



JDC1 Photometric Report

GLP German Light Products GmbH
Optical Laboratory

Catalog Number	7675
Maximum Output	74330.000 lm
Maximum Intensity	45630.000 cd
Energy Efficiency Class	A+
Energy Efficiency Index	0.16
Power Consumption	853.0 $\frac{\text{kWh}}{1000\text{h}}$





Contents

1	Light Distribution	2
1.1	Beam Beam	3
1.2	Full All Beam	4
1.3	Plate Red Beam	5
1.4	Plate Green Beam	6
1.5	Plate Blue Beam	7
1.6	Plate Full Beam	8
2	White Quality – Open	9
2.1	TM-30-15	10
2.2	TLCI-2012	12
3	Fixed Colors	13

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
Beam	117	73	143	87	151	122
Full All	117	73	144	88	153	138
Plate Red	106	103	151	146	162	158
Plate Green	107	102	151	146	163	158
Plate Blue	104	101	150	146	162	158
Plate Full	107	103	152	146	163	158

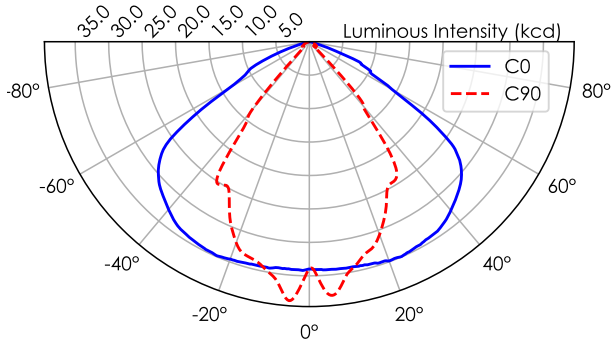
Table 2: Summary of luminous flux and intensity for different fixture configurations.

Beam	Total Lumen Output (lm)	Peak Luminous Intensity (cd)
Beam	59 626	38 815
Full All	74 329	45 633
Plate Red	3014	1244
Plate Green	8869	3633
Plate Blue	1944	815
Plate Full	13195	5386

Table 3: Summary of luminous flux and intensity for different fixture configurations.

Beam	Parameter	Factor	Projection Distance [m]								
			5	7.5	10	12.5	15	17.5	20	22.5	25
Beam	Diameter [m]	1.74	8.7	13.0	17.0	22.0	26.0	30.0	35.0	39.0	44.0
	Illuminance [lx]	38800	1600.0	690.0	390.0	250.0	170.0	130.0	97.0	77.0	62.0
Full All	Diameter [m]	1.81	9.0	14.0	18.0	23.0	27.0	32.0	36.0	41.0	45.0
	Illuminance [lx]	45600	1800.0	810.0	460.0	290.0	200.0	150.0	110.0	90.0	73.0
Plate Red	Diameter [m]	1.90	9.5	14.0	19.0	24.0	28.0	33.0	38.0	43.0	47.0
	Illuminance [lx]	1240	50.0	22.0	12.0	8.0	5.5	4.1	3.1	2.5	2.0
Plate Green	Diameter [m]	1.90	9.5	14.0	19.0	24.0	29.0	33.0	38.0	43.0	48.0
	Illuminance [lx]	3630	150.0	65.0	36.0	23.0	16.0	12.0	9.1	7.2	5.8
Plate Blue	Diameter [m]	1.90	9.5	14.0	19.0	24.0	28.0	33.0	38.0	43.0	47.0
	Illuminance [lx]	815	33.0	14.0	8.2	5.2	3.6	2.7	2.0	1.6	1.3
Plate Full	Diameter [m]	1.90	9.5	14.0	19.0	24.0	29.0	33.0	38.0	43.0	48.0
	Illuminance [lx]	5390	220.0	96.0	54.0	34.0	24.0	18.0	13.0	11.0	8.6

1.1 Beam Beam



Type Type B measurement with a total of 3721 data points.

