

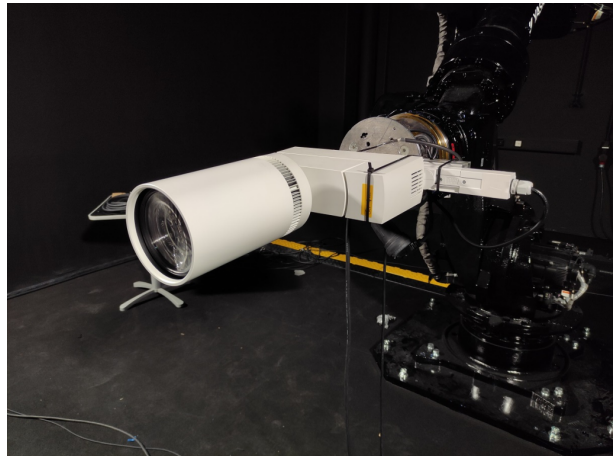


Agilio DOP Photometric Report

Report 2021-05-25-1

GLP German Light Products GmbH
GLP LightLab

Maximum Total Lumens	6490 lm
Maximum Intensity	81700 cd
CRI	96
Energy Efficiency Class	A
Energy Efficiency Index	0.25
Power Consumption	119 $\frac{\text{kWh}}{1000\text{h}}$
Measurement Date	2021-05-25 16:00
Analysis Date	2021-07-14 11:33
Measurement SW Version	2.2.1
Analysis SW Version	2.4.1





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1 Light Distribution

Table 1: Summary of beam opening angles for different fixture configurations.

Beam	Beam Angle (50 %)		Field Angle (10 %)		Cutoff Angle (3 %)	
	C0	C90	C0	C90	C0	C90
White Full, Wide	36°	36°	56°	56°	61°	61°
White Full, Medium	23°	23°	36°	35°	39°	39°
Full White, Narrow	17°	17°	21°	21°	24°	23°

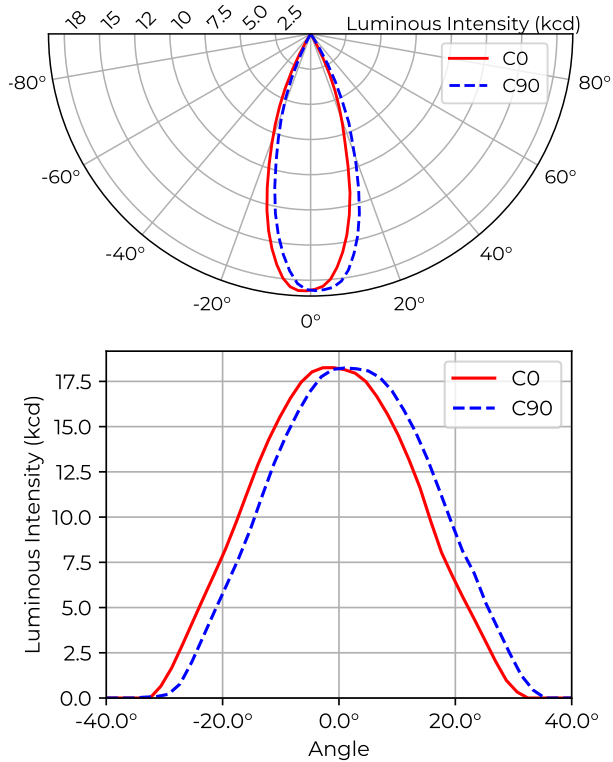
Table 2: Summary of luminous flux and intensity for different fixture configurations.

Beam	Total Lumen Output	Peak Luminous Intensity)
White Full, Wide	6.49 klm	18.3 kcd
White Full, Medium	6.27 klm	43.8 kcd
Full White, Narrow	5.76 klm	81.7 kcd

Table 3: Approximate illuminance and beam diameter at different projection distances, calculated with the inverse-square law. The approximation is valid only for large distances, compared to the size of the fixture output port.

