

Product Information

Schaefer offers a range of HV and UHV viewports used for process observation in the visible spectrum and for optical guidance. All viewports are manufactured to ISO 9001-2008 standards in contamination-free, class 10,000 clean room conditions, using the highest quality materials available.

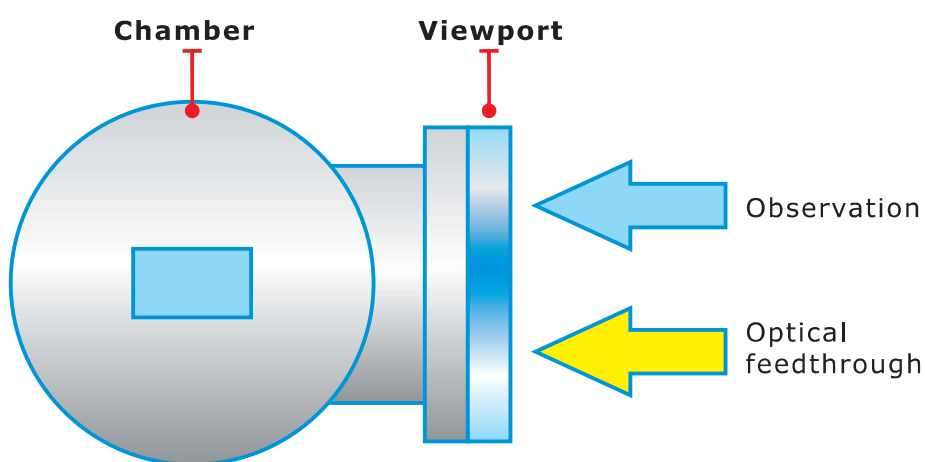
Most viewports within the range are of zero-length profile which not only provides an excellent angle of view, but do not protrude beyond the mounting flange making them less susceptible to damage.

System Components

Product Features

- Both HV and UHV viewports offered in a wide range of CF, KF & ISO flange sizes.
- Available optic material: Kodial (visible spectrum), Fused Silica (Infra-red), Sapphire (Ultra-violet).
- UHV viewports offered in SS304L material as standard with option for high-grade SS316LN.
- HV viewports sealed via O-ring, UHV viewports vacuum brazed for high-temperature operation.
- Custom designs available on request.

