

CF high temperature resistant deep ultraviolet ultra-high vacuum quartz glass window

1. Overview:

This CF window is made of 304/316 stainless steel flanges that have undergone high-temperature solution heat treatment, and then brazed with low-expansion alloy 4J34 Kovar and deep ultraviolet quartz glass (JGS1 optical quartz). It can withstand temperatures up to 450 °C, and the brazing material is a silver-based alloy filler metal. It can be used in high-temperature, normal-pressure, and 1×10^{-11} ultra-high vacuum environments.

Our company's brazed CF windows can be demagnetized according to user requirements to reduce the interference of electromagnetic fields on test signals.

2. Deep Ultraviolet Quartz Window Performance Specifications

Project Description	Parameters
Model	CF16-250
Structure	304/316 Stainless steel flange+4J34 Kovar alloy+JGS1 Quartz glass+Silver-based alloys
Temperature resistance	-196 °C / +450 °C
Ultimate vacuum/leakage rate	1.0×10^{-11} Torr / 1.0×10^{-11} Pa.m ³ S ⁻¹
Baking (heating/cooling) rate	≤ 3 °C / min
Flange surface treatment	Electropolishing
Kovar alloy	4J34
Brazing materials	Silver-based alloys
Glass materials	JGS1 Deep ultraviolet quartz glass
Glass transmission wavelength (nm)	185-2800
Transmittance T=%	190-240nm T ≥ 87% 240-2800nm T ≥ 95%
Glass-face PV	PV 1/2--1/20
Glass surface smoothness	80/50 、 60/40、 20/10
Non-magnetic treatment of metal parts	Demagnetization processing according to customer requirements.

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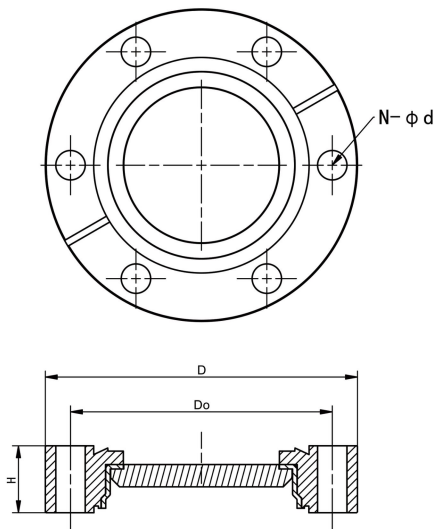
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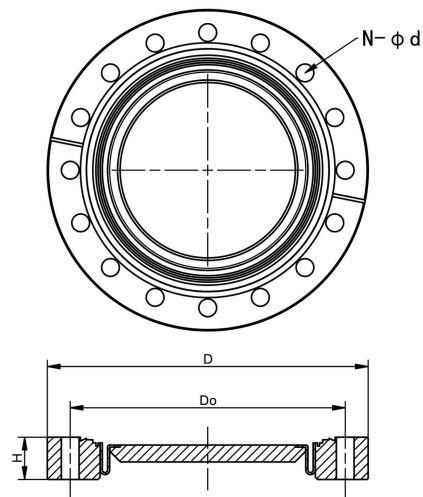
3. CF Model Data Sheet

Number	Specification	Glass size	glass material	Flange outer diameter	Number of bolt holes * diameter	center distance	Flange thickness
No.	Size	Glass	Material	D	N-Φd	Do	H
1	CF16	15.6*5	Quartz glass	34	6*φ4.3	27	12
2	CF20	23.6*5	Quartz glass	54	6*φ6.6	41.3	15
3	CF25	30.6*5	Quartz glass	60	6*φ6.6	47	15
4	CF40 (CF35)	40.6*5	Quartz glass	70	6*φ6.6	58.7	15
5	CF50	51.6*5	Quartz glass	86	8*φ8.4	72.4	20
6	CF63	70.6*5	Quartz glass	114	8*φ8.4	92.2	20
7	CF80	85.5*6	Quartz glass	130	16*φ8.4	110	20
8	CF100	92.6*6	Quartz glass	152	16*φ8.4	130.3	20
9	CF160	144.6*8	Quartz glass	202	20*φ8.4	181	22
10	CF200	190.6*10	Quartz glass	253	24*φ8.4	231.8	24.5
11	CF250	246*12	Quartz glass	305	32*φ8.4	284	26

4. CF internal welding style



CF16-CF80 window structure diagram:

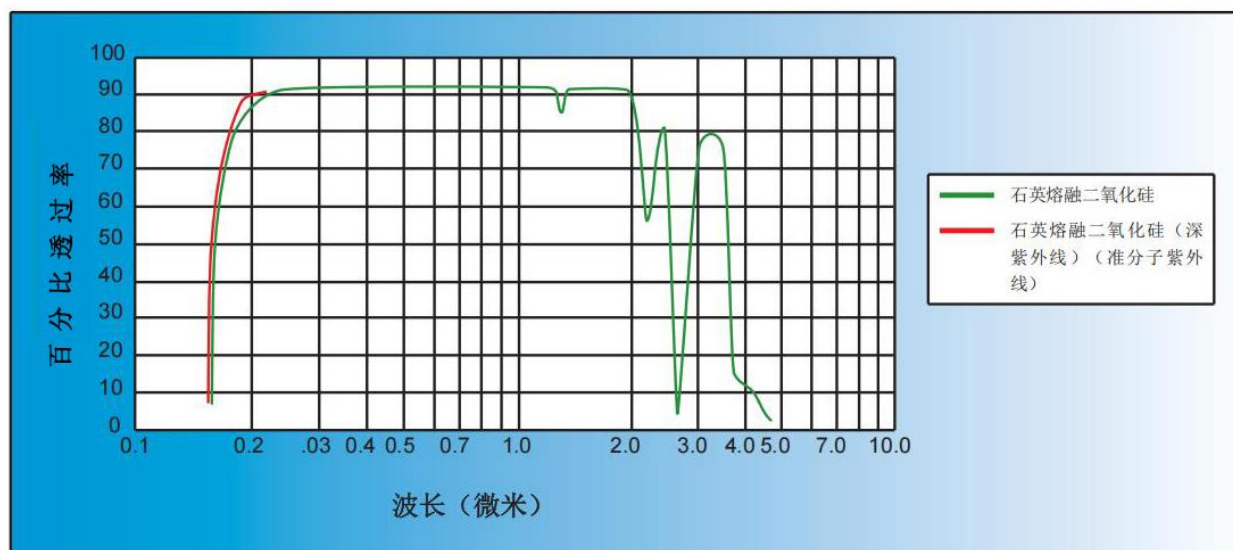


CF100-CF250 window structure diagram



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5. quartz glass transmittance curve



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Special Warnings:

1. The viewing window should be sealed with a fully annealed copper gasket to reduce induced strain.
2. We cannot guarantee that quartz and sapphire windows are unaffected by strain or polarization effects.
3. If the mounting port length exceeds the recommended length, the listed viewing angle will be affected.
4. If the process involves material deposition, we strongly recommend using a window shutter, as some deposits can cause permanent damage to certain windows. Although quartz and sapphire have reasonable thermal conductivity, for safety reasons, we strongly recommend against exposing the window to temperature changes exceeding 2-3°C per minute and to direct heat radiation. To limit the thermal gradient when heating the window, we recommend covering the observation area and flange with multiple layers of aluminum foil as a reflective shield.

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6. Transmission curves of other optical glasses

