

Medium to High Vacuum Filtration

WL Series ISO Flanges NW16 - NW40, K63 - K100

Overview

Solberg's WL Series Vacuum Filters are designed for a variety of industrial and semicon processes where rapid thermal and/or pressure cycles create harsh operating conditions. Ideal for medium-high vacuum applications that utilize vacuum furnaces or deposition tools, the WL series comes standard with a variety of vacuum rated flange options and replaceable filter elements that offer superior protection and longevity for the vacuum system.

Housings in this series are 100% helium leak tested to ensure vacuum integrity and verify leak rates down to 1×10^{-5} mbar L/s.

Features

- Stainless steel ISO flange connections
- Seamless drawn housings
- Corrosive resistant carbon steel construction
- Powder coat finish (black models)
- O-ring housing seal
- Stainless steel torsion clips

Technical Specifications

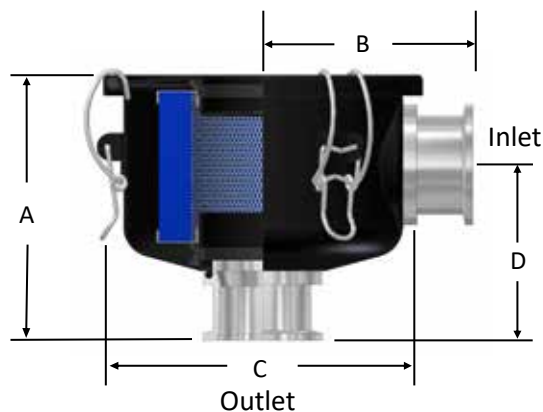
- Vacuum leak rate: 1×10^{-5} mbar L/sec
(verified by helium leak test)
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial ΔP
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

Options



- Filter media options available to meet strict process requirements: PTFE, PTFE Glass, SS mesh, and more
- Activated alumina, activated carbon, and zeolite available for foreline trapping and other applications
- Stainless steel (select models)
- Contact factory for larger sizes





SS ISO Flange w/Black Filter Assembly Finish

ISO Flg Inlet & Outlet	Assembly m ³ /hr Rating	Assembly Part Number		Dimensions - mm				Suggested Service ht. mm	Approx. Weight (kg)	Replacement Element Part No.		Element m ³ /hr Rating
		Polyester	Paper	A	B	C	D			Polyester	Paper	
NW16	39	WL-825-NW16B	WL-824-NW16B	99	67	95	58	68	0.4	825	824	42
NW25	42	WL-825-NW25B	WL-824-NW25B	99	67	95	58	68	0.4	825	824	42
NW25	59	WL-843-NW25B	WL-842-NW25B	111	86	146	66	70	1	843	842	93
NW40	93	WL-843-NW40B	WL-842-NW40B	121	96	146	80	70	1	843	842	93
NW40	136	WL-849-NW40B	WL-848-NW40B	183	117	187	127	121	2	849	848	195
K63	357	WL-851-K63B	WL-850-K63B	296	155	222	165	222	7	851	850	493
K100	885	WL-239-K100B	WL-238-K100B	400	222	337	218	254	10	239™	238™	969

SS ISO Flange w/Electroless Nickel Filter Assembly Finish

ISO Flg Inlet & Outlet	Assembly m ³ /hr Rating	Assembly Part Number		Dimensions - mm				Suggested Service ht. mm	Approx. Weight (kg)	Replacement Element Part No.		Element m ³ /hr Rating
		Polyester	Paper	A	B	C	D			Polyester	Paper	
NW16	39	WL-825-NW16EN	WL-824-NW16EN	99	67	95	58	68	0.4	825	824	42
NW25	42	WL-825-NW25EN	WL-824-NW25EN	99	67	95	58	68	0.4	825	824	42
NW25	59	WL-843-NW25EN	WL-842-NW25EN	111	86	146	66	70	1	843	842	93
NW40	93	WL-843-NW40EN	WL-842-NW40EN	121	96	146	80	70	1	843	842	93
NW40	136	WL-849-NW40EN	WL-848-NW40EN	183	117	187	127	121	2	849	848	195
K63	357	WL-851-K63EN	WL-850-K63EN	296	155	222	165	222	7	851	850	493
K100	885	WL-239-K100EN	WL-238-K100EN	400	222	337	218	254	10	239™	238™	969

Rated flows are determined based upon atmospheric conditions, for exact sizing or larger flows, please contact factory.

*See Vacuum Filter Technical Data for vacuum service data and sizing guidelines.



