

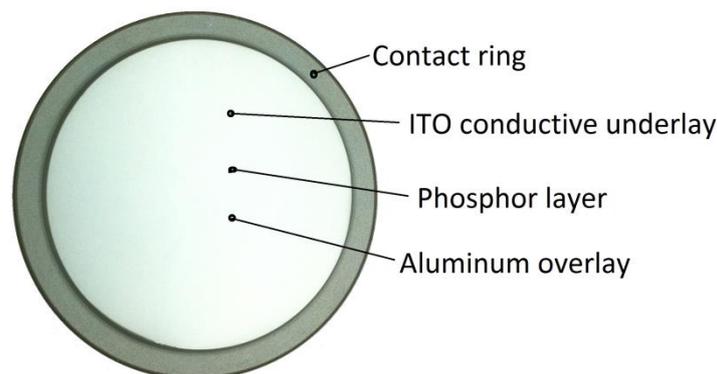
Phosphor Screens & Scintillators

Preparation & features

GIDS-GmbH offers phosphor screens in P43, P22, P46 and P47 that allow the two-dimensional, visual detection of electrons, protons, heavy ions, x-rays and UV-light. Our phosphor screens perfectly match with our MCP's with active diameter of 18, 25, 40 and 75 mm see [MCP-Types.pdf](#) and they also match with the MCP's from Hamamatsu, Photonis, Burle and other MCP suppliers.

The phosphor coating is prepared by brushing process. The phosphor grains are agitated through a sieve or muslin gauze upon the plate which has been coated with some kind of binder. The phosphor is then brushed into the binder layer. The result in an adhesive bonding of the phosphor grains with high compressed density. Our brushing process leads to a very homogeneous layer structure. The layer thickness is 6-10 μm .

The screens are stable under ultrahigh vacuum (UHV) conditions and can resist temperatures up to +200°C without problems. This stability is needed for the outgassing of a vacuum system.



APPLICATIONS

- custom made MCP detector systems
- X-ray detection
- UV and electron detection
- Proton and heavy ion detection
- Neutron detection
- beam profile analysis
- could be used with commercial available MCP's with active diameter of 18, 25, 40 and 75 mm

FEATURES

- P22, P43, P46 and P47 available (other types on request)
- attractive prices
- high efficiency
- homogeneous layer structure
- aluminized screens available
- screens with ITO conductive underlay available
- coating thickness 6-10 μm
- vacuum compatible to UHV stable up to 200°C in vacuum



Part No	Outer	Min Effective	Conductivity	Conductivity
	diameter (mm)	diameter (mm)	Aluminium layer	ITO underlay
SCR-18-AL	25	18	√	–
SCR-18-ITO	25	18	-	√
SCR-25-AL	33	25	√	-
SCR-25-ITO	33	25	-	√
SCR-40-AL	50	40	√	-
SCR-40-ITO	50	40	-	√
SCR-75-AL	88	75	√	-
SCR-75-ITO	88	75	-	√

P43 Phosphor screen

composition	Gd ₂ O ₂ S: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.

- **Substrate**, material B270 glass with thickness h = 2,2 mm (for **SCR-75** h = 3mm)
- **P43** Standard layer thickness is 6 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.
- **Al reflection layer** conductive overlay, increase the light efficiency and reduce stray light transmission, Standard thickness 60 nm coating is applied.

How to specify? Part No - Phosphor

Example **SCR-40-AL-P43**
P43 screen on a 50 mm substrate with active diameter 40 mm and aluminum over coating.

Storage

We recommend storage of phosphor screens in darkness under vacuum conditions or in Argon or dried nitrogen atmosphere.

Other phosphor types

P22, P46, P47 and others (on request) are available on our substrates with same screen parameters only the thickness of the phosphor layer changes due to other grain size.

High resolution screens

Available on request in 3, 4 and 5µm.

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 other phosphors/ szintillators (on request)
- coating other substrates like quartz glass, fiber optic plate, fiber optic taper, prisms and others
- other layer thickness
- reach best resolution for your application
- reach best efficiency for your application
- fit into your mechanic setup

How to get a quote

Send an e-mail with your contact data and the part number of the screen to info@gids-gmbh.com or call +49 (0)621-820394-34 or send a fax to +49 (0)621-820394-33.

