

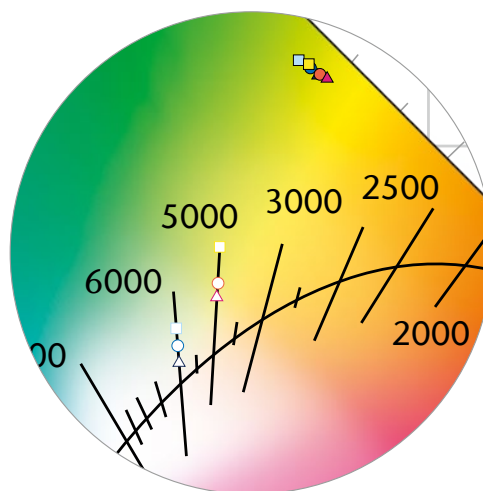
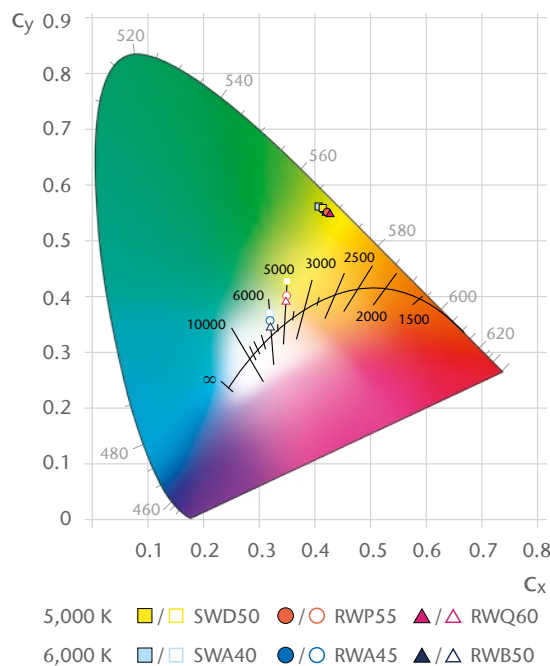
Data for green and yellow  
converter material included

# Static Ceramic Converter

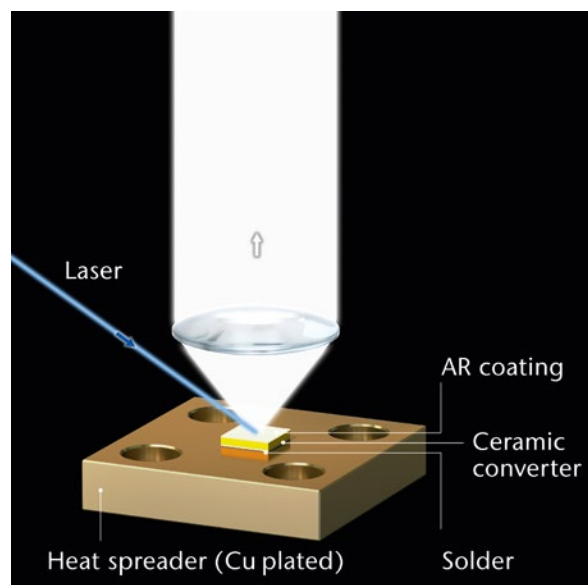
High Luminance Light Sources  
6,000 K and 5,000 K

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

SCHOTT converter allow high irradiance and superior luminance. Assembled on a heat sink these components enable compact light sources without moving parts. This is a 100% inorganic solution offering high reliability.\* SCHOTT offers three types of white static converter materials for correlated color temperatures (CCT) of 6,000 K and 5,000 K each, with different irradiance limits, to serve various applications.

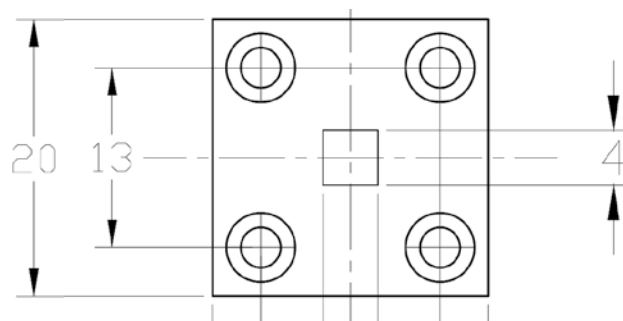


## How does it work for white light?



For white light generation, the material is designed for diffuse reflection of just the right portion of blue light to meet the desired color coordinates.

