

ZnSe WINDOWS



FEATURES / CHARACTERISTICS

ZnSe windows are used as end elements or protective windows in CO₂ lasers. Like cutting lenses, they are made exclusively with high quality “laser grade” material, to withstand high power densities.

The standard windows are AR coated at 10.6 µm, but coatings at 9.35 µm or special wideband AR or dualband AR coatings are also available upon request.

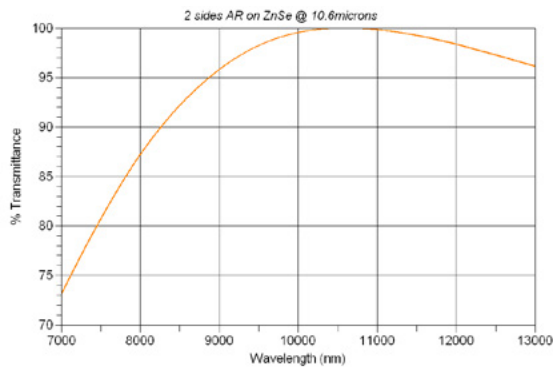
APPLICATIONS

End or protection window in CO₂ lasers that are used in welding, cutting, marking, etching and other industrial applications.

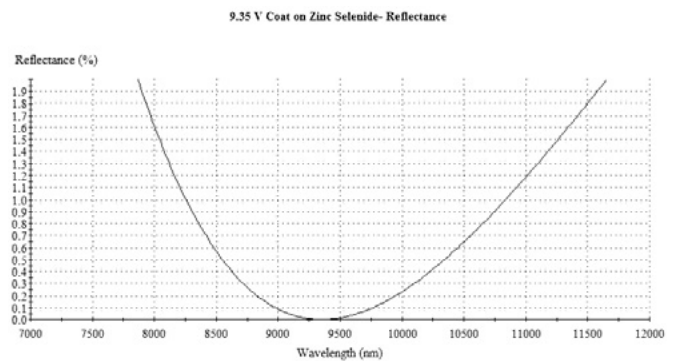
SPECIFICATIONS

Diameter tolerance [mm]	+0/-0.2
Thickness tolerance [mm]	±0.25
Wedge [arc min.]	<3
Surface figure [µm]	typ. $\lambda/20$ at 10.6 (depends on diameter thickness ratio)
Surface quality	40 – 20
Clear aperture	>85% of diameter
Total component absorption	standard: <0.25% up to 9 mm thickness low absorption option: <0.15% up to 9 mm thickness (typ. <0.12%)
Total transmission [µm]	T>99.4%, coated AR/AR at 10.6, depends on thickness
Reflection per side [µm]	R<0.25%, coated AR at 10.6
Laser damage threshold of coated component [W/mm]	depends on the beam diameter, typ. 3000 (CW CO ₂ Laser) (3 kW per mm of beam dia. 1/e ²)

SIMULATIONS



Transmission over wavelength for both side
AR/AR10.6 coated ZnSe window



Reflectance over wavelength for AR9.35
coating on ZnSe

GOOD TO KNOW

ZnSe windows can be fabricated in dimensions from 4.0 to 300 mm diameter and thicknesses from 1.0 mm up to 50 mm. Square and rectangular ZnSe windows can be fabricated to order.

Standard coating is for 10.6 μm or 9.35 μm , other coatings are also available, like for example

broadband BBAR/BBAR 8 – 12 μm or 3 – 5 μm or

wideband WBAR/WBAR 3 – 12 μm or 1 – 5 μm or

dual AR/AR 10.6 μm + 633 nm

In case windows must support a certain pressure, please advise which pressure part is used with. Customer designs are available upon request.

ORDERING CODE

	Diameter		Thickness		Coating
WNZ	-	inch x 100	-	inch x 100	- X

Example:

WNZ-1011-101 (window, ZnSe, dia 1 inch, 3.0 mm thick, AR coated for 10.6 μm)