

3.0 viewports & glass components

Viewports & Glass Components



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quality in vacuum technology

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Description

Our standard viewports are manufactured with an optical quality Koidal glass. It allows light transmission from about 300 – 2500 nm. The glass is sealed into a Kovar ring that is welded into standard stainless steel flange. The effective view diameter varies from 16 – 135 mm and depends on the chosen flange size.

Our viewports are available with CF-, KF- and ISO-K-flanges.

Please call us for further glass materials (i.e. Magnesium fluoride or quartz), flange sizes or styles and non magnetic versions.



Specification:

Vacuum: UHV

Material

Glass: Kodial

Transition: Kovar

Temperature:

CF flange: 400 °C

KF/LF flange 150 °C

Transmission: 300 – 2500nm

Annealed gaskets should be used for CF types

Flange	CF Standard Viewports	View diam	Part Number
CF16	STD VIEWPORT 7056 GLASS ON CF16	16	3-ST-0500
CF40	STD VIEWPORT 7056 GLASS ON CF40	38	3-ST-1500
CF63	STD VIEWPORT 7056 GLASS ON CF63	65	3-ST-2500
CF100	STD VIEWPORT 7056 GLASS ON CF100	90	3-ST-3500
CF160	STD VIEWPORT 7056 GLASS ON CF160	135	3-ST-4500
CF200	STD VIEWPORT 7056 GLASS ON CF200	135	3-ST-5500

Flange	KF / ISO-K (LF) Standard Viewports	View diam	Part Number
KF16	STD VIEWPORT 7056 GLASS ON KF16	16	3-ST-6500
KK25	STD VIEWPORT 7056 GLASS ON KF25	16	3-ST-7500
KF40	STD VIEWPORT 7056 GLASS ON KF40	34	3-ST-8500
KF50	STD VIEWPORT 7056 GLASS ON KF50	34	3-ST-9500
LF63	STD VIEWPORT 7056 GLASS ON LF63	50	3-ST-0600
LF100	STD VIEWPORT 7056 GLASS ON LF100	68	3-ST-1600
LF160	STD VIEWPORT 7056 GLASS ON LF160	98	3-ST-2600

Standard Magnesium Fluoride viewports

Specification:

Vacuum: UHV

Material

Glass: MGF

Transition: 304SS

Temperature:

CF flange: 250 °C

Transmission: 200 – 6500nm

Description	View diam	Part Number
MAGNESIUM FLUORIDE VP ON CF40	20	3-ST-3600
MAGNESIUM FLUORIDE VP ON CF40 38mm view diam	38	3-ST-4600

Fused Silica Viewports

Description

Fused Silica is a synthetic material with a polycrystalline and isotropic structure and shows no crystal orientation.

In comparison to standard quartz or glass material fused silica offers a higher quality for optical applications.

We offer three different grades of fused silica with different transmission and impurity levels: 1) Ultraviolet grade (>80% transmission@185nm, inclusion 0.25mm²), 2) Deep Ultraviolet grade (>80%@185nm, 0.03mm²) and Excimer UV (>85%@185nm, 0.03mm²).



Specification:

Vacuum: UHV

Temperature:

CF flange: 200 °C

KF/LF flange 150 °C

Thermal

gradient: 25 °C/min

Transmission in

visible range >90%

Type	Transmission	Homogeneity	Total Inclusion
UV	200-2000	2D-Material	max 0,25mm ²
DUV	200-2000	3D-Material	max 0,03mm ²
Excimer Material	185-2200	3D-Material	max 0,03mm ²

Annealed gaskets should be used for CF types

Fused Silica – Ultraviolet Grade

Description	View diam	Part Number
FUSED SILICA VIEWPORT UV CF16	16	3-FS-0210
FUSED SILICA VIEWPORT UV CF40	35	3-FS-0010
FUSED SILICA VIEWPORT UV CF63	68	3-FS-2010
FUSED SILICA VIEWPORT UV CF100	98	3-FS-4010
FUSED SILICA VIEWPORT UV CF160	137	3-FS-6010
FUSED SILICA VIEWPORT UV CF200	198	3-FS-7010
FUSED SILICA VIEWPORT UV KF50	35	3-FS-9110

Fused Silica – Deep Ultraviolet Grade

Description	View diam	Part Number
FUSED SILICA VIEWPORT DEEP UV CF40	35	3-FS-8010
FUSED SILICA VIEWPORT DEEP UV CF63	68	3-FS-0110
FUSED SILICA VIEWPORT DEEP UV CF100	98	3-FS-2110
FUSED SILICA VIEWPORT DEEP UV CF160	137	3-FS-4110
FUSED SILICA VIEWPORT DEEP UV CF200	198	3-FS-5110

