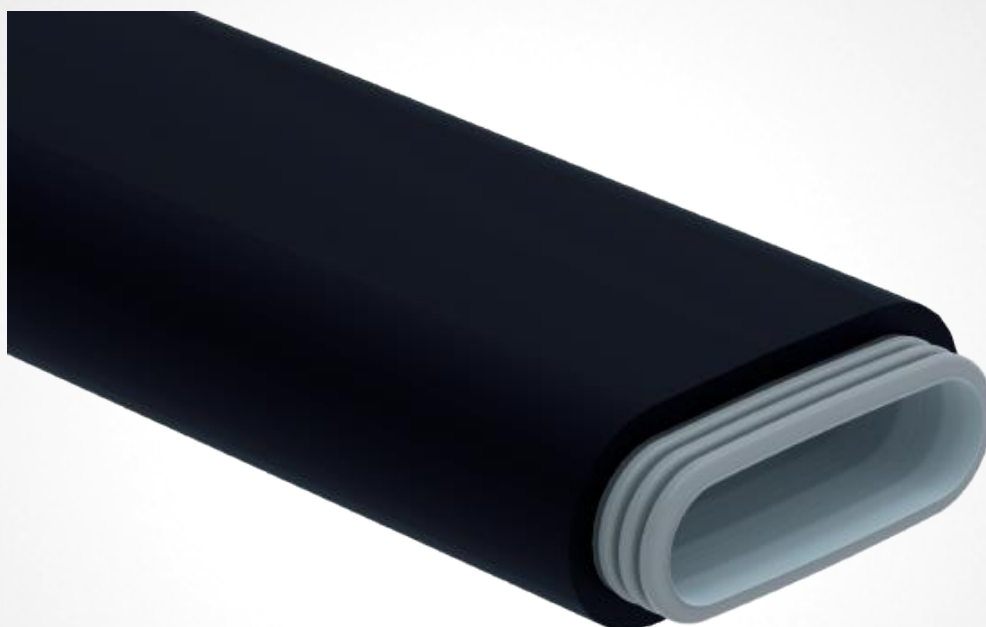# Versatile

ComfoTube Therm Flat 51

Insulated semi-rigid

Product data sheet

ComfoTube Therm Flat 51

The ComfoTube Therm Flat 51 is a high performance insulated oval shaped semi-rigid ductwork ideal for residential applications. The low profile and thermal properties make it the ideal ductwork for use with the range of climate conditioning devices such as ComfoClime and ComfoPost in small ceiling voids. The clinside smooth internal lining help to reduce build up of dust and enable the ductwork to be cleaned, this has helped the ductwork achieve a hygiene certificate from the Hygiene Institute. The ductwork was also one of the first to be fully accredited and listed on the PCDB.

The ductwork can be installed much faster than conventional ductwork with a reduced number of connections helping to reduce any potential air leakage within the system. The oval O-rings and locking slides also help to prevent the ductwork being disconnected during first fix and maintain an airtight seal. End caps are also provided to prevent dust ingress during first fix to maintain a hygienic system.

A variety of manifolds, insulated EPP connections, ancillaries and terminations can be used with the ductwork in addition to a wide range of decorative grilles.
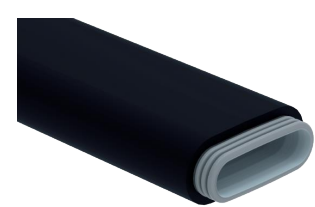
Key Features

- Low temperature loss and prevention of condensation when transporting tempered air
- The non-glued insulation offers flexibility during insulation and cutting
- No thermal bridges thanks to the insulation being optimally sized to fit against the connectors
- Wide range of EPP insulated connectors
- Easy and quick to install
- Airtight
- Extremely low profile, ideal for small voids
- Sound-optimised inner skin to ensure extremely quiet air flow
- High-quality food-grade plastic (PE)
- Fully accredited and listed on the PCDB
- Low pressure losses
- Easy to clean
- Corrosion resistant
- Lightweight and easy to handle
- No sealant or tape required
- Wide range of manifolds and grille termination options

Article Numbers

Description	Product Code
Ductwork	
ComfoTube Therm insulated Flat 51, 138 x 51mm, 10m roll	990 328 032
EPP ancillaries	
ComfoFit Therm insulated Flat 51, vertical 90° bend	990 430 850
ComfoFit Therm insulated Flat 51, horizontal 90° bend	990 430 851
ComfoFit Therm insulated Flat 51, Y-piece	990 430 853
ComfoFit Therm insulated Flat 51, pipe connector	990 430 854
ComfoFit Therm insulated Flat 51 to ComfoTube Therm insulated ø 90mm convertor	990 430 857
ComfoFit Therm insulated Flat 51 to ComfoTube Therm insulated ø 90mm convertor with 90° bend	990 430 852

Article Numbers

| Description	Product Code
Grille housing	
Grille housing CLF rectangular grille housing with 90° bend, connects 1 x 350x130 mm grille to 1 x ComfoTube Flat 51, L123 mm	990 322 000
Grille housing CLRF circular grille housing with 90° bend, connects 1 x ø 125 mm valve to 1 x ComfoTube Flat 51, L270 mm	990 322 060
Grille housing CLRF circular grille housing with 90° bend, connects 1 x ø 125 mm valve to 1 x ComfoTube Flat 51, L35 mm	990 322 064
Grille housing CLRF circular grille housing with 90° bend, connects 1 x ø 125 mm valve to 2 x ComfoTube Flat 51, L290 mm	990 322 063
Grille housing CLRF circular grille housing, connects 1 x ø 125 mm valve to 1 x ComfoTube Flat 51, L195 m	990 322 061
Grille housing Renoventil circular grille housing, connects 1 x ø 80 mm valve to 1 x ComfoTube Flat 51, L400 mm	990 322 062
Ancillaries	
ComfoTube Flat 51 manifold cover with ø 160 mm pipe adaptor, for 6 port manifold	990 322 037
ComfoTube Flat 51, cross bracing floor insert for CLF grille housing	990 322 095
ComfoTube Flat 51, end caps, 10 pieces	990 328 252
ComfoTube Flat 51, oval O-ring seal, 10 pieces	990 328 352
ComfoTube Flat 51, locking slides, 20 pieces	990 326 022
ComfoTube Flat 51, adjustable airflow regulator	990 322 015
Filter for ø 125 mm extract air valve, ISO Coarse (G3), 10 Pieces	990 320 032
Filter for CLF housing, ISO Coarse (G3), 10 Pieces	990 322 100

ComfoTube Therm insulated Flat 51, 138 x 51mm, 10m roll Article

number: 990 328 032

Technical Specification

Material - Ductwork	High-quality food-grade polyethylene (PE)
Material - Insulation	Cellular rubber
Operating temperature range	-25 to +60°C
Thermal conductivity at 0°C	0.033 W/mK
Thermal conductivity at 20°C	0.035 W/mK
10 m Temperature loss @ 40 m³hr (40/20°C)	7.1 K
10 m Temperature loss @ 40 m³hr (16/25°C)	-5.3 K
Maximum recommended air volume per tube	13 l/s (47 m³/h)
Minimum bending radius	207 mm and 468 mm
Buoyancy in concrete	150 N/m
Outside diameter (W/H)	156 mm x 69 mm
Inside diameter (W/H)	125 mm x 38 mm
Insulation thickness	9 mm
Weight per m	0.595 kg
Fire rating in accordance with EN 13501-1 - Ductwork	E
Fire rating in accordance with EN 13501-1 - Insulation	BL s2, d0
Fire rating in accordance with EN 13501-1 - EPP ancillaries	E
BS EN 61386-24:2010 crushability compliant	Yes
Coil diameter (10 m roll)	1100 mm
Coil height (10 m roll)	160 mm