Medium to High Vacuum Filtration

WL Series ISO Flanges K100 - K320

Overview

Solberg's WL Series Vacuum Filters are designed for a variety of industrial and semicon processes where rapid thermal and/or pressure cycles create harsh operating conditions. Ideal for medium-high vacuum applications that utilize vacuum furnaces or deposition tools, the WL series comes standard with a variety of vacuum rated flange options and replaceable filter elements that offer superior protection and longevity for the vacuum system.

Housings in this series are 100% helium leak tested to ensure vacuum integrity and verify leak rates down to 1×10^{-5} mbar L/s.

Features

- ISO-K stainless steel flanges standard
- K200 housings and larger have domed lid with hinge to minimize deflection
- NW10 differential ports for accurate vacuum ΔP readings
- Corrosive resistant black powder coat carbon steel
- Painted o-ring groove, free of scratches
- Lifting lugs and leg brackets standard

Technical Specifications

- Rated vacuum leak rate of 1×10^{-5} mbar L/sec or better (verified by helium leak test)
- Temp (continuous): min -26°C (-15°F) max 104°C (220°F)
- Filter change out differential: 37-50 mbar over initial ΔP
- Polyester: 99%+ removal efficiency standard to 5 micron
- Paper: 99%+ removal efficiency standard to 2 micron

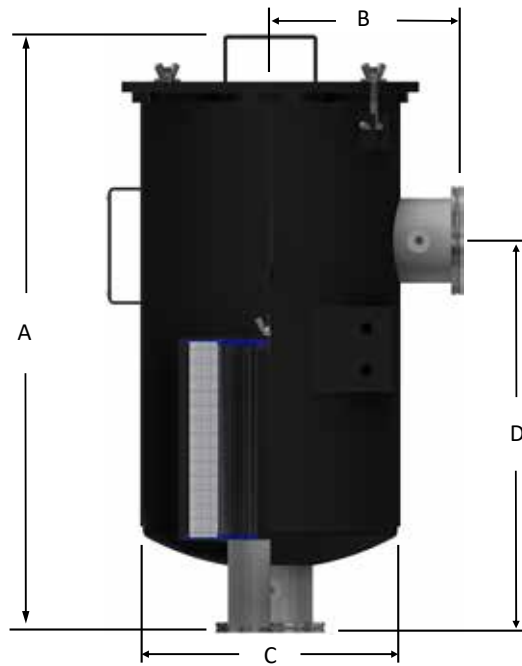
Options



- Filter media options available to meet strict process requirements: PTFE, PTFE Glass, SS mesh, and more
- Activated alumina, activated carbon, and zeolite available for foreline trapping and other applications
- Stainless steel (select models)



K320 configuration



ISO-K Inlet & Outlet	Assembly m ³ /hr Rating	Assembly Part Number		Dimensions - mm				Suggested Service ht. mm	Replacement Element Part No.		Element m ³ /hr Rating
		Polyester	Paper	A	B	C	D		Polyester	Paper	
K100	885	WL-235P-K100	WL-234P-K100	716	229	311	470	244	235P™	234P™	970
K100	885	WL-335P-K100	WL-334P-K100	716	229	311	470	368	335P™	334P™	1360
K160	1870	WL-275P-K160	WL-274P-K160	767	305	413	521	244	275P™	274P™	1870
K160	1870	WL-375P-K160	WL-374P-K160	767	305	413	521	368	375P™	374P™	2550
K200	3060	WL-377P-K200	WL-376P-K200	1116	356	518	648	368	377P™	376P™	3105
K250	4930	WL-385P-K250	WL-384P-K250	1364	410	619	864	368	385P™	384P™	5610
K320	7935	WL-485P-K320	WL-484P-K320	1364	410	619	864	546	485P™	484P™	8000
K320	8415	WL-685P-K320	WL-384P(2)-K320	1648	410	619	1143	724	685P™	384P™(2)	11220

Rated flows are determined based upon atmospheric conditions, for exact sizing please contact factory. Special configurations available upon request.