Beam	Parameter	Factor	Projection Distance [m]									
			5	7.5	10	12.5	15	17.5	20	22.5	25	
White Full, Wide	Diameter [m]	1.3	6.4	9.6	13	16	19	22	26	29	32	
	Illuminance [lx]	18.2k	730	320	180	120	81	59	45	36	29	
White Full, Medium	Diameter [m]	0.81	4.1	6.1	8.1	10	12	14	16	18	20	
	Illuminance [lx]	42.2k	1.7k	750	420	270	190	140	110	83	68	
Full White, Narrow	Diameter [m]	0.61	3.0	4.6	6.1	7.6	9.1	11	12	14	15	
	Illuminance [lx]	80.7k	3.2k	1.4k	810	520	360	260	200	160	130	

1.1 White Full, Wide Beam



Type B measurement, 1296 data points.

Table 4: Opening angles for different intensity thresholds. White Full, Wide

	C0	C90
Beam Angle 50 %	36°	36°
Field Angle 10 %	56°	56°
Cutoff Angle 3 %	61°	61°

Table 5: Luminous flux, integrated over the beam for several minimum threshold intensities. White Full, Wide

		Flux (lm)
Half-Peak Output @50 %		4110
Tenth-Peak Output @10 %		6340
Total Lumen Output @3 %		6490

$$\text{diameter} = 1.3 \times \text{distance}$$

$$\text{illuminance} = \frac{18\,200 \text{ lx}}{(\text{distance [m]})^2}$$

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

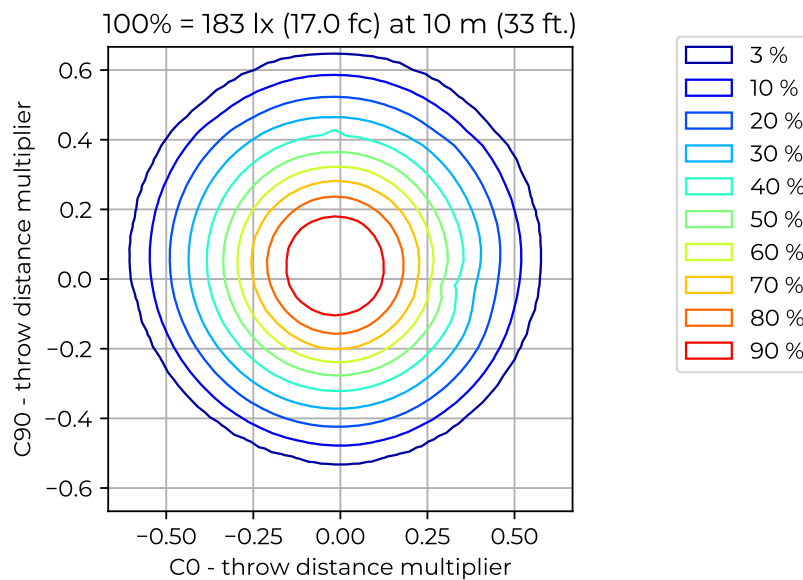
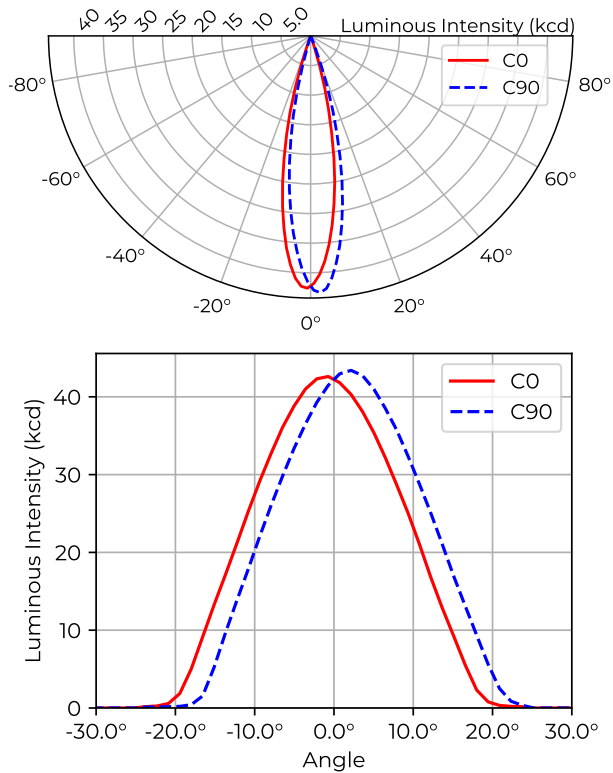