Pressure Curve

— Zehnder ComfoTube Therm Flat 51, 1 m length
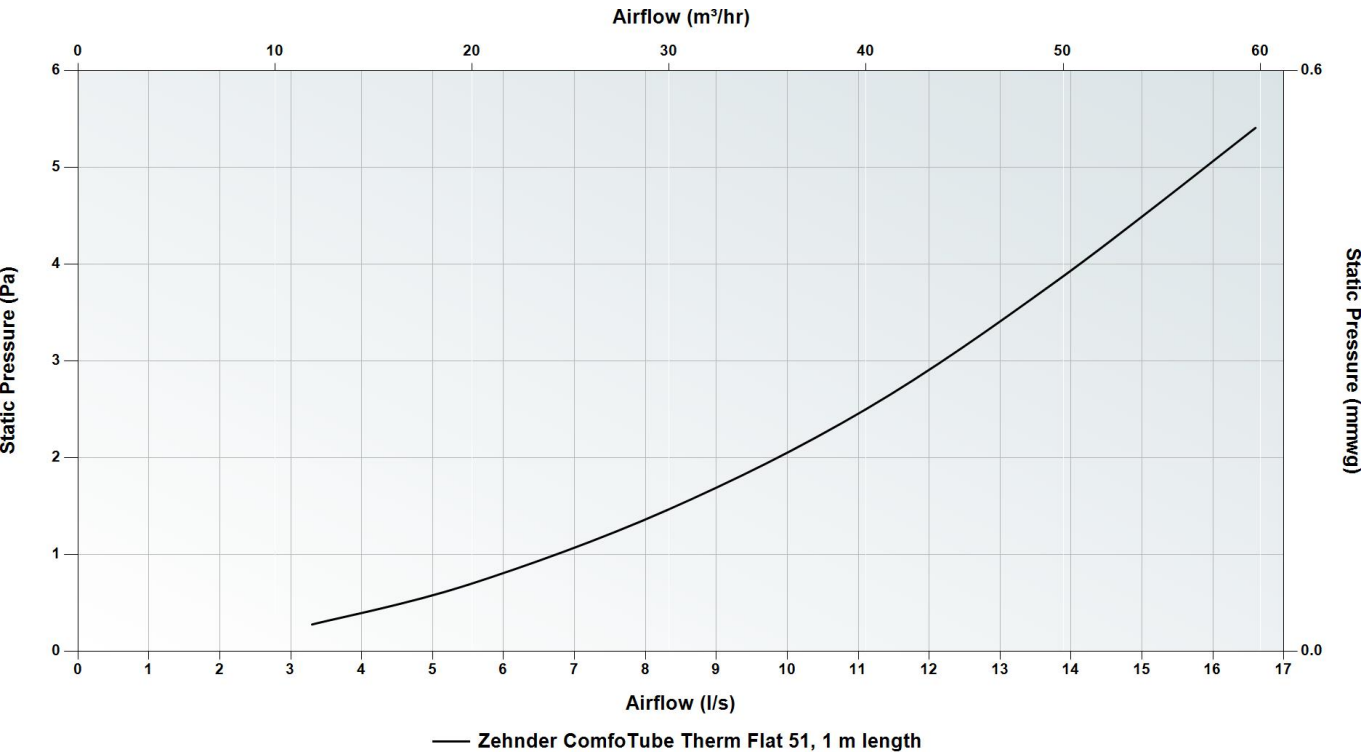
■ For use with ComfoTube Flat 51 Manifolds and Grille housings

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ComfoFit Therm insulated Flat 51, vertical 90° bend

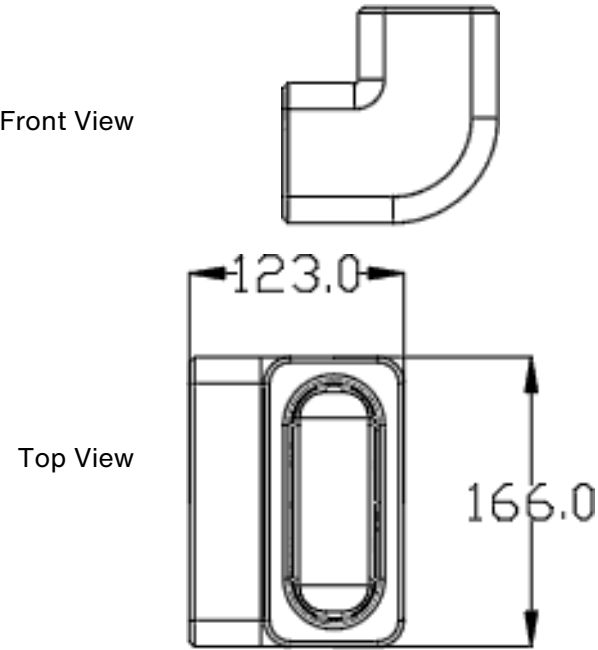Article number: 990 430 850

Description

Rigid 90° bend:
ComfoTube Therm Flat 51, insulated vertical 90° bend. The rigid bend can be placed between two lengths of ComfoTube Therm Flat 51 to create an airtight and robust seal using the supplied O-rings. The insulation must be cut straight to ensure no thermal bridging once push fit into the connector.
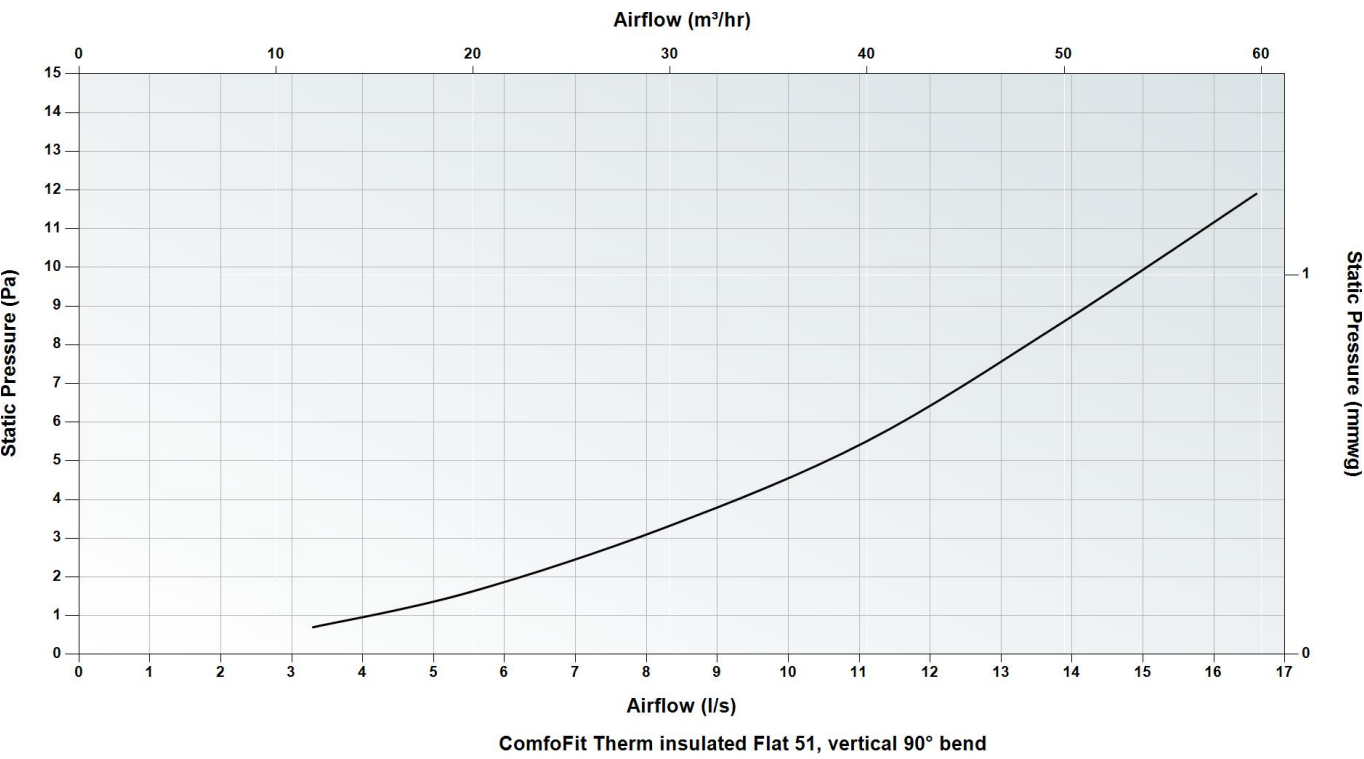
Technical Specification