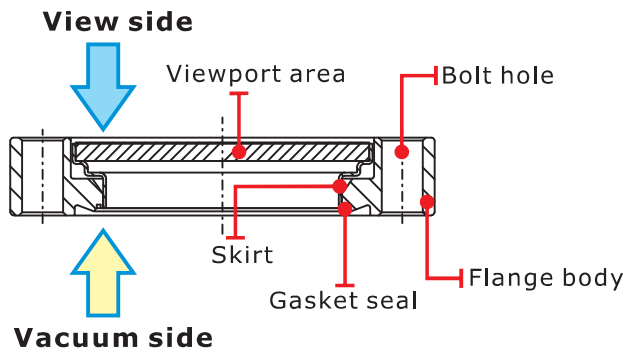
Product Application



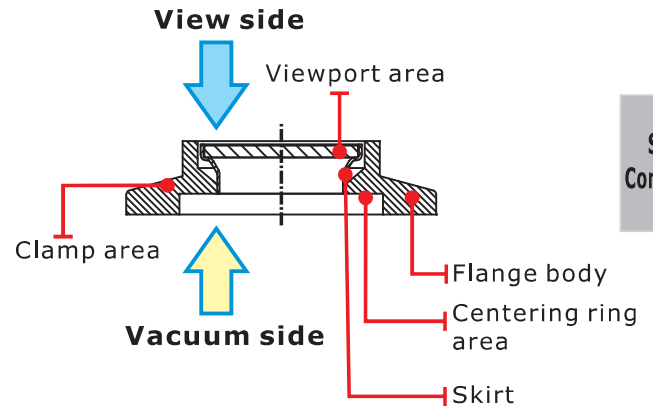
UHV Viewports

Key Product Parts

UHV Viewport

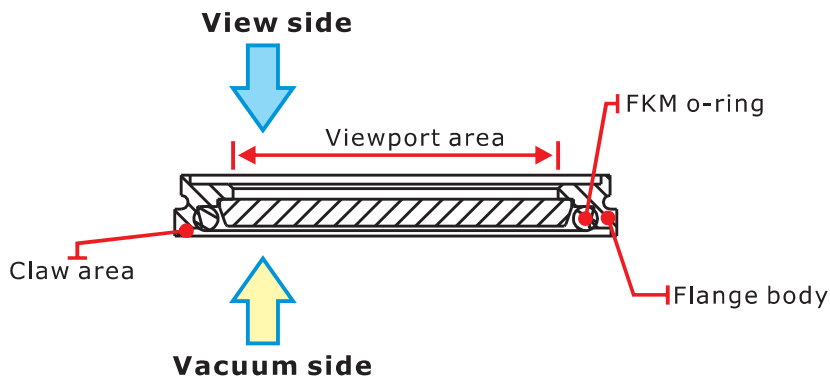


HV KF Viewport

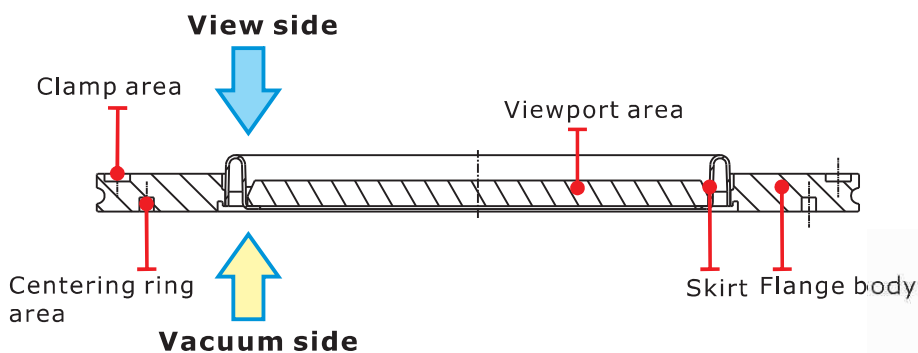


System Components

HV ISO-K Viewport Type I



HV ISO-K Viewport Type II



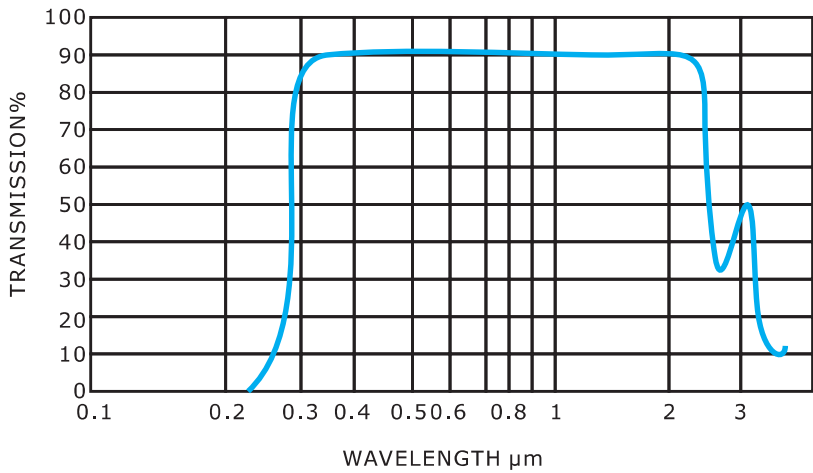
Technical Data

Technical Data for Viewport

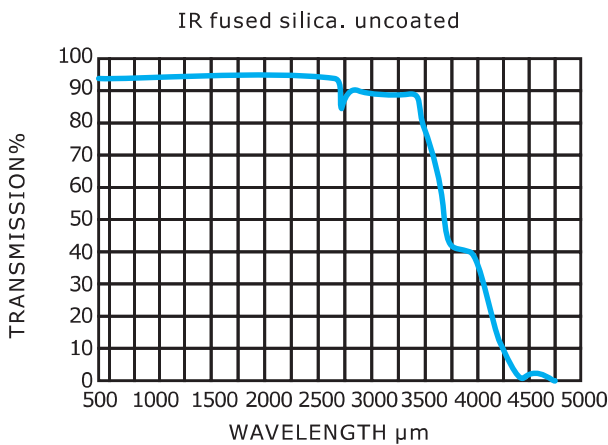
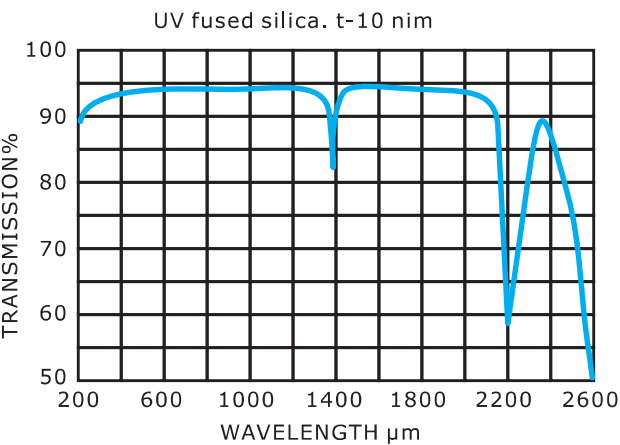
System
Components

	UHV Kodial	UHV Fused Silica
Viewport seal	Metal skirt	Fused
Mounting seal	OFHC gasket	OFHC gasket
