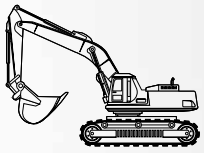
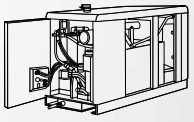
# ENTARON XD/MD Developed for challenging demands

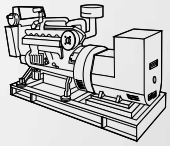
**The ENTARON XD from MANN+HUMMEL sets new standards for plastic two-stage air cleaners with a tangential raw air inlet. The ENTARON range extends the proven characteristics of the successful Europiclon and NLG air cleaners with plenty of new ingenious ideas. The single-stage version ENTARON MD with very low initial pressure drop complements the XD range.**











### ADVANTAGES

- Excellent protection of the engine through high initial and final separation efficiencies
- Corrosion-free and extra robust housing made from plastic reinforced with glass fiber
- Cr(VI)-free components
- High reliability through elements with new type of sealing system
- Considerable reduction in weight compared to conventional metal or hybrid solutions
- Excellent flexibility through variable modular system
- Straightforward adaptation to many applications through different inlet positions
- Easy maintenance due to tool-less element change with comfort fasteners

### ENTARON XD

- Environmentally-friendly and economical disposal through filter elements which are metal-free and fully incinerable (except ENTARON XD 40)
- Especially long filter service life through integrated pre-separation

### ENTARON MD

- Low flow resistance reduces operating costs
- Separation of the functions of pre-separation and main filtration enables a long service life as needed

# ENTARON XD/MD Developed for challenging demands

**ROBUST HOUSING**

The housings of the ENTARON XD and ENTARON MD are equipped with reinforcement ribs and manufactured from plastic reinforced with glass fiber. This has the advantage of reducing weight by 10 percent in comparison to conventional metal or hybrid air cleaners (combinations of metal and plastic). As a result, the air cleaner is able to handle even extreme mechanical requirements. At the same time the design offers the advantage of resistance to corrosion.

The housing consists of three parts with the main part joined to the raw air inlet by a special welding process. This welding provides a robust and secure connection and enables the required orientation of the connection to the integrated brackets. This achieves maximum flexibility which allows the air cleaner to be adapted to almost all installation situations. In addition, the clean air outlet is reinforced by a metal ring which enables a tightening torque for hose clamps up to 5 Newton meters.

The high pre-separation efficiency uniquely qualifies the ENTARON XD for heavy dust load applications. This high efficiency sets the standard for its filter class and eliminates the need for an additional external pre-separator.

**SMART DETAILS**

The comfort fasteners have color-coded operating elements. This simplifies handling and makes it immediately easy to understand, even when visibility is poor. Special snap-in noses allow the fasteners to be fixed - so they no longer interfere with the removal or fitting of the cover when servicing is required. A smart and user-friendly detail.

Furthermore, the ENTARON XD/MD series has a connection for a service switch or service indicator integrated in the housing and also integrated mounting possibilities with through-holes (standard) and threaded inserts (on request) to enable quick installation.

**HIGH-PERFORMANCE FILTER ELEMENTS**

The filter elements of the ENTARON XD/MD series are also designed for the highest requirements:

- A new type of sealing system ensures the reliable sealing of the elements to the housing.
- Robust center tubes made from plastic reinforce the filter element*.
- A new filter media used in the ENTARON XD/MD offers significantly higher separation efficiency with a simultaneously long service life.
- The glue string technology exclusively used by MANN+HUMMEL fixes the tops of the pleats and therefore ensures that the element offers high performance under all operating conditions.
- The safety element in the ENTARON XD/MD is threaded to the housing which prevents unintentional removal during servicing.
- Further versions of the main filter and secondary filter elements are available for the ENTARON XD and ENTARON MD as options.

*Not applicable for ENTARON XD/MD 40.

# ENTARON XD/MD
# At a glance



| Technical features | ENTARON XD 14 to 40 | ENTARON MD 40 | ENTARON MD 40 with DualSpin XT |
|---|---|---|---|
| **Type of operation** [1] | Two-stage air cleaner | Single-stage air cleaner | Combination air cleaner: single-stage air cleaner with external pre-separator[1] |
| **Field of application** | Mobile applications with a very high dust load such as construction machines, construction site trucks, harvesters, mobile cranes, mobile compressors, etc. | Stationary applications with a low dust load such as stationary machines, gensets, compressors, etc. | Applications with extreme dust load such as large harvesters |
| **Air flow requirements** | 7–40 m³/min | 20–40 m³/min | 20–40 m³/min |
| **Pre-separation efficiency** | | | |
| ■ **With dust discharge valve** | 87% | - | - |
| ■ **With scavenging (5%)** | 92% | - | - |
| ■ **With scavenging (10%)** | - | - | > 89% |
| **Final separation efficiency** | > 99.99% | > 99.97% | > 99.97% |
| **Dust discharge** | Dust discharge valve (scavenging available as option) | - | Scavenging |
| **Installation** | Vertical and horizontal installation possible [2] | Vertical and horizontal installation possible | Vertical and horizontal installation possible |
| **Servicing concept** | Front access with comfort fasteners | Front access with comfort fasteners | Front access with comfort fasteners |
| **Additional protection against ingress of water** | On request [3] / Standard [4] | Standard | Standard |

1) The connecting piece between ENTARON MD 40 and DualSpin XT is not included in the MANN+HUMMEL scope of delivery.
2) Depends on the position of the dust discharge valve (valve always directed downwards).
3) ENTARON XD 14 to 28
4) ENTARON XD 40

# ENTARON XD/MD
# High-performance details




Example of the ENTARON XD 40

# ENTARON XD/MD
# High-performance details

## 1 HOUSING

The three-part housing concept offers excellent flexibility for the positioning of the inlet in relation to the bracket. The use of plastic reinforced with glass fiber reduces the weight in comparison to conventional metal and hybrid air cleaners (combinations of metal and plastic) by more than 10 percent.

## 2 MAIN ELEMENT

The high-performance filter media achieves a long service life and separation efficiency above 99.99 percent. The support ring made from plastic, the center tube made from metal and the glue string technology ensure stability and safety during handling and operation. A version with a handle for even more user-friendly servicing is available as an option*.

## 3 SECONDARY ELEMENT (OPTION)

The secondary element offers the highest possible security when servicing the main element. There are two variants available: The standard one is fitted with a non-woven element while the second variant can be fitted with a pleated cellulose element as an option for higher requirements with regard to flow resistance and separation efficiency.

## 4 MOUNTING POSSIBILITIES

Integrated mounting possibilities with through-holes (standard) and/or threaded inserts (on request) enable quick installation.

## 5 SERVICE SWITCH / INDICATOR

The ENTARON XD/MD series has a connection for a service switch/indicator integrated in the housing. The connection is designed not to take up installation space and is located in a protected position.

## 6 RELEASE AID* AND SPECIAL FASTENERS

The smart design of the cover includes a release aid* for the secondary element. The use of comfort fasteners prevents pinching between the cover and housing. The distinctive color-coding of the fastener caps is also easy to see when visibility is poor. Depending on the customer requirements, the fasteners can be positioned freely on the cover*.

*Only for ENTARON XD/MD

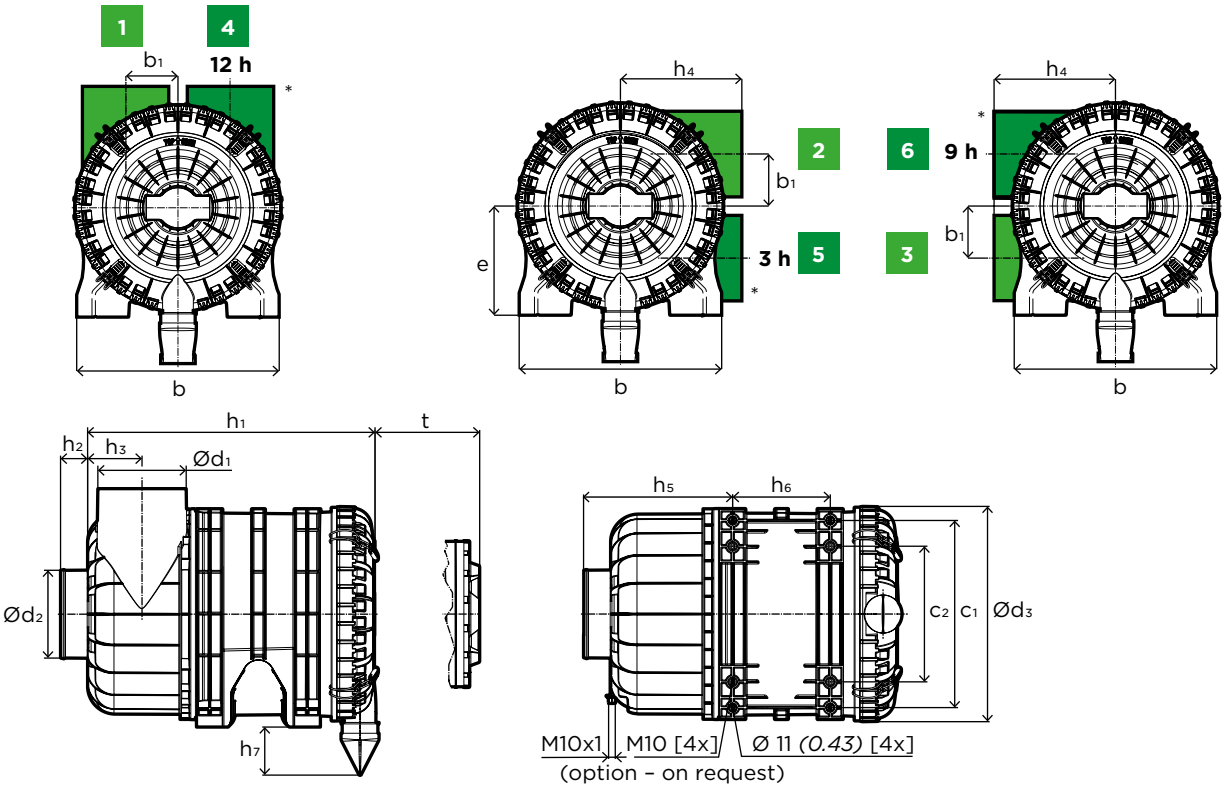
# ENTARON XD
# Part numbers and specifications