Height	123 mm
Width	166 mm
Depth	123 mm
Weight	0.065 kg
Material	Expanded polypropylene (EPP)

Dimensions

Front View

Top View

Pressure Curve

ComfoFit Therm insulated Flat 51, vertical 90° bend

ComfoFit Therm insulated Flat 51, horizontal 90° bend

Article number: 990 430 851
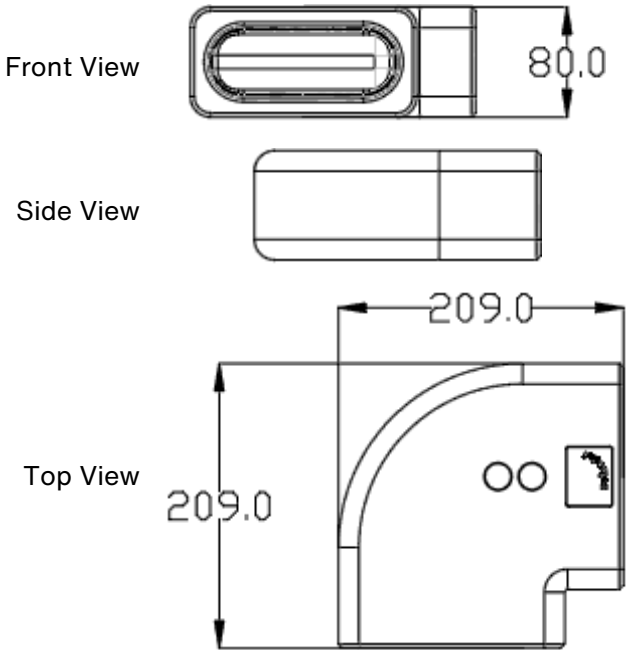
Description

Rigid 90° bend:
ComfoTube Therm Flat 51, insulated horizontal 90° bend. The rigid bend can be placed between two lengths of ComfoTube Therm Flat 51 to create an airtight and robust seal using the supplied O-rings. The insulation must be cut straight to ensure no thermal bridging once push fit into the connector.
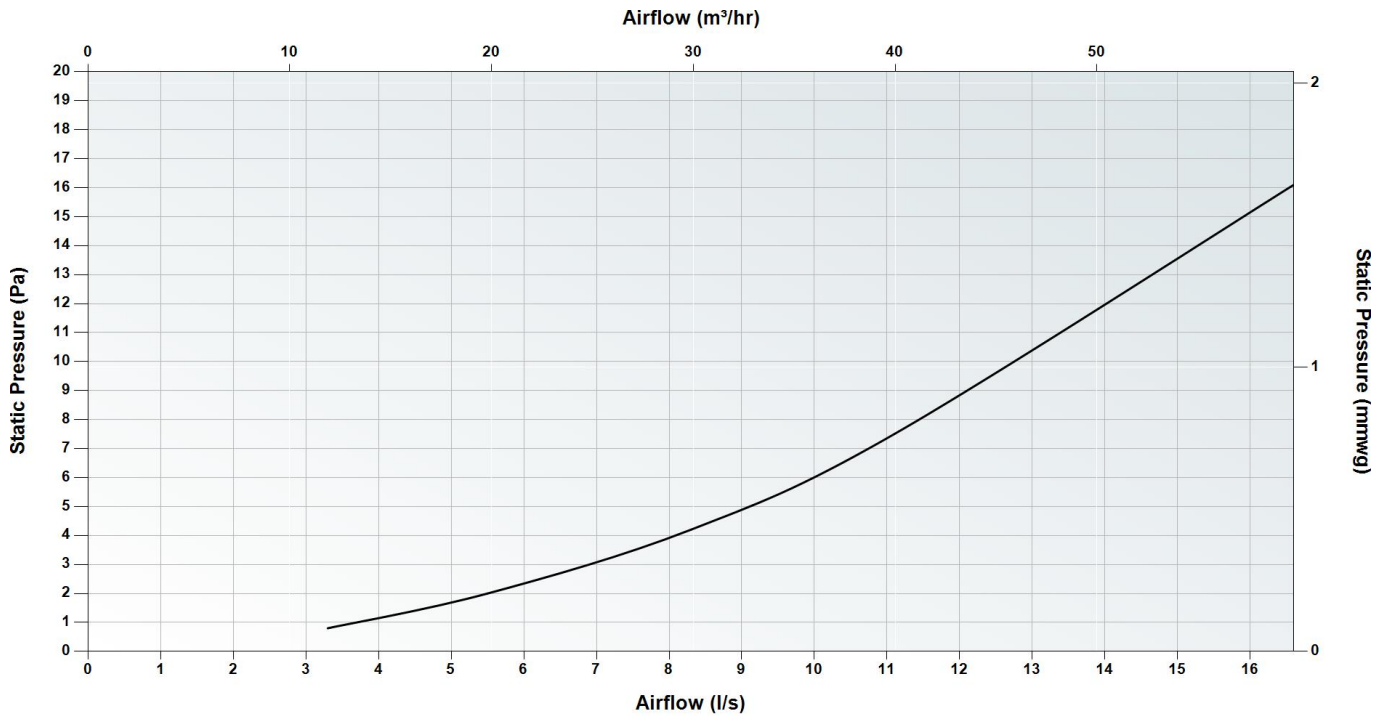
Technical Specification

Height	80 mm
Width	209 mm
Depth	209 mm
Weight	0.106 kg
Material	Expanded polypropylene (EPP)

Dimensions

Front View

Side View

80.0

Top View

209.0

209.0

Pressure Curve

ComfoFit Therm insulated Flat 51, horizontal 90° bend

ComfoFit Therm insulated Flat 51, Y-piece
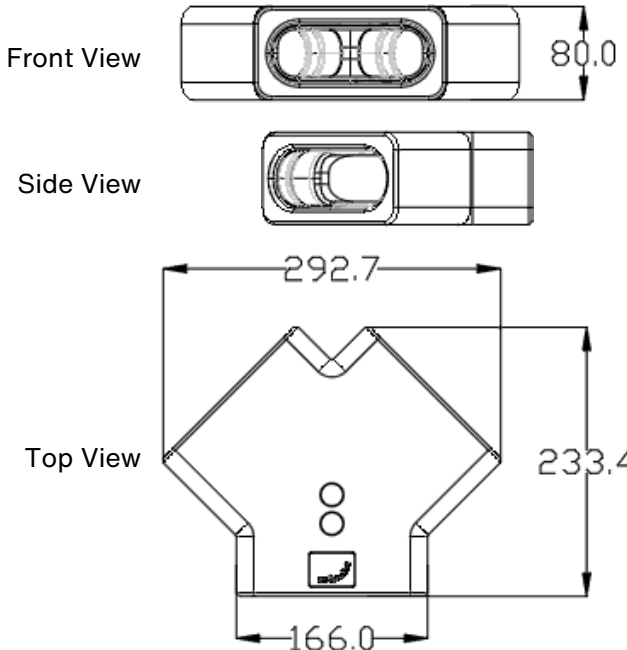
Article number: 990 430 853

