



VIEWPORTS

Sapphire

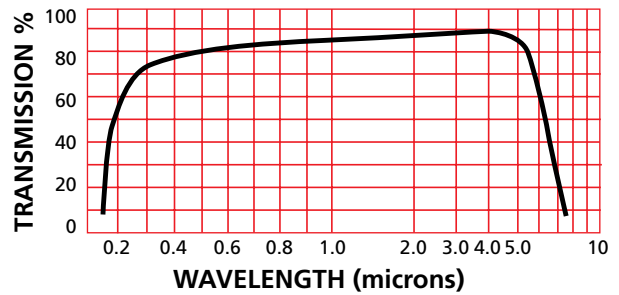
UV SAPPHIRE

Leak Rate: <math><2 \times 10^{-10}</math> atm cc/sec He
 Parallelism: <math><3</math> Arc Minutes
 Flange Material: 304/316 Stn. Stl.
 Surface Finish: 50/20
 Thermal Range: -100°C to 450°C
 Material: Sapphire
 UV Transmission: 50% @ 250nm (external)
 Orientation: 0-90°
 Pressure: Contact MPF Engineering

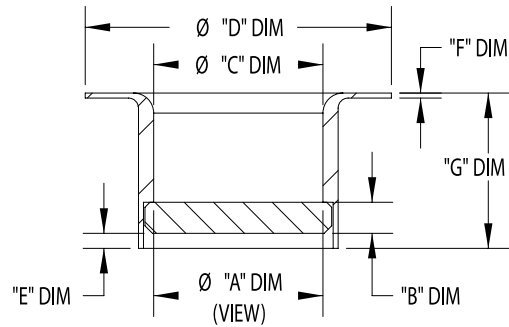
Operating Conditions

The thermal ratings specified are safe operating limits determined by various factors including material properties, mechanical design, and the intended operating environment. Temperature ratings for various mounting options may reduce the operating range of a window assembly. All assemblies have a maximum thermal gradient of 25°C per minute and may be damaged if this limit is exceeded.

SAPPHIRE (UV GRADE)

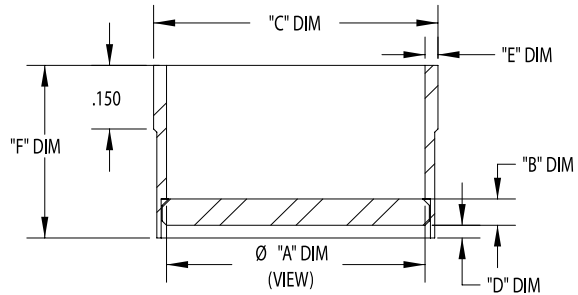


WELDABLE



SLEEVE	Ø "A" DIM (VIEW)	B	C	D	E	F	G	PART #	PRICE
Kovar	.34	.062	.38	.615	.030	.010	.31	A0711-1-W	\$140
Kovar	.46	.062	.51	.740	.030	.010	.31	A0711-2-W	\$165

WELDABLE



SLEEVE	Ø "A" DIM (VIEW)	B	C	D	E	F	PART #	PRICE
Kovar	.59	.062	.66	.030	.030	.43	A0629-1-W	\$165



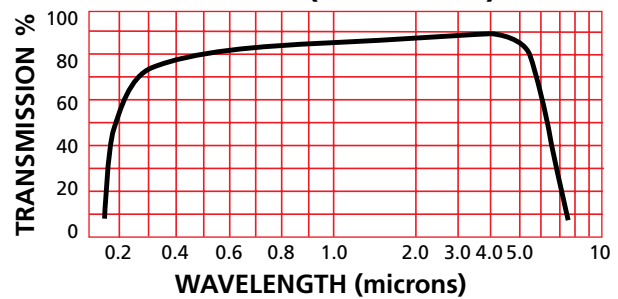
UV SAPPHIRE

Leak Rate: 2×10^{-10} atm cc/sec He
 Parallelism: <math>< 3</math> Arc Minutes
 Flange Material: 304/316 Stn. Stl.
 Surface Finish: 50/20
 Thermal Range: -100°C to 450°C
 Material: Sapphire
 UV Transmission: 50% @ 250nm (external)
 Orientation: 0-90°
 Pressure: Contact MPF Engineering

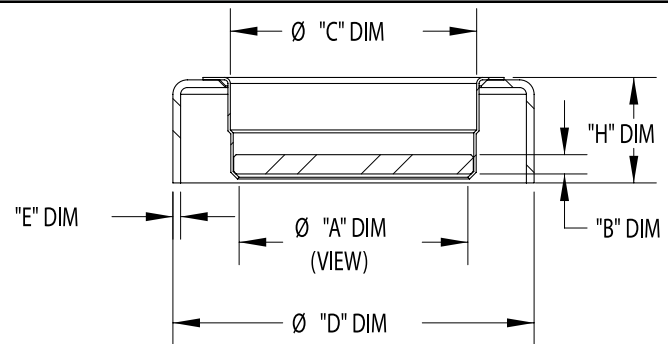
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SAPPHIRE (UV GRADE)