## PART NUMBERS

| Model | Nominal flow rate [m³/min] | Raw air inlet position | | Part number | | Replacement filter element | | Weight [kg] |
|---|---|---|---|---|---|---|---|---|
| | | | | without secondary element | with secondary element | Main element | Secondary element | |
| **ENTARON XD 14** | 7–14 | left | 1* | 45 526 92 950 | 45 526 92 910 | C 21 600 | CF 1280 | 5.0 |
| | | | 2* | 45 526 92 951 | 45 526 92 911 | | | |
| | | | 3* | 45 526 92 952 | 45 526 92 912 | | | |
| | | right | 4* | 45 527 92 950 | 45 527 92 910 | | | |
| | | | 5* | 45 527 92 951 | 45 527 92 911 | | | |
| | | | 6* | 45 527 92 952 | 45 527 92 912 | | | |
| **ENTARON XD 17** | 9–17 | left | 1* | 45 625 92 950 | 45 625 92 910 | C 23 800 | CF 1350 | 6.3 |
| | | | 2* | 45 625 92 951 | 45 625 92 911 | | | |
| | | | 3* | 45 625 92 952 | 45 625 92 912 | | | |
| | | right | 4* | 45 626 92 950 | 45 626 92 910 | | | |
| | | | 5* | 45 626 92 951 | 45 626 92 911 | | | |
| | | | 6* | 45 626 92 952 | 45 626 92 912 | | | |
| **ENTARON XD 21**[1)] | 11–21 | left | 1* | 45 722 92 950 | 45 722 92 910 | C 25 900 | CF 1470 | 7.3 |
| | | | 2* | 45 722 92 951 | 45 722 92 911 | | | |
| | | | 3* | 45 722 92 952 | 45 722 92 912 | | | |
| | | right | 4* | 45 723 92 950 | 45 723 92 910 | | | |
| | | | 5* | 45 723 92 951 | 45 723 92 911 | | | |
| | | | 6* | 45 723 92 952 | 45 723 92 912 | | | |
| **ENTARON XD 21-24**[1)] | 11–21 | left | 1* | 45 722 92 980 | 45 722 92 960 | C 25 1020 | CF 1480 | 7.9 |
| | | | 2* | 45 722 92 981 | 45 722 92 961 | | | |
| | | | 3* | 45 722 92 982 | 45 722 92 962 | | | |
| | | right | 4* | 45 723 92 980 | 45 723 92 960 | | | |
| | | | 5* | 45 723 92 981 | 45 723 92 961 | | | |
| | | | 6* | 45 723 92 982 | 45 723 92 962 | | | |
| **ENTARON XD 28**[1)] | 14–28 | left | 1* | 45 920 92 950 | 45 920 92 910 | C 28 1300 | CF 1750 | 9.6 |
| | | | 2* | 45 920 92 951 | 45 920 92 911 | | | |
| | | | 3* | 45 920 92 952 | 45 920 92 912 | | | |
| | | right | 4* | 45 921 92 950 | 45 921 92 910 | | | |
| | | | 5* | 45 921 92 951 | 45 921 92 911 | | | |
| | | | 6* | 45 921 92 952 | 45 921 92 912 | | | |
| **ENTARON XD 28-32**[1)] | 14–28 | left | 1* | 45 920 92 980 | 45 920 92 960 | C 28 1460 | CF 1760 | 10.1 |
| | | | 2* | 45 920 92 981 | 45 920 92 961 | | | |
| | | | 3* | 45 920 92 982 | 45 920 92 962 | | | |
| | | right | 4* | 45 921 92 980 | 45 921 92 960 | | | |
| | | | 5* | 45 921 92 981 | 45 921 92 961 | | | |
| | | | 6* | 45 921 92 982 | 45 921 92 962 | | | |
| **ENTARON XD 40** | 20–40 | left | 1* | 45 930 92 950 | 45 930 92 910 | C 35 2260 | CF 21 160 | 18 |
| | | | 2* | 45 930 92 951 | 45 930 92 911 | | | |
| | | | 3* | 45 930 92 952 | 45 930 92 912 | | | |
| | | right | 4* | 45 931 92 950 | 45 931 92 910 | | | |
| | | | 5* | 45 931 92 951 | 45 931 92 911 | | | |
| | | | 6* | 45 931 92 952 | 45 931 92 912 | | | |

1) Successor generation to Europiclon 700 and Europiclon 800
* Other spigot orientations possible on request.