Operate pressure range	760 Torr ~ 1x10 ⁻¹⁰ Torr 1,000 mbar~1.33x10 ⁻¹⁰ mbar 100 kPa~ 1.13x10 ⁻¹¹ kPa	760 Torr ~ 1x10 ⁻¹⁰ Torr 1,000 mbar~1.33x10 ⁻¹⁰ mbar 100 kPa~ 1.13x10 ⁻¹¹ kPa
Leak rate	1 x 10 ⁻¹⁰ Torr l/s, He 1.33x10 ⁻¹⁰ mbar l/s, He 1.13x10 ⁻¹¹ kPa l/s, He	1 x 10 ⁻¹⁰ Torr l/s, He 1.33x10 ⁻¹⁰ mbar l/s, He 1.13x10 ⁻¹¹ kPa l/s, He
Temperature range	-20°C (-4°F) ~ 350°C (662°F)	-20°C (-4°F) ~ 200°C (392°F)
Bake temperature	300°C (572°F)	150°C (302°F)
Maximum temperature change per minute	3°C (37°F)	3°C (37°F)
Body material	SS304L	SS304L
Viewport material	Kodial	Fused
Mounting position	Any	Any

Transmission Curve
Kodial



Transmission Curve
Fused Silica

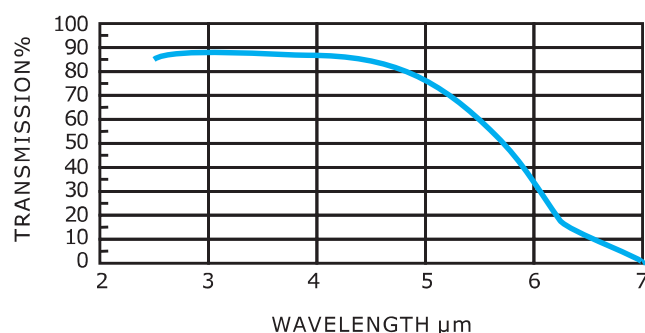
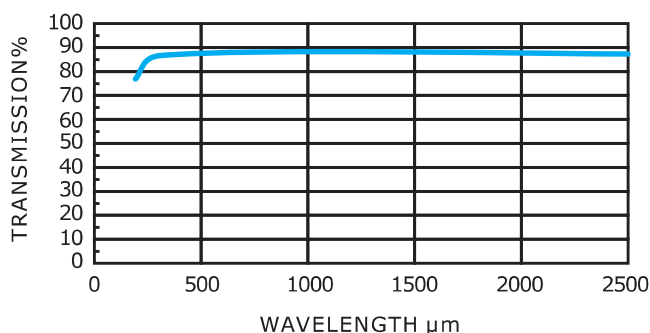


