KIMBALL PHYSICS INC. KPI

Excellence in electron and ion optics

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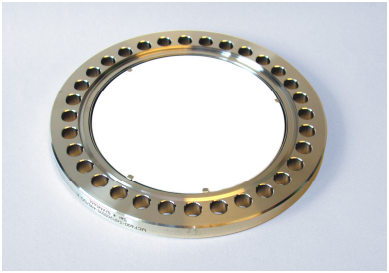
UHV PHOSPHOR SCREENS (RHEED APPLICATIONS)



The Kimball Physics UHV Phosphor Screen consists of a phosphor coating on a conductive glass plate mounted in a Multi-CF™ Thin Flange.

SPECIFICATIONS

UHV PHOSPHOR SCREENS (for RHEED)	
Phosphor Type	ZnS: Ag Type 1330 (P-22 Blue)
Saturation Threshold	3 x 10^{-2} Amps/cm^2
Peak Emitted Wavelength	450 nanometers
Maximum Input Power Density	**1 Watt/cm^2** CAUTION: Exceeding 1 Watt/cm^2 input power may damage the phosphor coating.
Minimum Power Density for screen response	5 x 10^{-5} Watts/cm^2
Mounting	2¾ CFF, 4½ CFF, 6 CFF or 8 CFF
Maximum Bakeout	350ºC
Operating Vacuum Level	UHV range, compatible with better than 10^{-8} torr

CARE AND HANDLING

- **CAUTION:** Use caution when handling the phosphor screen as the coating is extremely delicate. **DO NOT TOUCH THE PHOSPHOR COATING or damage will result. Banging or knocking the screen or its mount on a hard surface could cause the phosphor to flake off.**

- For protection the RHEED Phosphor Screen is shipped with a Plexiglas cover and steel base. This cover should be removed only by a qualified technician. Wear clean room gloves.
  Be careful not to touch or knock the phosphor surface while removing the cover.
  Remove the 12-point bolts.
  Carefully lift off the Plexiglas cover; this will expose the fragile phosphor surface.
  Holding the edge of the flange, remove phosphor screen with its flange from the steel base.
  Save the cover and base for storage or shipping.

- The phosphor screen is mounted in a CF flange for installation in vacuum.

- **After installation, ensure that the screen is properly grounded.**

- When using the phosphor screen detector, input power density to the screen must not exceed **1 Watt/cm^2**. To preserve screen brightness, it is advisable to use the lowest power density that provides a clear spot.
  CAUTION: Exceeding 1 Watt/cm^2 input power may damage the phosphor coating.

$$\text{Input Power Density} = \frac{\text{Beam Current x Beam Energy}}{\text{Spot Size (area)}}$$