# ENTARON XD
# Specifications

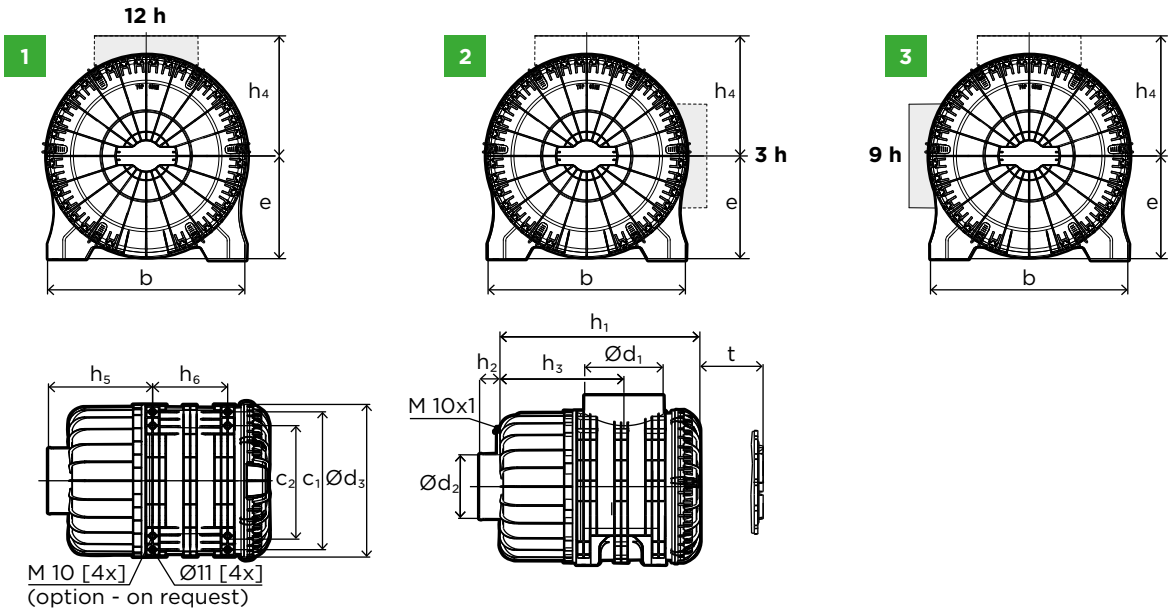



## DIMENSIONS

| Model | Dimensions in mm *(dimensions in inches)* | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **b** | **$b_1$** | **$c_1$** | **$c_2$** | **$d_1$** | **$d_2$** | **$d_3$** | **e** | **$h_1$** | **$h_2$** | **$h_3$** | **$h_4$** | **$h_5$** | **$h_6$** | **$h_7$** | **t** |
| **ENTARON XD 14** | 300 *(11.82)* | 79 *(3.11)* | 263.3 *(10.37)* | 175.3 *(6.90)* | 130 *(5.20)* | 110 *(4.33)* | 305.7 *(12.04)* | 159.7 *(6.29)* | 422.9 *(16.65)* | 45 *(1.77)* | 72.8 *(2.87)* | 186.5 *(7.34)* | 218.4 *(8.60)* | 136.8 *(5.39)* | 85.8 *(3.38)* | 362 *(14.25)* |
| **ENTARON XD 17** | 328.2 *(12.92)* | 90.1 *(3.55)* | 291.8 *(11.92)* | 203.8 *(8.03)* | 130 *(5.20)* | 130 *(5.20)* | 335.1 *(13.19)* | 173.7 *(6.84)* | 474.8 *(18.70)* | 45 *(1.77)* | 80.3 *(3.16)* | 198 *(7.80)* | 235.8 *(9.29)* | 169.9 *(6.69)* | 90.4 *(3.56)* | 408 *(16.06)* |
| **ENTARON XD 21** | 357.8 *(14.09)* | 92 *(3.62)* | 320 *(12.60)* | 232 *(9.13)* | 150 *(5.91)* | 150 *(5.91)* | 368.9 *(14.52)* | 193 *(7.60)* | 491 *(19.33)* | 45 *(1.77)* | 90 *(3.54)* | 215 *(8.46)* | 254 *(10)* | 167 *(6.58)* | 82.1 *(3.23)* | 426 *(16.77)* |
| **ENTARON XD 21-24** | 357.8 *(14.09)* | 92 *(3.62)* | 320 *(12.60)* | 232 *(9.13)* | 150 *(5.91)* | 150 *(5.91)* | 368.9 *(14.52)* | 193 *(7.60)* | 546 *(21.50)* | 45 *(1.77)* | 90 *(3.54)* | 215 *(8.46)* | 254 *(10)* | 221.8 *(8.73)* | 82.1 *(3.23)* | 480 *(18.90)* |
| **ENTARON XD 28** | 388 *(12.28)* | 96 *(3.78)* | 354 *(13.94)* | 266 *(10.47)* | 180 *(7.09)* | 180 *(7.09)* | 398 *(15.63)* | 208 *(8.19)* | 572 *(22.48)* | 45 *(1.77)* | 105 *(4.13)* | 245 *(9.65)* | 283 *(11.14)* | 220 *(8.66)* | 80.7 *(3.18)* | 505 *(19.88)* |
| **ENTARON XD 28-32** | 388 *(12.28)* | 96 *(3.78)* | 354 *(13.54)* | 266 *(10.47)* | 180 *(7.09)* | 180 *(7.09)* | 398 *(15.63)* | 208 *(8.19)* | 638 *(25.12)* | 45 *(1.77)* | 105 *(4.13)* | 245 *(9.65)* | 283 *(11.14)* | 285 *(11.22)* | 80.7 *(3.18)* | 573 *(22.56)* |
| **ENTARON XD 40** | 477 *(18.78)* | 125.7 *(4.95)* | 439 *(17.28)* | 351 *(13.82)* | 210 *(8.27)* | 203 *(7.99)* | 486.1 *(19.14)* | 248 *(9.76)* | 638.4 *(25.13)* | 65 *(2.56)* | 116.1 *(4.57)* | 295.5 *(11.63)* | 331.6 *(13.06)* | 239.1 *(9.41)* | 218 *(8.58)* | 650 *(25.59)* |

* Mirror image version of the raw air inlet.

# ENTARON MD 40
# Part numbers and specifications




## PART NUMBERS

| Model | Nominal flow rate [m³/min] | Raw air inlet position | | Part number | | Replacement filter element | | Weight [kg] |
|---|---|---|---|---|---|---|---|---|
| | | | | without secondary element | with secondary element | Main element [1] | Secondary element [2] | |
| **ENTARON MD 40** | 20–40 | central | 1 | 45 932 72 980 | 45 932 72 960 | C 38 3062 | CF 21 160 | 18 |
| | | | 2 | 45 932 72 981 | 45 932 72 961 | | | |
| | | | 3 | 45 932 72 982 | 45 932 72 962 | | | |

## DIMENSIONS

| Model | Dimensions in mm *(dimensions in inches)* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **b** | **$c_1$** | **$c_2$** | **$d_1$** | **$d_2$** | **$d_3$** | **e** | **$h_1$** | **$h_2$** | **$h_3$** | **$h_4$** | **$h_5$** | **$h_6$** | **t** |
| **ENTARON MD 40** | 476.5 *(18.76)* | 439 *(17.28)* | 361.5 *(14.23)* | 250 *(9.84)* | 203 *(7.99)* | 486.1 *(19.14)* | 248 *(9.76)* | 638.4 *(25.13)* | 65 *(2.56)* | 395.2 *(15.56)* | 290 *(11.42)* | 331.6 *(13.06)* | 239.1 *(9.41)* | 650 *(25.59)* |

## SPECIFICATIONS

| Model | Housing material | Dust discharge connection diameter | Tightening torque | | | Operating temperature | | Discharge valve orientation (downwards) |
|---|---|---|---|---|---|---|---|---|
| | | | Hose clamp (clean side) | Threaded insert | Through-hole | Continuous | Short-term | |
| **ENTARON XD** | PP-GF30 | 54 mm *(2.13 inch)* | max. 5 Nm | 15 Nm | 23 Nm | -30 °C to +90 °C | +110 °C | ±15° |
| **ENTARON XD 40** | | 74 mm *(2.91 inch)* | | | | | | |
| **ENTARON MD 40** | | - | | | | -30 °C to +80 °C | | - |

1) On request available with handle as option.
2) On request secondary element available with cellulose media.

# DualSpin XT Specifications

**THE DUALSPIN XT PRE-SEPARATOR IS THE PERFECT ADDITION TO THE ENTARON MD 40.**

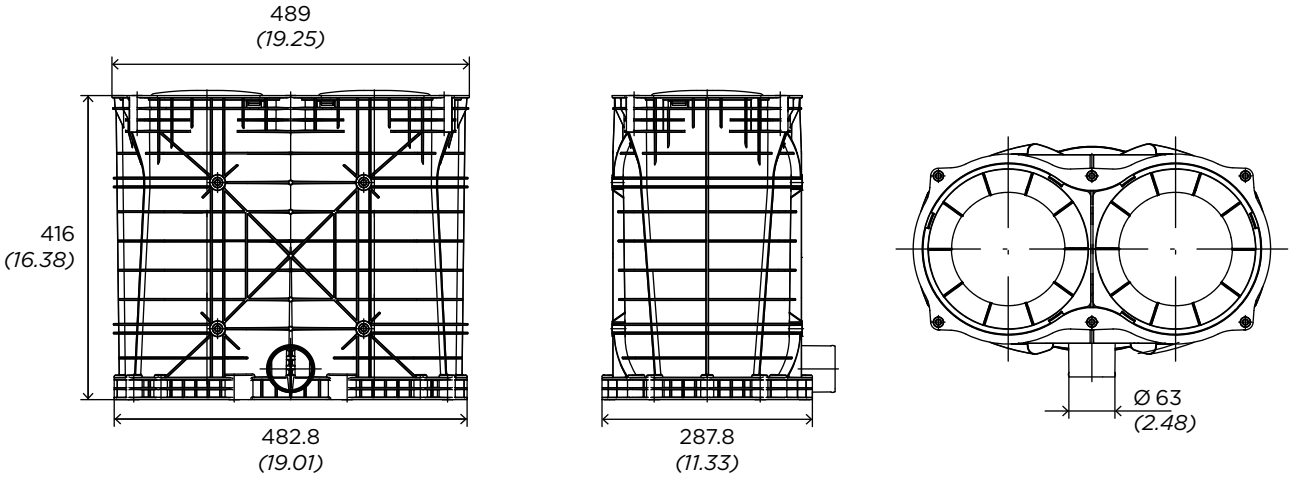
## ADVANTAGES

- High separation performance with low pressure drop
- As combination air cleaner considerably longer service life than comparable solutions on the market
- Flexible installation through operation with scavenging
- Installation possible in every direction in relation to scavenging connection
- Less downtime
- Robust design



## PART NUMBERS

| Model | Suitable for | Part number |
|---|---|---|
| **DualSpin XT** | ENTARON MD 40 | 48 030 75 910 |



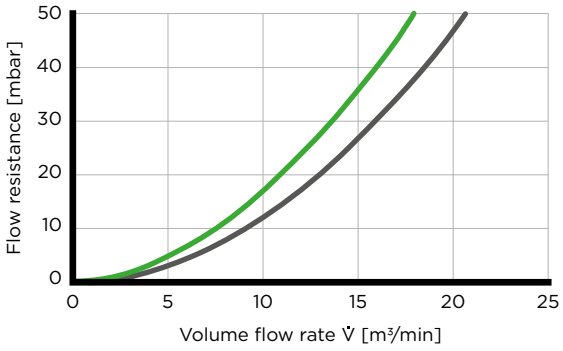

The connecting piece between ENTARON MD 40 and DualSpin XT is not included in the MANN+HUMMEL scope of delivery.

As an option, the ENTARON MD 40 can be used with an external DualSpin 37 pre-separator (with valve or scavenging operation), see catalog page 83.