## White standard samples



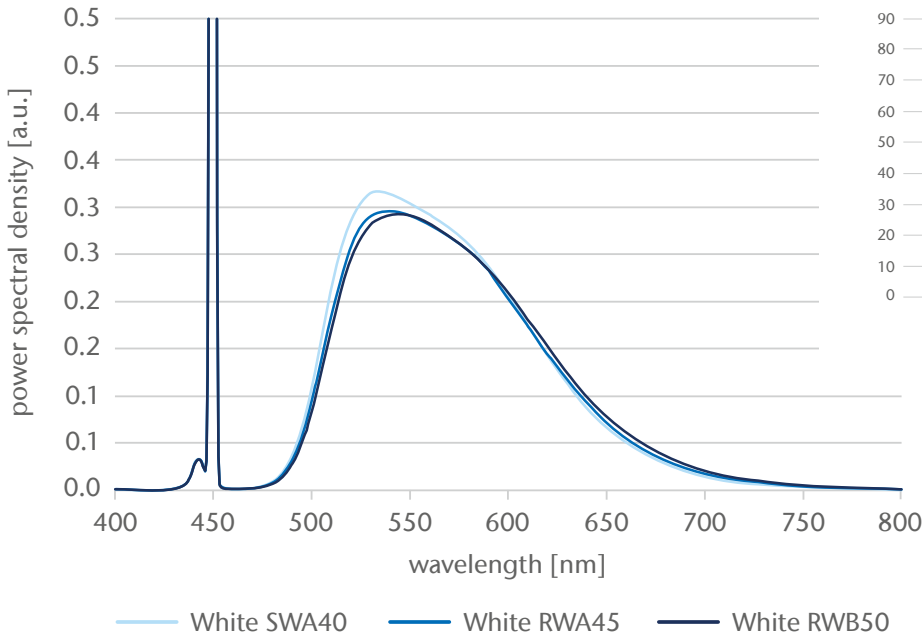
Standard samples available with heat spreader dimensions of 20 x 20 x 4 mm and phosphor material dimensions of 4 x 4 x 0.150 mm.

- Available without holes for large volumes.
- Detailed drawings are available on request.

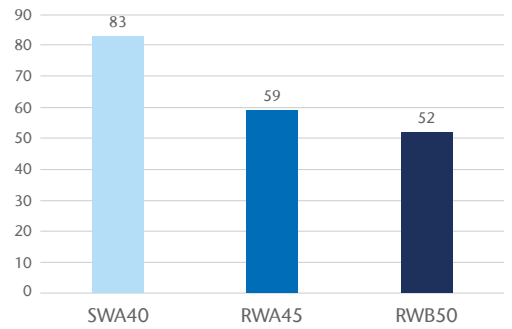
\* Operation above 65 °C on the heat spreader is not recommended and will void any warranty.

# SCHOTT offers three types of white 6,000 K material

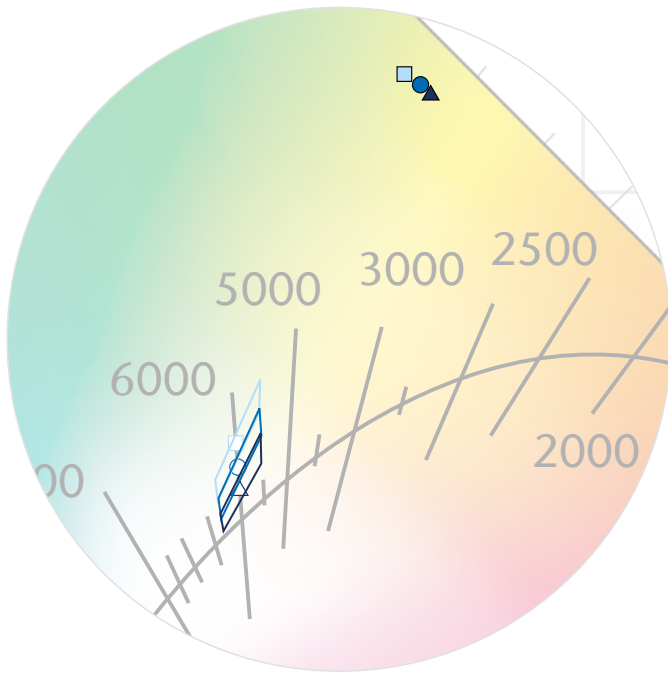
Emission spectrum



Irradiance limit (typical value) W/mm<sup>2</sup>



Tolerance window for white color coordinates ( $c_x$  and  $c_y$ )



