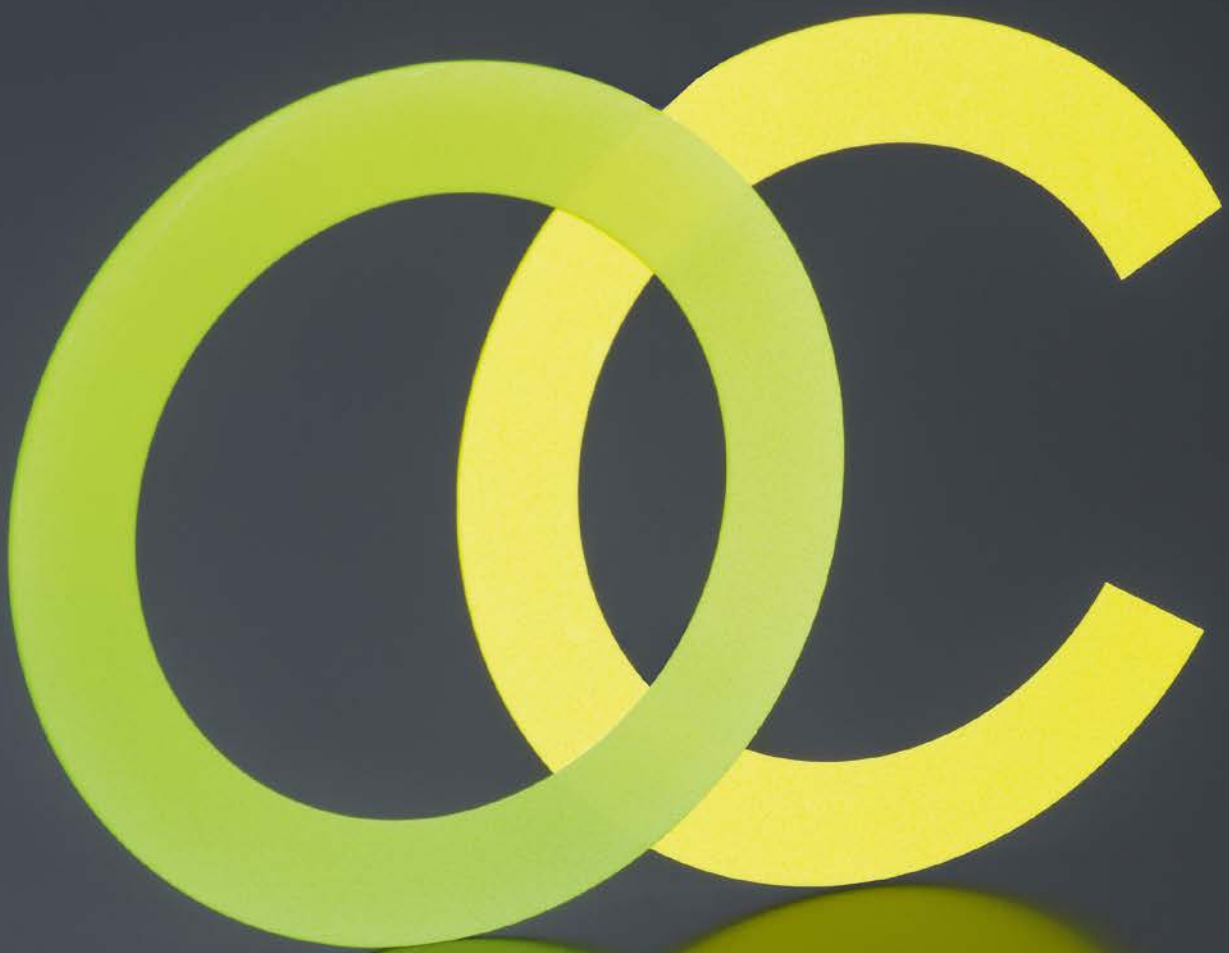
SCHOTT
glass made of ideas

Dynamic Ceramic Converter

Enabler for High Luminance Light Sources



Dynamic Ceramic Converter – Enabling high luminance for your laser pumped phosphor light sources

SCHOTT experts have developed phosphor ceramic converter components for laser pumped phosphor light sources. They enable superior luminance in laser phosphor wheels for digital projectors.

Thanks to this new material, laser projectors offer reliable performance, specifically in terms of brightness and color that remains constant over time. There is no need to change bulbs, which significantly lowers the total cost of ownership and energy costs. In addition, they do not require a warm-up period and are free of any environmentally harmful mercury.

Since this component is a pure, inorganic phosphor material, it exhibits a high temperature stability and outstanding heat conductivity. This leads to superior efficiency and reliability, which makes SCHOTT's Ceramic Converter a unique solution on the market.

The basis for this is an ingenious, reproducible production process that delivers reliable, quality-tested products.
To address the complete color gamut for digital projection, SCHOTT Ceramic Converter components are available in either yellow or green ceramic phosphor material.
In addition, SCHOTT has the processing capability to manufacture customized products including sub assemblies for various applications.

Advantages

Your brighter solution from SCHOTT is based on:

- Inorganic material for a long lifetime performance:
  - High temperature stability
  - Good heat conductivity
  - Customized scatter-properties
  - High Efficacy
- Fit to color gamut
- Ability to design to customer needs in size and color

Contact our experts anytime to discuss your personal product needs! Together we will find your perfect solution!