# ENTARON XD
# Flow characteristics

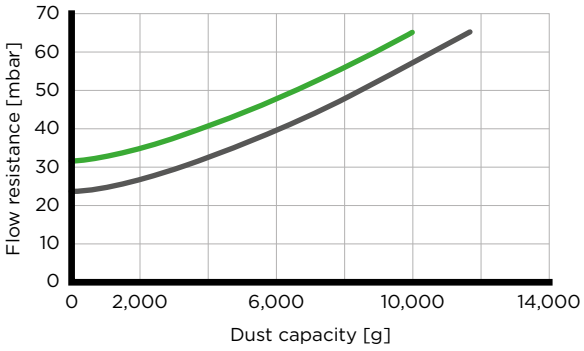
**ENTARON XD 14**

Flow rate



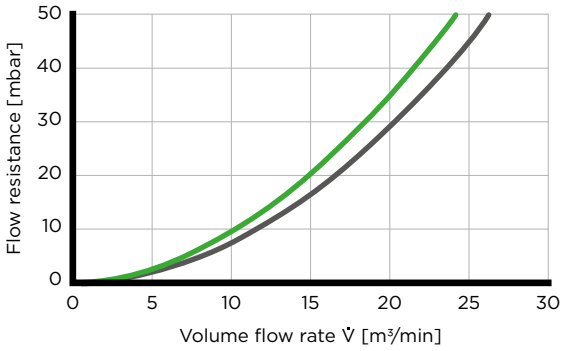

**ENTARON XD 14**

Dust capacity



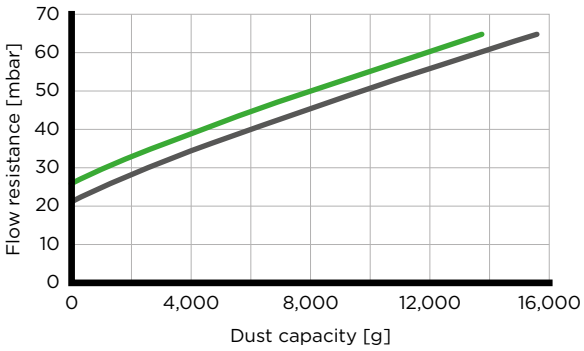

**ENTARON XD 17**

Flow rate



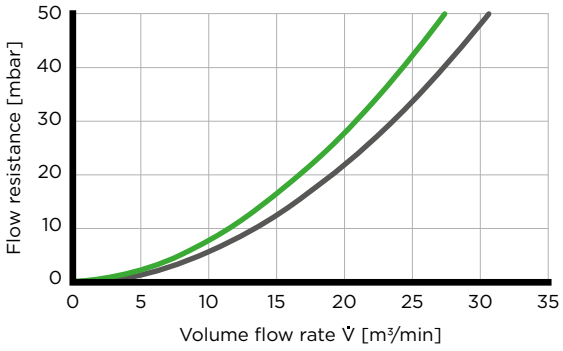

**ENTARON XD 17**

Dust capacity



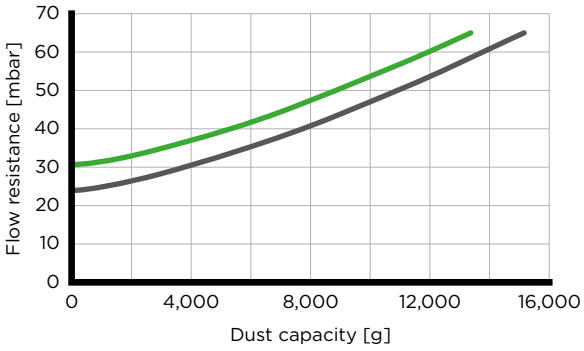

**ENTARON XD 21**

Flow rate




**ENTARON XD 21**

Dust capacity



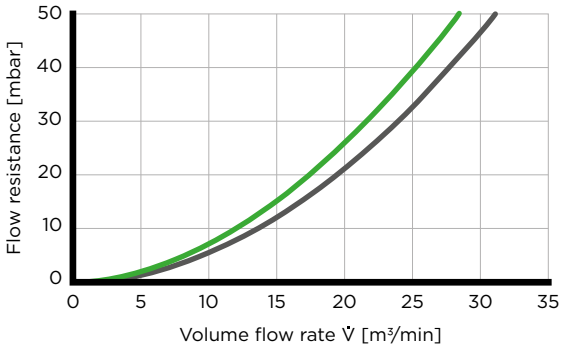

**With secondary element** **Without secondary element**

Data with scavenging on request.
Flow characteristics measured according to ISO 5011 with ISO coarse at nominal flow rates according to the specifications.

# ENTARON XD
# Flow characteristics

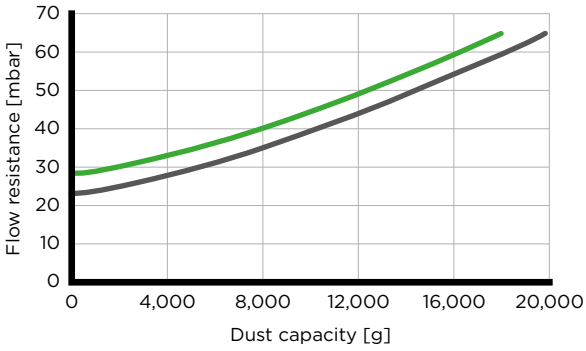
**ENTARON XD 21–24**

Flow rate



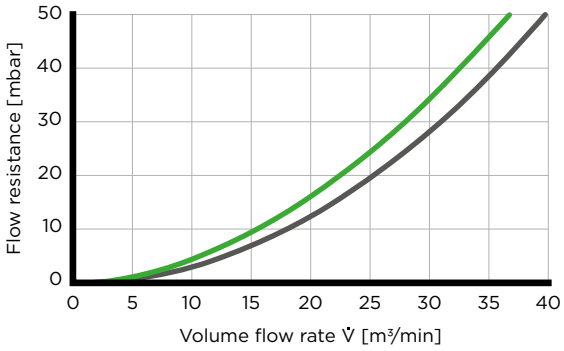

**ENTARON XD 21–24**

Dust capacity



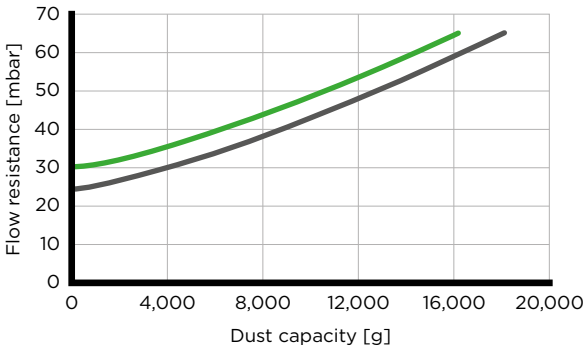

**ENTARON XD 28**

Flow rate



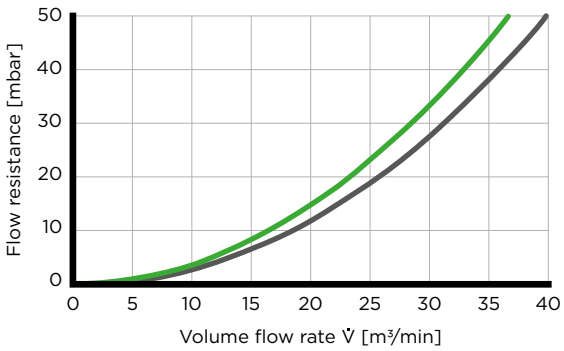

**ENTARON XD 28**

Dust capacity



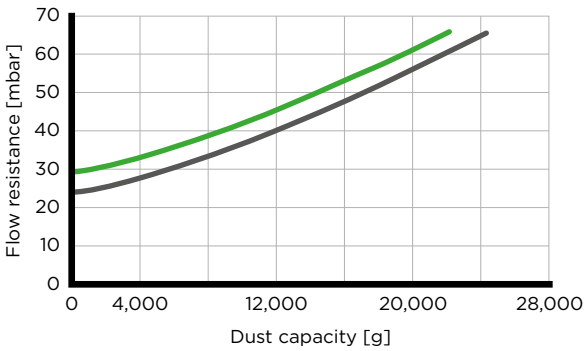

**ENTARON XD 28–32**

Flow rate




**ENTARON XD 28–32**

Dust capacity



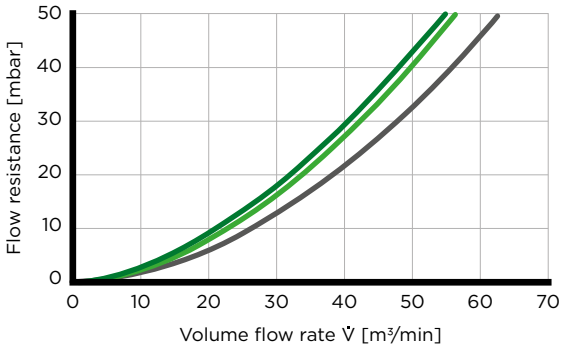

**With secondary element** **Without secondary element**

Data with scavenging on request.
Flow characteristics measured according to ISO 5011 with ISO coarse at nominal flow rates according to the specifications.

