210        | 46  |

Dimensions

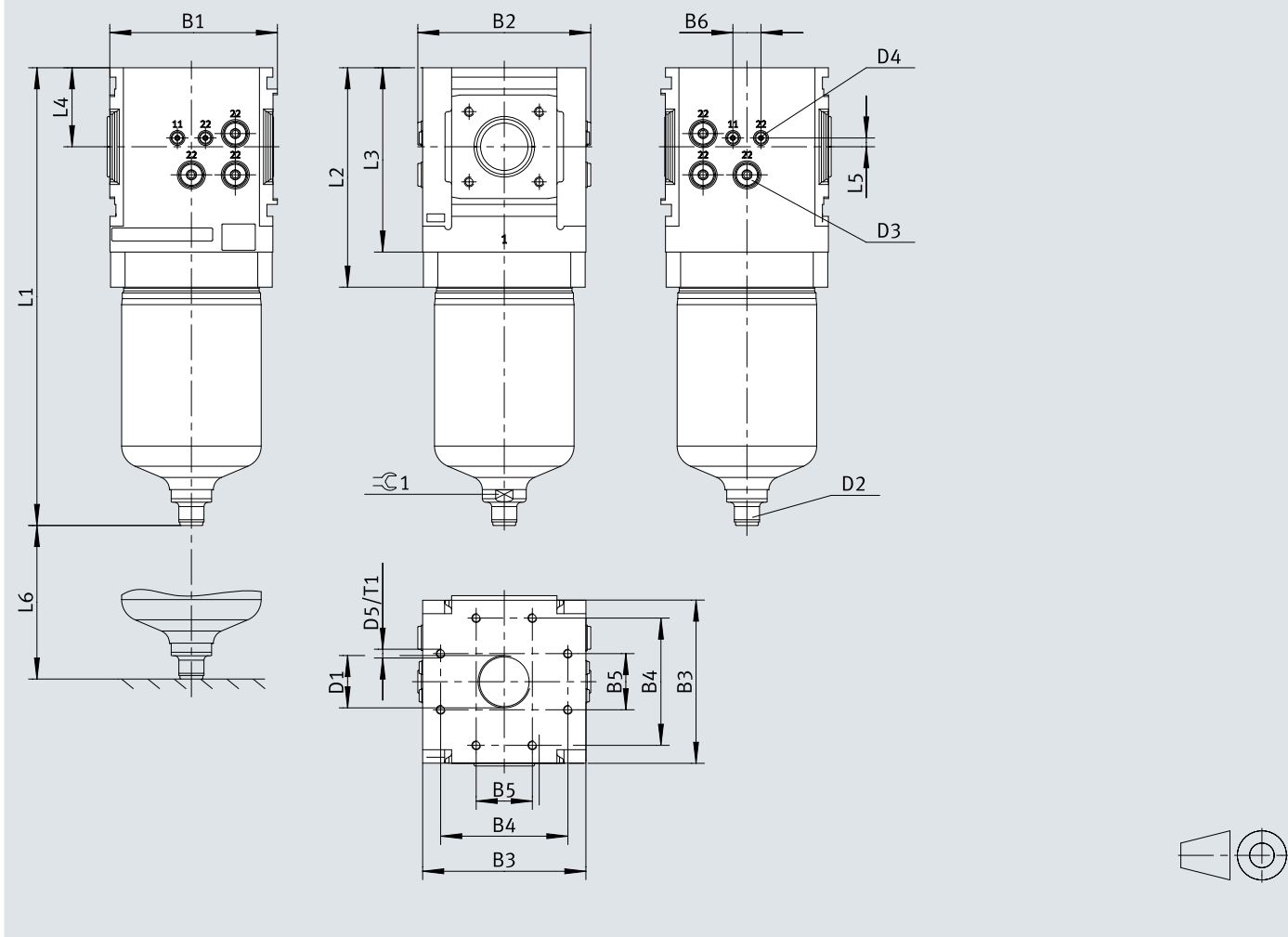
Dimensions – PFML-186-HP3-AST Download CAD data [www.festo.com](http://www.festo.com)



| Typ              | B1  | B2  | B3  | B4  | B5 | B6 | D1 | D2   | D3   | D4  | L1  | L2 | L3  | L4 | L5<br>min. | ≈ 1 |
|------------------|-----|-----|-----|-----|----|----|----|------|------|-----|-----|----|-----|----|------------|-----|
| PFML-186-HP3-AST | 194 | 191 | 186 | 145 | 64 | 32 | G2 | G1/2 | G1/8 | M10 | 504 | 90 | 210 | 10 | 210        | 46  |

