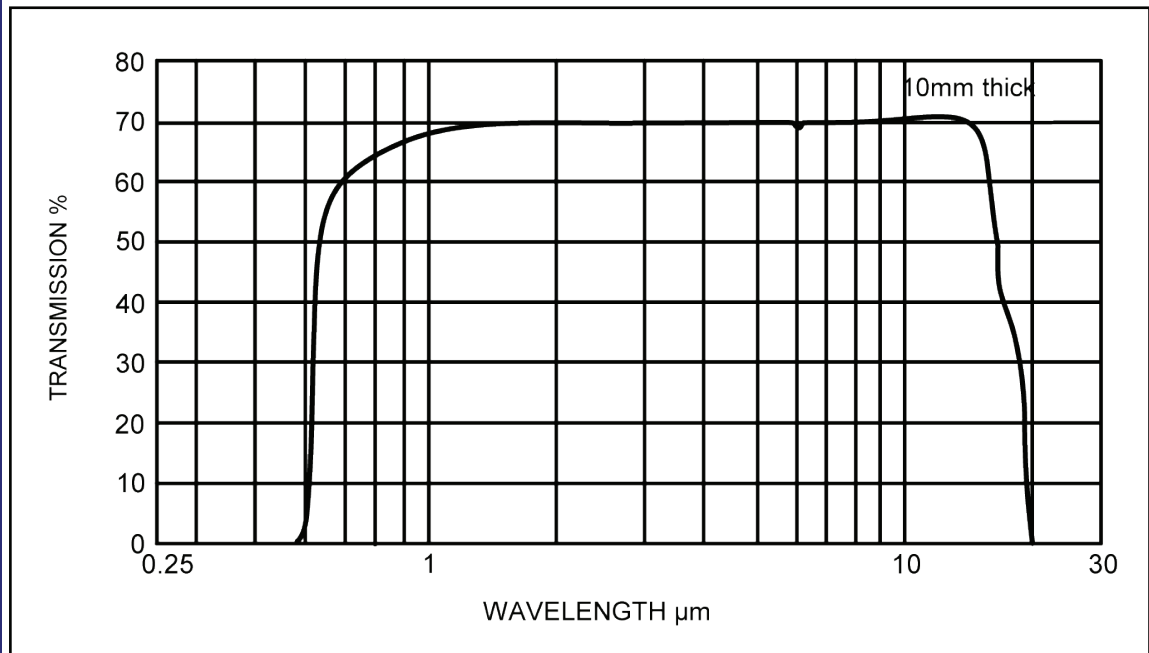


| Specification                      |                                      |
|------------------------------------|--------------------------------------|
| Seal Type                          | Bond                                 |
| Maximum Temperature                | 120°C                                |
| Minimum Temperature                | minus 20°C                           |
| Maximum Rate of Temperature Change | 3°C per minute                       |
| Leak Rate                          | <1x10 <sup>-10</sup> atm-cc/sec (He) |
| Pressure Range                     | 1 bar to 1x10 <sup>-11</sup> mbar    |
| Surface Quality                    | 60 /40 scratch/dig                   |
| Flatness                           | <2λ                                  |

Torr Scientific zinc selenide viewports are offered in CF, ISO and KF flange styles. The viewports comprise a laser quality zinc selenide optic with precise flatness, parallelism, scratch and dig specifications. The ultra high vacuum (UHV) CF versions are offered using high grade 304L or 316LN stainless steel flanges. Non-magnetic viewports are offered for low energy applications or surface science applications needing low magnetic fields. The non-magnetic viewports use a tantalum weld ring instead of the regular kovar weld ring. Flanges in 316L stainless steel are used for the high vacuum KF and ISO viewports. TSL viewports are manufactured in cleanroom conditions and helium leak tested, cleaned and packed to UHV standards. The rugged construction of the zinc selenide viewports allows bake-out to a maximum of 120°C with UHV performance, whilst the window offers broadband optical transmission to extreme infra-red. Options with anti-reflective coatings are also offered. Non-standard viewports can be manufactured on request, including re-entrant style microscope/camera viewports. Annealed copper gaskets and other component accessories are also supplied by TSL.

## Transmission Curve - Zinc Selenide



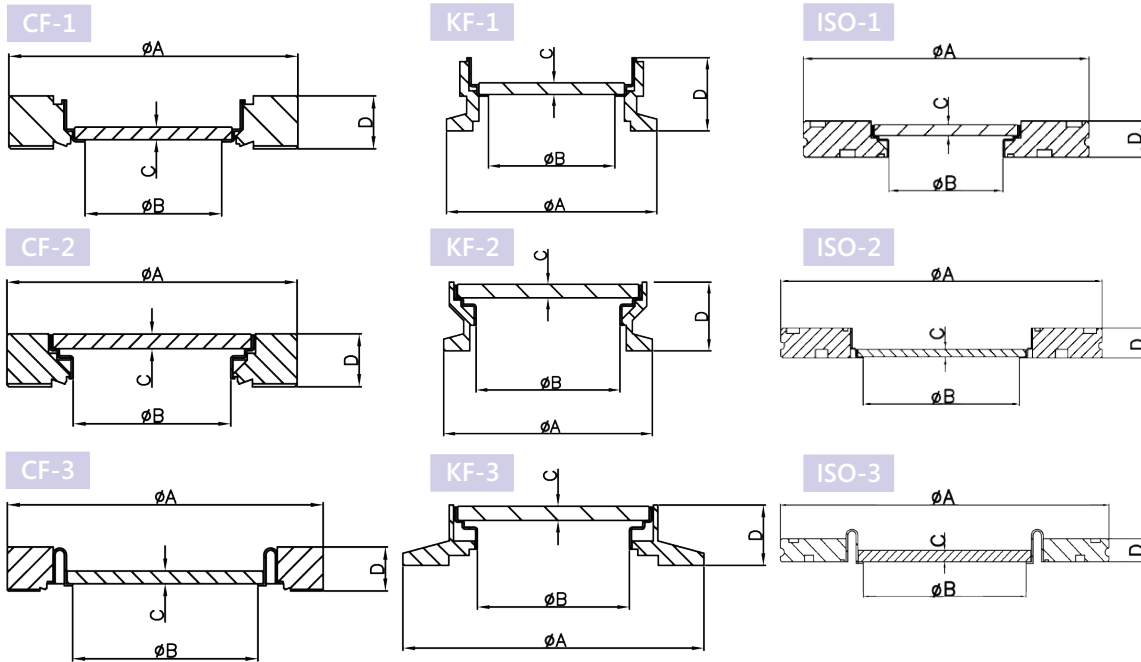
Please note that the optical transmission curves are approximations and should be used for reference only