# ENTARON XD/MD
# Flow characteristics

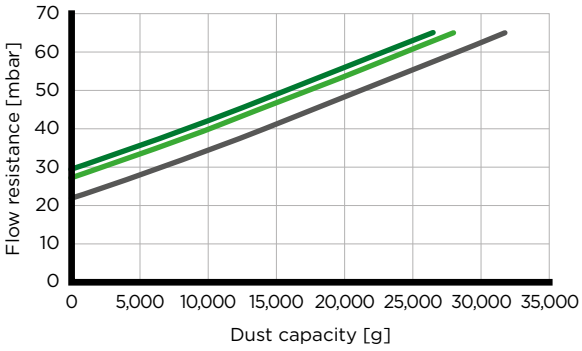
**ENTARON XD 40**

Flow rate



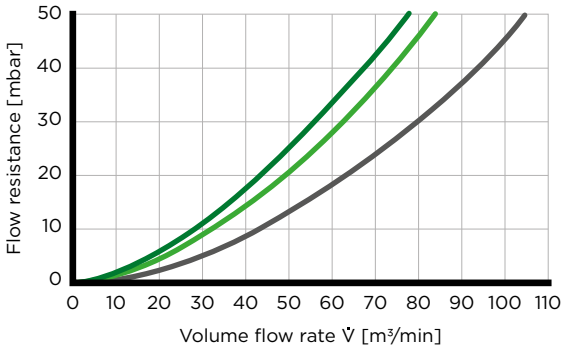

**ENTARON XD 40**

Dust capacity



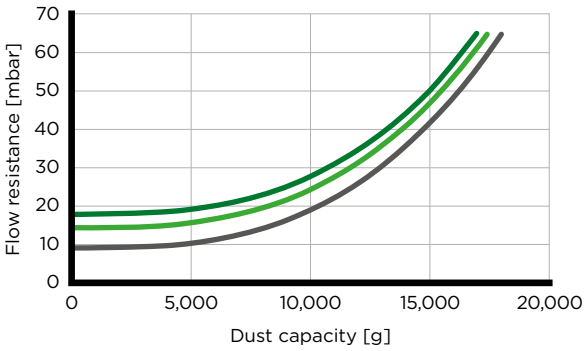

**ENTARON MD 40**

Flow rate




**ENTARON MD 40**

Dust capacity




**With secondary element made from cellulose material**

**With secondary element made from non-woven material**

**Without secondary element**

Data with scavenging on request.
Flow characteristics measured according to ISO 5011 with ISO coarse at nominal flow rates according to the specifications.

# ENTARON XD/MD
# Spare parts and accessories




## SPARE PARTS

| Model | Part number | | | Replacement filter element | | |
|---|---|---|---|---|---|---|
| | Dust discharge valve | | Cover | Main element | Secondary element | |
| | short version [2] | long version | | | Non-woven element | Cellulose element |
| **ENTARON XD 14** | 39 000 40 731 | - | 45 526 17 909 | C 21 600 | CF 1280 | - |
| **ENTARON XD 17** | 39 000 40 731 | - | 45 625 17 909 | C 23 800 | CF 1350 | - |
| **ENTARON XD 21** | 39 000 40 731 | - | 45 722 17 909 | C 25 900 | CF 1470 | - |
| **ENTARON XD 21-24** | 39 000 40 731 | - | 45 722 17 919 | C 25 1020 | CF 1480 | - |
| **ENTARON XD 28** | 39 000 40 731 | - | 45 920 17 909 | C 28 1300 | CF 1750 | - |
| **ENTARON XD 28-32** | 39 000 40 731 | - | 45 920 17 919 | C 28 1460 | CF 1760 | - |
| **ENTARON XD 40** | 39 000 40 291 | 39 000 40 991 | 45 930 17 909 | C 35 2260 | CF 21 160 | CF 21 160/1 |
| **ENTARON MD 40** | - | - | 45 932 17 909 | C 38 3062 [1] | CF 21 160 | CF 21 160/1 |

1) On request available with handle as option.
2) Part number for angled dust discharge valve with elbow: 39 000 40 671.

## ACCESSORIES

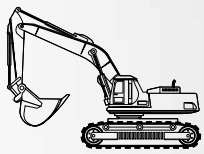
| Model | **Rain cap** (page 134) | **Straight connection** (page 139) | | **90 degree elbow** (page 138) | |
|---|---|---|---|---|---|
| | Form A | Without connection | With connection for M 10x1 | Without connection | With connection for M 10x1 |
| **ENTARON XD 14** | 39 160 67 910 | 39 600 27 999 | 39 600 27 979 | 39 600 25 999 | 39 600 25 979 |
| **ENTARON XD 17** | 39 160 67 910 | 39 700 27 999 | 39 700 27 979 | 39 700 25 999 | 39 700 25 979 |
| **ENTARON XD 21** | 39 190 67 910 | 39 800 27 999 | 39 800 27 979 | 39 800 25 999 | 39 800 25 979 |
| **ENTARON XD 21-24** | 39 190 67 910 | 39 800 27 999 | 39 800 27 979 | 39 800 25 999 | 39 800 25 979 |
| **ENTARON XD 28** | 39 220 67 910 | 39 930 27 999 | 39 930 27 979 | 39 930 25 999 | 39 930 25 979 |
| **ENTARON XD 28-32** | 39 220 67 910 | 39 930 27 999 | 39 930 27 979 | 39 930 25 999 | 39 930 25 979 |
| **ENTARON XD 40** | 39 370 67 910 | 39 000 27 345 | - | 39 000 25 270 | - |
| **ENTARON MD 40** | 39 420 67 910 | 39 000 27 345 | - | 39 000 25 270 | - |


MANN+HUMMEL
ENTARON HD
C 12 004
CF 240

# ENTARON HD/CD
# Round air cleaner for excellent flexibility

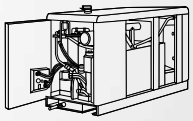
**The compact ENTARON HD two-stage air cleaner is roughly one third smaller than comparable air cleaners with a similar filtration performance and is therefore one of the smallest air cleaners in its class. In the long term MANN+HUMMEL will replace the proven Europiclon with this range.**

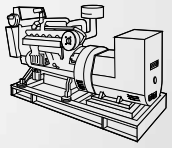
**The ENTARON CD is designed as a single-stage alternative to the ENTARON HD and is therefore the preferred solution for stationary applications with a low to medium dust load (e.g. compressors and power generators). In comparison to the Europiclon the installation space can be significantly reduced retaining the same low flow resistance.**



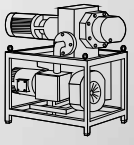












### ADVANTAGES

- Easy installation and compact design – up to 30 percent (ENTARON HD) or 50 percent (ENTARON CD) smaller than air cleaners with a comparable filtration performance
- Increased engine protection through increased initial and final separation efficiencies
- New type of sealing concept for reliable operation
- Environmentally-friendly and economical disposal through filter elements which are metal-free and fully incinerable
- Cr(VI)-free components
- Tool-less servicing due to comfort fasteners

### ENTARON HD

- Long service life
- High pre-separation efficiency due to integrated tangential inflow (no external pre-separator required)
- Easy operation with dust discharge valve
- Customized variants easy to generate
- Mirror image version for raw air inlet available

### ENTARON CD

- Low flow resistance reduces operating costs
- Housing air cleaner with free intake (no air duct on the raw air side required)
- Reduced installation costs due to axial air intake via the cover

# ENTARON HD/CD
# Round air cleaner for excellent flexibility

## THE BEST CHOICE FOR EACH APPLICATION

The ENTARON HD and CD air cleaners enable a perfect solution for each application. The ENTARON HD two-stage air cleaner is particularly suitable for applications with high dust loads. The single-stage ENTARON CD with low flow resistance and reduced operating costs is suitable for low to medium dust loads. Another benefit of the ENTARON CD is the simplified installation of the air cleaner on the raw air side which does not require any ducts. In addition, the ENTARON HD 4 VAC is available for vacuum pumps on request.

Both air cleaner versions offer a high filtration performance and compact design. The housing concept consists of three plastic parts: A special welding process reliably joins the raw air inlet to the air cleaner body. The gasket inserted in the cover protects against ingress of water and prevents the entry of hot intake air from the engine compartment to enable a reliable function. The innovative housing concept allows adaptation of the air cleaner to almost all installation situations as practically all orientations of the inlet duct relative to the integrated brackets are possible. The fixing of the air cleaner can be made using through-holes or threaded inserts. Additional flexibility is provided by the possibility to configure the raw air inlet in a mirror image position and also a selection of welded clean air connections comprising a 90 degree elbow which can be positioned (depending on model), a MAF connection and inch and metric connections.

## INNOVATIVE EVOLUTION

The ENTARON HD achieves excellent separation efficiencies due to effective pre-separation through tangential air flow and optimum filtration with high-performance media. This is despite the fact that the air cleaner requires only small installation space. In comparison to air cleaners with a similar filtration performance the air cleaner is approximately 30 percent smaller and is therefore one of the most compact air cleaners in its class. This is made possible by its design and ingenious solutions such as the integrated and protected service connection which requires less installation space.

