

Standard P43 Phosphor Screens

Preparation & Features

As a manufacturer of open MCP detector systems, ProxiVision also offers standard phosphor screens that allow the two-dimensional, visual detection of electrons, charged particles, x-rays and UV-radiation. The standard sizes perfectly match with MCPs with active diameter of 18, 25 and 40 mm from Hamamatsu, Photonis and other MCP suppliers.

The phosphor coating is prepared by sedimentation of phosphor grains on a substrate. Our sedimentation process leads to a very homogeneous layer structure. The standard P43 thickness is 10-15 μm .

The screens are stable under vacuum conditions and can resist temperatures up to +200°C under UHV conditions. This stability is needed for the outgassing of a vacuum system.

Applications

- custom made MCP detector systems
- X-ray detection
- UV and electron detection
- beam profile analysis
- compatible with common MCPs with 18, 25 and 40 mm active diameter from various manufacturers

Features

- standard sizes
- attractive prices
- high efficiency
- homogeneous layer structure
- aluminized screens
- screens with ITO conductive underlay
- coating thickness 10-15 μm
- vacuum compatible to UHV stable up to 200°C in vacuum

Low Light Cameras Special Purpose Cameras	Short Exposure Cameras Pulse Generators	Fiber Optical Coupling Phosphor Coatings	Detector and Camera Upgrades and Customised Prototyping
Solar Blind & Visible Image Intensifiers	UV & X-Ray Cameras Corona Detection Cameras	Customised Facilities & Equipment	Vacuum & Open MCP Detectors

ProxiVision Part Number	Outer diameter (mm)	Effective diameter (mm)	Conductivity Aluminium layer	Conductivity ITO and Contact ring	Compatible with Hamamatsu MCPs
107360	25	19	√	-	F1094-01, F1094-09, F6584-01, F6584-09, F1094-01, F1094-074, F4293-25
107361	25	19	-	√	F1094-01, F1094-09, F6584-01, F6584-09, F1094-01, F1094-074, F4293-25
107362	32,8	26,4	√	-	F1552-01, F1552-09, F1552-074, F4297-07
107363	32,8	26,4	-	√	F1552-01, F1552-09, F1552-074, F4297-07
107364	50	42	√	-	F1217-01, F1217-074, F4296-10
107365	50	42	-	√	F1217-01, F1217-074, F4296-10

P43 Phosphor screen

composition Gd₂O₂S:Tb
 efficiency up to 600 ph / e- @ 10 keV
 light emission green (max. @ 545 nm)
 decay time 1 ms from 90% to 10%
 1.6 ms from 10% to 1%

The efficiency depend on parameters like grain size, layer thickness, presence of Al reflection layer and special manufacturing parameters like thermal processing.

- **Standard substrate**, material Borosilicate glass thickness = 1,75 mm
- **P43** Standard layer thickness 10-15 µm and 2-3 µm grain size
- **ITO layer** conductive underlay with indium tin oxide (ITO) to avoid electrostatic effects on the screen caused by electrons and ions.
- **Contact ring** to allow direct electric contact to a phosphor screen, a chromium ring is sputtered on the outer area of the substrate. This reduces the area of the phosphor down to the active diameter
- **Al reflection layer** conductive overlay, increase the light efficiency and reduce stray light transmission, Standard thickness 50 nm coating is applied.

How to get a quote

Send an e-mail with your contact data and the part number of the screen to info@proxivision.de or call +49 (0)6251-1703-70.

Warranty

The phosphor screens can withstand an electric field

of up to 6000 V/mm and can be used under vacuum conditions. The phosphor and Al-layer are very sensitive to any kind of mechanical stress.

Storage

We recommend to store phosphor screens in darkness under vacuum conditions or in Argon or dried nitrogen atmosphere.

P46 Phosphor instead of P43

Available on request on the same substrate with same screen parameters.

High resolution screens

Available on request on the same substrate .

Custom specific screens

If you would like to get a quote for an individual screen we send you our specification datasheet. You fill in your preferred parameters and tell us your application. After receipt we send you the quote for your individual phosphor screen.

Custom specific screens

- could be produced with P1, P11, P22, P43, P46, P47 and other phosphors/ szintillators (on request)
- reach best resolution for your application
- reach best efficiency for your application
- fit into your mechanic setup

The effort to produce individual screens is much higher. Be aware that the price for such an individual screen is higher than the price for standard P43 phosphor screens.



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