Description

Y-piece:
ComfoTube Therm Flat 51, insulated Y-piece. The insulated Y-piece can placed between three lengths of ComfoTube Therm Flat 51 to branch from a single run into two separate runs to create an airtight and robust seal using the supplied O-rings. The insulation must be cut straight to ensure no thermal bridging once push fit into the connector.
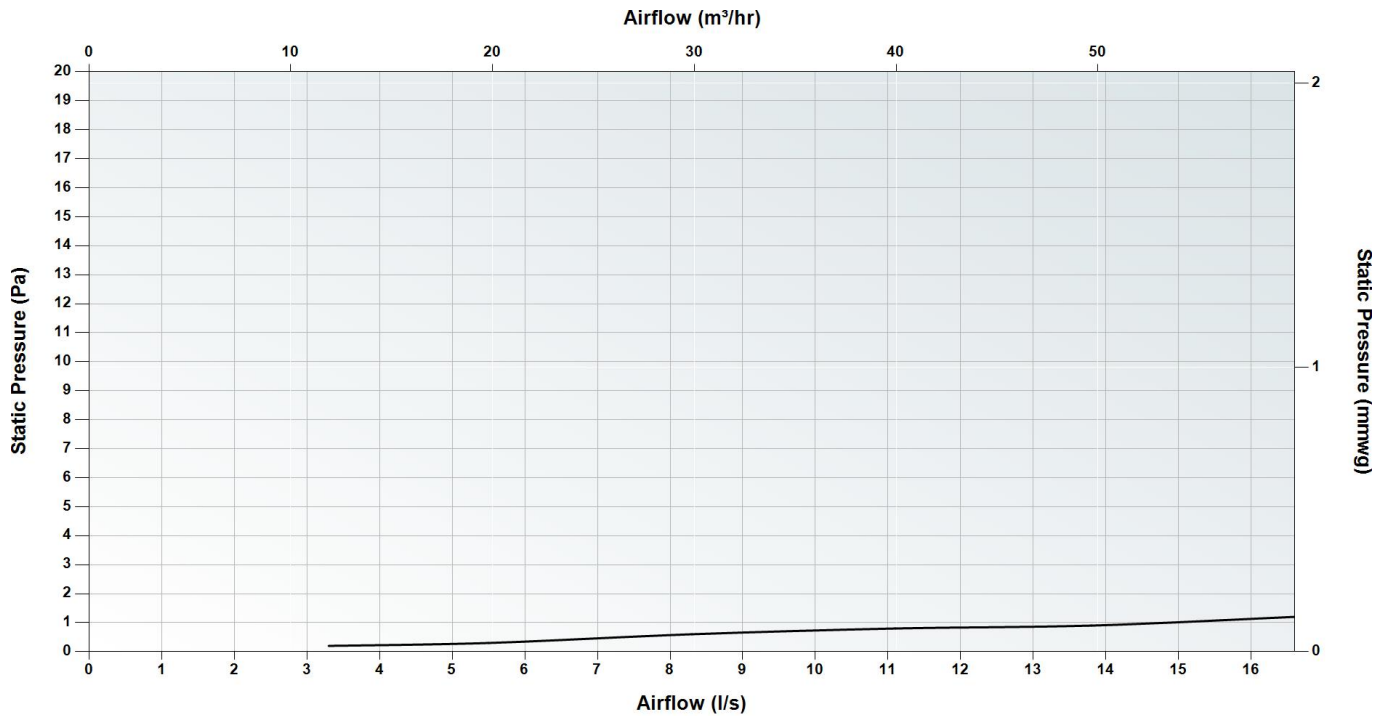
Technical Specification

Height	80 mm
Width	293 mm
Depth	233 mm
Weight	0.111 kg
Material	Expanded polypropylene (EPP)

Dimensions

Front View

80.0

Side View

Top View

292.7

233.4

166.0

Pressure Curve

ComfoFit Therm insulated Flat 51, Y-piece

ComfoFit Therm insulated Flat 51, pipe connector

Article number: 990 430 854

Description
Pipe connector:
ComfoTube Therm Flat 51, insulated pipe connector. The connector is used to join two lengths of ComfoTube Therm Flat 51 together to create an airtight and robust seal using the supplied O-rings. The insulation must be cut straight to ensure no thermal bridging once push fit into the connector.
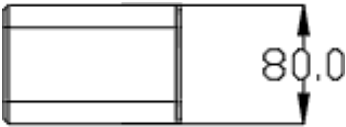
Technical Specification

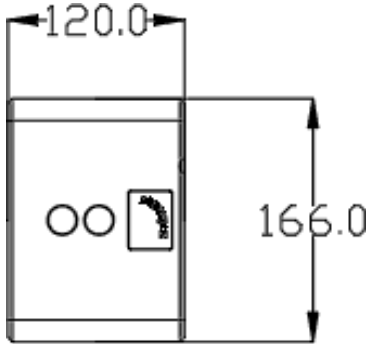|	
Length	120 mm
Outside diameter (W/H)	166 mm / 80 mm
Inside diameter (W/H)	138 mm / 51 mm
Weight	0.049 kg
Material	Expanded polypropylene (EPP)

Dimensions

Front View

Side View

Top View

Pressure Curve

Airflow (m³/hr)

Static Pressure (Pa)

Static Pressure (mmwg)

Airflow (l/s)

ComfoFit Therm insulated Flat 51, pipe connector
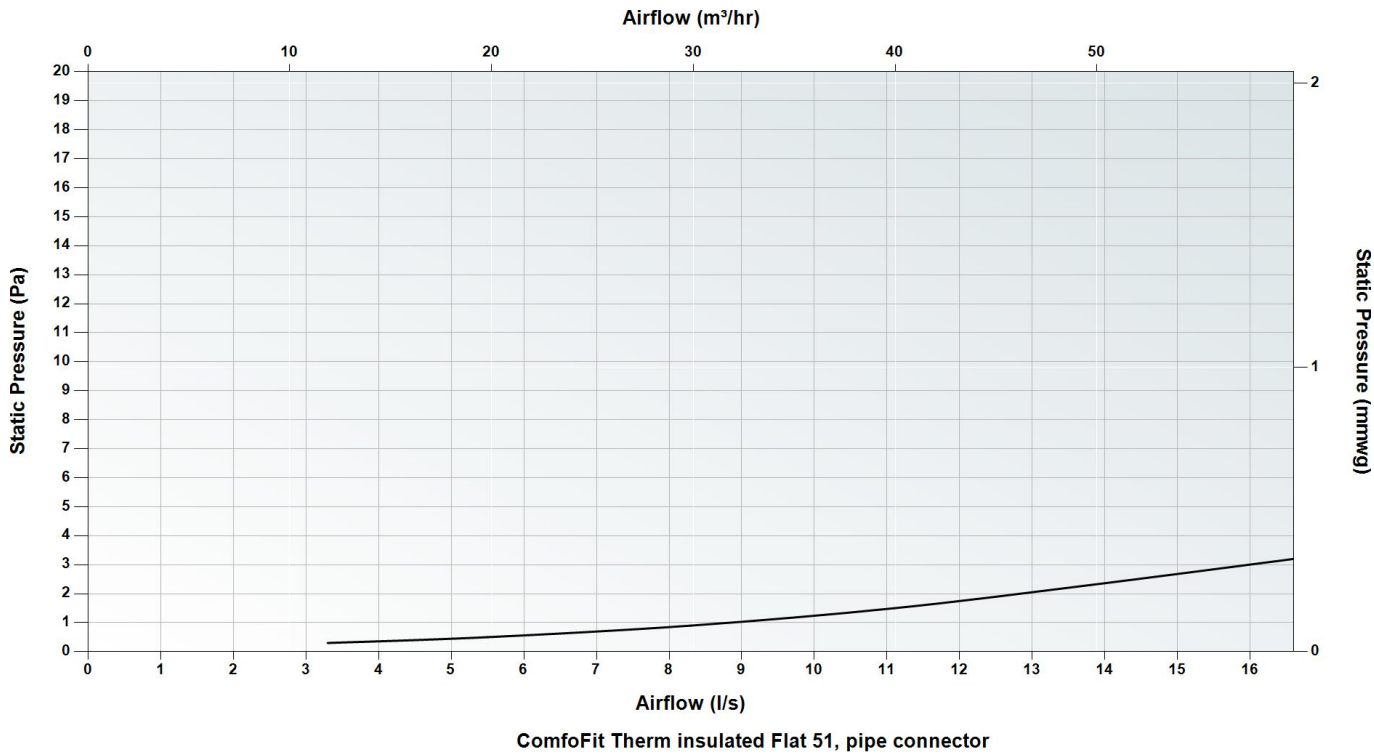

ComfoFit Therm insulated Flat 51 to ComfoTube Therm insulated ø 90mm convertor

Article number: 990 430 857

Description
Converter:
ComfoTube Therm Flat 51 toComfoTube Therm ø 90 mm convertor. The rigid connector can be used to convert ComfoTube Therm Flat 51 to ComfoTube Therm ø 90 mm to create an airtight and robust seal using the supplied O-rings. The insulation must be cut straight to ensure no thermal bridging once push fit into the connector.
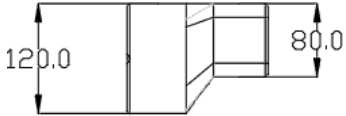
Technical Specification