Table 4: Opening angles for different intensity thresholds. Beam

	C0	C90
Beam Angle 50 %	116.9°	72.5°
Field Angle 10 %	143.2°	86.6°
Cutoff Angle 3 %	150.8°	121.6°

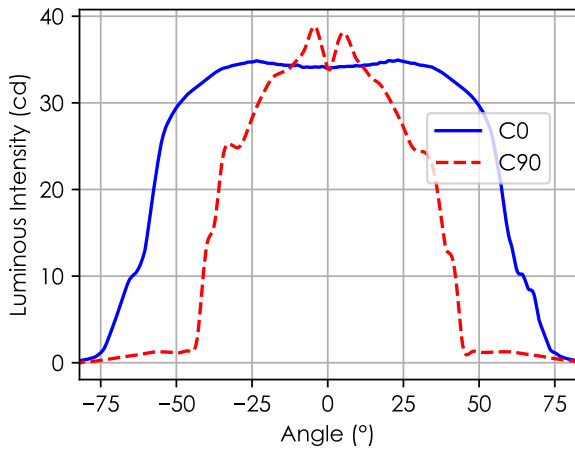


Table 5: Luminous flux, integrated over the beam for several minimum threshold intensities. Beam

	Flux (lm)
Half-Peak Output @50 %	51 200
Tenth-Peak Output @10 %	58 700
Total Lumen Output @3 %	60 000

$$\text{diameter} = 1.7 \times \text{distance}$$

$$\text{illuminance} = \frac{38800.00 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 1: Polar and cartesian light intensity distributions. Beam

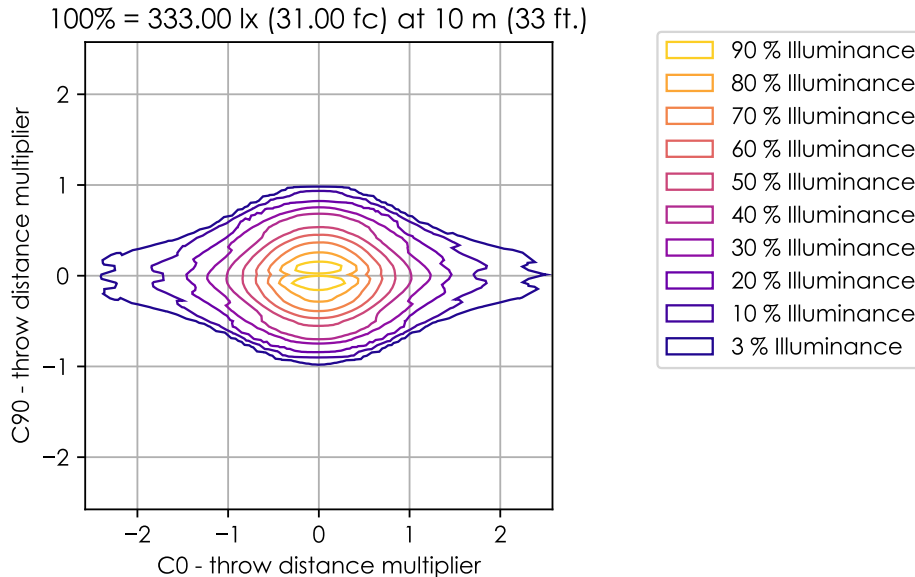
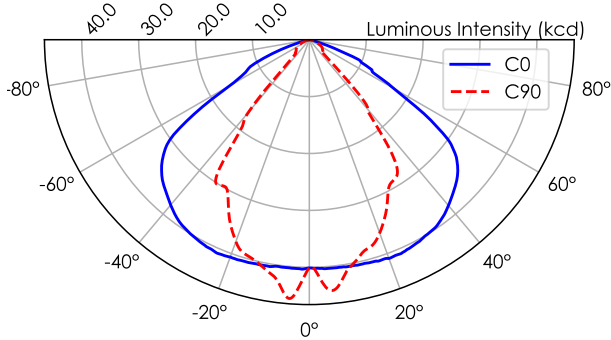


Figure 2: Iso-illuminance diagram of projected beam. Beam dist. from origin = throw dist. x throw dist. multiplier

Table 6: Quick calculation diagram for illuminance and beam diameter. Beam

Parameter	Factor	Projection Distance [m]								
		5	7.5	10	12.5	15	17.5	20	22.5	25
Diameter [m]	1.74	8.7	13.0	17.0	22.0	26.0	30.0	35.0	39.0	44.0
Illuminance [lx]	38800	1600.0	690.0	390.0	250.0	170.0	130.0	97.0	77.0	62.0

1.2 Full All Beam



Type Type B measurement with a total of 3721 data points.

