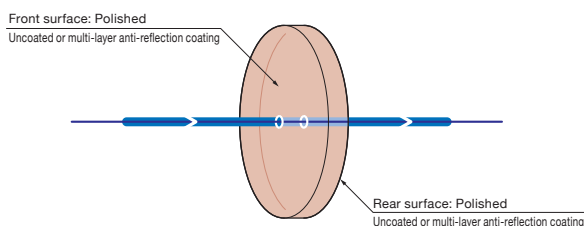


Windows made of zinc selenide (ZnSe) is the most commonly used optical material that allows transmission of infrared light. Nonhygroscopic and extremely stable under normal conditions, in contrast to other salt-based infrared materials.

- Non-coated and AR coated products for CO₂ lasers are available.
- In contrast to other optical materials for infrared light such as Ge (germanium), or Si (silicon), ZnSe windows allow transmission of some visible light, enabling easier adjustment (alignment) of the optical axis of infrared laser systems and enabling use of more convenient and inexpensive He-Ne lasers.

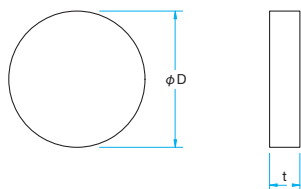


Schematic



Schematic

(in mm)



- Tolerance
Diameter $\phi D_{\pm 0.1}$
Thickness $t \pm 0.1$

Specifications	
Material	Zinc Selenide Crystal
Coating	OPZS: Uncoated WZSA: Anti-reflection coating (at Wavelength 10.6μm)
Incident angle	0° (WZSA only)
Surface Quality (Scratch-Dig)	40-20
Clear aperture	90% of actual aperture

Guide

- ▶ We also offer ZnSe lens (SLZS) for use in CO₂ Laser.
- ▶ For product sizes and wedges which are not listed on our website or in our catalog, please contact our Sales Division with your requests.

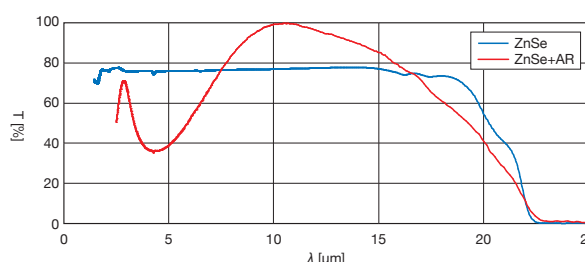
Attention

- ▶ Toxic hydrogen selenide is generated by contact with strong acids when it is immersed in a solution such as sulfuric acid or hydrochloric acid. Please do not use liquid solution to be in contact with ZnSe.
- ▶ Focusing with a high power laser onto the ZnSe lens, toxic gases may occur by heat decomposition. When ZnSe is damaged with over heating of Laser a large amount of gas and powder may occur. In case of breaking ZnSe, please avoid touching the substrates with bare hand and avoid breathing on powder and the gas.
- ▶ The surface and the back side of non-coated type has approximately 17% of reflectivity on each surface. The total power loss in transmittance is estimated at 30%.
- ▶ The WZSQ type must be used at incident angle at 0 degrees for a best transmittance.

About the handling policy of ZnSe optics

Legally, ZnSe has been considered as a toxic optic substance, the non-coated product (OPZS) must be delivered with a certificate of Acquisition of Poisonous and Harmful Substances. In addition, ZnSe Optics disposal after use is prohibited in general. However, we only take back products that we supplied. This policy noted is in Japan and other countries may differ in the treatment of ZnSe (Zinc selenide), please contact your local sales office.

Typical Transmittance Data T: Transmission



ZnSe Windows for Infrared Laser | OPZS/WZSA

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Wedged Substrates

Concave Mirror Substrates

Master Optics

Windows

Uncoated

Part Number	Diameter ϕD [mm]	Thickness t [mm]	Parallelism	Transmission (Wavelength 10.6 μm) [%]
OPZS-30C03-10-3	$\phi 30$	3	<3'	65
OPZS-40C04-10-3	$\phi 40$	4	<3'	65

AR coating

Part Number	Diameter ϕD [mm]	Thickness t [mm]	Parallelism	Transmission (Wavelength 10.6 μm) [%]
WZSA-19C2.5-10600	$\phi 19$	2.5	<5"	>99
WZSA-20C2.5-10600	$\phi 20$	2.5	<5"	>99
WZSA-25.4C03-10600	$\phi 25.4$	3	<5"	>99
WZSA-30C03-10-10600	$\phi 30$	3	<3'	>99
WZSA-38.1C03-10600	$\phi 38.1$	3	<5"	>99
WZSA-40C04-10-10600	$\phi 40$	4	<3'	>99
WZSA-50.8C03-10600	$\phi 50.8$	3	<5"	>99

Physics

Wavelength [μm]	Refractive Index
0.59	2.625
0.63	2.594
1.0	2.489
2.2	2.444
4.0	2.433
6.0	2.426
8.0	2.417
10.6	2.403
16.0	2.356
Density	5.27g/cm ³ (25°C)
Thermal Conductivity	18W·m ⁻¹ K ⁻¹ (23°C)
Thermal Expansion Coefficient	7.1×10 ⁻⁶ /°C(0°C)