## Dimensions

**Dimensions – PFML-186-HP3-H-AST**

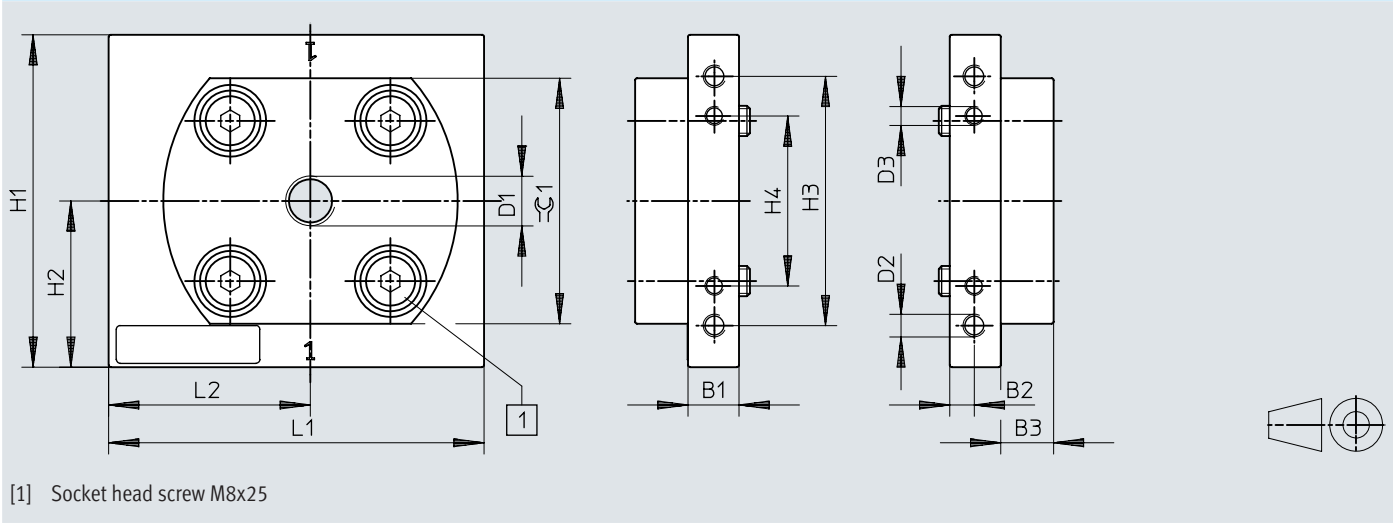
 Download CAD data [www.festo.com](http://www.festo.com)


| Typ                | B1  | B2  | B3  | B4  | B5 | B6 | D1 | D2   | D3   |
|--------------------|-----|-----|-----|-----|----|----|----|------|------|
| PFML-186-HP3-H-AST | 191 | 197 | 186 | 145 | 64 | 32 | G2 | G1/2 | G1/2 |

| Typ                | D4   | D5  | L1   | L2  | L3  | L4 | L5 | L6<br>min. | T1 | ≈G 1 |
|--------------------|------|-----|------|-----|-----|----|----|------------|----|------|
| PFML-186-HP3-H-AST | G1/8 | M10 | ~522 | 250 | 210 | 90 | 10 | 200        | 20 | 46   |

Dimensions

Dimensions – Sub-base PAML-CP-90-HP3-G14/G12/G34/G1 Download CAD data [www.festo.com](http://www.festo.com)