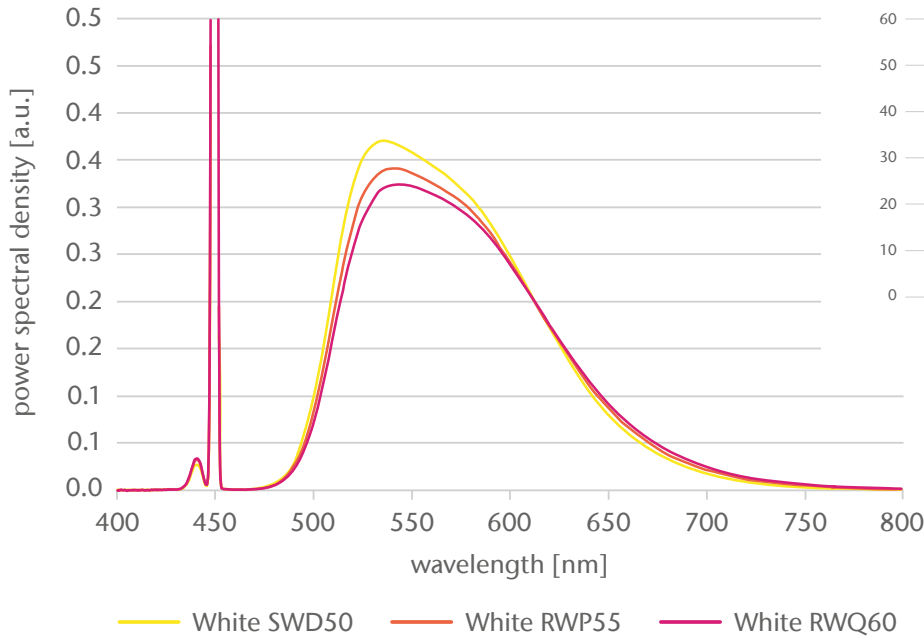
Tolerance window

	$c_x$	$c_y$
White SWA40	0.3330	0.4076
	0.3093	0.3548
	0.3108	0.3436
	0.3329	0.3904
White RWA45	0.3330	0.4076
	0.3329	0.3923
	0.3107	0.3449
	0.3122	0.3337
White RWB50	0.3327	0.3757
	0.3329	0.3923
	0.3328	0.3795
	0.3118	0.3363
White RWB50	0.3133	0.3253
	0.3327	0.3634
	0.3328	0.3795

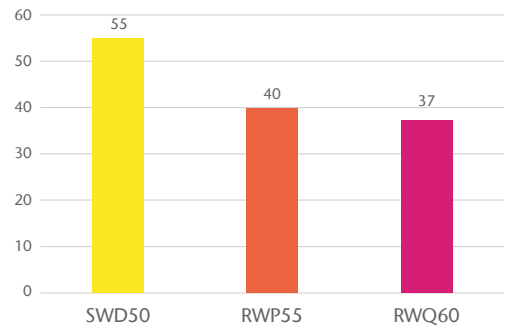
Visualization of spec in the CIE 1931 color space.

# SCHOTT offers three types of white 5,000 K material

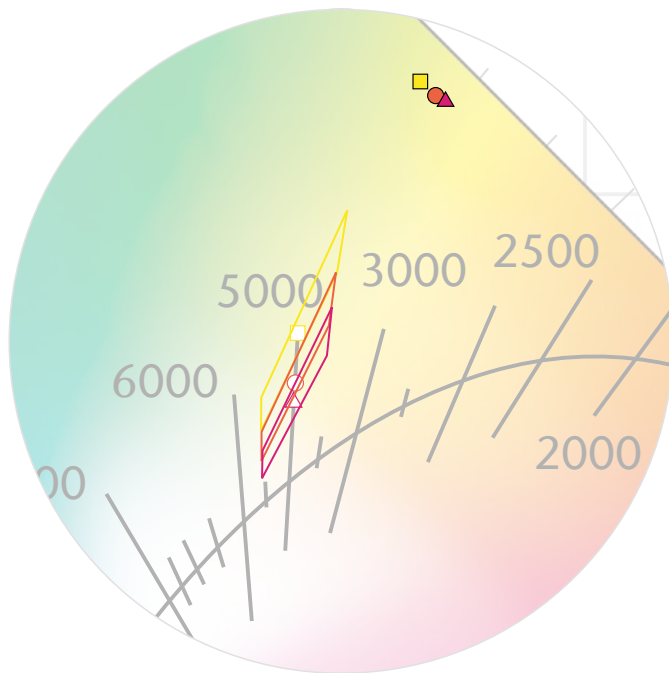
Emission spectrum



Irradiance limit (typical value) W/mm<sup>2</sup>



Tolerance window for white color coordinates ( $c_x$  and  $c_y$ )



Tolerance window

	$c_x$	$c_y$
White SWD50	0.3787	0.4952
	0.3330	0.3965
	0.3328	0.3797
	0.3739	0.4645
White RWP55	0.3787	0.4952
	0.3738	0.4640
	0.3328	0.3795
	0.3326	0.3633
White RWQ60	0.3692	0.4354
	0.3738	0.4640
	0.3708	0.4450
	0.3327	0.3688
White RWQ60	0.3326	0.3530
	0.3664	0.4178
	0.3708	0.4450

Visualization of spec in the CIE 1931 color space.