Technical Data

	UHV Sapphire	HV Kodial
Viewport seal	Metal skirt	Metal skirt / O-ring seal
Mounting seal	OFHC gasket	Centering ring
Operate pressure range	760 Torr $\sim 1 \times 10^{-10}$ Torr 1,000 mbar $\sim 1.33 \times 10^{-10}$ mbar 100 kPa $\sim 1.13 \times 10^{-11}$ kPa	760 Torr $\sim 1 \times 10^{-8}$ Torr 1,000 mbar $\sim 1.33 \times 10^{-8}$ mbar 100 kPa $\sim 1.13 \times 10^{-9}$ kPa
Leak rate	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa l/s, He	1×10^{-9} Torr l/s, He 1.33×10^{-9} mbar l/s, He 1.13×10^{-10} kPa l/s, He
Temperature range	-20°C (-4°F) \sim 200°C (392°F)	-20°C (-4°F) \sim 200°C (392°F)
Bake temperature	150°C (302°F)	150°C (302°F)
Maximum temperature change per minute	3°C (37°F)	3°C (37°F)
Body material	SS304L	SS304L
Viewport material	Sapphire	Kodial
Mounting position	Any	Any

System
Components

Transmission Curve Sapphire



Product Order Information

◆ UHV Viewports

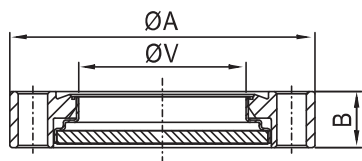


Figure 1

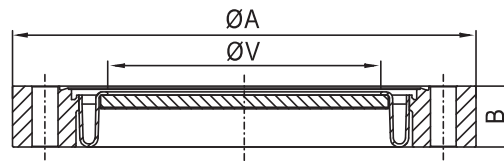


Figure 2

UHV Kodial Viewports, CF Flanges, SS304L

Part Number	Flange Size	Figure	A	B	V
VP-KD-CF-133	CF1.33"	1	34	8	16
VP-KD-CF-275	CF2.75"	1	69	13	38
VP-KD-CF-450	CF4.5"	1	114	17	64
VP-KD-CF-600	CF6"	2	152	20	89
VP-KD-CF-800	CF8"	2	202	22	137
VP-KD-CF-1000	CF10"	2	253	25	137

UHV Kodial Viewports, CF Flanges, SS316LN

Part Number	Flange Size	Figure	A	B	V
VP-KD-CF-133-6LN	CF1.33"	1	34	8	16
VP-KD-CF-275-6LN	CF2.75"	1	69	13	38
VP-KD-CF-450-6LN	CF4.5"	1	114	17	64
VP-KD-CF-600-6LN	CF6"	2	152	20	89
VP-KD-CF-800-6LN	CF8"	2	202	22	137

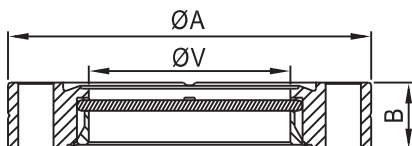


Figure 1

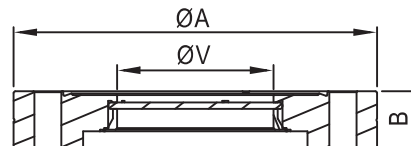


Figure 2

UHV Fused Silica Viewports, CF Flanges, SS304L

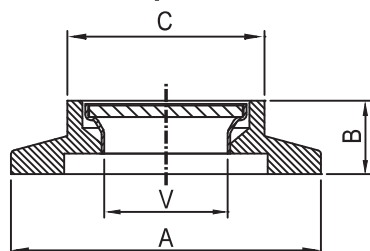
Part Number	Flange Size	Figure	A	B	V
VP-QZ-CF-133	CF16	1	34	12	16
VP-QZ-CF-275	CF40	1	69	13	38
VP-QZ-CF-450	CF63	1	114	18	73
VP-QZ-CF-600	CF100	1	152	20	110
VP-QZ-CF-800	CF160	1	202	22	110

UHV Sapphire Viewports, CF Flanges, SS304L

Part Number	Flange Size	Figure	A	B	V
VP-SH-CF-275	CF40	1	69	13	24
VP-SH-CF-275-1	CF40-1	1	69	13	39
VP-SH-CF-450	CF63	2	114	18	49
VP-SH-CF-450-1	CF63-1	1	114	18	73

Product Order Information

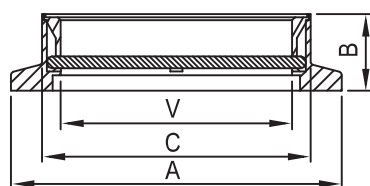
♦ HV KF Viewports



HV Kodial Viewports, KF Flanges, SS304L

Part Number	Flange Size	A	B	C	V
VP-KD-KF-25	KF25	40	9	25	16
VP-KD-KF-50	KF50	75	14	52	38