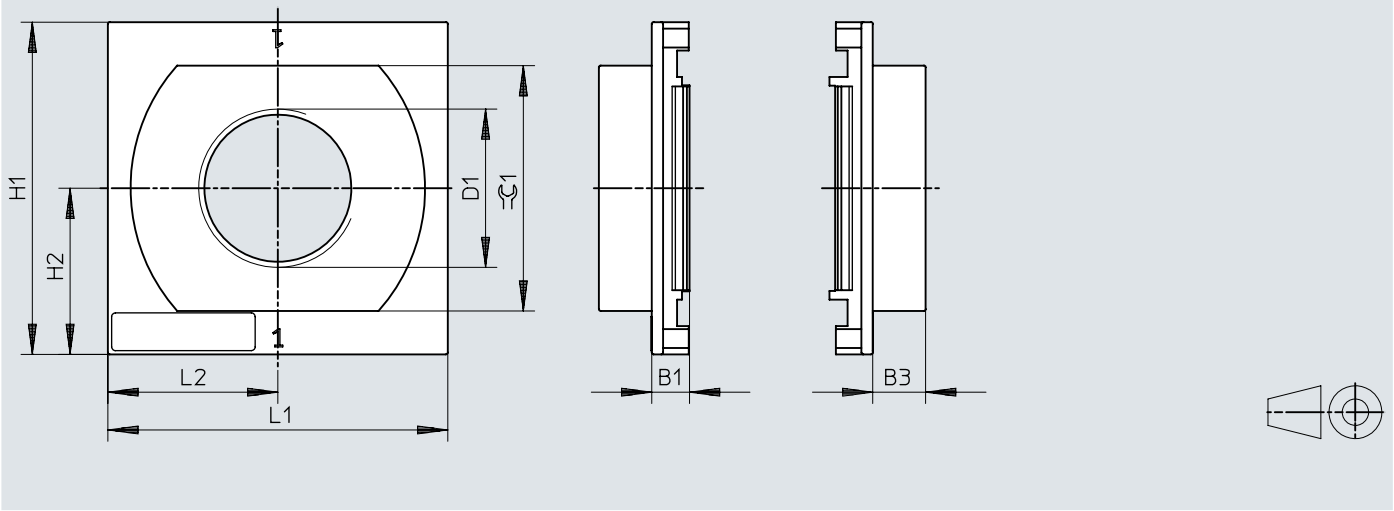
|                    | B1   | B2  | B3 | D1   | D2 <sup>1)</sup> | D3   | H1 | H2 | H3 | H4 | L1  | L2  | ±G 1 |
|--------------------|------|-----|----|------|------------------|------|----|----|----|----|-----|-----|------|
| PAML-CP-90-HP3-G14 | 13,5 | 6,5 | 14 | G1/4 | M6x10            | M5x9 | 88 | 44 | 66 | 45 | ~99 | ~53 | 65   |
| PAML-CP-90-HP3-G14 |      |     |    | G1/2 |                  |      |    |    |    |    |     |     |      |
| PAML-CP-90-HP3-G14 |      |     |    | G3/4 |                  |      |    |    |    |    |     |     |      |
| PAML-CP-90-HP3-G14 |      |     |    | G1   |                  |      |    |    |    |    |     |     |      |

1) Thread for wall mounting of the air preparation unit without a mounting bracket

Dimensions

Dimensions – Anschlussplatte PAML-CP-90-HP3-G114

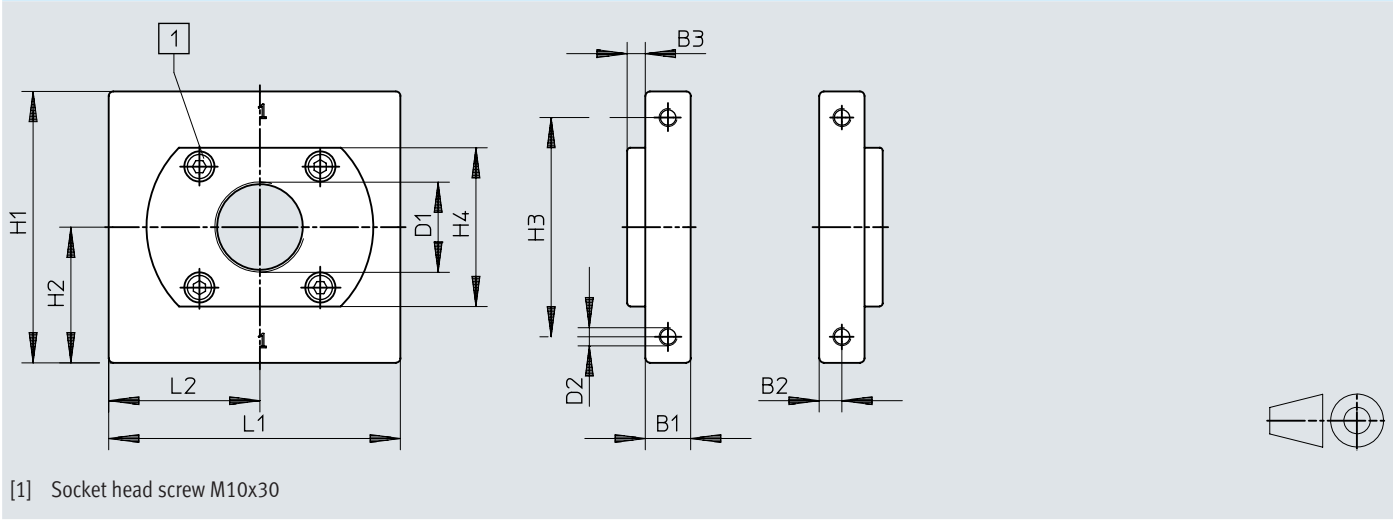
Download CAD data [www.festo.com](http://www.festo.com)



|                     | B1 | B3 | D1     | D3   | H1 | H2 | L1 | L2 | ⊥ 1 |
|---------------------|----|----|--------|------|----|----|----|----|-----|
| PAML-CP-90-HP3-G114 | 10 | 14 | G1 1/4 | M5x9 | 88 | 44 | 90 | 45 | 65  |

