



# FUSION Exo Beam 10 Photometric Report

Report 2021-04-22-1

GLP German Light Products GmbH  
GLP LightLab

Maximum Total Lumens	2480 lm
Maximum Intensity	4460000 cd
CRI	74
Energy Efficiency Class	B
Energy Efficiency Index	0.91
Power Consumption	168 $\frac{\text{kWh}}{1000\text{h}}$
Measurement Date	2021-04-22 12:11
Analysis Date	2021-07-14 11:29
Measurement SW Version	2.1.2
Analysis SW Version	2.4.1

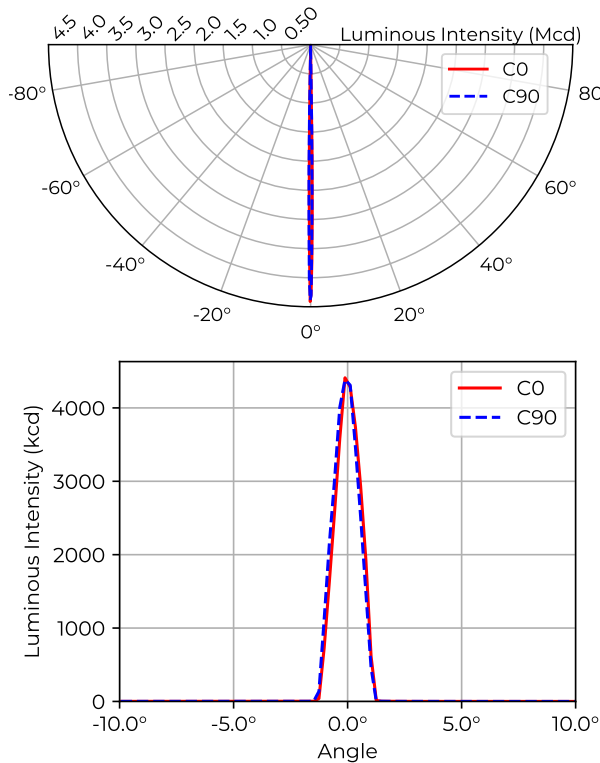




## Contents

<b>1</b>	<b>Light Distribution Normal, White Beam</b>	<b>2</b>
<b>2</b>	<b>White Quality – White Chip</b>	<b>3</b>
2.1	TM-30-15 Detail Plots . . . . .	4
2.2	TLCI-2012 Results . . . . .	6

# 1 Light Distribution Normal, White Beam



Type B measurement, 1296 data points.

Table 1: Opening angles for different intensity thresholds. Normal, White

		C0	C90
Beam Angle	50 %	1.4°	1.4°
Field Angle	10 %	2.2°	2.3°
Cutoff Angle	3 %	2.4°	2.5°

Table 2: Luminous flux, integrated over the beam for several minimum threshold intensities. Normal, White

		Flux (lm)
Half-Peak Output	@50 %	1530
Tenth-Peak Output	@10 %	2400
Total Lumen Output	@3 %	2480

$$\text{diameter} = 0.049 \times \text{distance}$$

$$\text{illuminance} = \frac{4\,360\,000 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 1: Polar and cartesian light intensity distributions. Normal, White

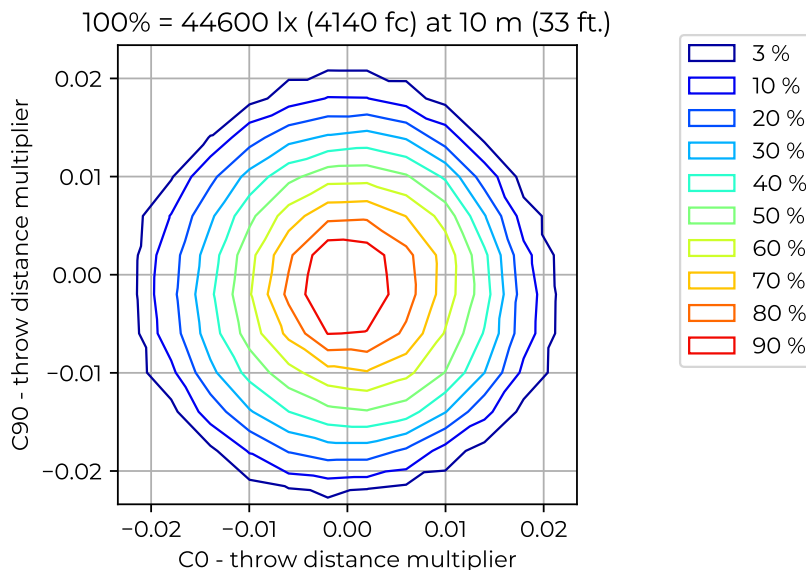


Figure 2: Iso-illuminance diagram of projected beam. Normal, White  
dist. from origin = throw dist. × throw dist. multiplier