Table 7: Opening angles for different intensity thresholds. Full All

		C0	C90
Beam Angle	50 %	116.9°	73.2°
Field Angle	10 %	143.6°	87.7°
Cutoff Angle	3 %	152.6°	138.2°

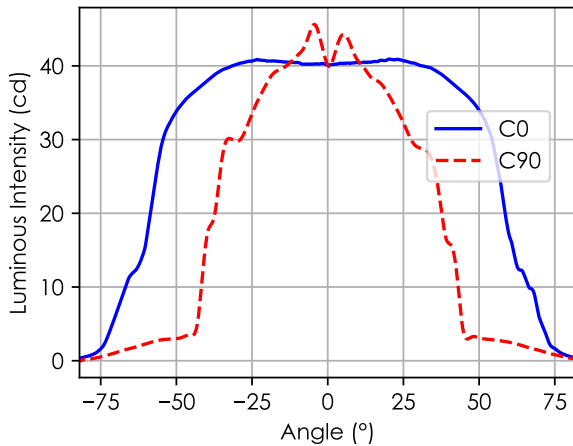


Table 8: Luminous flux, integrated over the beam for several minimum threshold intensities. Full All

		Flux (lm)
Half-Peak Output	@50 %	60 500
Tenth-Peak Output	@10 %	69 700
Total Lumen Output	@3 %	74 200

$$\text{diameter} = 1.8 \times \text{distance}$$

$$\text{illuminance} = \frac{45600.00 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 3: Polar and cartesian light intensity distributions. Full All

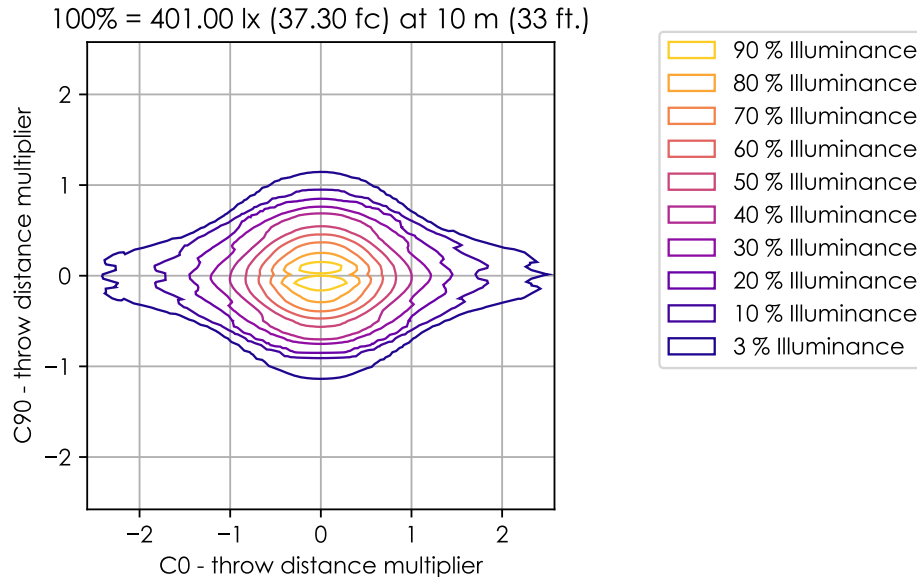
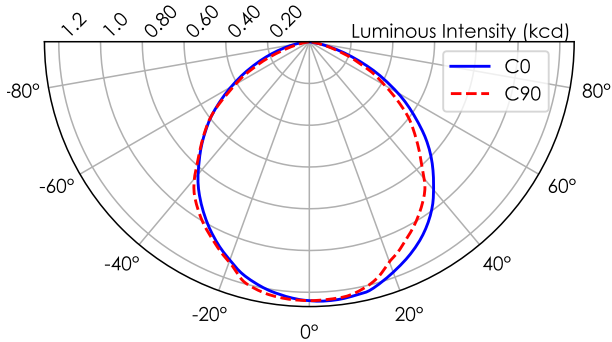


Figure 4: Iso-illuminance diagram of projected beam. Full All
dist. from origin = throw dist. x throw dist. multiplier

Table 9: Quick calculation diagram for illuminance and beam diameter. Full All

Parameter	Factor	Projection Distance [m]								
		5	7.5	10	12.5	15	17.5	20	22.5	25
Diameter [m]	1.81	9.0	14.0	18.0	23.0	27.0	32.0	36.0	41.0	45.0
Illuminance [lx]	45600	1800.0	810.0	460.0	290.0	200.0	150.0	110.0	90.0	73.0

1.3 Plate Red Beam



Type Type B measurement with a total of 3721 data points.