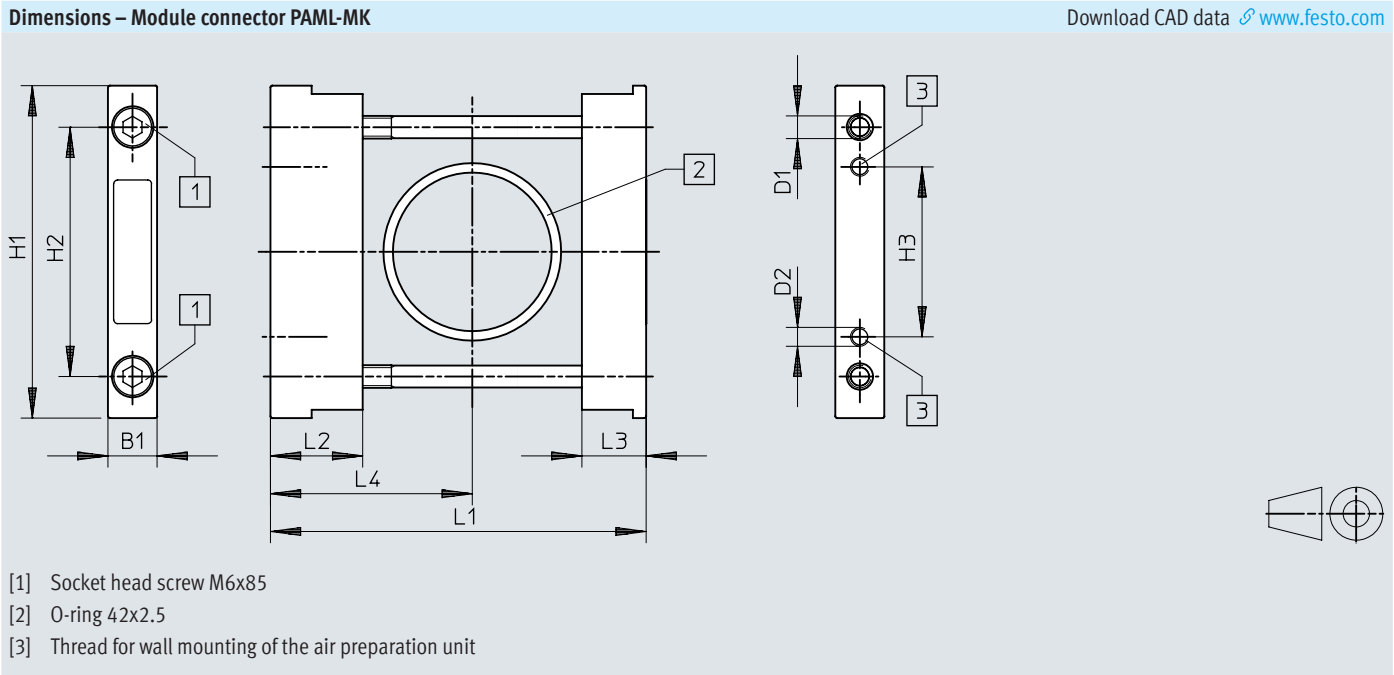
Dimensions

Dimensions – Sub-bases PAML-CP-186 Download CAD data [www.festo.com](http://www.festo.com)



|                      | B1 | B2 | B3 | D1     | D2  | H1  | H2 | H3  | H4  | L1  | L2  |
|----------------------|----|----|----|--------|-----|-----|----|-----|-----|-----|-----|
| PAML-CP-186-HP3-G14  | 30 | 15 | 12 | G1/4   | M12 | 180 | 90 | 145 | 105 | 193 | 100 |
| PAML-CP-186-HP3-G114 |    |    |    | G1 1/4 |     |     |    |     |     |     |     |
| PAML-CP-186-HP3-G112 |    |    |    | G1 1/2 |     |     |    |     |     |     |     |
| PAML-CP-186-HP3-G2   |    |    |    | G2     |     |     |    |     |     |     |     |
| PAML-CP-186-HP3-G212 |    |    | 25 | G2 1/2 |     |     |    |     |     |     |     |