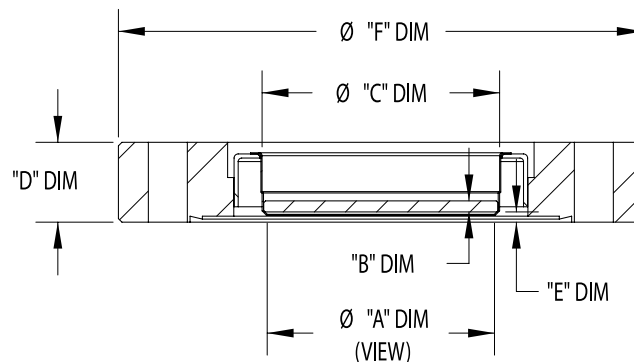
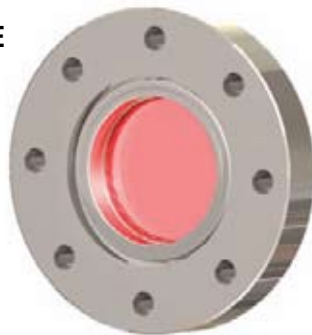


WELDABLE



ADAPTER	Ø "A" DIM (VIEW)	B	C	D	E	H	PART #	PRICE
STN. STL.	.69	.080	.77	1.500	.030	.44	A0633-1-W	\$210
STN. STL.	.94	.080	1.02	1.500	.030	.44	A0633-2-W	\$235
STN. STL.	1.44	.080	1.52	2.500	.030	.49	A0633-3-W	\$520
STN. STL.	1.94	.094	2.02	2.500	.030	.54	A0633-4-W	\$550
STN. STL.	2.95	.125	3.02	3.500	.030	.55	A1679-1-W	\$1400

CONFLAT FLANGE



Ø "A" DIM (VIEW)	B	C	D	E	F	PART #	PRICE
.46	.062	.510	.285	.080	1.33	A1858-1-CF	\$190
.59	.062	.600	.500	.100	1.33	A0808-1-CF	\$200
.69	.080	.770	.500	.080	2.75	A0810-1-CF	\$225
.94	.080	1.02	.500	.080	2.75	A0810-2-CF	\$255
1.44	.080	1.52	.500	.13	2.75	A6944-1-CF	\$600
1.44	.080	1.52	.680	.13	4.50	A0810-3-CF	\$600
1.94	.094	2.02	.680	.10	4.50	A0810-4-CF	\$700

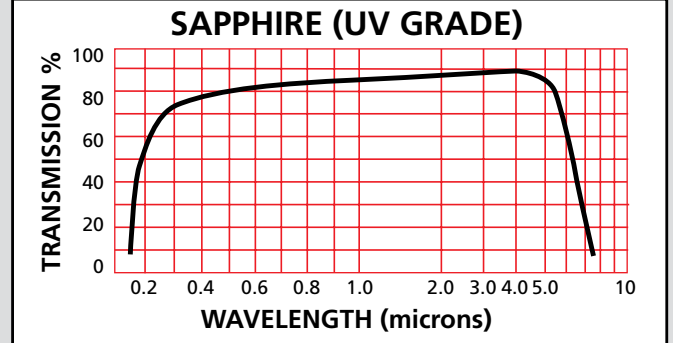


UV SAPPHIRE

Leak Rate: <math><2 \times 10^{-10}</math> atm cc/sec He
 Parallelism: <math><3</math> Arc Minutes
 Flange Material: 304/316 Stn. Stl.
 Surface Finish: 50/20
 Thermal Range: -100°C to 450°C
 Material: Sapphire
 UV Transmission: 50% @ 250nm (external)
 Orientation: 0-90°
 Pressure: Contact MPF Engineering

Operating Conditions

The thermal ratings specified are safe operating limits determined by various factors including material properties, mechanical design, and the intended operating environment. Temperature ratings for various mounting options may reduce the operating range of a window assembly. All assemblies have a maximum thermal gradient of 25°C per minute and may be damaged if this limit is exceeded.