Table 3: Quick calculation diagram for illuminance and beam diameter. Normal, White

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	0.049	0.25	0.37	0.49	0.62	0.74	0.87	0.99	1.1	1.2	
Illuminance [lx]	4.36M	170k	78k	44k	28k	19k	14k	11k	8.6k	7.0k	

## 2 White Quality – White Chip

Table 4: Summary for White Chip spectral measurement results and color metrics.

Metric	Value
CCT	7931 K
CCT $D_{uv}$	-0.0015
CRI $R_a$	74
CRI $R_g$	-17
TLCI-2015	45
TM-30-15 $R_f$	93
TM-30-15 $R_g$	69
CIE 1931 $x$	0.297
CIE 1931 $y$	0.303
CIE 1960 $u$	0.196
CIE 1960 $v$	0.301

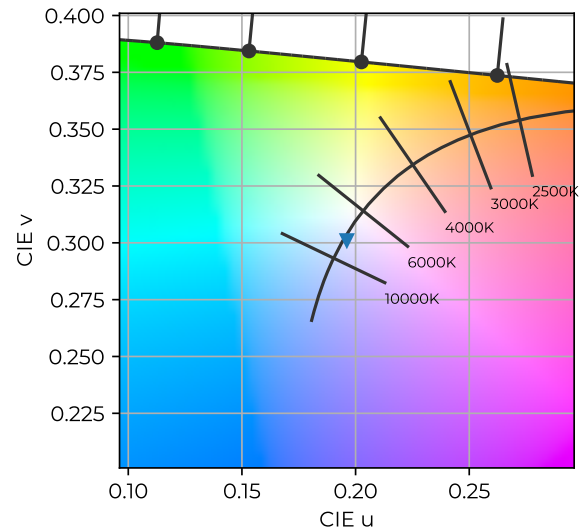


Figure 3: Color coordinates in CIE 1960 chromaticity diagram. White Chip

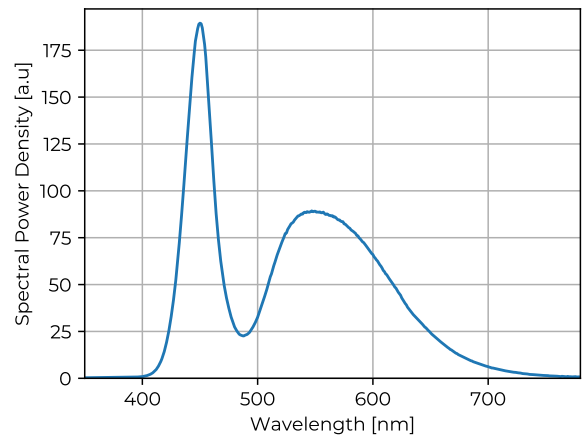
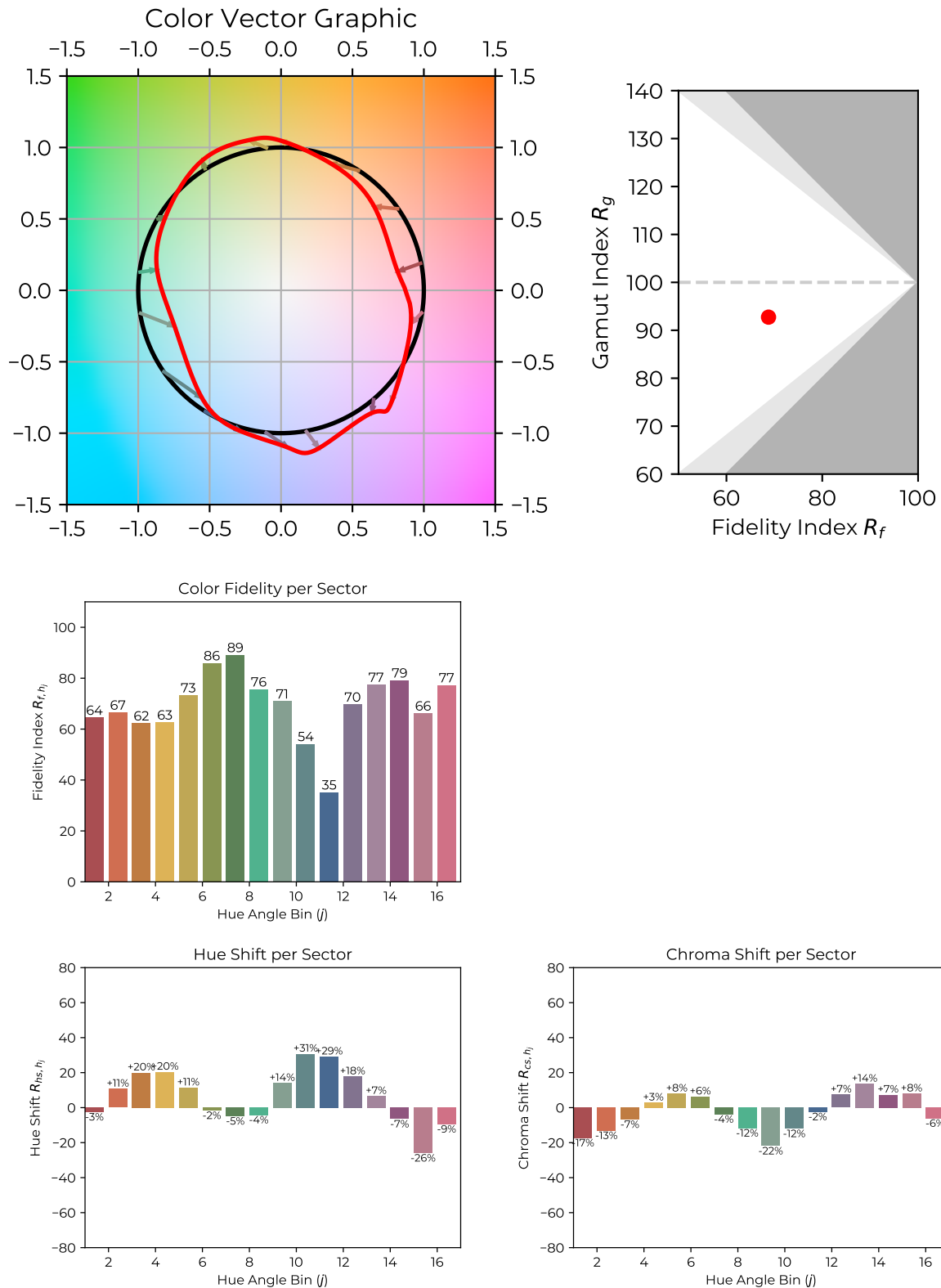
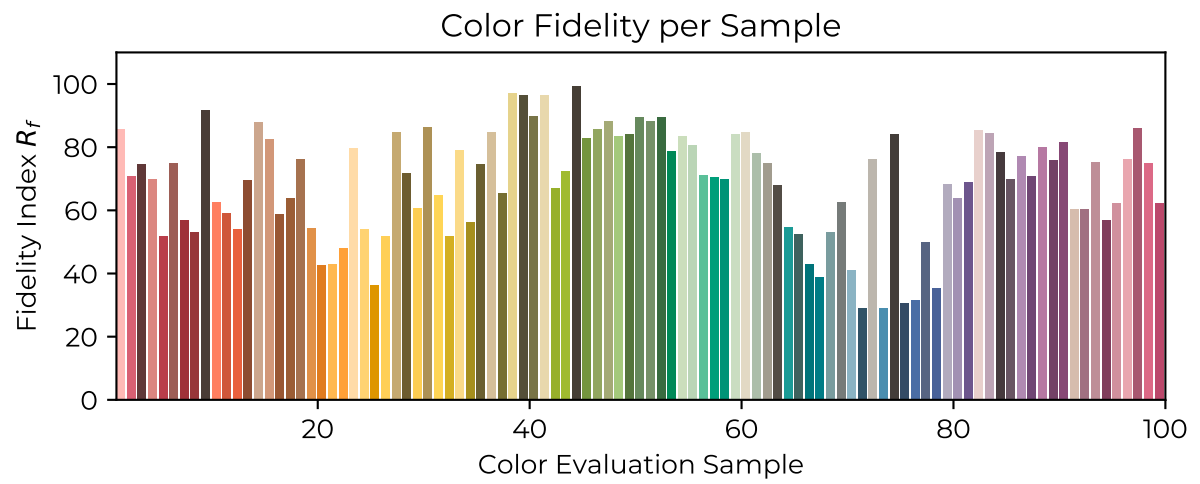