Dimensions

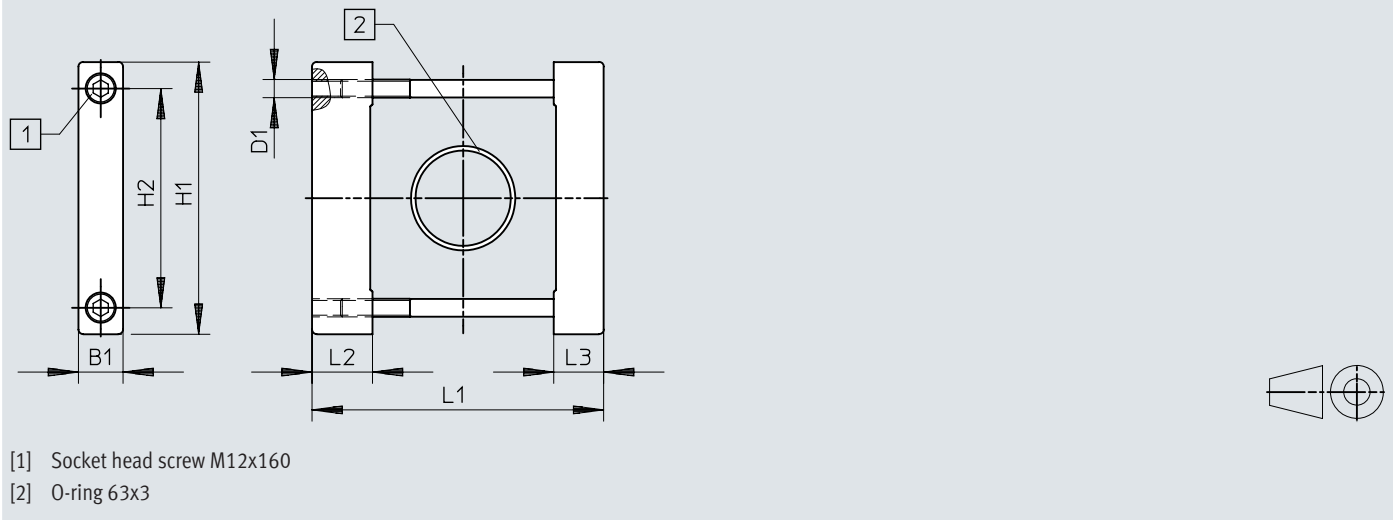


|                | B1 | D1 | D2   | H1 | H2 | H3 | L1 <sup>1)</sup> | L2   | L3 | L4 <sup>1)</sup> |
|----------------|----|----|------|----|----|----|------------------|------|----|------------------|
| PAML-MK-90-HP3 | 13 | M6 | M5x9 | 88 | 66 | 45 | 99               | 24,4 | 17 | ~53              |

1) Dimension in mounted state

Dimensions

Dimensions – Module connector PAML-MK-186 [Download CAD data](#) [www.festo.com](http://www.festo.com)



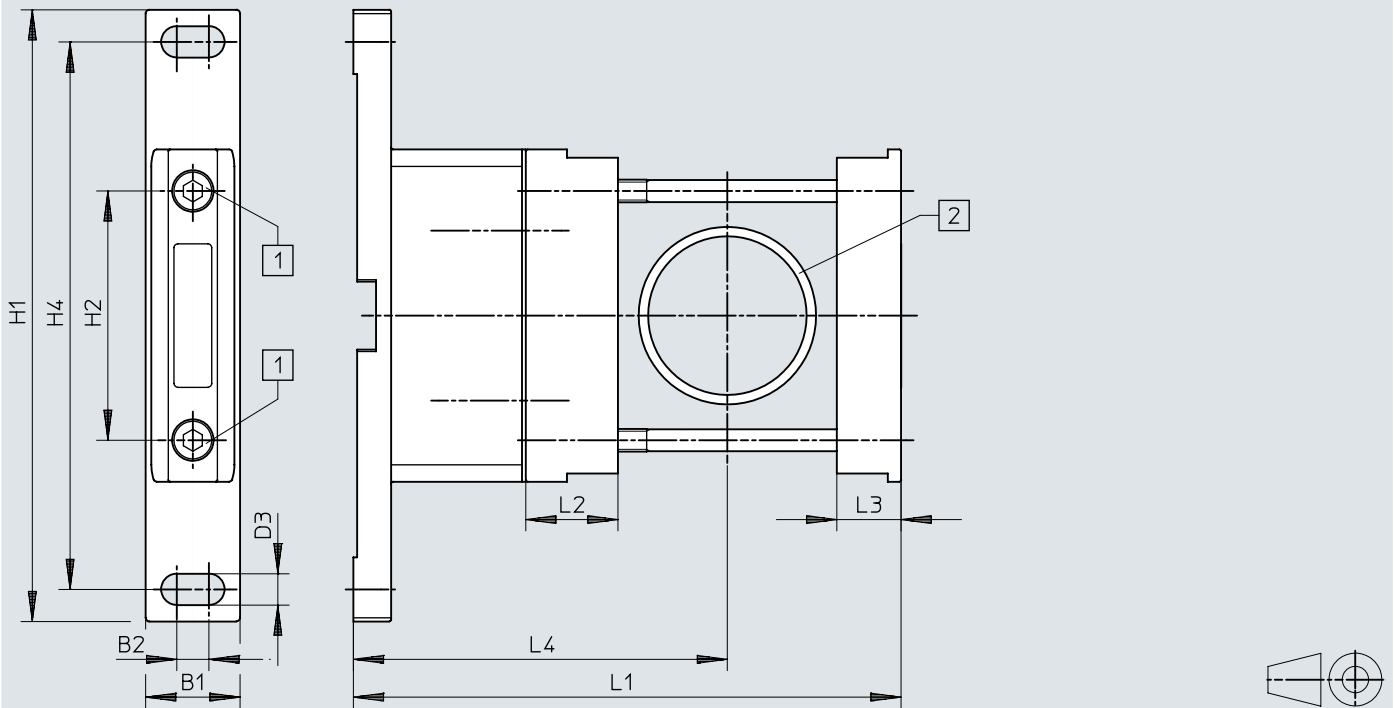
|                 | B1   | D1  | H1  | H2  | L1 <sup>1)</sup> | L2 | L3 |
|-----------------|------|-----|-----|-----|------------------|----|----|
| PAML-MK-186-HP3 | 29,5 | M12 | 180 | 145 | 193              | 40 | 33 |

