**Nederman**

# LBR-S SmartFilter with screw conveyor

The filter is designed for small and medium-sized air flows with large material concentration.



## Specification

| Parameters | Description |
|---|---|
| Temperature | Max. 167°F (75°C) |
| Positive pressure | Max. 3.2 in $H_2O$ (800 Pa) |
| Negative pressure | Max. 2 in $H_2O$ (500 Pa) for Standard (overpressure) Option 20.1 in $H_2O$ (5000 Pa) only for Vacuum version |
| Reduced pressure in vessel | $P_{red}$ < 0,2 bar (20 kPa) |
| Power supply: | 208-230/460 or 575 V (230 / 400 V) Regeneration fan – 3 HP (2,2 kW) option - 1.5 HP (1,1 kW ) |
| Filter element | Superbag 2000 XT15 with ø200 mm collar |
| Max. quantity of modules | 6 modules |
| Filter area per module | HJ: 915 ft² (85 m²) |
| Max. filtration area | HJ: 5,490 ft² (510 m²) |
| Door switch | At the inspection doors in the filter hopper. At one filter module door per each 5 modules. At each inlet module door. |
| | |

## Product Marking of LBR-S SmartFilter:

The marking is based on product certificate Baseefa 06 ATEX 0068X:

• The explosion relief doors are marked:

$C \epsilon$ 1026 $\langle \epsilon x \rangle$ II D

The LBR-S SmartFilters with screw conveyor is designed for small and medium-sized air flows with large material content, for example filtration of waste-laden extracted air particularly in the wood and paper industries.

The medium/large particles are separated in the filter hopper (inlet section optional) and the air is afterwards distributed to the filter bags. The collected material is discharged through the rotary valve or screw conveyor.

The filter is typically used in situations requiring non-pressurized material discharge directly into a silo, container or separate material transport system.

The filter can be supplied for either continuous operation or with a pause for cleaning of the filter bags every four hours.

The LBR-S Smartfilter is suitable for explosive dusts type St1 and St2.

## Description

The LBR-S Smartfilter is a modular filter made of galvanised steel sheets.

Size of base module: 47.25x47.25 in (1200 x 1200 mm).

The filter is self-supporting; it has telescopic supporting legs and is suitable for outdoor locations.

Each module of the module filter construction is fitted with a combined inspection and explosion relief door. Side venting is standard. (Option – top venting or venting type UP).

The filter is available in type J– two modules 94.5 in (2400 mm) wide.

Inlet of air in hopper or via inlet module.