QUICK FLANGE

FIGURE 1

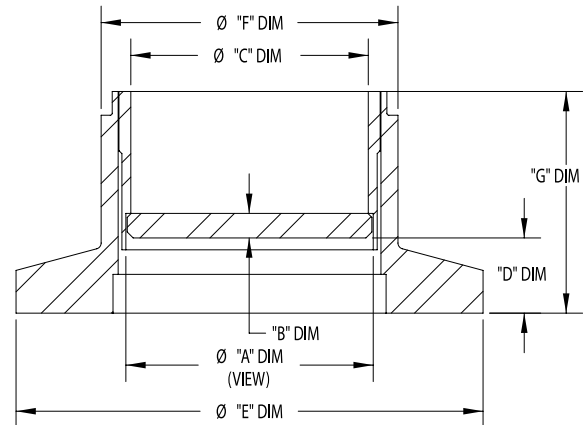
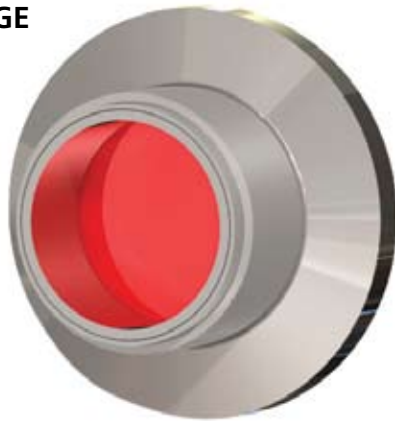
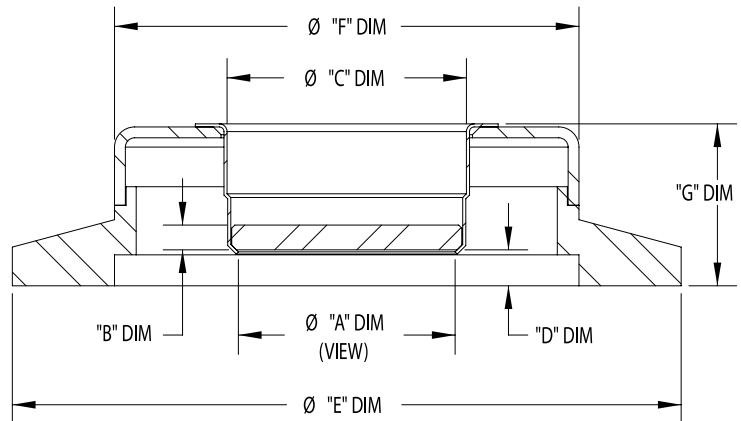


FIGURE 2



GRADE	FIG NO.	Ø "A" DIM (VIEW)	B	C	D	E	F	G	PART #	PRICE
UV	1	.59	.062	.600	.13	1.18	.750	.56	A0813-1-QF	\$200
UV	2	.69	.080	.770	.13	2.16	1.50	.52	A0814-1-QF	\$225
UV	2	.94	.080	1.02	.13	2.16	1.50	.52	A0814-2-QF	\$250
UV	2	.94	.080	1.02	.13	2.95	2.00	.52	A1641-1-QF	\$255



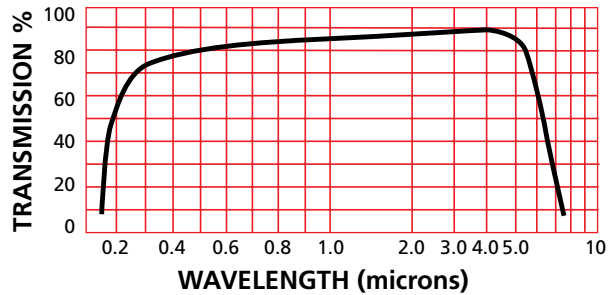
DUV SAPPHIRE

Leak Rate: <math> < 2 \times 10^{-10}</math> atm cc/sec He
 Parallelism: <math> < 3</math> Arc Minutes
 Flange Material: 304/316 Stn. Stl.
 Surface Finish: 20/10
 Thermal Range: -100°C to 450°C
 Material: Sapphire
 UV Transmission: 70% @ 250nm (external)
 Orientation: 0°
 Pressure: Contact MPF Engineering

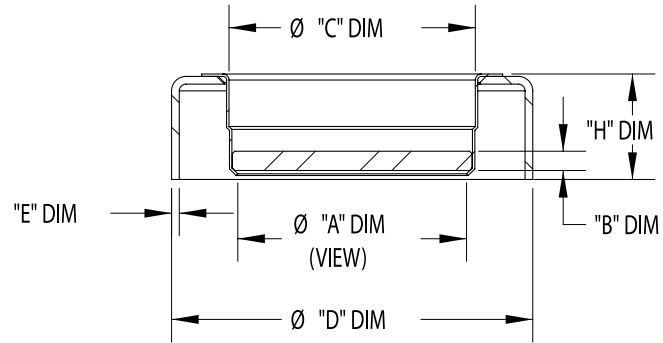
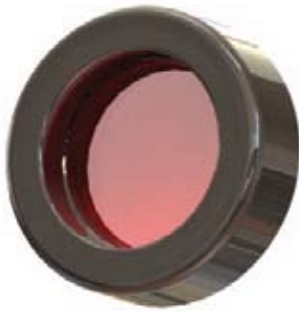
Operating Conditions