Height	120 mm
Width	166 mm
Depth	155 mm
Weight	0.06 kg
Material	Expanded polypropylene (EPP)
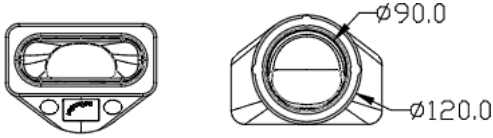
Dimensions

Front View

Side View

Top View

Pressure Curve

Airflow (m³/hr)

Static Pressure (Pa)

Static Pressure (mmwg)

Airflow (l/s)

ComfoFit Therm insulated Flat 51 to ComfoTube Therm insulated ø 90mm convertor
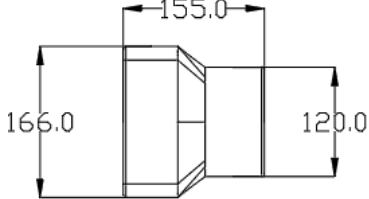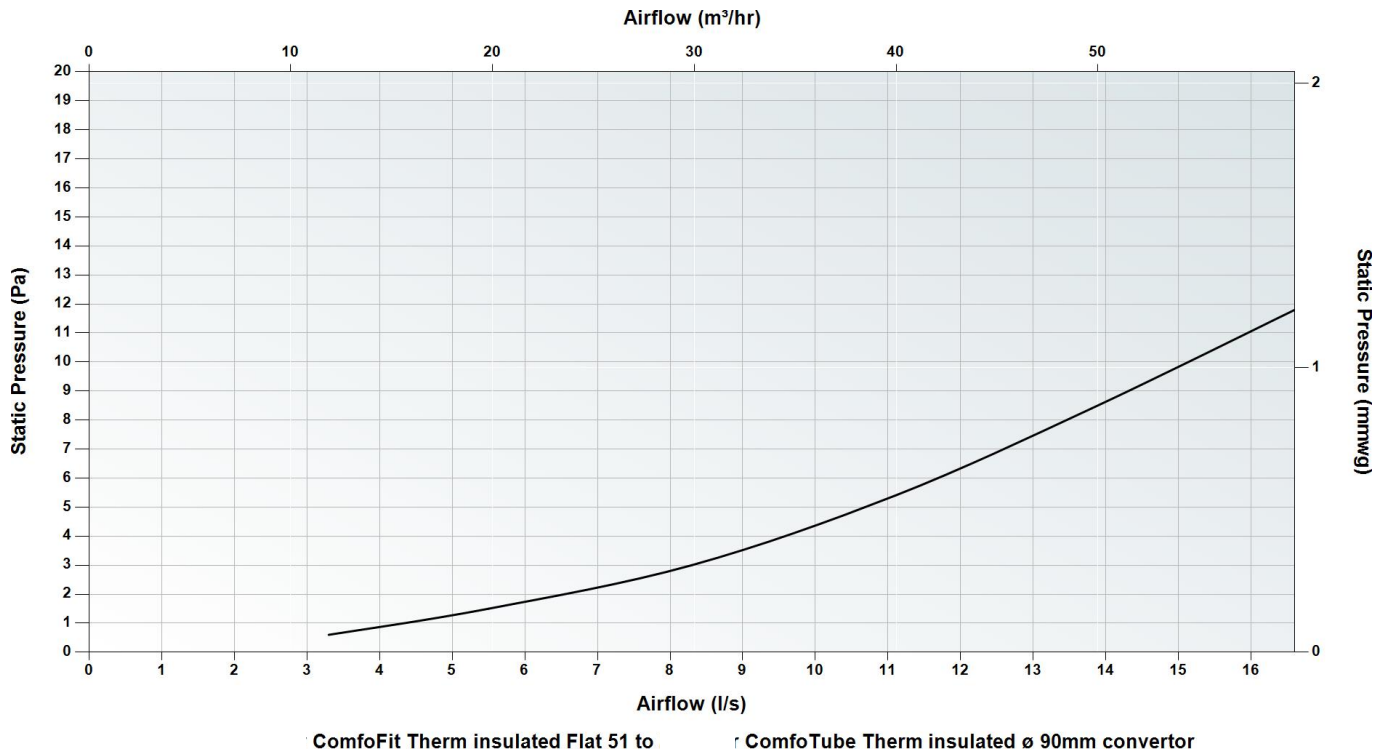
ComfoFit Therm insulated Flat 51 to ComfoTube Therm insulated ø 90mm convertor with 90° bend

Article number: 990 430 852
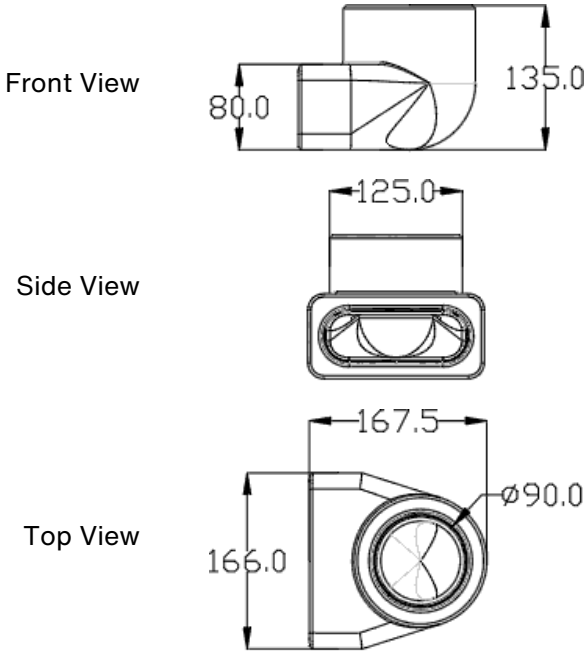
Description

Converter:

ComfoTube Therm Flat 51 to ComfoTube Therm ø 90 mm, 90° convertor. The rigid bend can be used to convert ComfoTube Therm Flat 51 to ComfoTube Therm ø 90 mm to create an airtight and robust seal using the supplied O-rings. The insulation must be cut straight to ensure no thermal bridging once push fit into the connector.
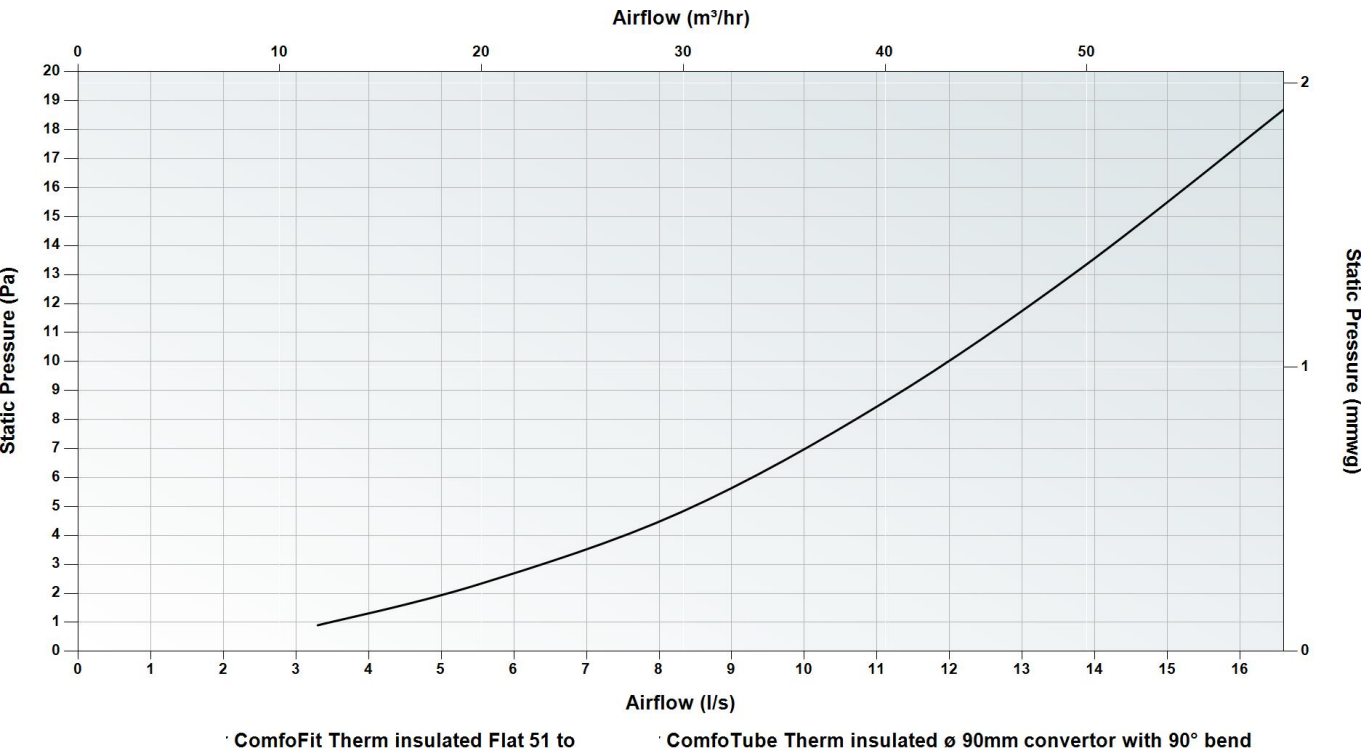
Technical Specification