A regeneration fan can be mounted for reverse air cleaning of the filter bags according to a pre-set sequence. Positioning of the regeneration fans - optional on the roof or on the side.
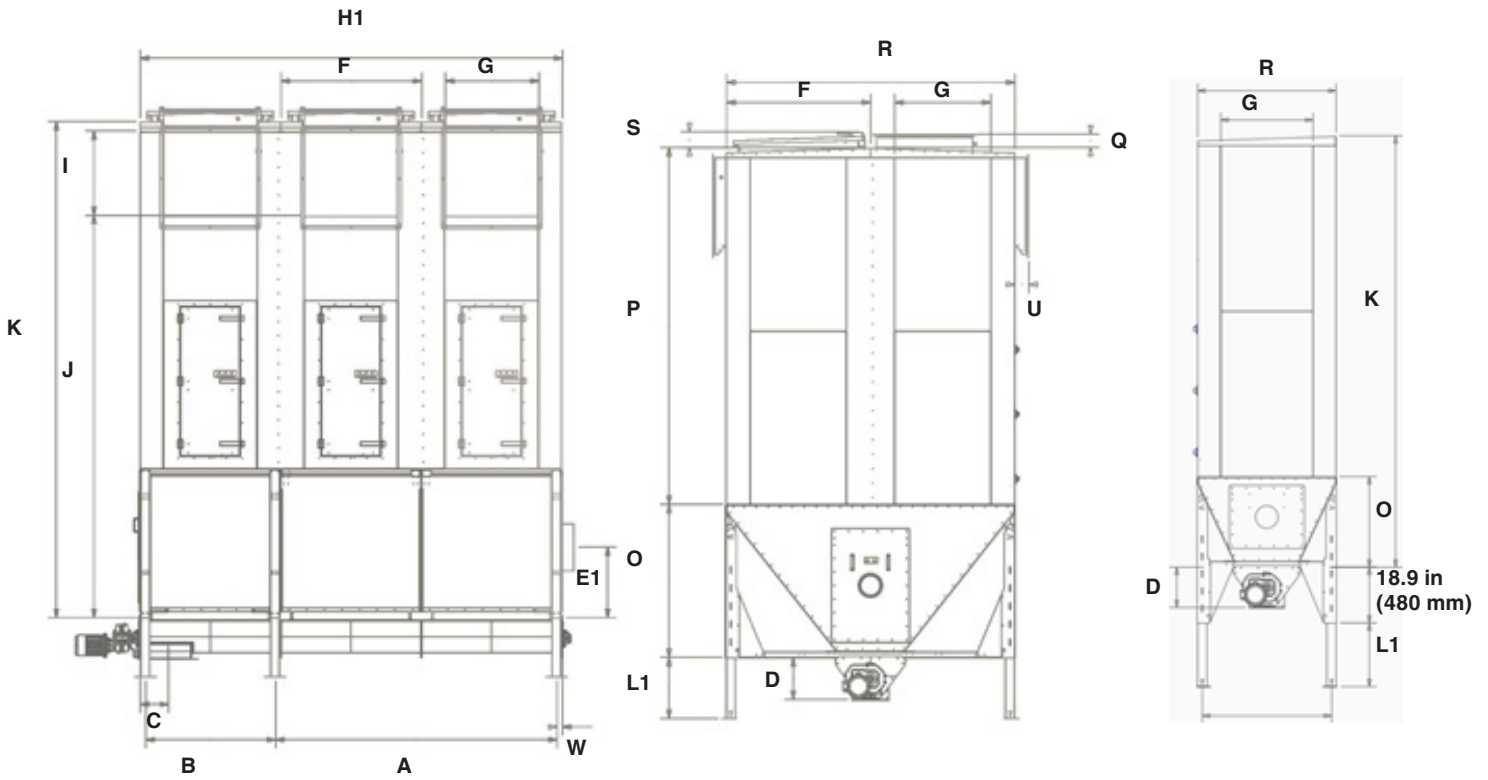
Superbag 2000 XT15 antistatic polyester filter bags are standard (50 per module).

For dust type St1 for installation in non-zone is marked:

$C \epsilon$ 1026 $\langle \epsilon x \rangle$ II D St1

For dust type St1 and St2, the filter body is marked:

$C \epsilon$ 1026 $\langle \epsilon x \rangle$ II D St2

| Unit | Type | A # | B | C | D | E1 | F | G | H1 | I | J** | K** | M | O |
|------|------|------|------|-----|-----|-----|------|-----|--------|-----|--------|--------|--------|--------|
| mm | J | 2400 | 1106 | 242 | 350 | 482 | 1200 | 800 | 3600 | 720 | 3420 | 4220 | 2321 | 1260 |
| in | J | 94.5 | 45.67 | 9.65 | 13.78 | 18.98 | 47.24 | 31.50 | 141.73 | 28.35 | 134.65 | 166.14 | 91.38 | 49.61 |

| Unit | Type | P** | Q | R | S | U | W |
|------|------|--------|------|------|------|------|------|
| mm | J | 2960 | 135 | 2400 | 115 | 150 | 47 |
| in | J | 116.54 | 5.31 | 94.5 | 4.53 | 5.91 | 1.85 |

* Optional position of outlet / reg. fan.