1) Dimension in mounted state

# Dimensions

## Dimensions – Mounting bracket PAML-MB

Download CAD data [www.festo.com](http://www.festo.com)



- [1] Socket head screw M5x18  
[2] O-ring 42x2.5

|                | B1 | B2  | D3  | H1  | H2 | H4  | L1 <sup>1)</sup> | L2   | L3 | L4 <sup>1)</sup> |
|----------------|----|-----|-----|-----|----|-----|------------------|------|----|------------------|
| PAML-MB-90-HP3 | 25 | 8,5 | 8,3 | 162 | 66 | 145 | ~145             | 24,4 | 17 | ~99              |

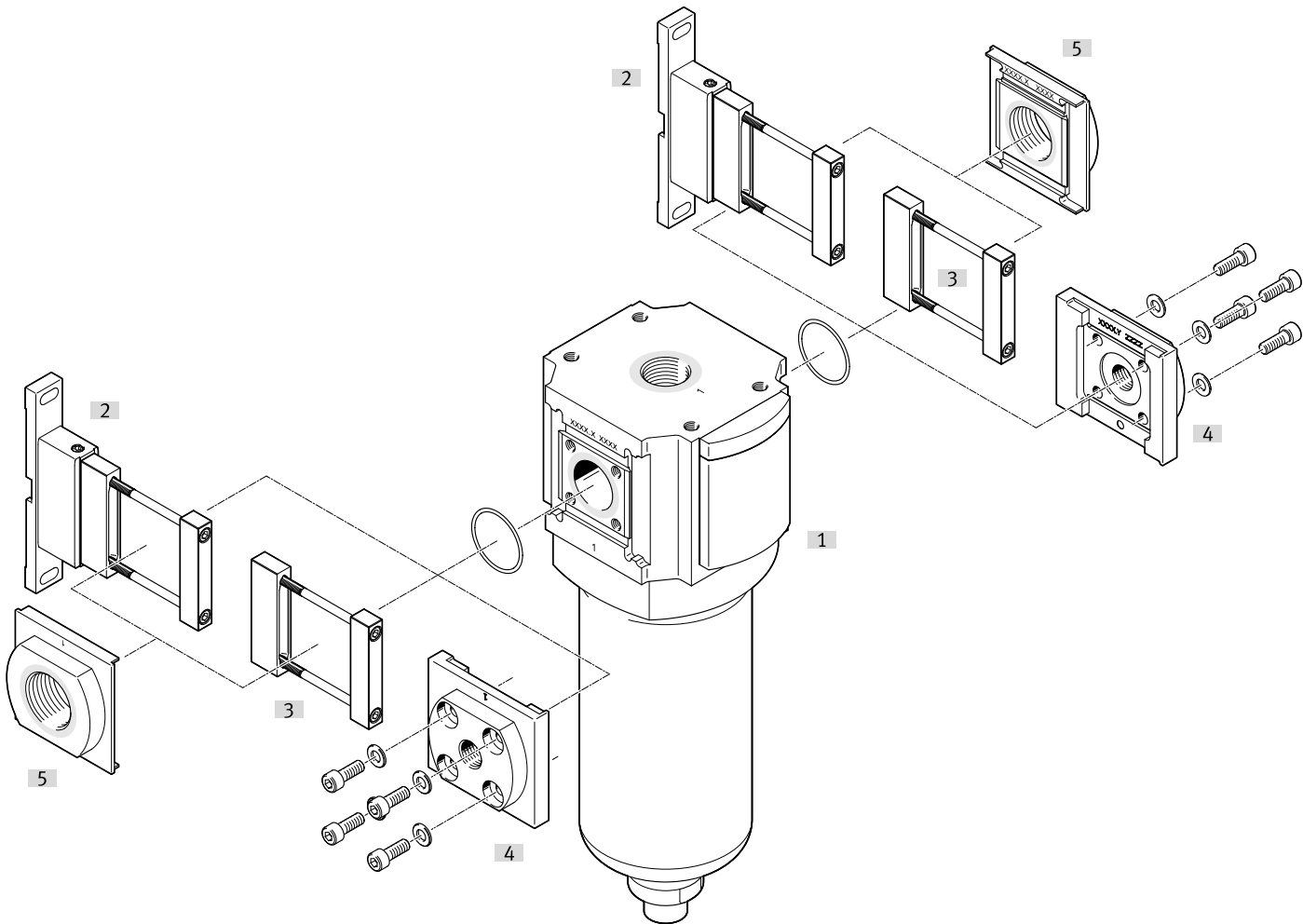
1) Dimension in mounted state

Ordering data

| Ordering data                                                                    |      |                                                  |                |          |                    |
|----------------------------------------------------------------------------------|------|--------------------------------------------------|----------------|----------|--------------------|
|                                                                                  | Size | Max. standard flow rate<br>for air quality class | Product weight | Part no. | Type               |
|  | 90   | 10,220 l/min                                     | 7,700 g        | 1612487  | PFML-90-HP3-AST    |
|                                                                                  | 186  |                                                  | 17,900 g       | 1364705  | PFML-186-HP3-AST   |
|                                                                                  |      | 18,980 l/min                                     | 21,000 g       | 1624062  | PFML-186-HP3-H-AST |