System
Components



HV Fused Silica Viewports, KF Flanges, SS304L

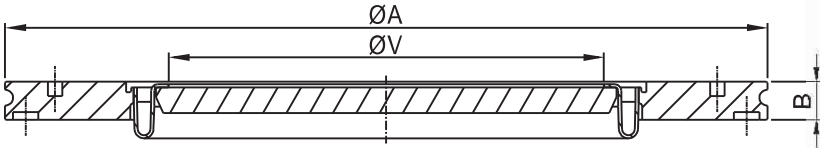
Part Number	Flange Size	A	B	V	C
VP-QZ-KF-25	KF25	40	13	24	29
VP-QZ-KF-40	KF40	55	13	39	45
VP-QZ-KF-50	KF50	75	13	49	57

HV Sapphire Viewports, KF Flanges, SS304L

Part Number	Flange Size	A	B	V	C
VP-SH-KF-25	KF25	40	13	24	29
VP-SH-KF-40	KF40	55	13	39	45
VP-SK-KF-50	KF50	75	13	49	57

Product Order Information

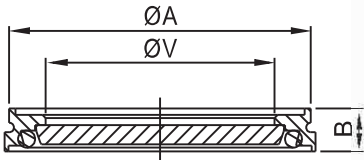
♦ Welding Sealed HV ISO-K Viewports



ISO-K Welded Zero Length Viewports, SS304L

Part Number	Flange Size	A	B	V
VP-KD-ISOK-63	ISO-K 63	95	14	64
VP-KD-ISOK-100	ISO-K 100	130	16	89
VP-KD-ISOK-160	ISO-K 160	180	17	137
VP-KD-ISOK-200	ISO-K 200	240	18	137
VP-KD-ISOK-250	ISO-K 250	290	19	137

♦ O-ring Sealed HV ISO-K Viewports

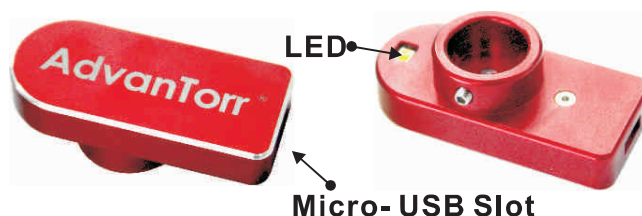
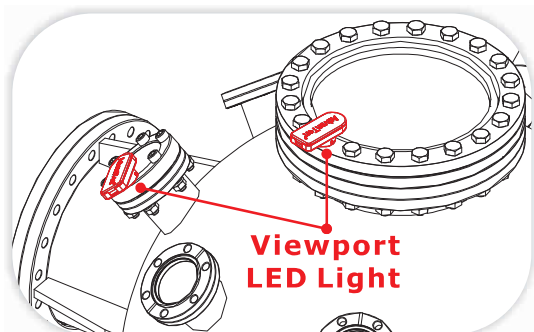


ISO-K O-ring Zero Length Viewports, SS304L

Part Number	Flange Size	A	B	V
VP-KD-ISOK-63-O	ISO-K 63	95	14	64
VP-KD-ISOK-100-O	ISO-K 100	130	16	89
VP-KD-ISOK-160-O	ISO-K 160	180	17	137