| Filter length | | |
|------|------|--------|
| Type | H1 | |
| | mm | in |
| 1 HJ | 1200 | 47.24 |
| 2 HJ | 2400 | 94.5 |
| 3 HJ | 3600 | 141.73 |
| 4 HJ | 4800 | 189.0 |
| 5 HJ | 6000 | 236.22 |
| 6 HJ | 7200 | 283.46 |

| L1 - telescopic filter legs | | | | |
|-------|------|-------|------|-------|
| Type | Min. Adjust | | Max. Adjust | |
| | mm | in | mm | in |
| L= 1196 | 155 | 6.1 | 850 | 33.46 |
| L= 1596 | 555 | 21.85 | 1250 | 84.65 |
| L= 2195 | 1155 | 45.47 | 1850 | 72.83 |
| L= 2596 | 1555 | 61.22 | 2250 | 88.58 |

## Flange NRSZ4

17.72 in (450 mm)

5.91 in (150 mm)　5.91 in (150 mm)

Ø 0.39 in(10 mm)

0.39 x 0.78 in (20 x10 mm)

5.91 in (150 mm)

9.09 in (231 mm)

10.63 in (270 mm)

12.52 in (318 mm)

12.52 in (396 mm)

22.4 in (569 mm)

## Flange NRSZ10

2.95 in (75 mm)　5.91 in (150 mm)　5.91 in (150 mm)　5.91 in (150 mm)　5.91 in (150 mm)　5.91 in (150 mm)　5.91 in (150 mm)　2.95 in (75 mm)

Ø 0.39 in(10 mm)

0.39 x 0.78 in (20 x10 mm)

5.91 in (150 mm)

9.09 in (231 mm)

12.80 in (325 mm)

37.48 in (952 mm)

44.29 in (1125 mm)
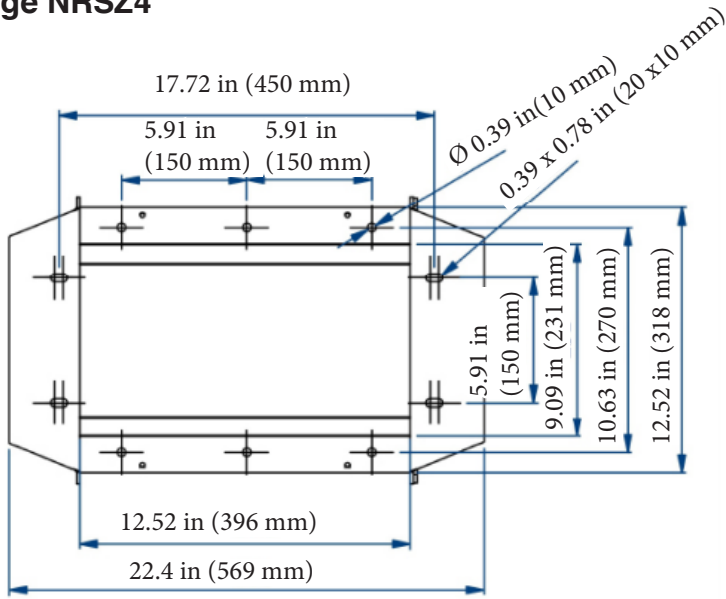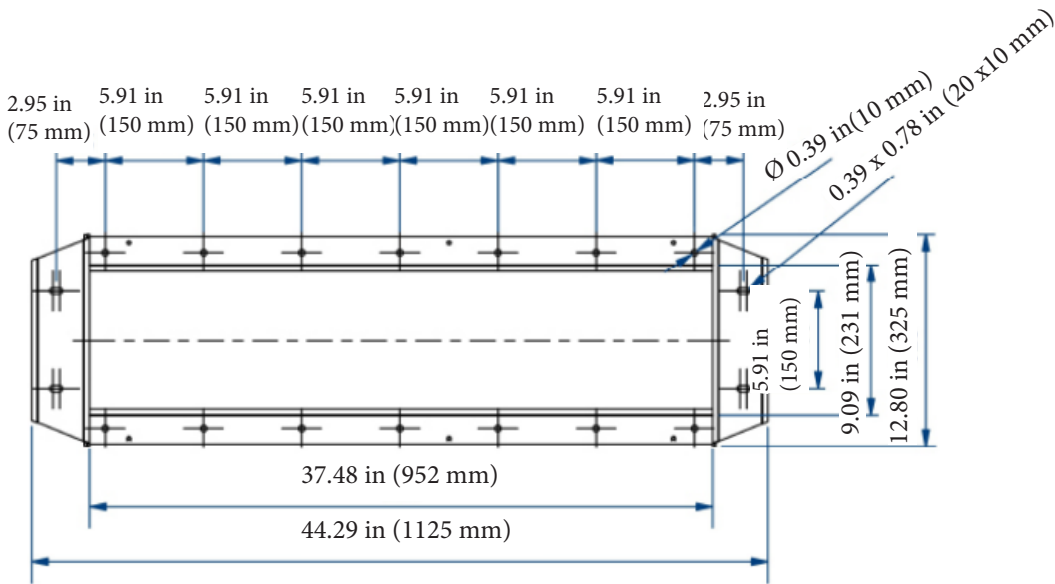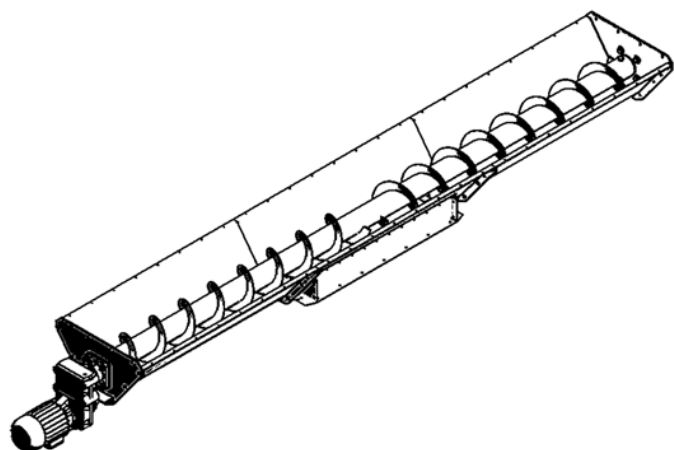
## Screw conveyor