Figure 4: Measured Spectral Power Distribution of light source. White Chip

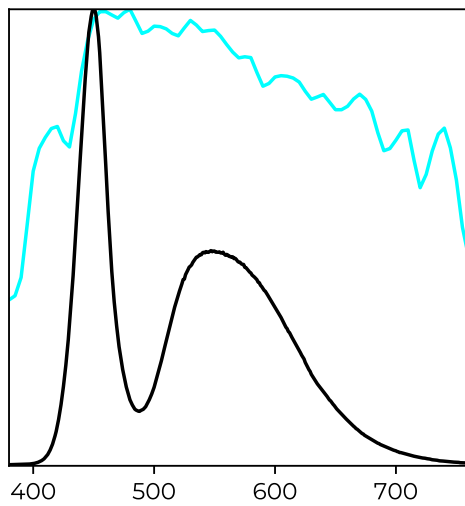
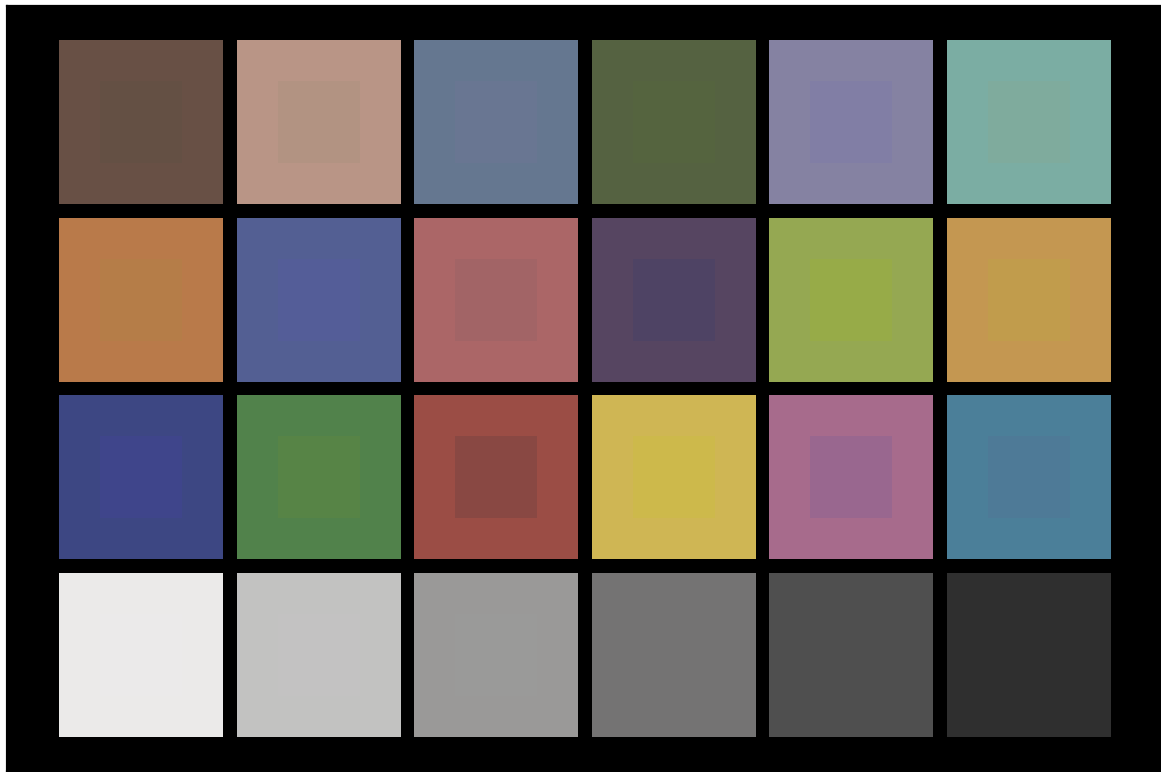
## 2.1 TM-30-15 Detail Plots





## 2.2 TLCI-2012 Results

FUSION Exo Beam 10 White Chip : CCT = D5913 -3.1, TLCI = 45



Sector	Lightness	Chroma	Hue
R	7	7	7
R/Y	2	2	2
Y	6	6	6
Y/G	3	3	3
G	4	4	4
G/C	4	4	4
C	5	5	5
C/B	5	5	5
B	4	4	4
B/M	7	7	7
M	8	8	8
M/R	8	8	8