Product Order Information

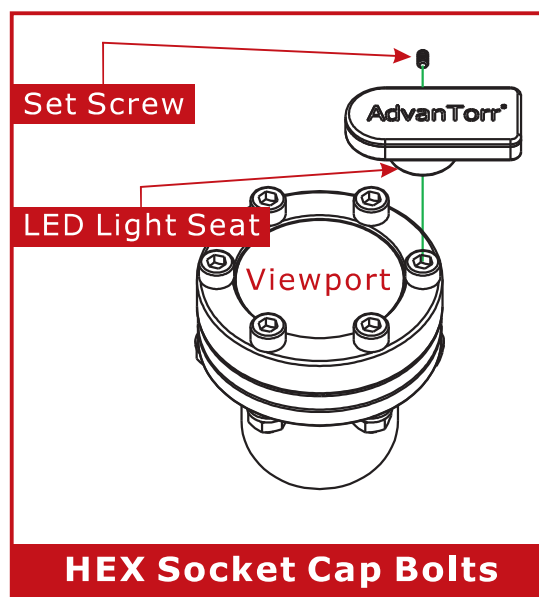
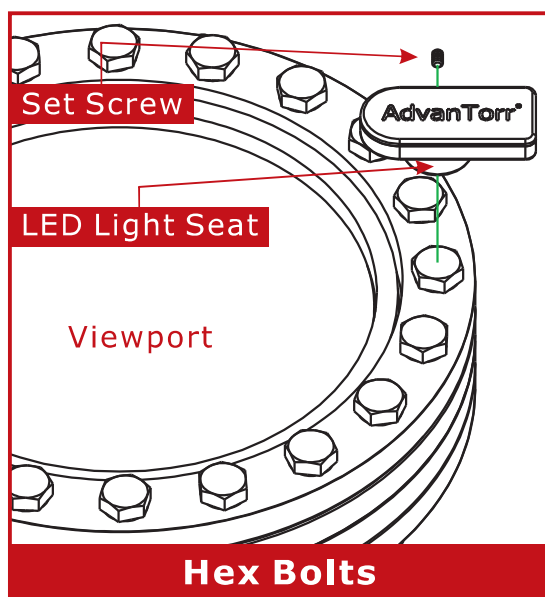
Viewport LED Light is designed for quick installation.
No software and complicated preparation for operation.
Just need one Micro-USB cable to operate.



System Components

Features:

- Lightweight design with aluminum alloy body.
- Long life cycle.
- Easy installation



Product Specification:

Description	Specification
Input Power	5V +/-5%
Current of LED light	150mA +/-25%
Temperature of LED light	5,000K (4,745~5,310K)
Brightness of LED light	50~83 lm
Operating Temperature	-40~85°C
Storage Temperature	-40~100°C
Life Cycle	6,000 hrs (keep in below 55°C)

Product Information

Vacuum Viewport Shutters are used in both HV and UHV coating applications to protect the viewport from the deposition of materials.

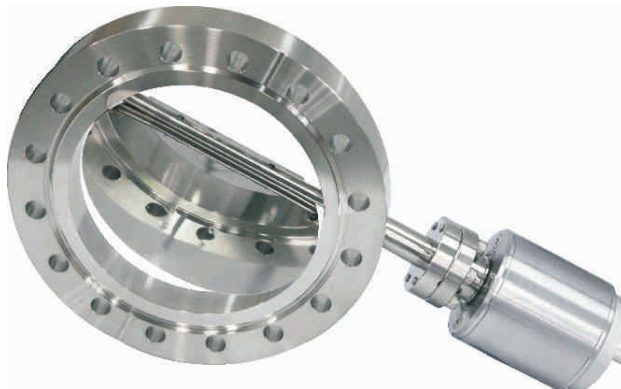
All shutters incorporate a double-sided flange so that they can be mounted in between the chamber and viewport which they are protecting. The swing mechanism, which is operated via a magnetic rotary drive, can 'swing' through 0° to 90° but can easily be locked at a set angle via a thumbscrew on the back of the drive.

The viewport shutter can also easily be cleaned by bead-blasting the shutter plate.