## PERFECT CONTROL

The right relation between the volume of air and fuel is crucial for an environmentally-friendly combustion process and economical engine operation. The ENTARON HD is well prepared for an MAF sensor. In order to ensure the best signal quality at all times, the secondary element is equipped with a key lock function which defines the installation position and therefore the right air flow.

# ENTARON HD/CD
# At a glance

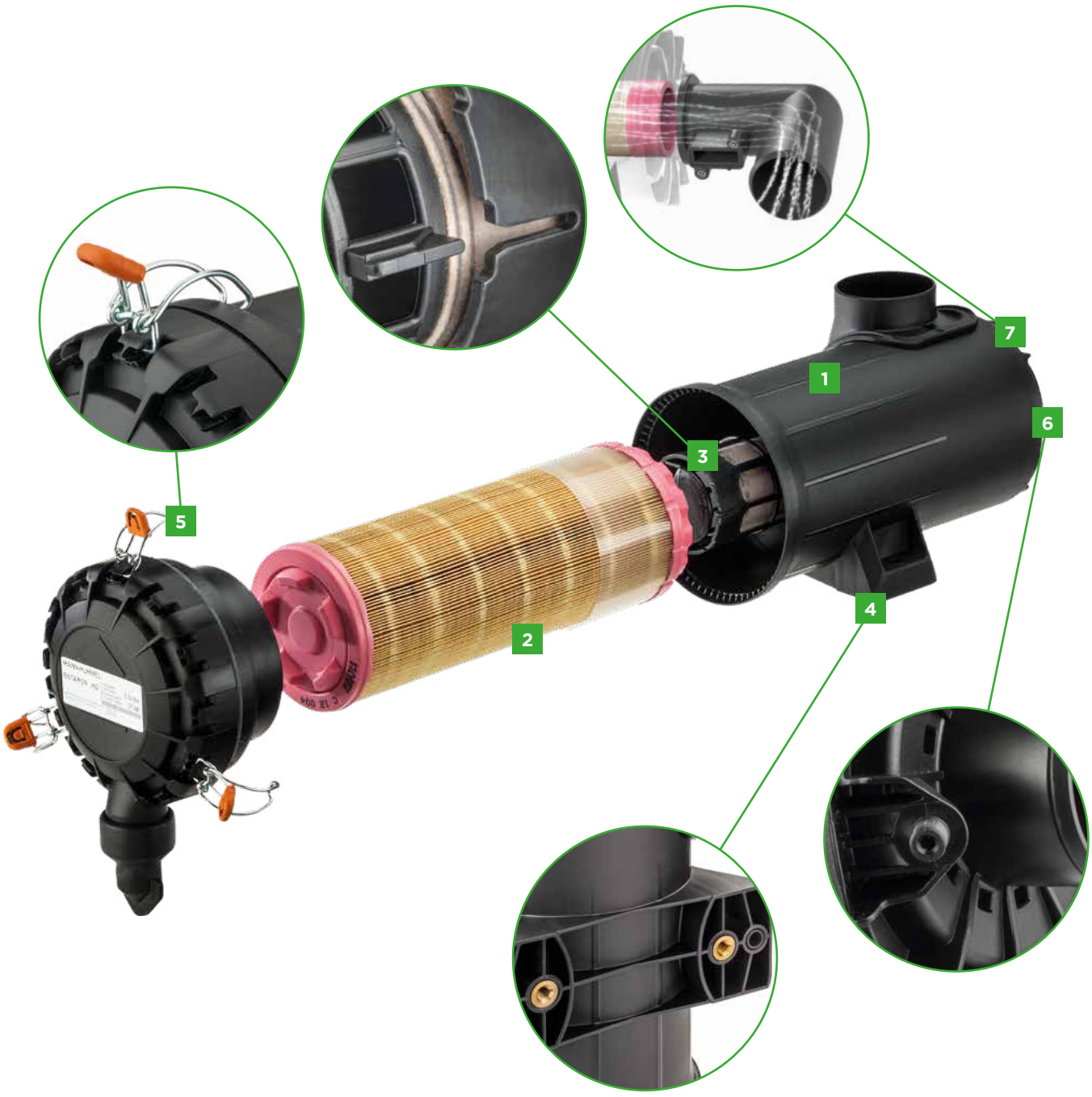




| Technical features | ENTARON HD | ENTARON CD |
|---|---|---|
| **Type of operation** | Two-stage air cleaner | Single-stage air cleaner |
| **Field of application** | Mobile applications with high dust loads such as construction and agricultural machines and compressors | Stationary applications in areas with a low dust load such as machines and engines, gensets and compressors |
| **Air flow requirements** | 2–13 m³/min | 2–13 m³/min |
| **Pre-separator** | Tangential | - |
| **Pre-separation efficiency** | | |
| ■ **With dust discharge valve** | > 86% | - |
| ■ **With scavenging (5%)** | > 89% | - |
| **Final separation efficiency** | > 99.99% | > 99.97% |
| **Dust discharge** | Dust discharge valve (option: scavenging) | - |
| **Secondary element** | Option | - |
| **Installation** | Vertical and horizontal installation possible [1)] | Vertical and horizontal installation possible |
| **Servicing concept** | Front servicing with comfort fasteners [2)] | Front servicing with comfort fasteners |
| **Additional protection against ingress of water** | Standard | - |
| **Special variant** | Vacuum versions [3)] | - |

1) Depends on the position of the dust discharge valve (valve always directed downwards).
2) Except ENTARON HD 13 (standard fasteners).
3) On request.

# ENTARON HD/CD
# High-performance details



# ENTARON HD/CD
# High-performance details

### 1 HOUSING

The three-part housing concept offers excellent flexibility for the positioning of the inlet angle relative to the integrated bracket and therefore simplifies use for OEM applications.

### 2 MAIN ELEMENT

The innovative filter media offers a high separation performance simultaneously with an exceptionally long service life. The filter element is equipped with a new gasket system which ensures the reliable sealing of the element to the housing. The main and secondary elements are metal free and are fully incinerable with low-cost disposal.

### 3 SECONDARY ELEMENT

The center tube of the ENTARON HD fixed to the housing protects the secondary element, defines the installation position and prevents unintentional removal or incorrect installation.

### 4 MOUNTING POSSIBILITIES

The brackets integrated in the housing (on request also available without brackets for HD 10 and 13) offer two mounting possibilities with through-holes (as standard with M8 screws) and threaded inserts*.

### 5 COMFORT FASTENERS

During servicing the snap-in function of the comfort fasteners prevents pinching between the cover and housing. The distinctive color-coding of the fasteners enables a reliable service even when visibility is poor. In order to meet special installation conditions, the fasteners can be freely positioned on the cover according to the customer needs.

### 6 SERVICE SWITCH

The ENTARON HD/CD has a connection for a service indicator which is directly integrated in the housing. The connection is designed to use a minimum of installation space and is located in a protected position.

### 7 PREPARED FOR MAF SENSOR TECHNOLOGY

Due to the defined installation position of the secondary element and optional welded clean air outlet, the ENTARON HD is perfectly designed for a MAF sensor with excellent signal quality.

* Option - on request.