Figure 2: Iso-illuminance diagram of projected beam. White Full, Wide
dist. from origin = throw dist. × throw dist. multiplier

Table 6: Quick calculation diagram for illuminance and beam diameter. White Full, Wide

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	1.3	6.4	9.6	13	16	19	22	26	29	32	
Illuminance [lx]	18.2k	730	320	180	120	81	59	45	36	29	

1.2 White Full, Medium Beam



Type B measurement, 1296 data points.

Table 7: Opening angles for different intensity thresholds. White Full, Medium

	C0	C90
Beam Angle 50 %	23°	23°
Field Angle 10 %	36°	35°
Cutoff Angle 3 %	39°	39°

Table 8: Luminous flux, integrated over the beam for several minimum threshold intensities. White Full, Medium

		Flux (lm)
Half-Peak Output @50 %		3930
Tenth-Peak Output @10 %		6120
Total Lumen Output @3 %		6270

$$\text{diameter} = 0.81 \times \text{distance}$$

$$\text{illuminance} = \frac{42\,200 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 3: Polar and cartesian light intensity distributions. White Full, Medium

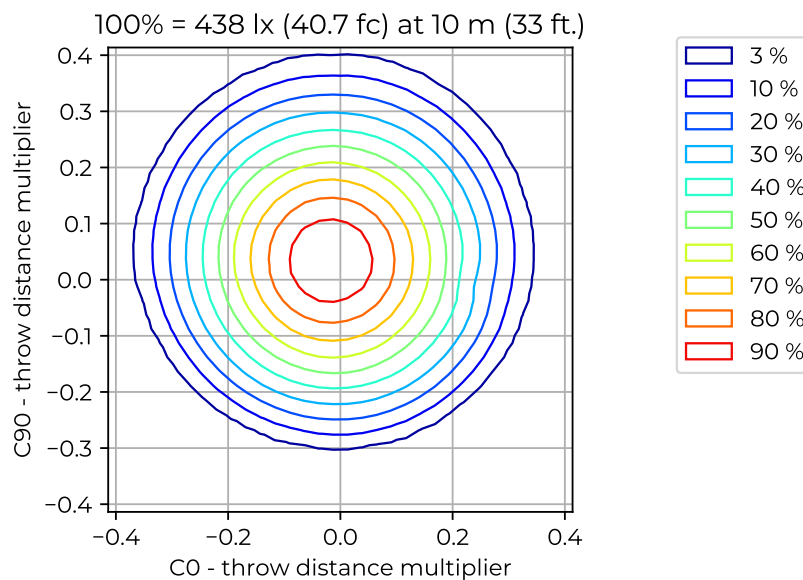
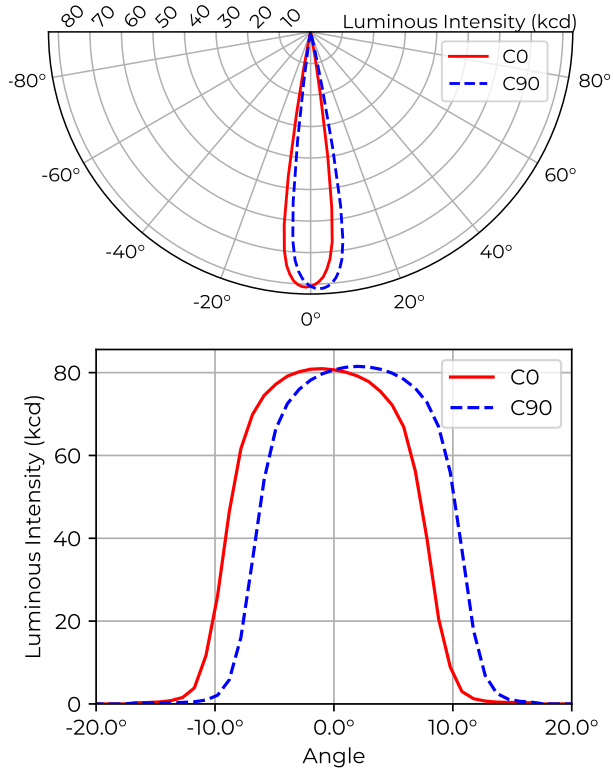