# Zinc Selenide Zero Length Viewports



Zinc Selenide Zero Length Viewports



| Part Number     | Flange Type | A   | B   | C    | D    | Diagram | Flange Material | Weld Ring Material | Non-Magnetic |
|-----------------|-------------|-----|-----|------|------|---------|-----------------|--------------------|--------------|
| BVPZ16ZnSe      | NW16CF      | 34  | 15  | 1.5  | 12.7 | CF-1    | 304L            | Kovar              |              |
| BVPZ16ZnSe-LN   | NW16CF      | 34  | 15  | 1.5  | 12.7 | CF-1    | 316LN           | Kovar              |              |
| BVPZ16ZnSe-NM   | NW16CF      | 34  | 15  | 1.5  | 12.7 | CF-1    | 316LN           | Tantalum           | Yes          |
| BKVPZ16ZnSe     | KF16        | 25  | 15  | 1.5  | 15   | KF-1    | 304L            | Kovar              |              |
| BKVPZ25ZnSe     | KF25        | 40  | 20  | 2    | 18.5 | KF-1    | 304L            | Kovar              |              |
| BVPZ38ZnSe      | NW35CF      | 70  | 32  | 3    | 12.7 | CF-1    | 304L            | Kovar              |              |
| BVPZ38LAZnSe    | NW35CF      | 70  | 38  | 3.75 | 12.7 | CF-2    | 304L            | Kovar              |              |
| BVPZ38ZnSe-LN   | NW35CF      | 70  | 32  | 3    | 12.7 | CF-1    | 316LN           | Kovar              |              |
| BVPZ38LAZnSe-LN | NW35CF      | 70  | 38  | 3.75 | 12.7 | CF-2    | 316LN           | Kovar              |              |
| BVPZ38ZnSe-NM   | NW35CF      | 70  | 32  | 3    | 12.7 | CF-1    | 316LN           | Tantalum           | Yes          |
| BKVPZ40/32ZnSe  | KF40        | 55  | 32  | 3    | 12.7 | KF-1    | 304L            | Kovar              |              |
| BKVPZ40ZnSe     | KF40        | 55  | 38  | 3.75 | 18.5 | KF-2    | 304L            | Kovar              |              |
| BKVPZ50ZnSe     | KF50        | 75  | 38  | 3.75 | 15   | KF-3    | 304L            | Kovar              |              |
| BVPZ64ZnSe      | NW63CF      | 114 | 63  | 5    | 17.4 | CF-1    | 304L            | Kovar              |              |
| BVPZ64ZnSe-LN   | NW63CF      | 114 | 63  | 5    | 17.4 | CF-1    | 316LN           | Kovar              |              |
| BVPZ64ZnSe-NM   | NW63CF      | 114 | 63  | 5    | 17.4 | CF-1    | 316LN           | Tantalum           | Yes          |
| BISO63VPZZnSe   | ISO63       | 95  | 38  | 3.75 | 12   | ISO-1   | 304L            | Kovar              |              |
| BVPZ100ZnSe     | NW100CF     | 152 | 89  | 6.5  | 19.9 | CF-3    | 304L            | Kovar              |              |
| BVPZ100ZnSe-LN  | NW100CF     | 152 | 89  | 6.5  | 19.9 | CF-3    | 316LN           | Kovar              |              |
| BVPZ100ZnSe-NM  | NW100CF     | 152 | 89  | 6.5  | 19.9 | CF-3    | 316LN           | Tantalum           | Yes          |
| BISO100VPZZnSe  | ISO100      | 130 | 63  | 5    | 12   | ISO-2   | 304L            | Kovar              |              |
| BVPZ150ZnSe     | NW150CF     | 203 | 136 | 9.5  | 22.3 | CF-3    | 304L            | Kovar              |              |
| BVPZ150ZnSe-LN  | NW150CF     | 203 | 136 | 9.5  | 22.3 | CF-3    | 316LN           | Kovar              |              |
| BVPZ150ZnSe-NM  | NW150CF     | 203 | 136 | 9.5  | 22.3 | CF-3    | 316LN           | Tantalum           | Yes          |
| BISO160VPZZnSe  | ISO160      | 180 | 89  | 6.5  | 12   | ISO-3   | 304L            | Kovar              |              |
| BVPZ200ZnSe     | NW200CF     | 254 | 136 | 9.5  | 24.5 | CF-3    | 304L            | Kovar              |              |