# Technical details

## White 6,000 K (150 µm die thickness)

Optical specifications	White SWA40	White RWA45	White RWB50	
Conversion efficacy [lm/W]	> 240	> 230	> 220	
Emission color coordinates $c_x$	0.4078	0.4155	0.4223	Tolerance window of $c_x/c_y$ color coordinates is $\pm 0.007$ .
Emission color coordinates $c_y$	0.5615	0.5565	0.5521	
White color coordinates $c_x$	0.3195	0.3204	0.3210	Tolerance window see previous pages.
White color coordinates $c_y$	0.3699	0.3580	0.3479	
Emission color coordinates $u'$	0.18282	0.18784	0.19238	
Emission color coordinates $v'$	0.56638	0.56612	0.56590	
White color coordinates $u'$	0.18798	0.19255	0.19659	Tolerance window see previous pages.
White color coordinates $v'$	0.32639	0.32274	0.31952	
Material properties				
Irradiance limit (typical value) [W/mm <sup>2</sup> ]	83	59	52	Depends on laser spot size.*

## White 5,000 K (150 µm die thickness)

Optical specifications	White SWD50	White RWP55	White RWQ60	
Conversion efficacy [lm/W]	> 260	> 250	> 240	
Emission color coordinates $c_x$	0.4142	0.4229	0.4287	Tolerance window of $c_x/c_y$ color coordinates is $\pm 0.007$ .
Emission color coordinates $c_y$	0.5598	0.5533	0.5490	
White color coordinates $c_x$	0.3520	0.3500	0.3488	Tolerance window see previous pages.
White color coordinates $c_y$	0.4286	0.4063	0.3926	
Emission color coordinates $u'$	0.18640	0.19237	0.19642	
Emission color coordinates $v'$	0.56677	0.56627	0.56594	
White color coordinates $u'$	0.18930	0.19512	0.19895	Tolerance window see previous pages.
White color coordinates $v'$	0.51851	0.50961	0.50378	
Material properties				
Irradiance limit (typical value) [W/mm <sup>2</sup> ]	55	40	37	Depends on laser spot size.*

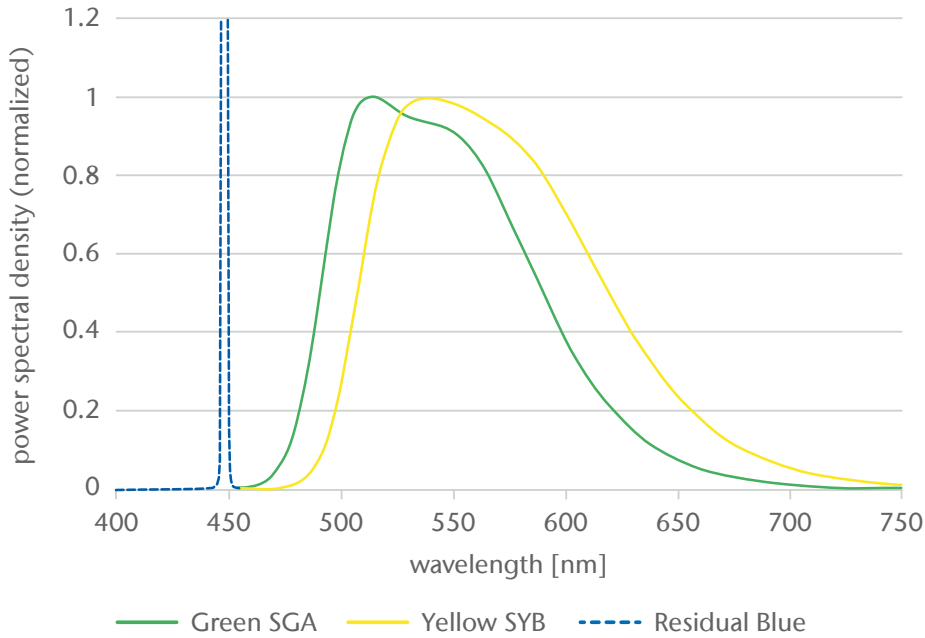
\* Measured with spot size of 400 µm diameter.  
 More details see webpage: <https://www.schott.com/ceramic-converter>

