



# TRANSFER LINE

## *Vacuum Superinsulated Lines (VIL)*

Cryo Diffusion offers a complete range of tailor-made vacuum superinsulated **rigid and flexible transfer lines / single or multilines**.

We use Stainless Steel piping for the inner line.

Standard working pressure: 10 bar. Higher pressure on request.

On site **installation and commissioning** on request.

**Best quality** permanent vacuum with no particular maintenance.

Full range of options and accessories available.

Outer pipe remains at ambient temperature providing a **higher safety level**.

Full stainless steel construction for hygiene-critical areas (cryobiological rooms, food and electronics industry, applied research and physics).

Multi-pipe vacuum insulated lines for Liquid Helium transfer equipped with copper or aluminum shield are also available. See documentation regarding VIL for Helium.

Pressure Equipment Directive - PED 2014/68/UE - ASME



1-2: Vacuum insulated line in industry



3: Super-insulated valve box



4: Vacuum insulated line for cryobiological storage

## Technical specifications:

Materials:	Inner pipe: Stainless Steel 1.4307 or 304L, with bellows Outer pipe: Stainless Steel 304 Spacer: Fiber glass Insulation: Multi layer of aluminum and fiber glass foils
Connections:	Johnston bayonet couplings or vacuum welded sleeves
Maximum pressure:	With Johnston, 16 bar With vacuum welded connection, 40 bar
Design:	Conform with PED 2014/64/UE
Maximum length:	10m per section
Accessories:	Vacuum Jacketed Valves, Automatic degassing system, Automatic dewar filling system

DIAMETER ...	Flow rate WP: 3bar L / HR	Dimensions (mm)		Weight Kg / m	Coupling	Heat inleak W / m	Heat inleak W / bayonet Coupling M+F
		Inner	Outer				
DN 10	350	16 x 1	63,5 x 1,5	3,2	Bayonet	0,35	1,4
DN 20	1500	25 x 1,5	63,5 x 1,5	3,4	Bayonet	0,42	1,4
DN 25	2500	34 x 1	76,1 x 1,5	5,5	Bayonet	0,67	2,3
DN 32	4000	42,4 x 1,6	88,9 x 1,5	6,3	Sleeve	0,71	2,9
DN 40	7500	53 x 1,5	114,3 x 1,6	7,3	Sleeve	0,78	4
DN 50	9000	63 x 1,6	114,3 x 1,6	8	Sleeve	0,82	4

Other dimension available on request

## Production characteristics:

Vacuum:	Pumped down to $10^{-5}$ mbar with diffusion pumps or turbo molecular pumps
Helium leak test:	$1 \cdot 10^{-9}$ mbar/l sec.
Welding:	Orbital and manual welding
Others:	Final polishing and individual packing

## Suppliers and Partners:

Only top quality components and suppliers have been selected:  
SANDVIK, THYSSENKRUPP, LYDALL, STOHR, HEROSE, WITZENMANN.

## References:

Research:	E.S.R.F. Grenoble, PSI (Switzerland), Soleil
Industrial:	SOL Feluy, EuroDisney, FIAT Avio, Novartis
Medical:	Different Hospitals (E.F.S Lille, Hôpital Cochin Paris)



**CRYO DIFFUSION SAS**, 49, rue de Verdun, 27690 Léry – France

Tel. +33 2 32 59 03 68 Fax. +33 2 32 59 00 65 [info@cryodiffusion.fr](mailto:info@cryodiffusion.fr) [www.vrv.com](http://www.vrv.com)

[www.cryodiffusion.com](http://www.cryodiffusion.com)

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