**Example: screw conveyor
141.73 in (3600 mm) with outlet on the middle**

### Advantages

• Reliable

• Minimal maintenance need

• Useable in ATEX zone 22 and 21

### Options

Lengths of 94.5 in (2400 mm), 141.73 in (3600 mm), 189 in (4800 mm), 236.22 in (6000 mm), 283.5 in (7200 mm) are possible.

Outlet for rotary valves: NRS4 or NRS10

**The screw conveyor can be used for transporting dust and chips within various industries including wood. The screw conveyor can be used as a separate conveyor or fitted directly under a filter.**

### Description

The screw conveyor type PSK is made in galvanized steel plate. The hopper and the top panel are made in 14 ga (2 mm) steel. The hopper is made in modules, each 47.24 in (1200 mm) and can be supplied in 2 - 6 modules 94.5 in – 283.5 in (2400 - 2700 mm). As standard the hopper can be supplied with outlet in the driving end, opposite the driving end and in the middle. The outlet can be supplied to fit the rotary valves type NRS4 and NRS10. The outlet is also available with a transition from rotary valve NRS4 to NRS3.

The screw has a 4.25 in (108 mm) center pipe and the windings are 1.81 in (46 mm) high and made in 8 ga (4 mm) steel. The gradient of the screw conveyor is 7.87 in (200 mm). The capacity at 30 rpm is approx. 350 ft$^3$/h (10 m$^3$/h).
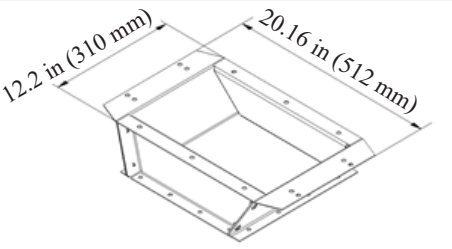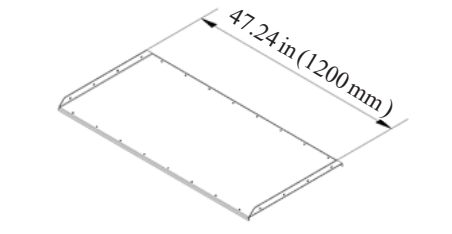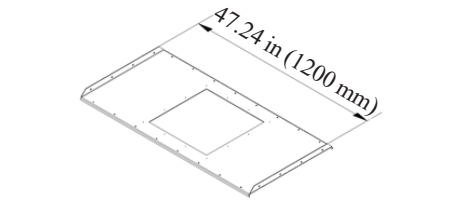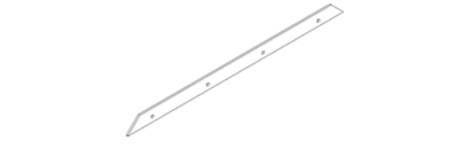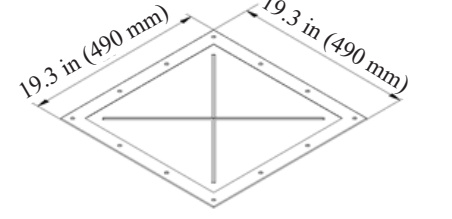
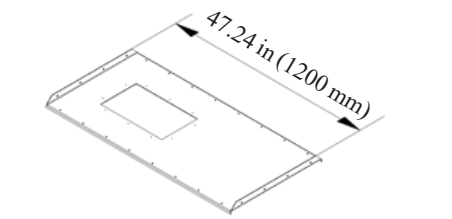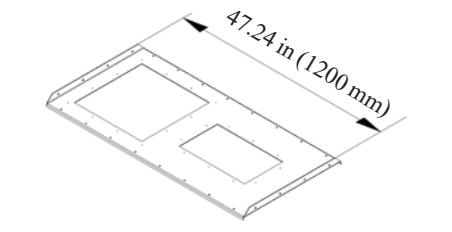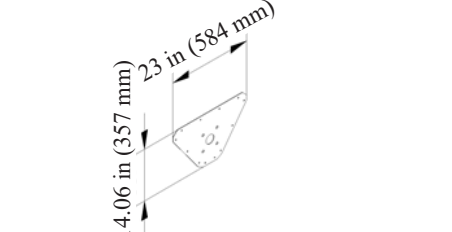Standard motor size 2 HP (1.5 kW).