Applications

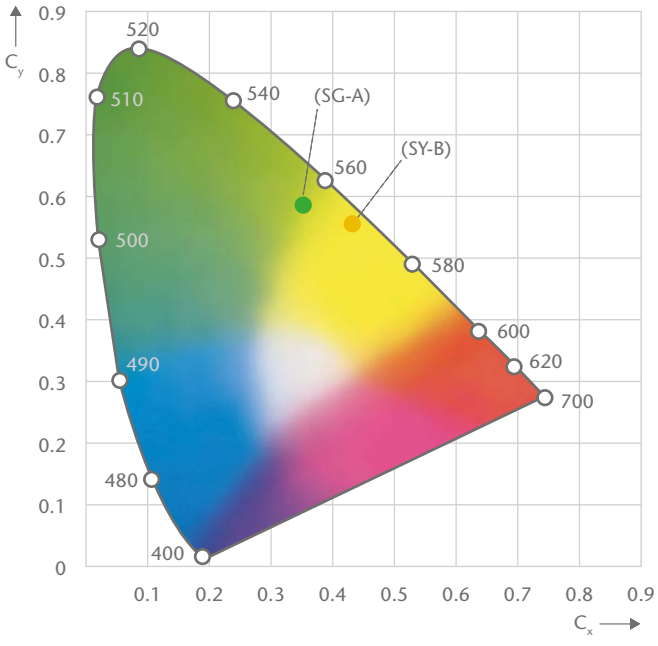
- Phosphor wheel for digital projection
- Specialty lighting such as spotlights and search lights
- High luminance light sources for microscopy and machine vision and general lighting

Supply Forms

SCHOTT is manufacturing ceramic phosphor converters for digital projection

- from two standard materials such as yellow (SY) and green (SG) and
- in different standard geometries.

Customized geometries and materials are available on request.
e.g.: for applications like specialty and general lighting

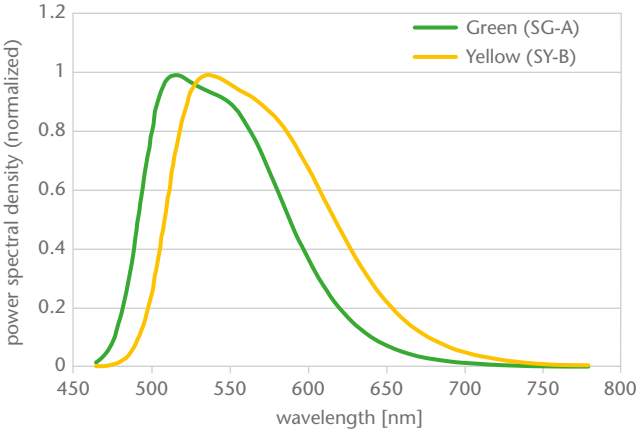


Color coordinates of yellow and green Ceramic Converter material in the CIE 1931/2° color space

Technical Details

Technical features	Yellow phosphor material	Green phosphor material	Remarks
Tradename	SY	SG	
Type	SY-B	SG-A	
Optical specifications			
Phosphor conversion efficacy	325 ± 15 lm/W	330 ± 20 lm/W	
Emission color coordinates	c_x: 0.417 ± 0.005 c_y: 0.560 ± 0.005	c_x: 0.337 ± 0.005 c_y: 0.591 ± 0.005	Color coordinates are defined within the CIE 1931/2° color space
Material properties			
Thermal quenching stability @ 170 °C	>89 %	>92 %	Thermal quenching stability is measured on samples that are placed on a heating plate at 170 °C and is defined as the ratio of efficacy at 170 °C with respect to room temperature.
Temperature damage threshold	>250 °C	>250 °C	Operation above 250 °C is not recommended.
Thermal conductivity in temperature range from 25 °C to 200 °C	5 –10 W/(m·K)	data on request	Thermal conductivity is temperature dependent. Please contact SCHOTT for details.

Please contact SCHOTT
- For details on measurement methods and precision
- For customer specific material developments



Outer Diameter mm	Inner Diameter mm	Thickness mm	Available shape		
			O ring	C ring (angle)	Segment
88	74	0.2	available	300°/310°	On demand
64	50	0.2	available	300°/310°	On demand
49	35	0.2	available	300°/310°	On demand
35	25	0.2	available	300°/310°	On demand

Customized geometries are possible for large volume. Please contact SCHOTT representative person for more information
- The thickness of all rings and segments is 200 –0/+50 µm
- The products have a polished surface. Surface quality is specified with
  – a surface roughness (R_a) smaller than 0.1 µm and
  – maximum size of surface defects (scratch/dig) is 60/40 according to MIL-PRF-13830B
- Detailed drawings of the products are available on request

Advanced Optics
SCHOTT AG
Hattenbergstrasse 10
55122 Mainz
Germany
Phone +49 (0)6131/66-1812
Fax +49 (0)3641/2888-9047
info.optics@schott.com
www.schott.com/advanced_optics

carbon neutral
natureOffice.com | DE-077-022910
print production

Version December 2019