Height	135 mm

Width	166 mm
Depth	167.5 mm
Weight	0.079 kg
Material	Expanded polypropylene (EPP)

Dimensions

Front View

Side View

Top View

Pressure Curve

Airflow (m³/hr)

Static Pressure (Pa)

Static Pressure (mmwg)

Airflow (l/s)

ComfoFit Therm insulated Flat 51 to   ComfoTube Therm insulated ø 90mm convertor with 90° bend

Grille housing CLF rectangular grille housing with 90° bend, connects 1 x 350x130 mm grille to 1 x ComfoTube Flat 51, L123 mm

Article number: 990 322 000

Description

CLF Grille housing:

Rectangular grille housing with 90° bend. The cleanable rectangular CLF grille housing, made from 25% recycled plastic, is suitable for installation in multiple types of wall/floor/ceiling applications and comes complete with locking slide and oval O-ring seal. The rectangular decorative grilles (350 mm x 130 mm) can be surface or flush-mounted dependent on preference. A ComfoFresh filter can be used to remove particulates.
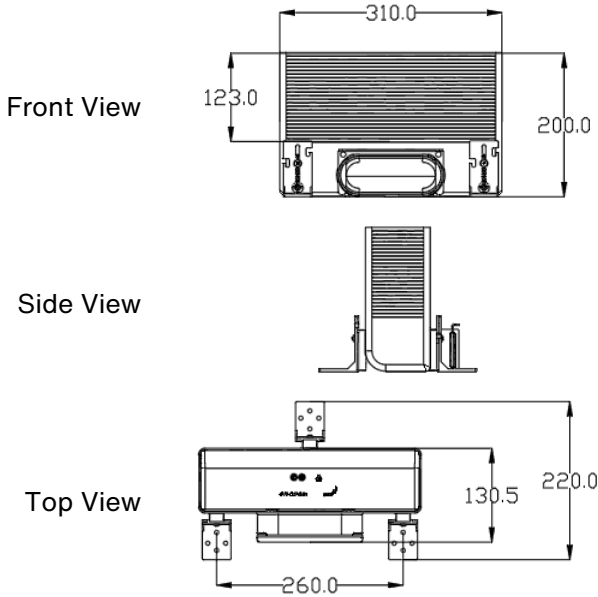
Technical Specification

Height	200 mm
Spigot length	123 mm
Width	310 mm
Depth	130 mm
Weight	0.79 kg
Material	High-density polyethylene (HDPE)
Recycled material content	25%

■ For use with Rectangular decorative grilles 350 x 130 mm

Dimensions

Front View

Side View

Top View

Grille housing CLRF circular grille housing with 90° bend, connects 1 x ø 125 mm valve to 1 x ComfoTube Flat 51, L270 mm

Article number: 990 322 060

Description

CLRF Grille housing:

Circular grille housing with 90° bend. The cleanable circular CLRF grille housing is suitable for installation in multiple types of wall and ceiling applications and comes complete with locking slide and oval O-ring seal. The square (160 x 160 mm) and circular decorative grilles can be used in addition to any standard ø 125 mm valve. A ComfoFresh filter can be used to remove particulates.
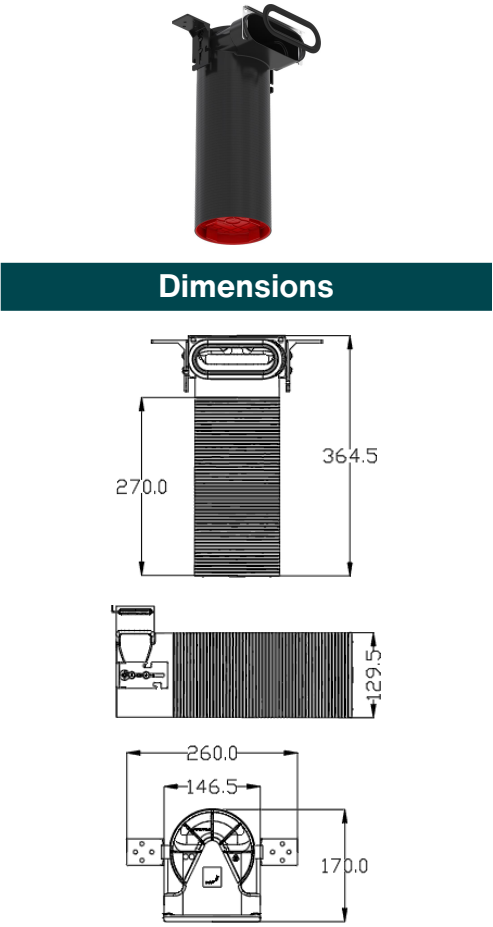
Technical Specification

Height	364.5 mm
Spigot length	270 mm
Width	146.5 mm
Depth	170 mm
Weight	0.5 kg
Material	High-density polyethylene (HDPE)
Recycled material content	25%

Dimensions

Front View

364.5
270.0

Side View

129.5

Top View

260.0
146.5
170.0

■ For use with Square or circular decorative grilles, ø 125 mm supply/extract grilles and ComfoValve Luna

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Grille housing CLRF circular grille housing with 90° bend, connects 1 x ø 125 mm valve to 1 x ComfoTube Flat 51, L35 mm

Article number: 990 322 064

Description

CLRF Grille housing:

Circular grille housing with 90° bend. The cleanable circular CLRF grille housing is suitable for installation in multiple types of wall and ceiling applications and comes complete with locking slide and oval O-ring seal. The square (160 x 160 mm) and circular decorative grilles can be used in addition to any standard ø 125 mm valve. A ComfoFresh filter can be used to remove particulates.
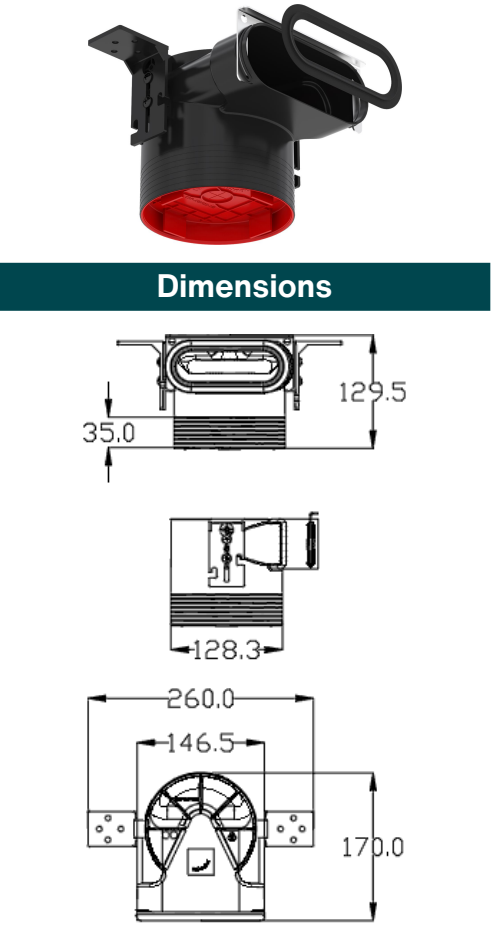
Technical Specification