# Peripherals overview

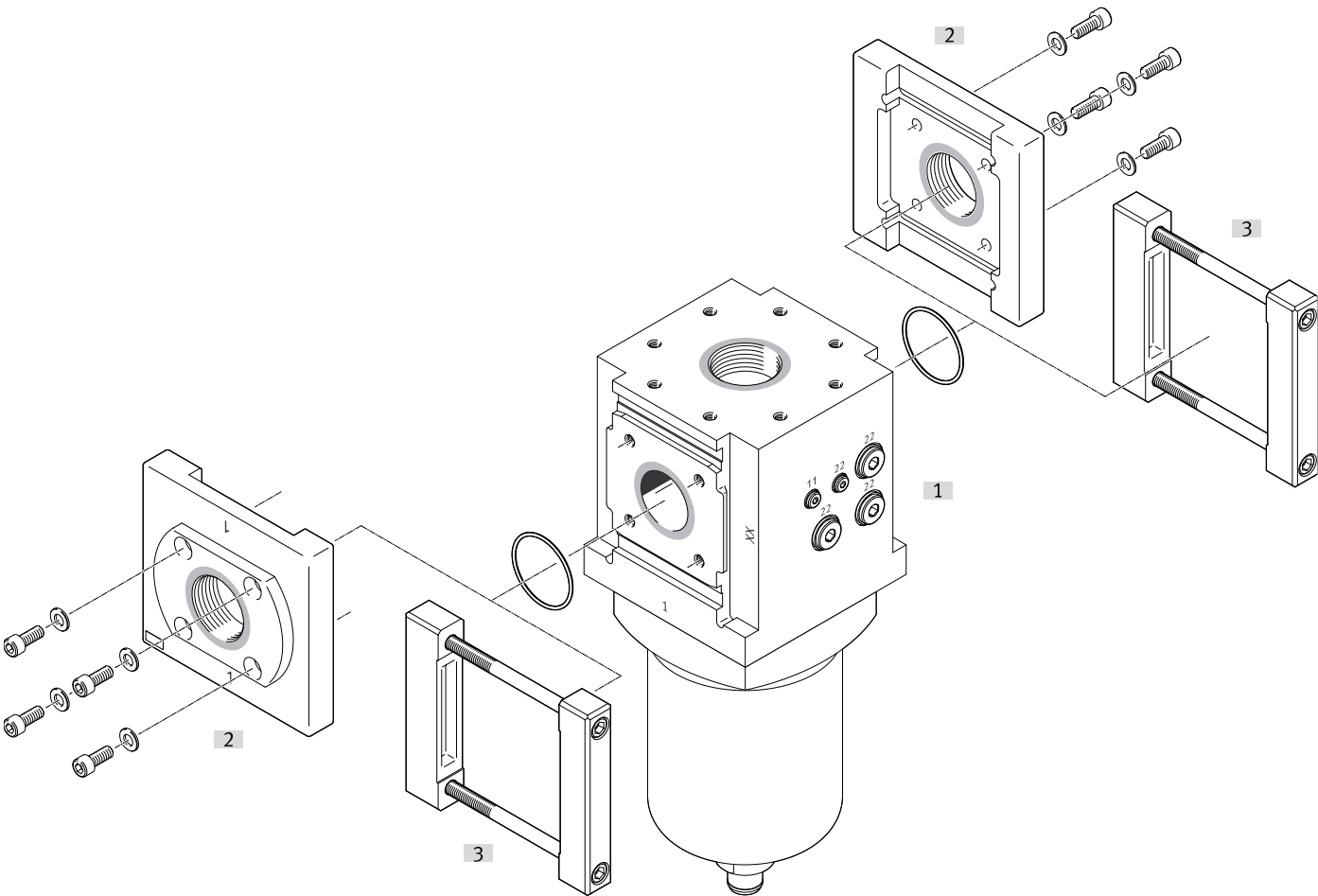
Size 90



| Accessories                              |             | → Page/Internet      |
|------------------------------------------|-------------|----------------------|
| Type/order code                          | Description |                      |
| [1] Micro filter PFML                    |             | <a href="#">pfml</a> |
| [2] Mounting bracket PAML-MB             |             | 17                   |
| [3] Module connector PAML-MK             |             | 17                   |
| [4] Sub-bases PAML-CP....-G14/G12/G34/G1 |             | 17                   |
| [5] Sub-bases PAML-CP....-G114           |             | 17                   |

Peripherals overview

Size 186

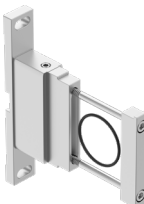


| Accessories                   |             | → Page/Internet      |
|-------------------------------|-------------|----------------------|
| Type/order code               | Description |                      |
| [1] Micro filter PFML         |             | <a href="#">pfml</a> |
| [2] Connecting plates PAML-CP |             | 17                   |
| [3] Module connector PAML-MK  |             | 17                   |

## Accessories

| Connecting plates PAML-CP                                                         |      |                        |                        |                |          |                      |
|-----------------------------------------------------------------------------------|------|------------------------|------------------------|----------------|----------|----------------------|
|                                                                                   | Size | Pneumatic connection 1 | Pneumatic connection 2 | Product weight | Part no. | Type                 |
|  | 90   | G1/4                   | G1/4                   | 800 g          | 1651540  | PAML-CP-90-HP3-G14   |
|                                                                                   |      | G1/2                   | G1/2                   | 770 g          | 1651541  | PAML-CP-90-HP3-G12   |
|                                                                                   |      | G3/4                   | G3/4                   | 750 g          | 1651542  | PAML-CP-90-HP3-G34   |
|                                                                                   |      | G1                     | G1                     | 730 g          | 1651543  | PAML-CP-90-HP3-G1    |
|                                                                                   |      | G1 1/4                 | G1 1/4                 | 500 g          | 1448978  | PAML-CP-90-HP3-G114  |
|                                                                                   | 186  | G1/4                   | G1/4                   | 4,700 g        | 1629300  | PAML-CP-186-HP3-G14  |