Table 10: Opening angles for different intensity thresholds. Plate Red

	C0	C90
Beam Angle 50 %	105.7°	102.8°
Field Angle 10 %	150.8°	145.7°
Cutoff Angle 3 %	162.0°	158.0°

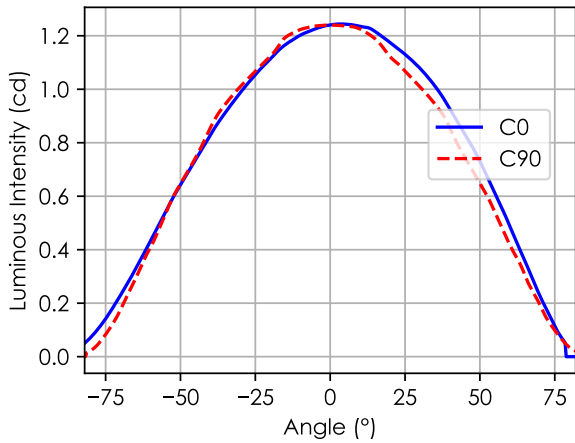


Table 11: Luminous flux, integrated over the beam for several minimum threshold intensities. Plate Red

	Flux (lm)	
Half-Peak Output @50 %		2212
Tenth-Peak Output @10 %		2968
Total Lumen Output @3 %		3019

$$\text{diameter} = 1.9 \times \text{distance}$$

$$\text{illuminance} = \frac{1240.00 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 5: Polar and cartesian light intensity distributions. Plate Red

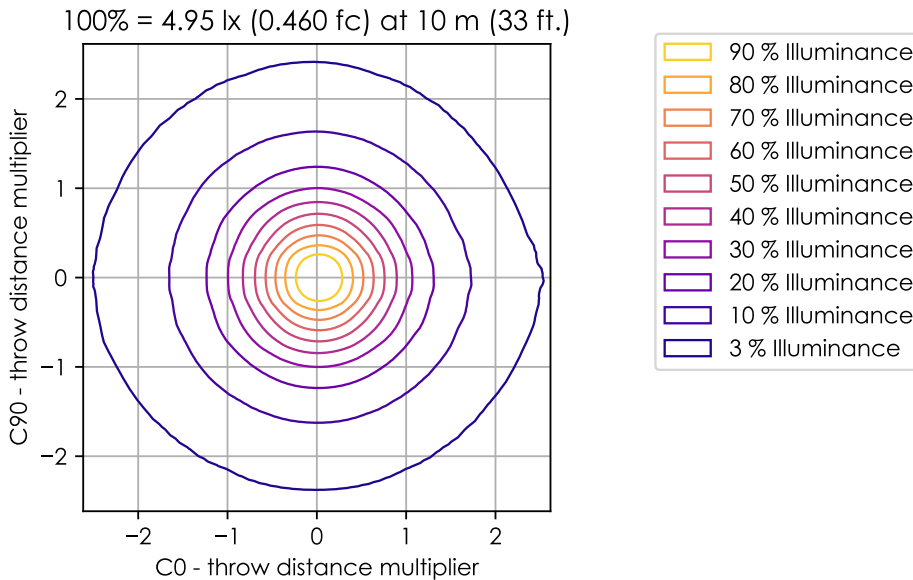
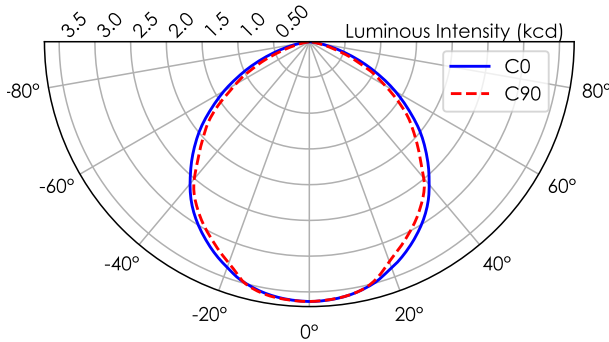