### Notes:

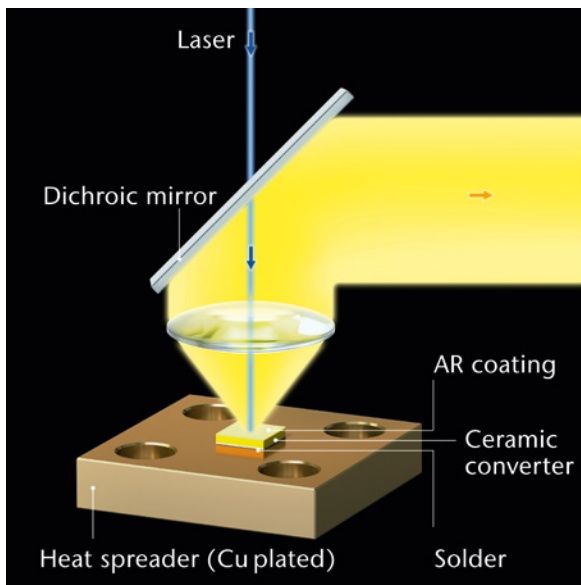
White color coordinates change with blue laser wavelength and measured at blue laser wavelength of 449.5 nm.  
 Emission spectrum defined by the power spectral density > 465 nm.  
 Efficacy specified for emission spectrum. White efficacy higher, since luminous flux of blue light is added.  
 AR coating optimized for blue light incident angle of 60°.  
 Efficacy and color coordinates measured with 60° incident angle of blue laser at low power. Emission is detected in normal direction.

# SCHOTT offers green and yellow converter material

## Emission spectrum



## How does it work for green and yellow light?



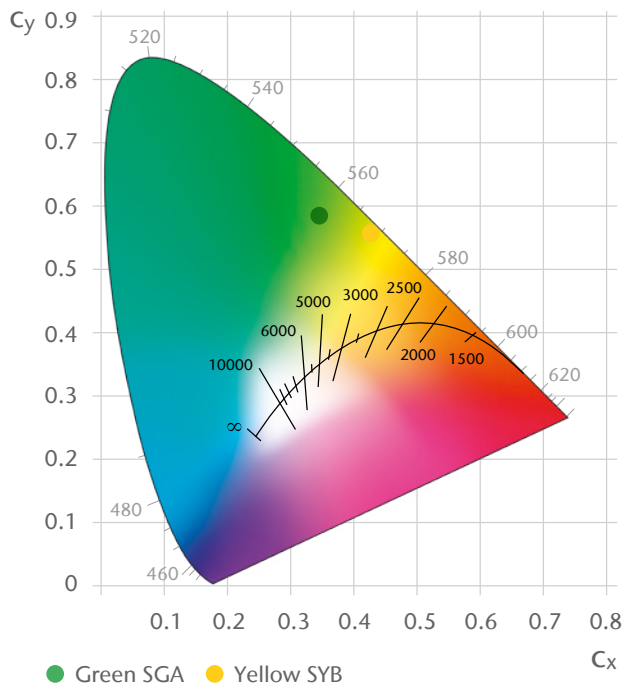
Blue laser light is applied via a dichroic mirror. This also blocks residual blue light, that is reflected from the sample. The pure emission spectrum of green or yellow light serves applications like digital projection or stage lighting.

# Technical details

## Green, Yellow (100 µm and 150 µm die thickness)

Technical features			Remarks
Tradename	Green SGA35	Yellow SYB35	
Type	Anti-reflection coated ceramic on heat spreader		
Optical specifications for 100 µm		Emission spectrum	
Conversion efficacy [lm/W]	> 280	> 280	
Color coordinates $c_x$	0.333	0.417	Tolerances $\pm 0.01$
Color coordinates $c_y$	0.590	0.557	
Material properties for 100 µm			
Irradiance limit (typical value) [W/mm <sup>2</sup> ]	50	50	Depends on laser spot size.*
Optical specifications for 150 µm		Emission spectrum	
Conversion efficacy [lm/W]	> 280	> 280	
Color coordinates $c_x$	0.333	0.417	Tolerances $\pm 0.01$
Color coordinates $c_y$	0.588	0.557	
Material properties for 150 µm			
Irradiance limit (typical value) [W/mm <sup>2</sup> ]	40	40	Depends on laser spot size.*

\* Measured with spot size of 600 µm diameter.  
 More details see webpage: <https://www.schott.com/ceramic-converter>



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

Version January 2022 | SCHOTT reserves the right to make specification changes in this product flyer without notice.



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