Other Flange Types Available:



Technical Data

Inlet Vacuum Filters

Applications & Equipment

- Industrial & Severe Duty
- Vacuum Pumps & Systems: Roots, Rotary Vane, Screw, Piston
- Vacuum Packaging Equipment
- Vacuum Furnace
- Blowers: Side Channel & P.D.
- Vacuum Lifters
- Intake Suction Filters
- Food Industry
- Woodworking/Routers
- Ash Handling
- Printing Industry
- Medical/Hospital
- Sterilization
- Remote Installations for Piston & Screw Compressors
- Paper Processing
- Waste Water Aeration
- Cement Processing
- Bag House Systems
- Vacuum Vent Breathers
- Chemical Processing
- Factory Automation Equipment
- Leak Detection Systems
- Semiconductor / Solar

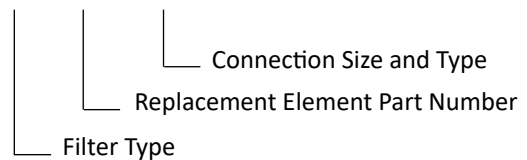
Identification

Standard Solberg assemblies should have an identification label/nameplate that gives the following information:

- Assembly Model #
- Replacement Element #

The part number designates the filter type, the element configuration and housing connection size. For example, the following part number identifies the filter as being a “CSL” design filter with a “235™” element, “P” prefilter and DN100 flange connection size.

CSL-235P-DN100



Vacuum Service Rating Chart

Threaded vacuum filter connections must be free of defect and properly sealed to achieve deeper vacuum levels. Vacuum service levels are given for reference only and serve as a guideline for product selection. Product certification and alternative designs are available for applications requiring deeper vacuum levels and specific leak rates. Please contact factory for details.

Vacuum Level	Pressure (mbar)	Pressure (Torr)	Pressure (Pa)
Atmospheric Pressure	1013	760	1.013x10 ⁵
Rough Vacuum	1013 to 33	760 to 25	1x10 ⁵ to 3x10 ⁺³
Medium Vacuum	33 to 1.3x10 ⁻³	25 to 1x10 ⁻³	3x10 ⁺³ to 1x10 ⁻¹
High Vacuum	1.3x10 ⁻³ to 1.3x10 ⁻⁹	1x10 ⁻³ to 1x10 ⁻⁹	1x10 ⁻¹ to 1x10 ⁻⁷

Choosing the Best Filter for Your Equipment

A. When the connection & airflow is known:

1. Select the appropriate connection style. (i.e.: BSPT, Flange, BSPP, etc.)
 - a. Verify assembly m³/hr (flow) rating. Compare with your required airflow.
(Note: Assembly flow ratings are based on 6,000 FPM or 30m/sec for a given connection size to achieve low pressure drop performance. When required flow exceeds assembly flow rating, the pressure drop through the outlet connection will increase. In such cases select by element m³/hr (flow) rating.)
 - b. Verify that the flow rating matches connection size; skip to “C. Selecting Elements”.

B. When the connection size is unknown, flexible, or the required flow rating exceeds assembly flow rating:

1. Match required flow rating with the element flow rating.
2. Choose related connection size.

C. Selecting Elements: The filter performance is influenced by the actual application duty and the equipment it is installed on. Regular maintenance checks and proper servicing is required.

Application Duty Descriptions:

Industrial Duty: clean workshop or clean outdoor environment - small element sizing is sufficient.

Severe Duty: dirty workshop, wastewater – medium to large element is recommended.

Extreme Duty: cement, steel making, plastics or dusty material conveying – largest element sizing is recommended.

1. Select media required by your application. Options include:
 - a. Standard media
 1. Polyester: all purpose; withstands pulses, moisture, and oily air
 2. Paper: mostly dry, smooth flow applications
 - b. Special Media: for a variety of micron levels and media types, see the “Filter Media Specifications” in the Replacement Element Section or contact Solberg.
2. Select element size by matching the element with the anticipated duty and upsize accordingly.

Filter Assembly Maintenance

Request the appropriate maintenance manual for more in-depth information from your Solberg representative or on our website: www.solbergmfg.com.

Element Maintenance

Solberg elements should be replaced once the pressure drop reaches 37-50 mbar above the initial pressure drop of the installation. Cleaning the element is also an option.

Solberg recommends replacing dirty elements for optimal performance. Any damage which results from by-pass or additional pressure drop created by element cleaning is the sole responsibility of the operator.

Note: The overall performance of a filter element is altered once cleaned. The initial pressure drop after subsequent cleanings will be greater than the original, clean pressure drop of the element. After each cleaning, the pressure drop will continue to increase. Under all circumstances, the initial pressure drop of the element needs to be maintained at less than 37 mbar.

If the pressure drop exceeds 50 mbar at start-up; it should be replaced with a new element. With many types of equipment, the maximum pressure drop allowed will be dictated by the ability of the equipment to perform to its rated capacity. Under all circumstances, the operator should avoid exceeding the manufacturer’s recommended maximum pressure drop for their specific equipment.