# ENTARON HD/CD Part numbers and specifications

## PART NUMBERS

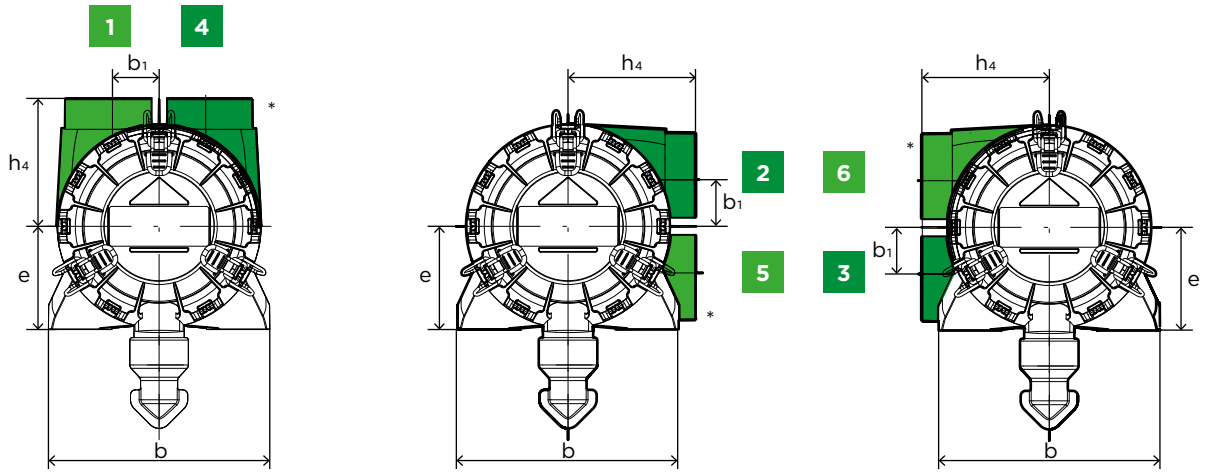
| Model | Nominal flow rate [m³/min] | Raw air inlet position | | Part number | | Replacement filter element | | Weight [kg] |
|---|---|---|---|---|---|---|---|---|
| | | | | without secondary element | with secondary element | Main element | Secondary element | |
| **ENTARON HD 4** | 2–4 | left | 1* | 45 131 92 950 | 45 131 92 910 | C 12 004 | CF 240 | 1.4 |
| | | | 2* | 45 131 92 951 | 45 131 92 911 | | | |
| | | | 3* | 45 131 92 952 | 45 131 92 912 | | | |
| | | right | 4* | 45 132 92 950 | 45 132 92 910 | | | |
| | | | 5* | 45 132 92 951 | 45 132 92 911 | | | |
| | | | 6* | 45 132 92 952 | 45 132 92 912 | | | |
| **ENTARON HD 5.5** | 3–5.5 | left | 1* | 45 151 92 950 | 45 151 92 910 | C 13 009 | CF 355 | 1.7 |
| | | | 2* | 45 151 92 951 | 45 151 92 911 | | | |
| | | | 3* | 45 151 92 952 | 45 151 92 912 | | | |
| | | right | 4* | 45 152 92 950 | 45 152 92 910 | | | |
| | | | 5* | 45 152 92 951 | 45 152 92 911 | | | |
| | | | 6* | 45 152 92 952 | 45 152 92 912 | | | |
| **ENTARON HD 7.5** | 4–7.5 | left | 1* | 45 171 92 950 | 45 171 92 910 | C 15 020 | CF 475 | 2.2 |
| | | | 2* | 45 171 92 951 | 45 171 92 911 | | | |
| | | | 3* | 45 171 92 952 | 45 171 92 912 | | | |
| | | right | 4* | 45 172 92 950 | 45 172 92 910 | | | |
| | | | 5* | 45 172 92 951 | 45 172 92 911 | | | |
| | | | 6* | 45 172 92 952 | 45 172 92 912 | | | |
| **ENTARON HD 10** | 5–10 | left | 1* | 45 191 92 950 | 45 191 92 910 | C 16 100 | CF 510 | 3.1 |
| | | | 2* | 45 191 92 951 | 45 191 92 911 | | | |
| | | | 3* | 45 191 92 952 | 45 191 92 912 | | | |
| | | right | 4* | 45 192 92 950 | 45 192 92 910 | | | |
| | | | 5* | 45 192 92 951 | 45 192 92 911 | | | |
| | | | 6* | 45 192 92 952 | 45 192 92 912 | | | |
| **ENTARON HD 13** | 7.5–13 | left | 1* | 45 231 92 950 | 45 231 92 910 | C 19 130 | CF 613 | 3.8 |
| | | | 2* | 45 231 92 951 | 45 231 92 911 | | | |
| | | | 3* | 45 231 92 952 | 45 231 92 912 | | | |
| | | right | 4* | 45 232 92 950 | 45 232 92 910 | | | |
| | | | 5* | 45 232 92 951 | 45 232 92 911 | | | |
| | | | 6* | 45 232 92 952 | 45 232 92 912 | | | |
| **ENTARON CD 4** | 2–13 | position-independent | | 45 131 85 990 | - | C 12 014 | - | 1.2 |

* Other spigot orientations possible on request

## SPECIFICATIONS

| Model | Housing material | Dust discharge connection diameter | Tightening torque | | | Operating temperature | | Discharge valve orientation (downwards) |
|---|---|---|---|---|---|---|---|---|
| | | | Hose clamp (clean side) | Threaded insert | Through-hole | Continuous | Short-term | |
| **ENTARON HD 4 to 7.5** | PP-T20 | 40 mm *(1.57 inch)* | max. 5 Nm | max. 25 Nm | max. 25 Nm | -30 °C to +80 °C | +110 °C | ±15 ° |
| **ENTARON HD 10 to 13** | | 54 mm *(2.13 inch)* | | | | | | |
| **ENTARON CD 4** | | - | | | | | | - |

# ENTARON HD/CD
# Specifications




ENTARON HD/CD | ENTARON HD/CD | ENTARON HD 10/13

## DIMENSIONS

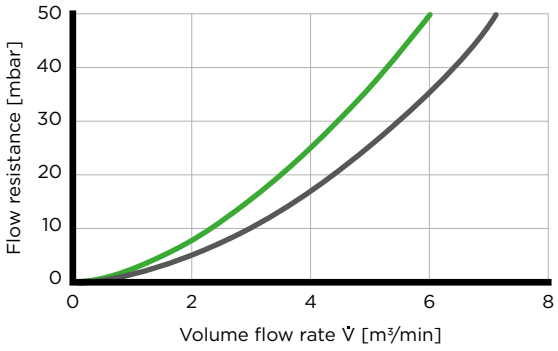
| Model | Dimensions in mm *(dimensions in inches)* | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **b** | **$b_1$** | **$c_1$** | **$c_2$** | **$d_1$** | **$d_2$** | **$d_3$** | **e** | **$h_1$** | **$h_2$** | **$h_3$** | **$h_4$** | **$h_5$** | **$h_6$** | **$h_7$** | **t** |
| **ENTARON HD 4** | 178 *(7.01)* | 37.5 *(1.48)* | 154 *(6.07)* | 110 *(4.33)* | 76 *(2.99)* | 64 *(2.52)* | 164 *(6.46)* | 83 *(3.27)* | 330 *(13.00)* | 36 *(1.42)* | 60 *(2.36)* | 103 *(4.06)* | 204 *(8.04)* | - | 80 *(3.15)* | 300 *(11.82)* |
| **ENTARON HD 5.5** | 193 *(7.60)* | 40 *(1.58)* | 165 *(6.50)* | 110 *(4.33)* | 90 *(3.55)* | 76 *(2.99)* | 189 *(7.45)* | 95.5 *(3.76)* | 340 *(13.40)* | 36 (1.42) | 68 *(2.68)* | 118 (4.65) | 212 *(8.35)* | - | 80 *(3.15)* | 310 *(12.21)* |
| **ENTARON HD 7.5** | 230 *(9.06)* | 46 *(1.81)* | 190 *(7.49)* | 127 *(5.00)* | 102 *(4.02)* | 89 *(3.51)* | 216 *(8.51)* | 109 *(4.29)* | 360 *(14.18)* | 36 (1.42) | 74 *(2.92)* | 131 *(5.16)* | 221 *(8.71)* | - | 80 *(3.15)* | 330 *(13.00)* |
| **ENTARON HD 10** | 268.6 *(10.58)* | 51 *(2.01)* | 240 *(9.46)* | 182 *(7.17)* | 130 *(5.12)* | 102 *(4.02)* | 244 *(9.61)* | 123 *(4.85)* | 385 *(15.17)* | 36 *(1.42)* | 85.5 *(3.37)* | 143 *(5.63)* | 236 *(9.30)* | 40 *(1.58)* | 90 *(3.55)* | 355 *(13.99)* |
| **ENTARON HD 13** | 290.6 *(11.48)* | 45.5 *(1.79)* | 262 *(10.3)* | 204 *(8.10)* | 150 *(5.92)* | 110 *(4.34)* | 278 *(10.91)* | 140 *(5.49)* | 414 *(16.36)* | 37 *(1.42)* | 97 *(3.82)* | 166 *(6.51)* | 258 *(10.15)* | 40 *(1.58)* | 90 *(3.55)* | 385 *(15.21)* |
| **ENTARON CD 4** | 178 *(7.01)* | - | 154 *(6.07)* | 110 *(4.33)* | - | 64 *(2.52)* | 164 *(6.46)* | 83 *(3.27)* | 330 *(13.00)* | 36 *(1.42)* | - | - | 204 *(8.04)* | - | - | 300 *(11.82)* |

* Mirror image version of the raw air inlet.

