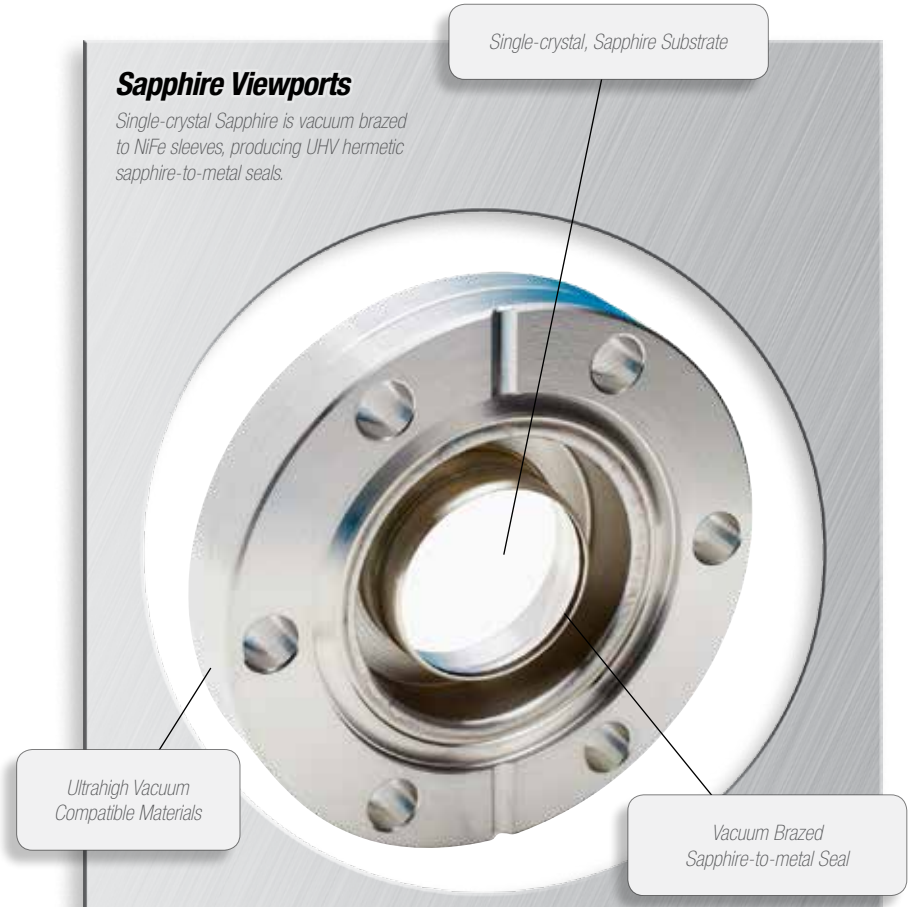
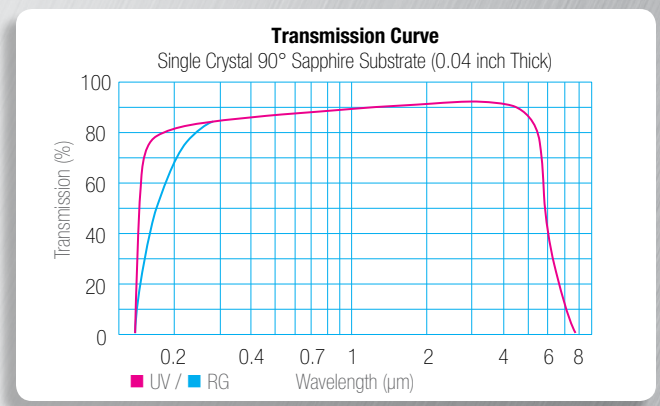


Sapphire Viewports

Accu-Glass' Sapphire viewports are rated for both high and ultrahigh vacuum applications. The use of high purity sapphire and low expansion alloys allow these viewports to be repeatedly baked out at temperatures up to 350°C. Sapphire is a synthetic, hexagonal single crystal anisotropic material which displays substantially different physical, thermal, dielectric and optical qualities when measured along different axes. The crystal orientation of our sapphire viewports is normal to the optical axis, also referred to as a 90° orientation. All viewports up to one-inch in diameter are made with UV grade sapphire. Viewports larger than one-inch in diameter are supplied with regular grade material.



Features

- Synthetic single-crystal Sapphire
- 90° Crystal orientation
- Ultraviolet and regular grades
- Optically polished substrate faces
- UHV compatible construction
- High Temperature rated to 350°C
- Stainless steel / NiFe construction
- Conflat® and ISO NW compatible mounts
- Custom Solutions on Request

Specifications

Material	
Flange	304 Stainless Steel
Glass Substrate	90° Sapphire
Seal	Vacuum Brazed

Vacuum Range [1]	
UHV, Ultrahigh vacuum	$1x10^{-10}$ Torr
HV, High vacuum	$1x10^{-8}$ Torr