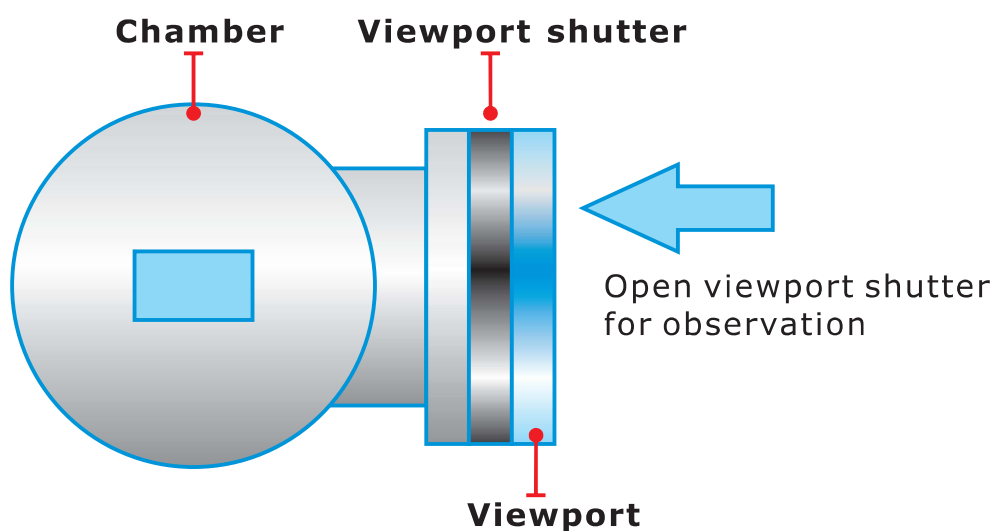
System Components

Product Features

- Range of CF flange sizes from 2.75" to 10" OD.
- Double-sided flange mount.
- UHV grade rotary drive with thumbscrew for discrete angle positioning.
- Bakeable to 250°C.
- Wide range observation area.
- Easy installation in any orientation.

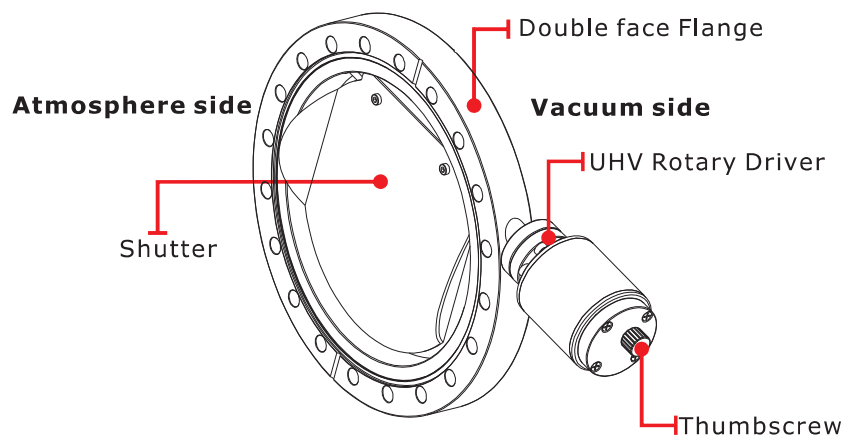


Product Application



Viewport shutter is mounted in between the chamber and viewport

Key Product Parts



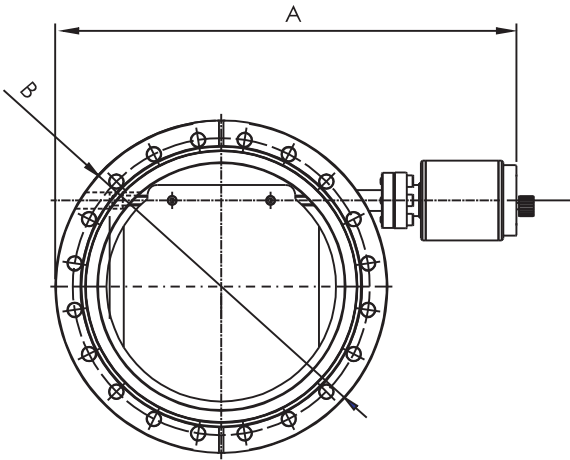
System
Components

Technical Data for Quick Access Doors

Shutter	Stainless steel
Mounting seal	OFHC gasket (both sides)
Operate pressure range	760 Torr ~ 1×10^{-10} Torr 1,000 mbar ~ 1.33×10^{-10} mbar 100 kPa ~ 1.13×10^{-11} kPa
Leak rate	1×10^{-10} Torr l/s, He 1.33×10^{-10} mbar l/s, He 1.13×10^{-11} kPa l/s, He
Temperature range	0°C (32°F) ~ 200°C (392°F)
Bake temperature	250°C (482°F)
Body material	SS304L
Feedthrough	UHV Rotary Drive
Mounting position	Any

Product Order Information

System
Components



UHV Viewport Shutters, CF Flange, SS304L

Part Number	Flange Size	A	B
VPS-CF-275	CF2.75"	152	69
VPS-CF-450	CF4.5"	197	114
VPS-CF-600	CF6"	235	152
VPS-CF-800	CF8"	285	202
VPS-CF-1000	CF10"	323	253