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SAPPHIRE (DUV GRADE)

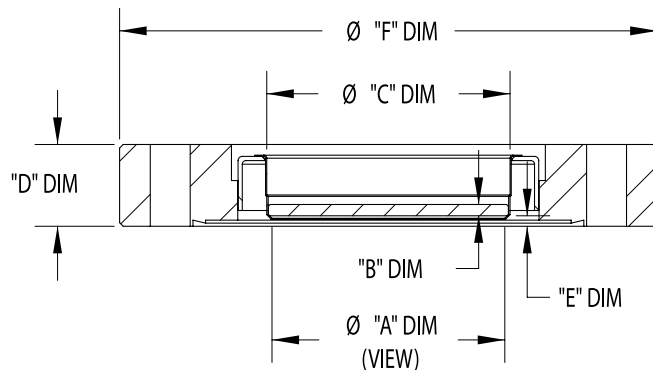


WELDABLE



ADAPTER	Ø "A" DIM (VIEW)	B	C	D	E	H	PART #	PRICE
STN. STL.	.69	.080	.77	1.500	.030	.44	A8006-1-W	\$280
STN. STL.	.94	.080	1.02	1.500	.030	.44	A8006-2-W	\$315
STN. STL.	1.44	.080	1.52	2.500	.030	.49	A8006-3-W	\$730
STN. STL.	1.94	.094	2.02	2.500	.030	.54	A8006-4-W	\$825

CONFLAT FLANGE



Ø "A" DIM (VIEW)	B	C	D	E	F	PART #	PRICE
.69	.080	.770	.500	.080	2.75	A8007-1-CF	\$295
.94	.080	1.02	.500	.080	2.75	A8007-2-CF	\$335
1.44	.080	1.52	.680	.13	4.50	A8007-3-CF	\$810
1.94	.094	2.02	.680	.10	4.50	A8007-4-CF	\$975



VIEWPORTS

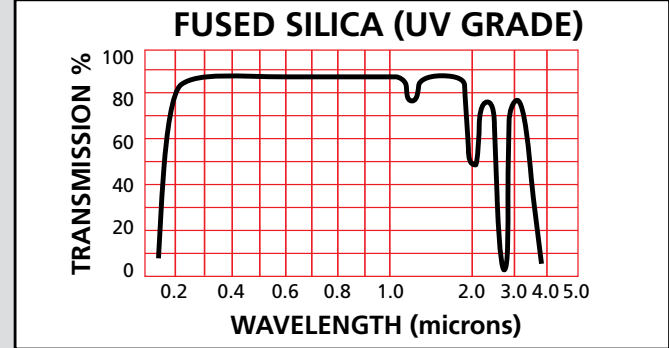
Fused Silica

UV FUSED SILICA

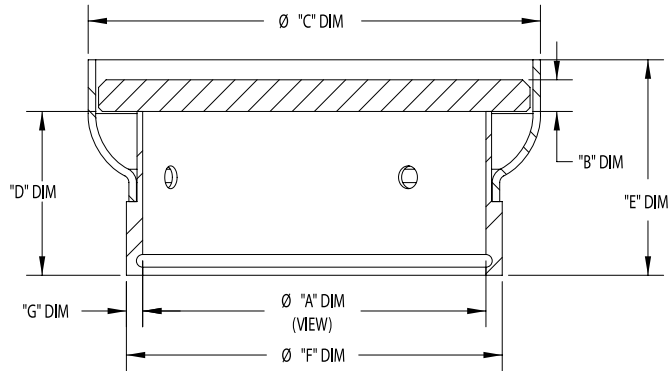
Leak Rate: <math> < 2 \times 10^{-10}</math> atm cc/sec He
 Parallelism: <math> < 30</math> Arc Minutes
 Flange Material: 304/316 Stn. Stl.
 Surface Finish: 40/20
 Thermal Range: -100°C to 200°C
 Material: Corning HPFS 7980 Fused Silica
 Transmission: >90% @ 250nm (external)
 Homogeneity Grade: F
 Inclusion Class: 2

Operating Conditions

The thermal ratings specified are safe operating limits determined by various factors including material properties, mechanical design, and the intended operating environment. Temperature ratings for various mounting options may reduce the operating range of a window assembly. All assemblies have a maximum thermal gradient of 25°C per minute and may be damaged if this limit is exceeded.