Figure 4: Iso-illuminance diagram of projected beam. White Full, Medium
dist. from origin = throw dist. × throw dist. multiplier

Table 9: Quick calculation diagram for illuminance and beam diameter. White Full, Medium

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	0.81	4.1	6.1	8.1	10	12	14	16	18	20	
Illuminance [lx]	42.2k	1.7k	750	420	270	190	140	110	83	68	

1.3 Full White, Narrow Beam



Type B measurement, 1296 data points.

Table 10: Opening angles for different intensity thresholds. Full White, Narrow

		C0	C90
Beam Angle	50 %	17°	17°
Field Angle	10 %	21°	21°
Cutoff Angle	3 %	24°	23°

Table 11: Luminous flux, integrated over the beam for several minimum threshold intensities. Full White, Narrow

		Flux (lm)
Half-Peak Output	@50 %	4900
Tenth-Peak Output	@10 %	5650
Total Lumen Output	@3 %	5760

$$\text{diameter} = 0.61 \times \text{distance}$$

$$\text{illuminance} = \frac{80\,700 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 5: Polar and cartesian light intensity distributions. Full White, Narrow

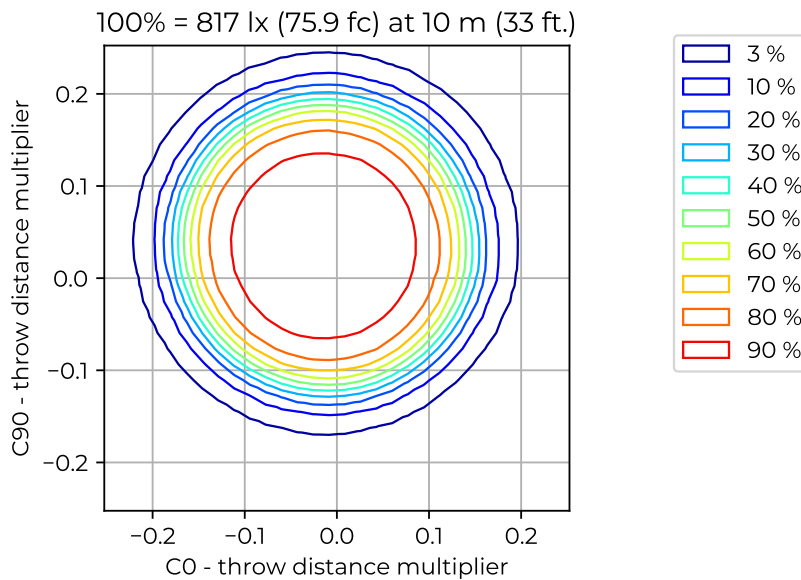


Figure 6: Iso-illuminance diagram of projected beam. Full White, Narrow
dist. from origin = throw dist. × throw dist. multiplier

Table 12: Quick calculation diagram for illuminance and beam diameter. Full White, Narrow

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	0.61	3.0	4.6	6.1	7.6	9.1	11	12	14	15	
Illuminance [lx]	80.7k	3.2k	1.4k	810	520	360	260	200	160	130	

2 White Quality – 4000K

Table 13: Summary for 4000K spectral measurement results and color metrics.