Fused Silica – Excimer Grade

Description	View diam	Part Number
FUSED SILICA VIEWPORT EXCIMER UV CF40	35	3-FS-6110
FUSED SILICA VIEWPORT EXCIMER UV CF63	68	3-FS-7110
FUSED SILICA VIEWPORT EXCIMER UV CF100	98	3-FS-8110

Laser Optic Viewports

Description

Especially for Laser optic environments we offer coated fused silica viewports for use with certain Laser types. All viewports show a transmission of >99.5% at the corresponding wavelength, a surface finish of 20/10 and a flatness of $\lambda/4$ (at 632nm transmitted wavelength). The surface parallelism is <30 Arc Seconds.

Description	Wavelength coating at	Laser type	Part Number
coated FUSED SILICA VIEWPORT CF40	1064nm	YAG	3-LS-0001
coated FUSED SILICA VIEWPORT CF40	248nm	KrF Excimer	3-LS-0010
coated FUSED SILICA VIEWPORT CF40	193nm	ArF Excimer	3-LS-0100
coated FUSED SILICA VIEWPORT CF40	780nm	Diode	3-LS-1000



For further details and special designs please contact our sales office.

Description:

Sapphire viewports show a wider transmission range than standard glass or fused silica viewports: 180 – 5500 nm. A further advantage is the high bake out temperature of 400°C. Available are all standard sizes of flanges.

Specification:

Vacuum: UHV

Material: Sapphire, 90° orientation

Polish: 50-20 Scratch-Dig

Temperature:

CF flange: 400 °C

KF/LF flange 150 °C

Thermal

gradient: 25 °C/min

Transmission in

UV Grade: 180-5500nm

Reg. Grade: 250-5500nm

Annealed gaskets should be used for CF types

Grade	Description	View diam	Part Number
UV	SAPPHIRE VIEWPORT UV GRADE VIEW 15mm ON CF16	15	3-SA-0010
UV	SAPPHIRE VIEWPORT UV GRADE VIEW 24mm ON CF40	24	3-SA-2010
REG	SAPPHIRE VIEWPORT REG GRADE VIEW 36mm ON CF63	36	3-SA-3010
REG	SAPPHIRE VIEWPORT REG GRADE VIEW 49mm ON CF63	49	3-SA-4010
UV	SAPPHIRE VIEWPORT UV GRADE VIEW 17mm ON KF40	17	3-SA-5010
UV	SAPPHIRE VIEWPORT UV GRADE VIEW 24mm ON KF40	24	3-SA-6010

Please contact our sales office when looking for larger sizes or coated optics!

Special Viewports

Description

We offer a wide range of special materials viewports as well: Magnesium fluoride, Calcium fluoride, Crystal quartz, BK7, Silicon, Germanium, Cleartrans and Zinc selenide. Anti reflective coatings are available. Please contact us for further information.

Specification:

Vacuum: UHV

Temperature:

CF flange: 400 °C

Thermal

gradient: 25 °C/min

Transmission: see table next page



Description	View diam	Part Number
MAGN FLUORIDE VIEWPORT CF40 (HV only)	28	3-MF-0210
MAGN FLUORIDE VIEWPORT CF63	63	3-MF-1210
CALCIUM FLUORIDE VIEWPORT CF40	28	3-CF-2210
CALCIUM FLUORIDE VIEWPORT CF63	63	3-CF-3210
CRYSTAL QUARTZ VIEWPORT CF40	28	3-CQ-4210
CRYSTAL QUARTZ VIEWPORT CF63	63	3-CQ-5210
BK7 VIEWPORT CF40	28	3-BK-6210
BK7 VIEWPORT CF63	63	3-BK-7210
SILICON VIEWPORT CF40	28	3-SL-8210
SILICON VIEWPORT CF63	63	3-SL-9210
GERMANIUM VIEWPORT CF40	28	3-GE-0310
GERMANIUM VIEWPORT CF63	63	3-GE-1310
CLEARTRAN VIEWPORT CF40	28	3-CT-2310
CLEARTRAN VIEWPORT CF63	63	3-CT-3310
ZINC SELENIDE VIEWPORT CF40	28	3-ZS-4310
ZINC SELENIDE VIEWPORT CF63	63	3-ZS-5310

You are looking for different flange sizes? Please contact our sales office!