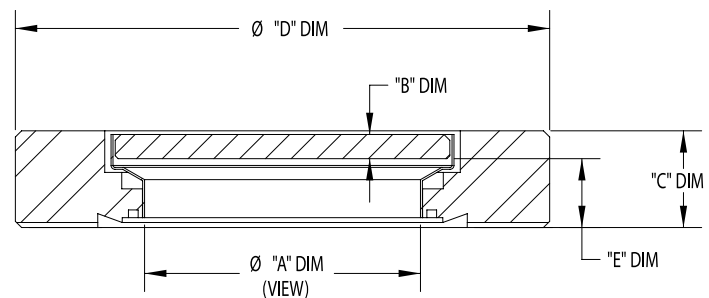
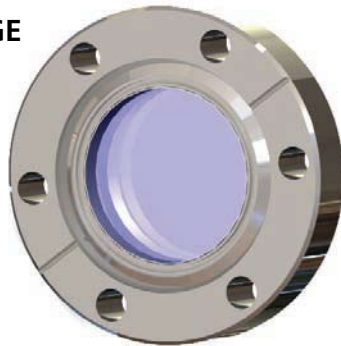


WELDABLE



Ø "A" DIM (VIEW)	B	C	D	E	F	G	PART #	PRICE
1.37	.13	1.76	.68	.85	1.500	.065	A0657-11-W	\$240
2.37	.25	2.88	.79	1.10	2.500	.065	A0657-12-W	\$475
3.84	.25	4.41	1.01	1.30	4.500	.085	A0657-13-W	\$700

CONFLAT FLANGE



NOM. SIZE	Ø "A" DIM (VIEW)	B	C	D	E	PART #	PRICE
3/4"	.63	.10	.29	1.33	.17	A1671-1-CF	\$180
1 1/2"	1.40	.13	.50	2.75	.35	A0651-1-CF	\$200
1 1/2"	1.40	.13	.62	3.37	.35	A0651-2-CF	\$220
2 1/2"	2.69	.25	.68	4.50	.41	A0651-3-CF	\$650
2 1/2"	2.69	.25	.75	4.62	.41	A0651-4-CF	\$665
4"	3.88	.25	.78	6.00	.51	A0651-5-CF	\$800
4"	3.88	.25	.84	6.75	.51	A0651-6-CF	\$850
6"	5.38	.37	.88	8.00	.48	A0651-7-CF	\$1950
8"	7.78	.37	.97	10.00	.53	A0651-8-CF	\$2500



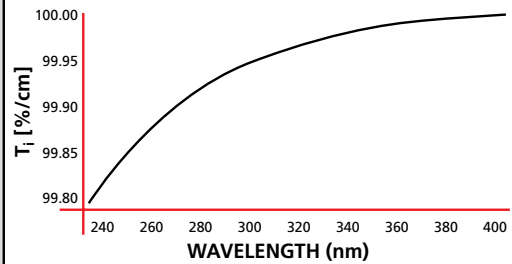
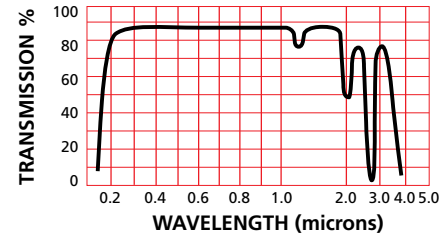
DUV FUSED SILICA (LASER QUALITY)

Leak Rate:	<2x10 ⁻¹⁰ atm cc/sec He
Parallelism:	<10 Arc Seconds
Flange Material:	304/316 Stn. Stl.
Flatness:	λ/4 @ 632nm Transmitted Wavefront
Surface Finish:	20/10
Thermal Range:	-100°C to 200°C
Material:	Corning HPFS 7980 Fused Silica
Transmission:	≥99.8% @ 248nm (internal)
Homogeneity Grade:	A
Inclusion Class:	0

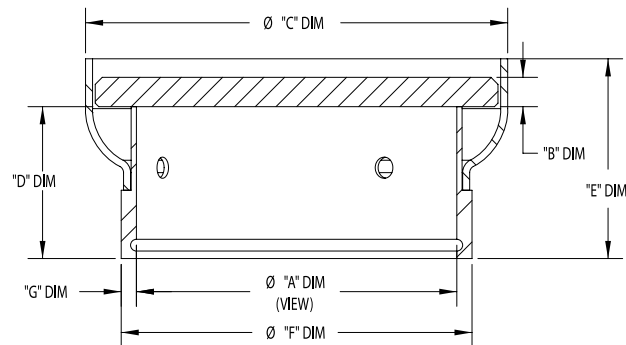
Operating Conditions

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FUSED SILICA (DUV GRADE)