Height	129.5 mm
Spigot length	35 mm
Width	146.5 mm
Depth	170 mm
Weight	0.3 kg
Material	High-density polyethylene (HDPE)
Recycled material content	25%

Dimensions

Front View

129.5
35.0

Side View

128.3

Top View

260.0
146.5
170.0

■ For use with Square or circular decorative grilles, ø 125 mm supply/extract grilles and ComfoValve Luna

Grille housing CLRF circular grille housing with 90° bend, connects 1 x ø 125 mm valve to 2 x ComfoTube Flat 51, L290 mm

Article number: 990 322 063

Description

CLRF Grille housing:

Circular grille housing with 90° bend. The cleanable circular CLRF grille housing is suitable for installation in multiple types of wall and ceiling applications and comes complete with locking slide and oval O-ring seal. The square (160 x 160 mm) and circular decorative grilles can be used in addition to any standard ø 125 mm valve. A ComfoFresh filter can be used to remove particulates.

Technical Specification

Height	453.5 mm
Spigot length	290 mm
Width	302 mm
Depth	200.5 mm
Weight	0.52 kg
Material	High-density polyethylene (HDPE)

Dimensions

Front View

Side View

Top View

■ For use with Square or circular decorative grilles, ø 125 mm supply/extract grilles and ComfoValve Luna

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Grille housing CLRF circular grille housing, connects 1 x ø 125 mm valve to 1 x ComfoTube Flat 51, L195 m

Article number: 990 322 061

Description

CLRF Grille housing:

Circular grille housing with straight connection. The cleanable circular CLRF grille housing is suitable for installation in multiple types of wall and ceiling applications and comes complete with locking slide and oval O-ring seal. The square (160 x 160 mm) and circular decorative grilles can be used in addition to any standard ø 125 mm valve. A ComfoFresh filter can be used to remove particulates.
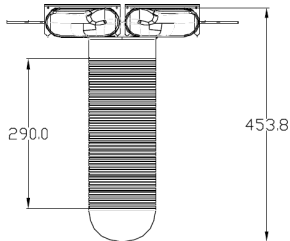
Technical Specification

Height	130.6 mm
Spigot length	195 mm
Width	145 mm
Depth	358.5 mm
Weight	0.4 kg
Material	High-density polyethylene (HDPE)

Dimensions

Front View

Side View

Top View

■ For use with Square or circular decorative grilles, ø 125 mm supply/extract grilles and ComfoValve Luna

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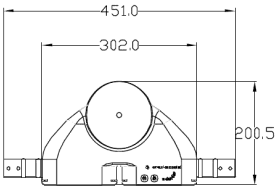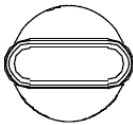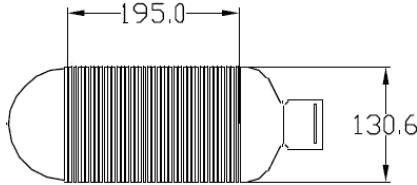
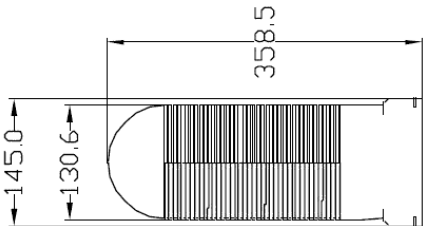**Grille housing Renoventil circular grille housing, connects 1 x ø 80 mm valve to 1 x ComfoTube Flat 51, L400 mm**

Article number: 990 322 062

Description

Renoventil Grille housing Circular grille housing with straight connection. The Renoventil housing is perfect for refurbishments since the Renoventil supply and extract grilles can be located close to the ceiling. The Renoventil grille housing comes complete with locking slide and oval O-ring seal.

Technical Specification

Height	91.7 mm
Spigot length	400 mm
Width	148.5 mm
Depth	489 mm
Weight	0.28 kg
Material	High-density polyethylene (HDPE)

Dimensions

Front View

Side View

Top View

■ For use with Renoventil supply/extract grilles

ComfoTube Flat 51 manifold cover with ø 160 mm pipe adaptor, for 6 port manifold

Article number: 990 322 037

Description

Pipe adaptor:

ComfoTube Flat 51 manifold cover with ø 160 mm pipe adaptor. The rigid gasket seal connector can be used to connect ø 160 rigid round duct to the ComfoTube Flat 51 manifold.

Technical Specification

Height	38 mm
Width	261 mm
Depth	261 mm
Weight	0.5 kg
Material	High-density polyethylene (HDPE)
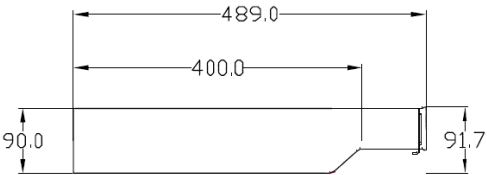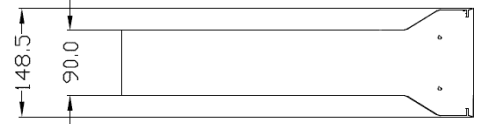
Dimensions

Top View

■ For use with #REF!

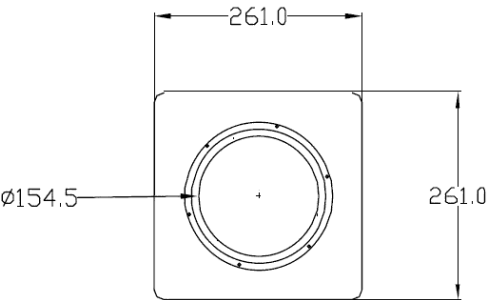## ComfoTube Flat 51, cross bracing floor insert for CLF grille housing

Article number: 990 322 095

Description
Cross brace:
ComfoTube Flat 51, cross bracing floor insert for CLF grille housing. The support is installed behind the 350 x 130 mm rectangular decorative grilles when installed in the floor to ensure strength and rigidity.
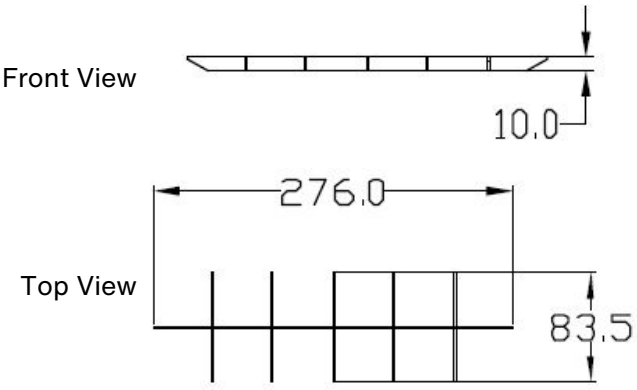
Technical Specification

Height	10 mm
Width	276 mm
Depth	83.5 mm
Weight	1 kg
Material	Steel

■ For use with Grille housing CLF rectangular grille housing with 90° bend, connects 1 x 350x130 mm grille to 1 x ComfoTube Flat 51, L123 mm

Dimensions

Front View

10.0

276,0

Top View

83,5

ComfoTube Flat 51, O-ring seal, 10 pieces Article number: 990 328 352

Description
O-ring:
ComfoTube Flat 51 oval O-ring seal. The lubricated oval O-ring is used to ensure an airtight connection is made with pipe connectors, grille housings, manifolds and connecting elements.

Technical Specification

Height	60 mm
Width	143.4 mm
Depth	4.45 mm
Weight	0.007 kg (each)
Material	EPDM (Ethylene Propylene Diene Monomer)

ComfoTube Flat 51, end caps, 10 pieces
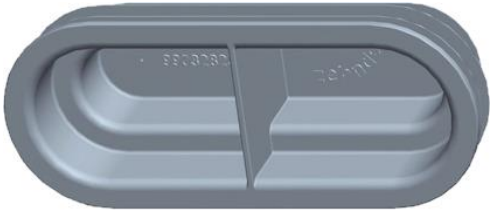
Article number: 990 328 252

Description
End caps:
ComfoTube Flat 51 end caps. The Flat 51 end caps can be placed within their corresponding ComfoTube Flat 51 ductwork during the construction phase to prevent dust ingress. The end caps can also be placed directly into Flat 51 manifold to seal off any unwanted ports.