The screw conveyor is also available in ATEX version for mounting in zone 22 or zone 21. The inner section of the screw conveyor is defined as zone 20. Depending on the version additional explosion membranes on the screw conveyor top are necessary.
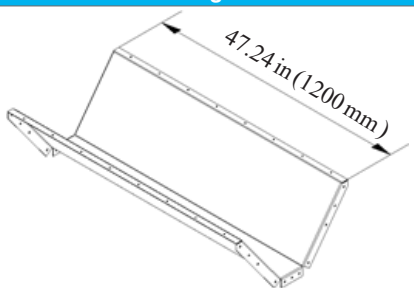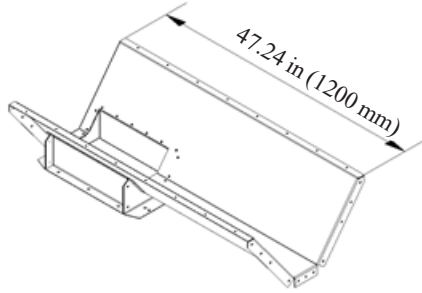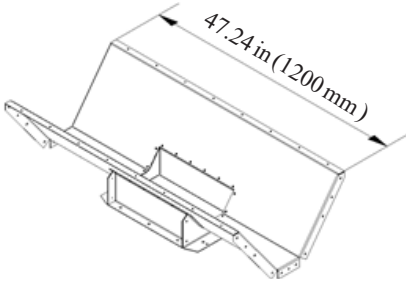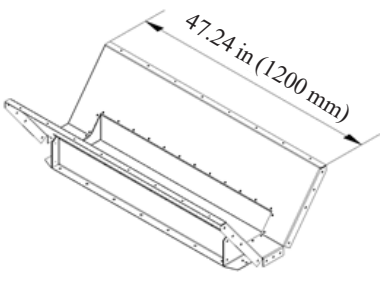
### Dimension
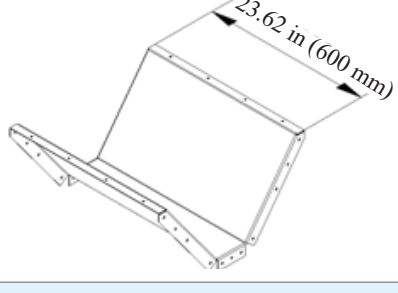
Example of module length 141.73 in (3600 mm):
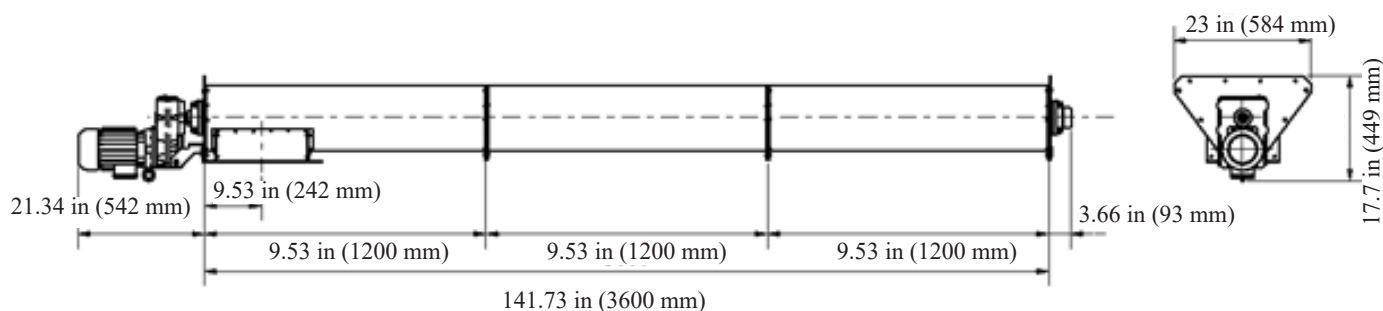
## Accessories for screw conveyor

| Description | Figure | Item number |
|---|---|---|
| Transition to NRS3 rotary valve | 12.2 in (310 mm) — 20.16 in (512 mm) | 5503412 |
| Closed top panel | 47.24 in (1200 mm) | 5503406 |
| Top panel with hole for Ex membrane | 47.24 in (1200 mm) | 5503408 |
| Flange for assembling of top panels | | 5503407 (1 pc. Per top panel + 1 pc.) |
| Ex membrane | 19.3 in (490 mm) — 19.3 in (490 mm) — 19.3 in (490 mm) | 5502155 |
| Top panel with hole for NRS4 inlet | 47.24 in (1200 mm) | 5503417 |
| Top panel with hole for Ex. membrane and NRS4 inlet | 47.24 in (1200 mm) | 5503416 |
| End panel | 23 in (584 mm) — 14.06 in (357 mm) | 5503395 |

## Hoppers

| Figure | Item number |
| --- | --- |
| 47.24 in (1200 mm) | 5503397 |
| 47.24 in (1200 mm) | 5503420 |
| 47.24 in (1200 mm) | 5503421 |
| 47.24 in (1200 mm) | 5503422 |
| 23.62 in (600 mm) | 5503415 |

## Ordering

By ordering LBR-S, please specify:
- Dust characteristics $K_{ST}$ and $p_{max}$
- Zone-rating of place for installation (Non-zone)
- Filter material type (only antistatic)
- Answers to the question session in the configurator.