Metric	Value
CCT	3813 K
CCT D_{uv}	0.0010
CRI R_a	96
CRI R_g	66
TLCI-2015	90
TM-30-15 R_f	100
TM-30-15 R_g	92
CIE 1931 x	0.390
CIE 1931 y	0.385
CIE 1960 u	0.228
CIE 1960 v	0.338

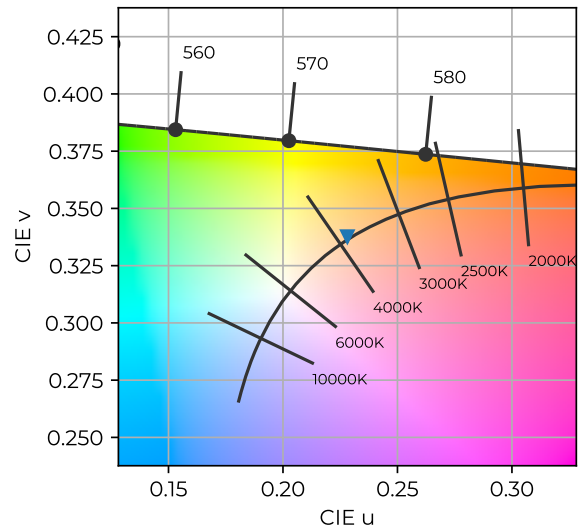