Technical Specification

Height	60 mm
Width	148 mm
Depth	42 mm
Weight	0.037 kg (each)
Material	Low-density polypropylene

ComfoTube Flat 51, locking slides, 20 pieces

Article number: 990 326 022

Description
Locking slide:
ComfoTube Flat 51, locking slide. The locking slide is used to secure the ComfoTube Flat 51 ductwork without the need for messy sealants.

Technical Specification

Weight	0.036 kg (each)
Material	Galvanised steel

ComfoTube Flat 51, adjustable airflow regulator

Article number: 990 322 015
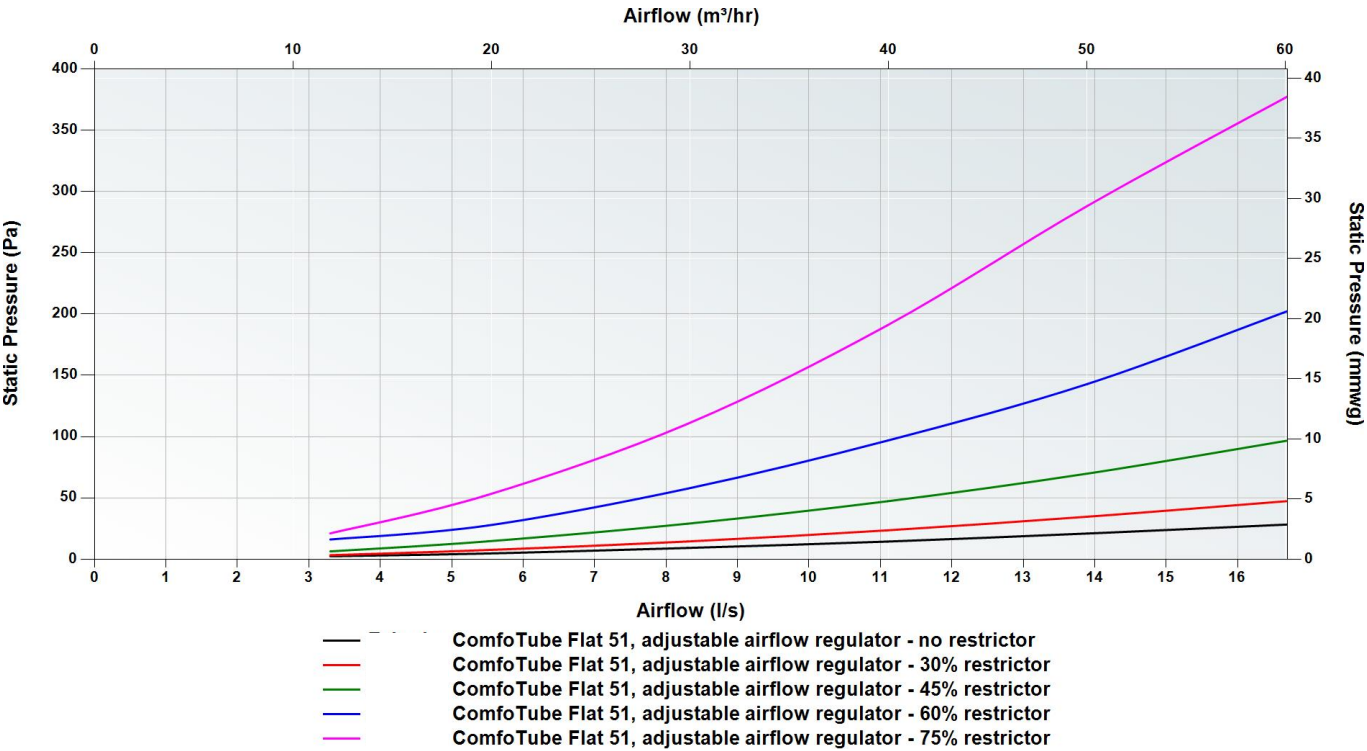
Description

Airflow regulator:
ComfoTube Flat 51 adjustable airflow regulator. The airflow regulator has 5 different restriction settings to reduce the air volume silently. The airflow regulator can be used at the manifold or at the grille housing by inserting it into the Flat 51 ductwork.

Technical Specification

Height	41 mm
Width	129 mm
Depth	75 mm
Weight	0.06 kg
Material	Polypropylene

Pressure Curve

- ComfoTube Flat 51, adjustable airflow regulator - no restrictor
- ComfoTube Flat 51, adjustable airflow regulator - 30% restrictor
- ComfoTube Flat 51, adjustable airflow regulator - 45% restrictor
- ComfoTube Flat 51, adjustable airflow regulator - 60% restrictor
- ComfoTube Flat 51, adjustable airflow regulator - 75% restrictor

Filter for ø 125 mm extract air valve, ISO Coarse (G3, 10 Pieces

Article number: 990 320 032

Description

Grille housing filter:
 filter for ø 125 mm CLRF grille housing. The filter is perfect to remove particles before they enter the ductwork and is quick and easy to install without interfering with the installed parts.

Technical Specification

Length	165 mm
Diameter	125 mm
Height	15 mm
Filter grade	ISO Coarse (G3)
Weight	<0.032 kg each
Material	Polyester

■ For use with Square or circular decorative grilles, ø 125 mm supply/extract grilles and ComfoValve Luna valves

Filter for CLF housing, ISO Coarse (G3, 10 Pieces

Article number: 990 322 100

Description

Grille housing filter:
Filter for CLF grille housing. The filter is perfect to remove particles before they enter the ductwork and is quick and easy to install without interfering with the installed parts.

Technical Specification

Height	15 mm
Width	294.5 mm
Depth	74.5 mm
Filter grade	ISO Coarse (G3)
Weight	<0.032 kg each
Material	Polyester

■ For use with Rectangular decorative grilles 350 x 130 mm
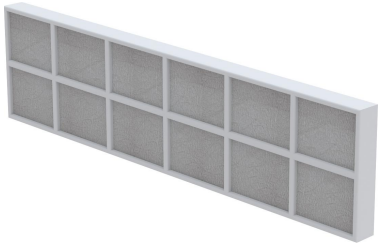
Thermal Shield

■With ThermalShield by you establish a fast reacting system providing freshness in the summer and warmth in the winter.
■Our new air distribution components with ThermalShield help reduce temperature loss when transporting tempered air and enables
■By using ThermalShield you support the climate system solution in your home to create a comfortable and healthy indoor climate

For use with

The ComfoTube Therm flat 51 insulated ventilation tube impresses with optimum sound and heat insulation properties for the perfect feel-good climate at home. This makes the ComfoTube Therm the ideal solution for the condensation-free transport of warm and cold air. Thanks to high-quality insulation, the temperature-controlled air is passed through the ventilation tube with almost no temperature loss, so that living spaces can be supplied tempered or supplementary heated as required in an energy-efficient manner. The ideal devices to provide the tempered or heated supply air are the ComfoPost and ComfoClime units.

TO VIEW OUR COOLING AND HEATING UNITS

CLICK HERE

BIM/CAD Components

If you would like to download the BIM / CAD files for this or any other of our products then please visit our BIM library.

TO VISIT OUR BIM/CAD LIBRARY

CLICK HERE

Installation Instructions

If you would like to download the installation files for this or any other of our products then please visit our download
page by clicking the link below.

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Consultant Specification

Specification

The insulated semi-rigid ductwork shall be duel wall constructed of high-quality food-grade plastic PE with cellular rubber insulation to provide a thermal conductivity of at least 0.035 W/mK. It shall have a fire rating in accordance with EN 13501-1 of E. It shall have an operating temperature range of -25 to +60 °C and not be designed to exceed flowrates of 13 l/s.

The ductwork shall have a hygiene certificate and be accredited for use in SAP Appendix Q.

The ductwork shall be manufactured by Zehnder.

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