Description

Depending on the application our fibre optic feedthrough systems can be a reasonable solution to transmit light into your UHV system.

Our standard multimode step index fibre show a pure silica core with a doped silica cladding. The outside is coated with a copper alloy.

2 versions are available: The IR type transmits light in the range from 500-2600nm, the UV type transmits in the range from 180-1200nm. Standard core diameter are 200, 400 and 600 microns.

For single mode fibres please contact our sales office!

A further alternative might be our 1-fibre-solution with the non-stop use of only 1 fibre from your light source into the UHV system to avoid the loss of transmission by coupling.

Please contact our sales office for technical details!



Quick Access Door

Description

A wide range of quick access doors (blank style or with a glass door) are available. Using a Viton elastomer gasket the access door can be used in HV condition to get a fast entry into your system.

Specification:

Vacuum: 1×10^{-8} mbar

Temperature:

CF flange: 150 °C

Viewing window: Blank

7056 glass or
Quartz

Thermal gradient: 10 °C/min

Do not expose to pressure above 1 atm

Flange	Glass	Description	A	B	C	Part Number
CF40	BLANK	QUICK ACCESS DOOR BLANK ON CF40	35	13	-	3-QD-0020
CF63	BLANK	QUICK ACCESS DOOR VIEWPORT BLANK ON CF63	62	17	-	3-QD-1020
CF63	GLASS	QUICK ACCESS DOOR VIEWPORT GLASS ON CF63	62	18	38	3-QD-2020
CF63	QUARTZ	QUICK ACCESS DOOR VIEWPORT QUARTZ ON CF63	62	19	36	3-QD-3020
CF100	BLANK	QUICK ACCESS DOOR VIEWPORT BLANK ON CF100	99	20	-	3-QD-4020
CF100	GLASS	QUICK ACCESS DOOR VIEWPORT GLASS ON CF100	99	25	67	3-QD-5020
CF100	QUARTZ	QUICK ACCESS DOOR VIEWPORT QUARTZ ON CF100	62	26	68	3-QD-6020
CF160	BLANK	QUICK ACCESS DOOR VIEWPORT BLANK ON CF160	149	22	-	3-QD-7020
CF160	GLASS	QUICK ACCESS DOOR VIEWPORT GLASS ON CF160	149	30	99	3-QD-8020
CF160	QUARTZ	QUICK ACCESS DOOR VIEWPORT QUARTZ ON CF160	62	31	99	3-QD-9020
CF200	BLANK	QUICK ACCESS DOOR VIEWPORT BLANK ON CF200	200	25	-	3-QD-0120
CF200	GLASS	QUICK ACCESS DOOR VIEWPORT GLASS ON CF200	200	33	142	3-QD-1120
CF200	QUARTZ	QUICK ACCESS DOOR VIEWPORT QUARTZ ON CF200	62	33	137	3-QD-2120

A: bore size ; B: thickness ; C: view diameter glass

Tubular Glass-to-Metal Adaptors, open end

We supply open glass style adaptors on all standard flange sizes and as weldable versions. Glass tube diameter vary from 1/8" to 6". Possible material transitions are: Kovar-Pyrex, Kovar-Glass, Copper-Pyrex, Stainless steel-Pyrex, Stainless steel-Glass, Stainless steel-Quartz. O.D. tubular seals in Kovar, stainless steel and OFHC copper with glass types of "Kovar sealing glasses", PYREX and Quartz. Customized versions are possible on request.

***Sealed-Off Adaptors, closed***

We supply closed "domed" adaptors on all standard flange sizes and as weldable versions. Glass tube diameter vary from 1/2" to 6". Possible material transitions are Kovar-Glass, Stainless steel-Pyrex and Stainless steel-Quartz. Customized versions are possible on request.

***Double Ended Adaptors***

We supply double ended adaptors on all standard flange sizes with glass tube diameters from 1/2" thru 6". Possible metal ends are Kovar, stainless steel, and stainless steel bellows. Please contact us for further information.

Bellows Adaptors

We supply bellow-to-glass adaptor in different material transitions: i.e. Glass-bellows with standard or heavy cuff ends, cuff ends on both sides or Glass-bellow-flange. Please contact us to discuss your needs.

Special Glass-to-Metal-Adaptor

We also offer customized versions of glass-to-metal-adaptor to fit to your requirements. Please contact our sales office to check your needs regarding glass type, sealing and design!



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