Figure 7: Color coordinates in CIE 1960 chromaticity diagram. 4000K

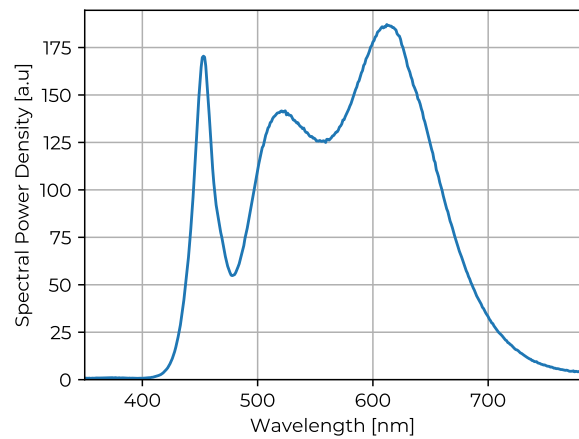
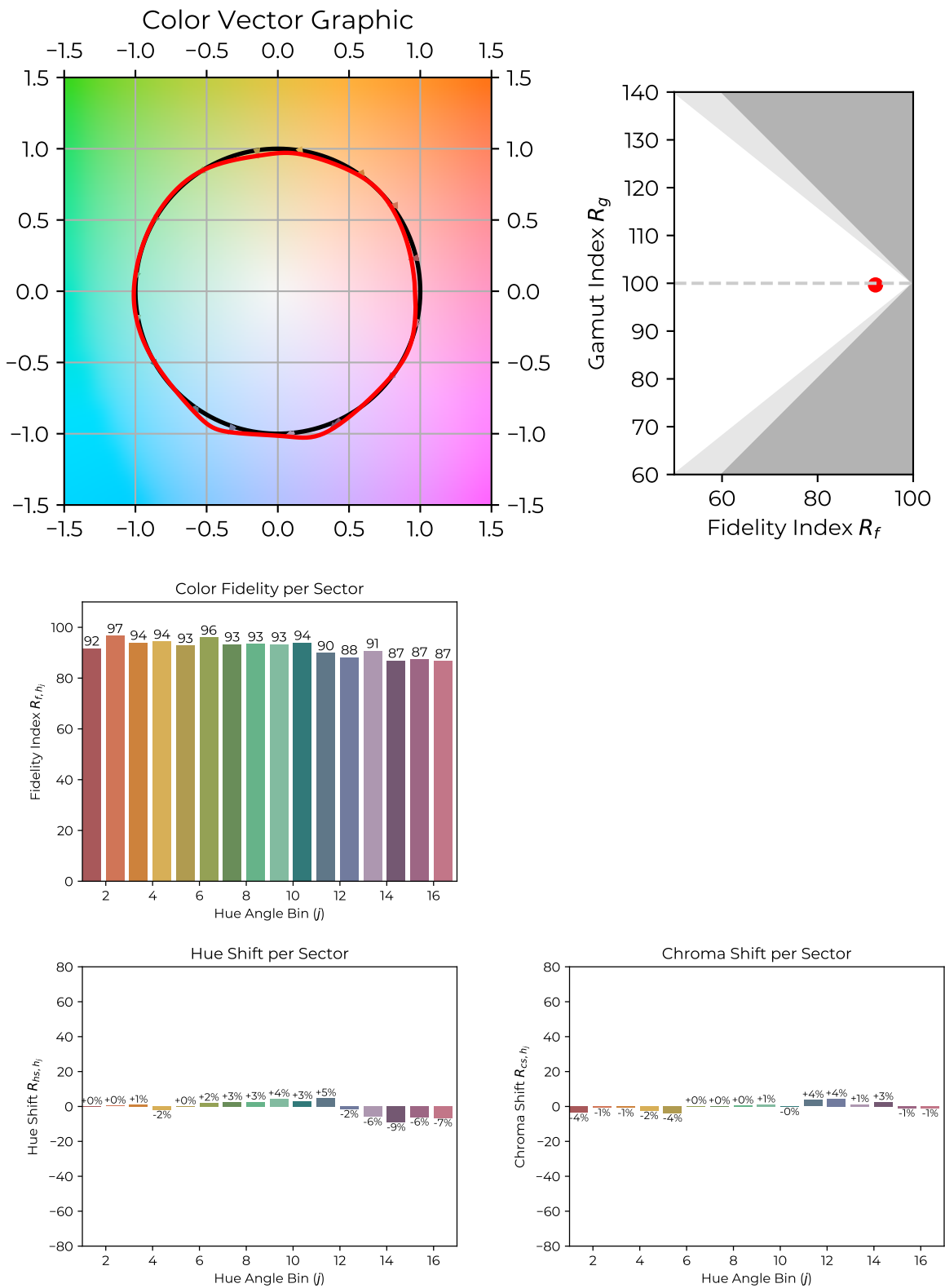
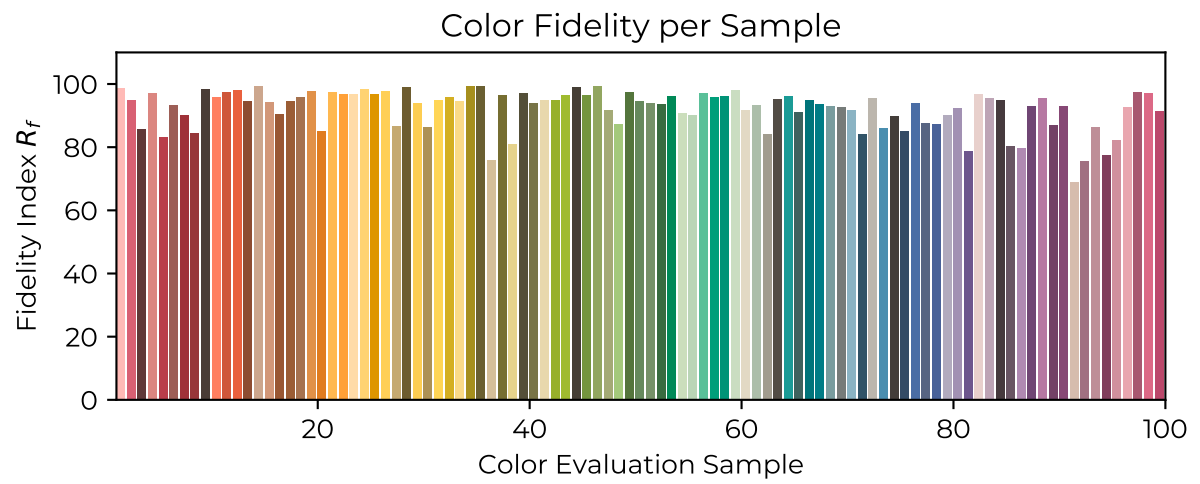