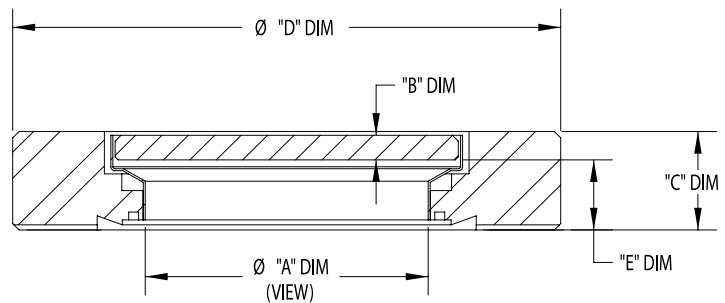
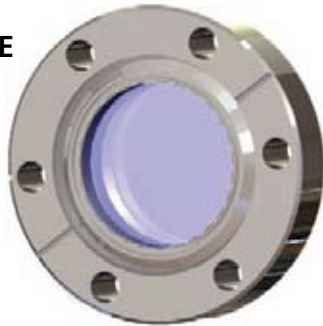


WELDABLE



Ø "A" DIM (VIEW)	B	C	D	E	F	G	PART #	PRICE
1.37	.13	1.76	.68	.85	1.500	.065	A0657-6-W	\$390
2.37	.25	2.88	.79	1.10	2.500	.065	A0657-7-W	\$950
3.84	.25	4.41	1.01	1.30	4.500	.085	A0657-8-W	\$1350

CONFLAT FLANGE



NOM. SIZE	Ø "A" DIM (VIEW)	B	C	D	E	PART #	PRICE
3/4"	.63	.10	.29	1.33	.17	A1671-2-CF	\$305
1 1/2"	1.40	.13	.50	2.75	.35	A0650-1-CF	\$350
1 1/2"	1.40	.13	.62	3.37	.35	A0650-2-CF	\$400
2 1/2"	2.69	.25	.68	4.50	.41	A0650-3-CF	\$950
2 1/2"	2.69	.25	.75	4.62	.41	A0650-4-CF	\$1025
4"	3.88	.25	.78	6.00	.51	A0650-5-CF	\$1350



VIEWPORTS

Fused Silica

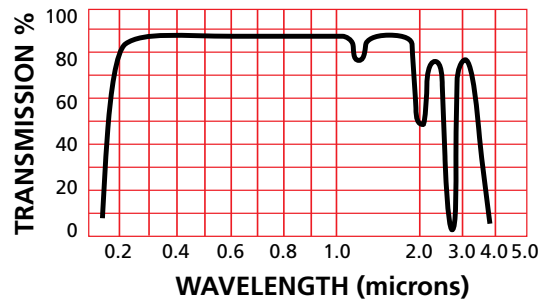
UV FUSED SILICA

Leak Rate: <math><2 \times 10^{-10}</math> atm cc/sec He
 Parallelism: <math><30</math> Arc Minutes
 Flange Material: 304/316 Stn. Stl.
 Surface Finish: 40/20
 Thermal Range: -100°C to 200°C
 Material: Corning HPFS 7980 Fused Silica
 Transmission: >90% @ 250nm (external)
 Homogeneity Grade: F
 Inclusion Class: 2

Operating Conditions

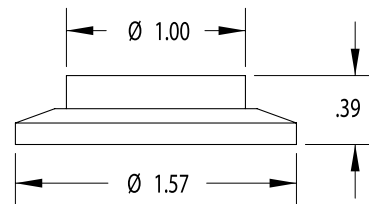
The thermal ratings specified are safe operating limits determined by various factors including material properties, mechanical design, and the intended operating environment. Temperature ratings for various mounting options may reduce the operating range of a window assembly. All assemblies have a maximum thermal gradient of 25°C per minute and may be damaged if this limit is exceeded.

FUSED SILICA (UV GRADE)

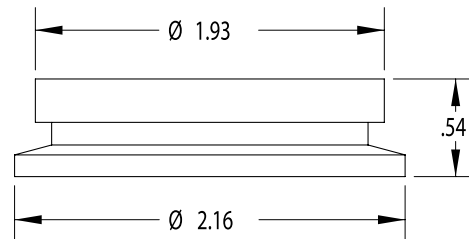


*See page 9 for DUV information.