|                                                                                   |      | G1 1/4                 | G1 1/4                 | 4,600 g        | 1629296  | PAML-CP-186-HP3-G114 |
|                                                                                   |      | G1 1/2                 | G1 1/2                 | 4,500 g        | 1629297  | PAML-CP-186-HP3-G112 |
|                                                                                   |      | G2                     | G2                     | 4,400 g        | 1629298  | PAML-CP-186-HP3-G2   |
|                                                                                   |      | G2 1/2                 | G2 1/2                 | 4,900 g        | 1629299  | PAML-CP-186-HP3-G212 |

| Module connector PAML-MK                                                          |      |                |          |                 |
|-----------------------------------------------------------------------------------|------|----------------|----------|-----------------|
|                                                                                   | Size | Product weight | Part no. | Type            |
|  | 90   | 150 g          | 1367005  | PAML-MK-90-HP3  |
|                                                                                   | 186  | 1,300 g        | 1629377  | PAML-MK-186-HP3 |

| Mounting bracket PAML-MB                                                            |      |                |          |                |
|-------------------------------------------------------------------------------------|------|----------------|----------|----------------|
|                                                                                     | Size | Product weight | Part no. | Type           |
|  | 90   | 300 g          | 1367323  | PAML-MB-90-HP3 |

| Filter cartridges PFEL                                                              |                |                     |                |                                |          |               |
|-------------------------------------------------------------------------------------|----------------|---------------------|----------------|--------------------------------|----------|---------------|
|                                                                                     | Flow rate      | Grade of filtration | Seals material | Compressed air filter material | Part no. | Type          |
|  | Standard       | 0.01 µm             | NBR            | Borosilicate glass fiber       | 1334716  | PFEL-G2-A     |
|                                                                                     | High flow rate |                     |                |                                | 1471578  | PFEL-G212-H-A |