Figure 8: Measured Spectral Power Distribution of light source. 4000K

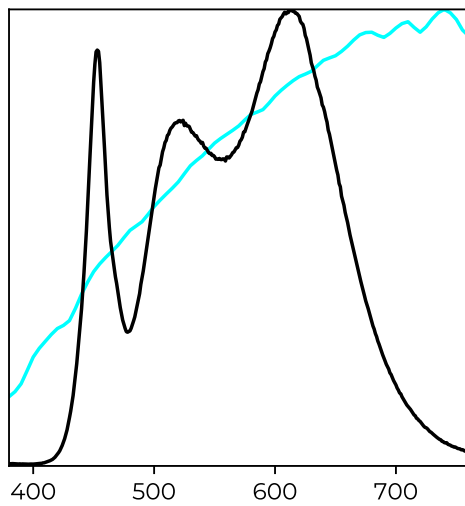
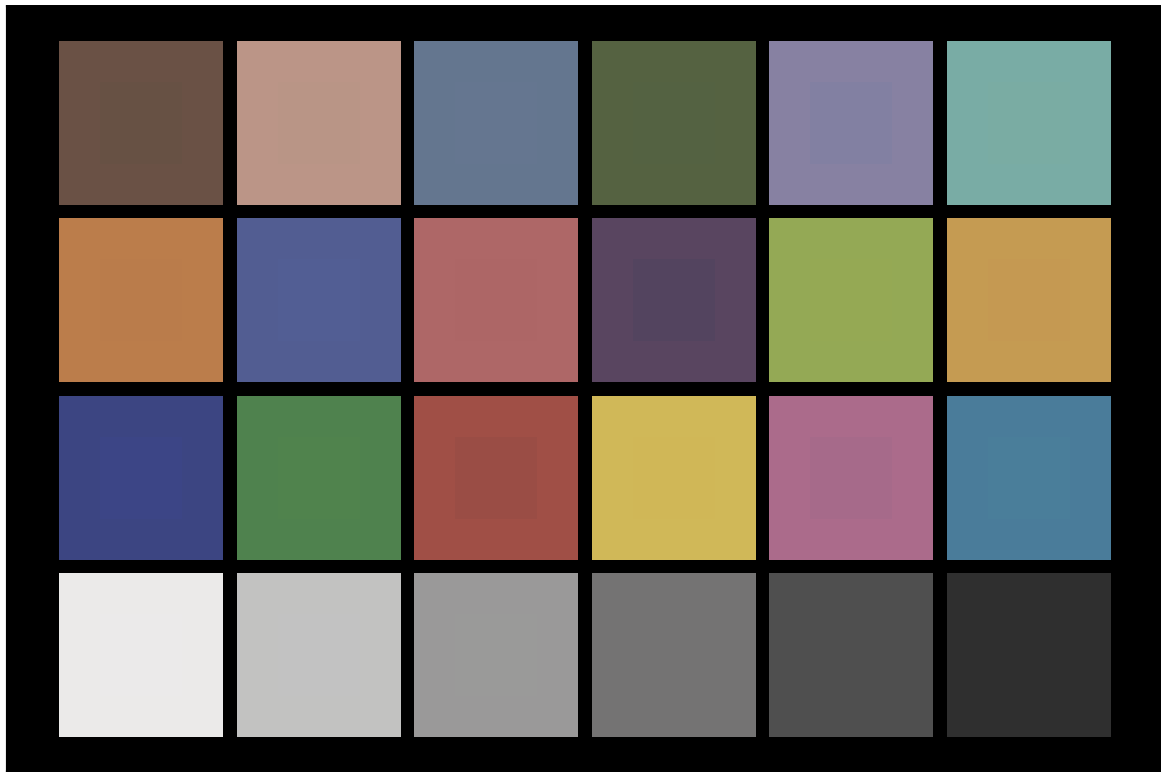
2.1 TM-30-15 Detail Plots





2.2 TLCI-2012 Results

Agilio DOP 4000K : CCT = M3812 1.3, TLCI = 90



Sector	Lightness	Chroma	Hue
R	2	2	2
R/Y	1	1	1
Y	1	1	1
Y/G	0	0	0
G	0	0	0
G/C	1	1	1
C	2	2	2
C/B	1	1	1
B	2	2	2
B/M	2	2	2
M	3	3	3
M/R	3	3	3