# ENTARON HD/CD
# Flow characteristics

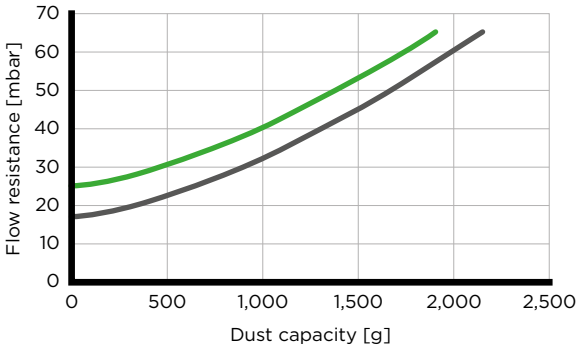
**ENTARON HD 4**

Flow rate



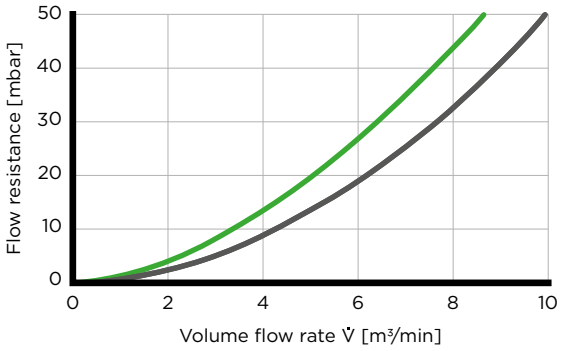

**ENTARON HD 4**

Dust capacity



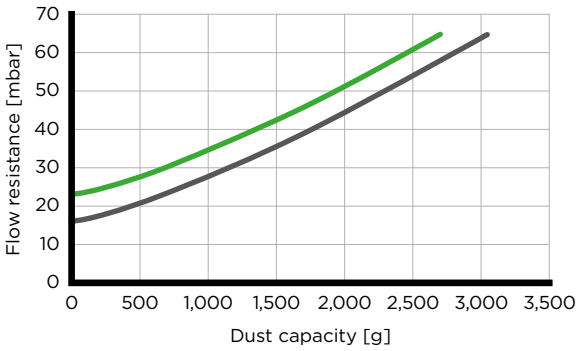

**ENTARON HD 5.5**

Flow rate



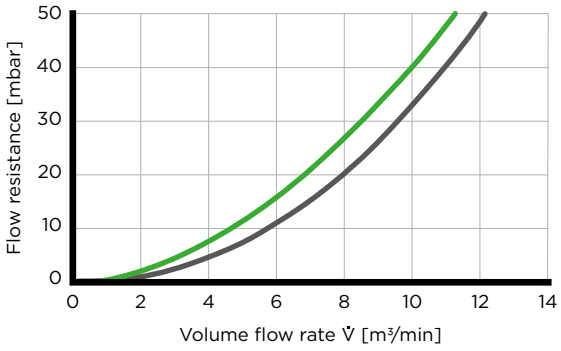

**ENTARON HD 5.5**

Dust capacity



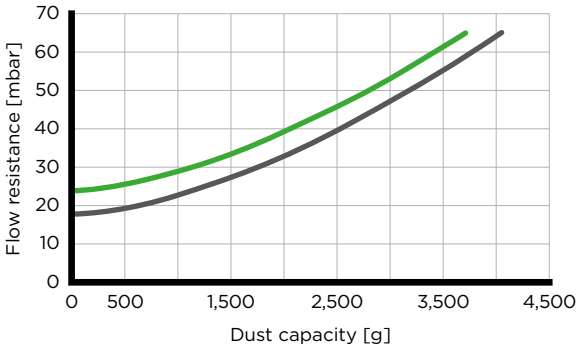

**ENTARON HD 7.5**

Flow rate




**ENTARON HD 7.5**

Dust capacity

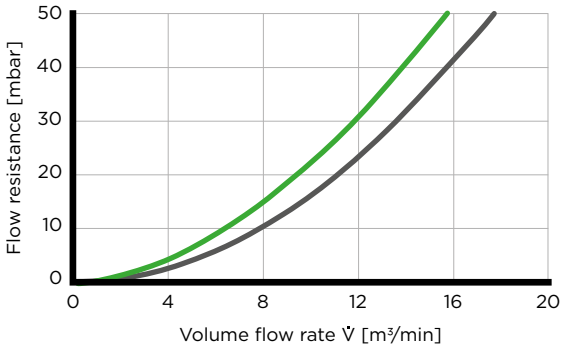



**With secondary element** **Without secondary element**

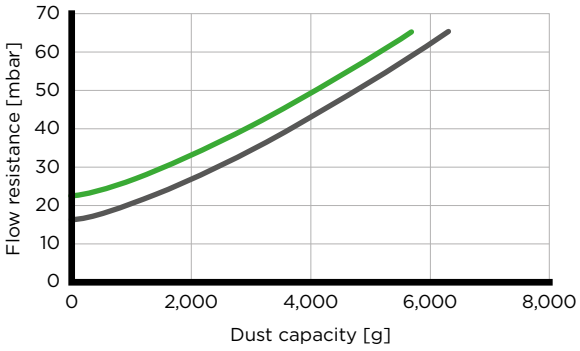
Data with scavenging on request.
Flow characteristics measured according to ISO 5011 with ISO coarse at nominal flow rates according to the specifications.

# ENTARON HD/CD
# Flow characteristics

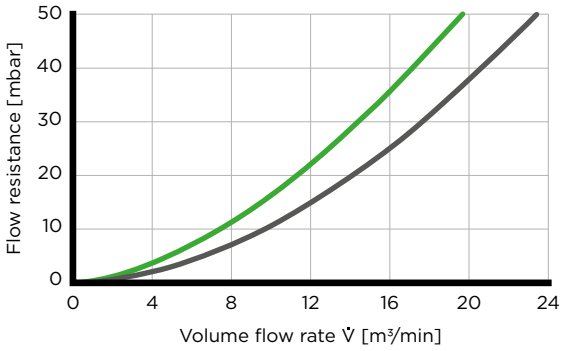
**ENTARON HD 10**
Flow rate



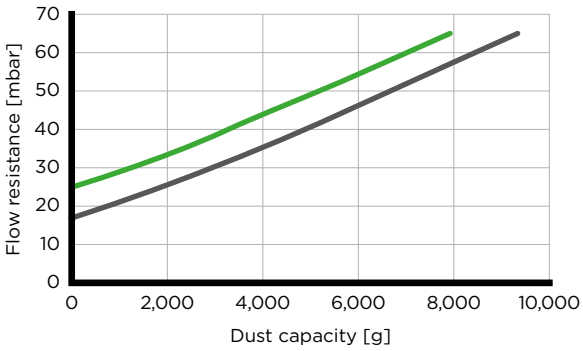

**ENTARON HD 10**
Dust capacity



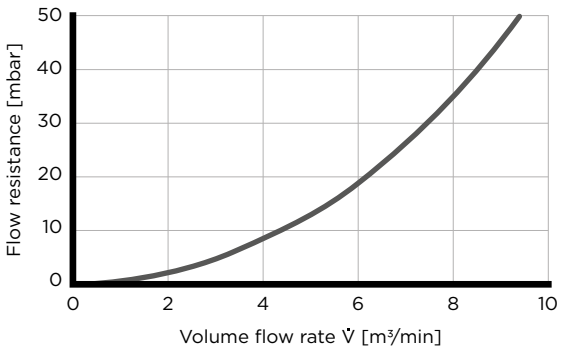

**ENTARON HD 13** (preliminary)
Flow rate



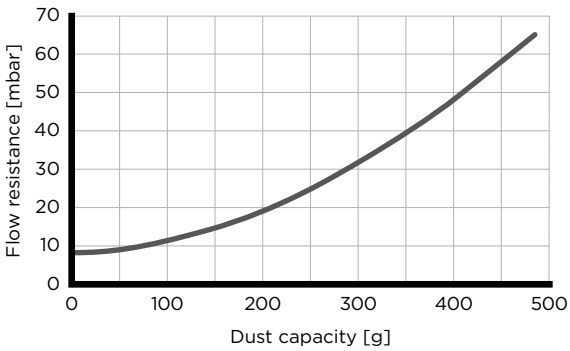

**ENTARON HD 13** (preliminary)
Dust capacity




**ENTARON CD 4** (preliminary)
Flow rate




**ENTARON CD 4** (preliminary)
Dust capacity




**With secondary element** **Without secondary element**

Data with scavenging on request.
Flow characteristics measured according to ISO 5011 with ISO coarse at nominal flow rates according to the specifications.

# ENTARON HD/CD Spare parts and accessories




## SPARE PARTS

| Model | Part number | Replacement filter element | |
|---|---|---|---|
| | Part number | Main element | Secondary element |
| **ENTARON HD 4** | 45 131 17 909 | C 12 004 | CF 240 |
| **ENTARON HD 5.5** | 45 151 17 909 | C 13 009 | CF 355 |
| **ENTARON HD 7.5** | 45 171 17 909 | C 15 020 | CF 475 |
| **ENTARON HD 10** | 45 191 17 909 | C 16 100 | CF 510 |
| **ENTARON HD 13** | 45 231 17 119 | C 19 130 | CF 613 |
| **ENTARON CD 4** | 13 951 60 S01 | C 12 014 | - |

## DUST DISCHARGE VALVE

| Model | Dust discharge connection diameter | Replacement filter element | | |
|---|---|---|---|---|
| | | Dust discharge valve small, standard | Dust discharge valve large/angled | Dust discharge valve large/straight |
| **ENTARON HD 4** | 40 mm | 39 000 40 391 | 39 000 40 661 | 39 000 40 102 |
| **ENTARON HD 5.5** | 40 mm | 39 000 40 391 | 39 000 40 661 | 39 000 40 102 |
| **ENTARON HD 7.5** | 40 mm | 39 000 40 391 | 39 000 40 661 | 39 000 40 102 |
| **ENTARON HD 10** | 54 mm | 39 000 40 731 | - | - |
| **ENTARON HD 13** | 54 mm | 39 000 40 731 | - | - |
| **ENTARON CD 4** | - | - | - | - |

**NOTE**
The complete range of accessories for our air cleaners can be found starting on page 132.


MANN+HUMMEL
ENTARON HD
C 12 904
CF 240
FILTER C 12 004