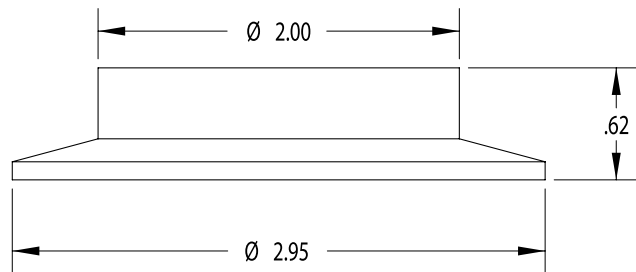
QUICK FLANGE



TYPE	NOM. SIZE	VIEW DIAMETER	FLANGE	PART #	PRICE
UV Grade	5/8"	.63	QF-25	A4563-1-QF	\$205
*DUV Grade - Laser Quality	5/8"	.63	QF-25	A4563-2-QF	\$355



TYPE	NOM. SIZE	VIEW DIAMETER	FLANGE	PART #	PRICE
UV Grade	1 1/2"	1.40	QF-40	A2206-1-QF	\$205
*DUV Grade - Laser Quality	1 1/2"	1.40	QF-40	A2206-2-QF	\$355



TYPE	NOM. SIZE	VIEW DIAMETER	FLANGE	PART #	PRICE
UV Grade	1 1/2"	1.40	QF-50	A0816-1-QF	\$250
*DUV Grade - Laser Quality	1 1/2"	1.40	QF-50	A0816-2-QF	\$400



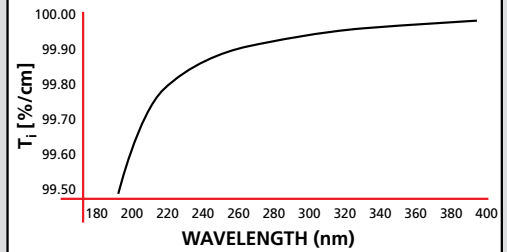
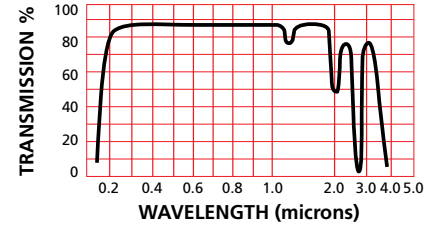
EUV FUSED SILICA (EXCIMER GRADE)

Leak Rate: <math><2 \times 10^{-10}</math> atm cc/sec He
 Parallelism: <math><10</math> Arc Seconds
 Flange Material: 304/316 Stn. Stl.
 Flatness: $\lambda/4$ @ 632nm Transmitted Wavefront
 Surface Finish: 20/10
 Thermal Range: -100°C to 200°C
 Material: Corning HPFS 7980 Excimer Grade 193 Fused Silica
 Transmission: $\geq 99.5\%$ @ 193nm (internal)
 Homogeneity Grade: A
 Inclusion Class: 0

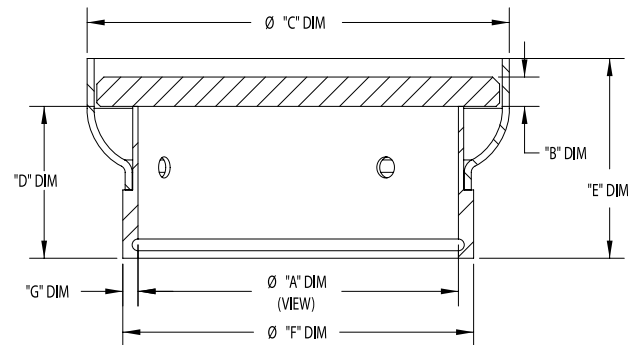
Operating Conditions

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FUSED SILICA (EUV GRADE)

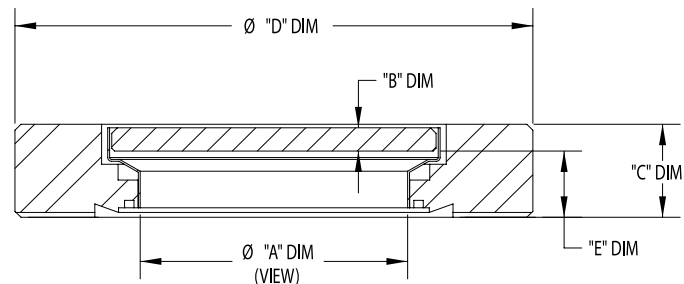
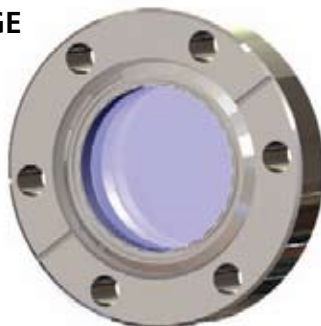


WELDABLE



Ø "A" DIM (VIEW)	B	C	D	E	F	G	PART #	PRICE
1.37	.13	1.76	.68	.85	1.500	.065	A0657-16-W	\$610
2.37	.25	2.88	.79	1.10	2.500	.065	A0657-17-W	\$1410