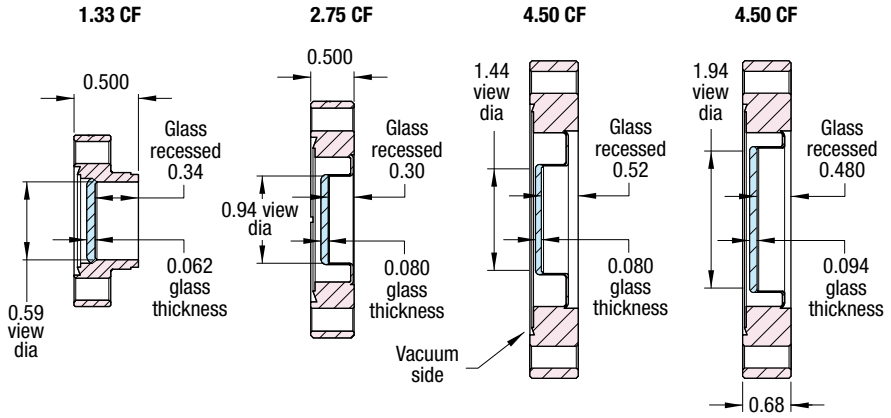
Temperature Range [2]	
Seal (braze joint)	350°C
Flange Mount, Conflat®	450°C
Flange Mount, ISO	150°C
Thermal Gradient	20°C / Minute Maximum

Transmission Range [3]	
200~4500nm (UV Grade)	90%
50-20 scratch-dig finish on both faces	
Flatness (per square inch)	.0002in
300~4000nm (Regular Grade)	90%
50-20 scratch-dig finish on both faces	
Flatness (per square inch)	.0002in

Notes

1. Leak tested to $5x10^{-10}$ Standard cc/sec of He.
2. Overall assembly ratings must be adjusted to that of its lowest rated component.
3. Transmission curves are provided for reference only. Transmission for individual viewports may vary based on thicknesses, surface finish and/or other conditions.

§ Unless specified otherwise, dimensional units in all sections of this catalog are expressed in inches.



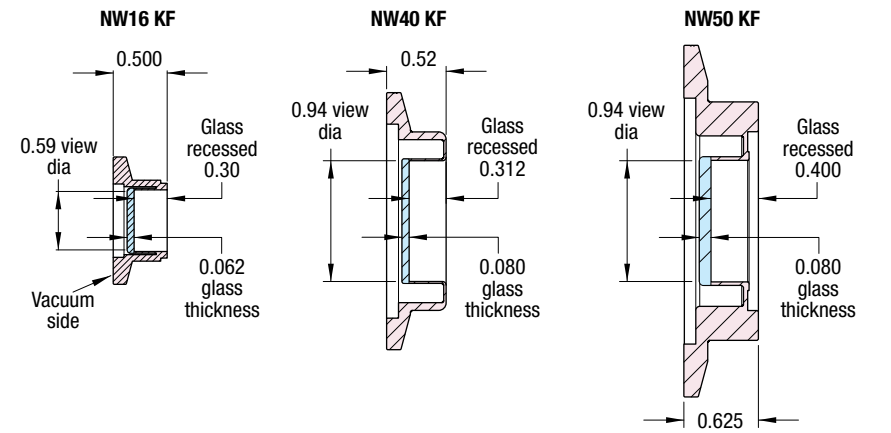
CF Flange[1] — Sapphire Viewports / 350°C / UHV to 1x10^{-10} Torr

View Diameter	Flange Type	Flange OD	Window Thickness	Crystal Angle	Spectral Range nm	Model Number	**Part Number**	Unit Price $
UV — Ultraviolet Grade Substrate								
0.59	133 CF	1.33	0.062	90°	200-4500	VPS-0.6-133	**112415**	284
0.94	275 CF	2.73	0.080	90°	200-4500	VPS-1-275	**112416**	353
RG — Regular Grade Substrate								
1.44	275 CF	2.73	0.080	90°	300-4000	VPS-1.5-275	**112725**	762
1.44	450 CF	4.47	0.080	90°	300-4000	VPS-1.5-450	**112417**	819
1.94	450 CF	4.47	0.094	90°	300-4000	VPS-2-450	**112466**	956

1. Compatible with Conflat® flanges and hardware

112415 / UHV Sapphire Viewport mounted on 1.33 CF Flange

112416 / UHV Sapphire Viewport mounted on 2.75 CF Flange



ISO KF Flange[1] — Sapphire Viewports / 150°C / HV to 1x10^{-8} Torr

View Diameter	Flange Type	Flange OD	Window Thickness	Crystal Angle	Spectral Range nm	Model Number	**Part Number**	Unit Price $
UV — Ultraviolet Grade Substrate								
0.59	NW16 KF	1.18	0.062	90°	200-4500	VPS-0.6-K16	**112418**	301
0.94	NW40 KF	2.16	0.080	90°	200-4500	VPS-1-K40	**112419**	352
0.94	NW50 KF	2.95	0.080	90°	200-4500	VPS-1-K50	**112420**	363

1. Compatible with ISO 2861/1 specification flanges and hardware

112418 / HV Sapphire Viewport mounted on NW16 KF ISO Flange

112419 / HV Sapphire Viewport mounted on NW40 KF ISO Flange