CONFLAT FLANGE



NOM. SIZE	Ø "A" DIM (VIEW)	B	C	D	E	PART #	PRICE
1 1/2"	1.40	.13	.50	2.75	.35	A0652-1-CF	\$650
2 1/2"	2.69	.25	.68	4.50	.41	A0652-3-CF	\$1450

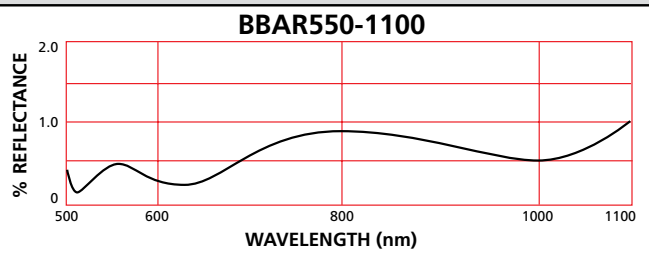
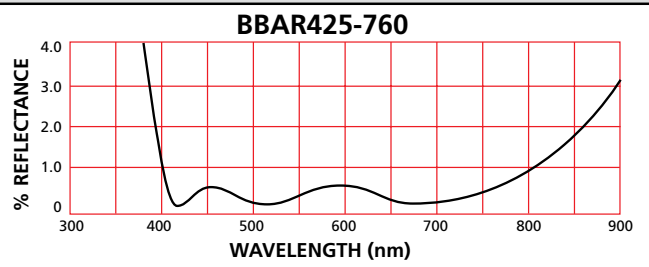
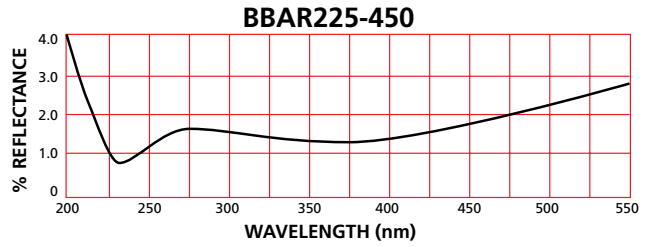


BBAR COATED FUSED SILICA

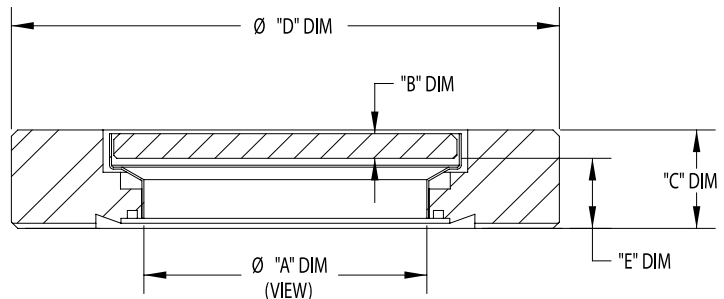
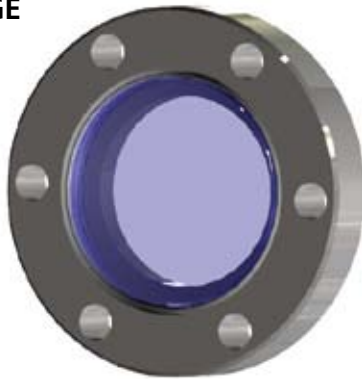
Leak Rate: <math><2 \times 10^{-10}</math> atm cc/sec He
 Parallelism: <math><10</math> Arc Seconds
 Flange Material: 304/316 Stn. Stl.
 Flatness: $\lambda/4$ @ 632nm Transmitted Wavefront
 Surface Finish: 20/10
 Thermal Range: -100°C to 200°C
 Material: Corning HPFS 7980 Fused Silica
 Homogeneity Grade: A
 Inclusion Class: 0

Operating Conditions

The thermal ratings specified are safe operating limits determined by various factors including material properties, mechanical design, and the intended operating environment. Temperature ratings for various mounting options may reduce the operating range of a window assembly. All assemblies have a maximum thermal gradient of 25°C per minute and may be damaged if this limit is exceeded.



CONFLAT FLANGE



TYPE	Ø "A" DIM (VIEW)	B	C	D	E	PART #	PRICE
225-450nm	1.40	.13	.50	2.75	.35	A8000-1-CF	\$695
225-450nm	2.69	.25	.68	4.50	.41	A8001-1-CF	\$1245
425-760nm	1.40	.13	.50	2.75	.35	A8002-1-CF	\$695
425-760nm	2.69	.25	.68	4.50	.41	A8003-1-CF	\$1245
550-1100nm	1.40	.13	.50	2.75	.35	A8004-1-CF	\$695
550-1100nm	2.69	.25	.68	4.50	.41	A8005-1-CF	\$1245