Figure 6: Iso-illuminance diagram of projected beam. Plate Red
dist. from origin = throw dist. × throw dist. multiplier

Table 12: Quick calculation diagram for illuminance and beam diameter. Plate Red

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	1.90	9.5	14.0	19.0	24.0	28.0	33.0	38.0	43.0	47.0	
Illuminance [lx]	1240	50.0	22.0	12.0	8.0	5.5	4.1	3.1	2.5	2.0	

1.4 Plate Green Beam



Type Type B measurement with a total of 3721 data points.

Table 13: Opening angles for different intensity thresholds. Plate Green

	C0	C90
Beam Angle 50 %	107.1°	102.4°
Field Angle 10 %	151.1°	146.1°
Cutoff Angle 3 %	163.0°	158.4°

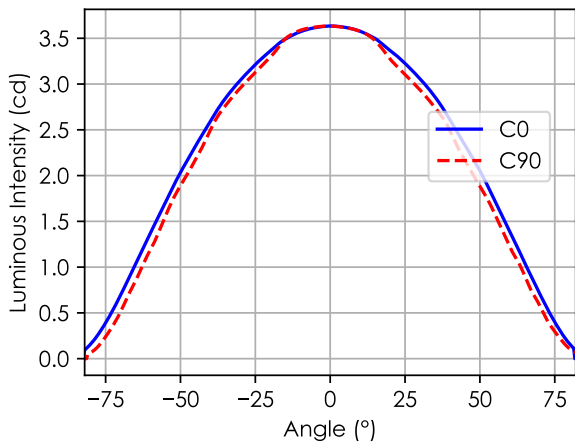


Table 14: Luminous flux, integrated over the beam for several minimum threshold intensities. Plate Green

	Flux (lm)	
Half-Peak Output @50 %		6534
Tenth-Peak Output @10 %		8750
Total Lumen Output @3 %		8870

$$\text{diameter} = 1.9 \times \text{distance}$$

$$\text{illuminance} = \frac{3630.00 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 7: Polar and cartesian light intensity distributions. Plate Green

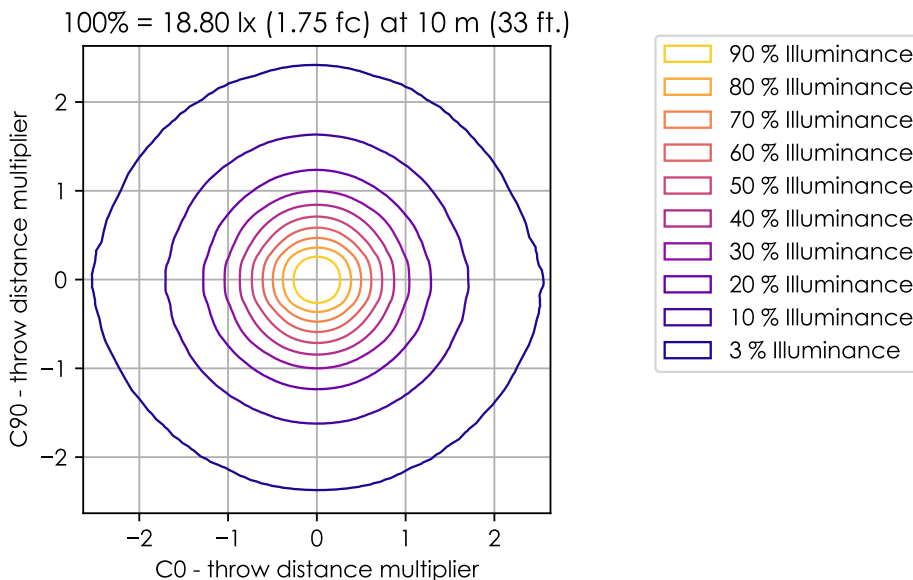
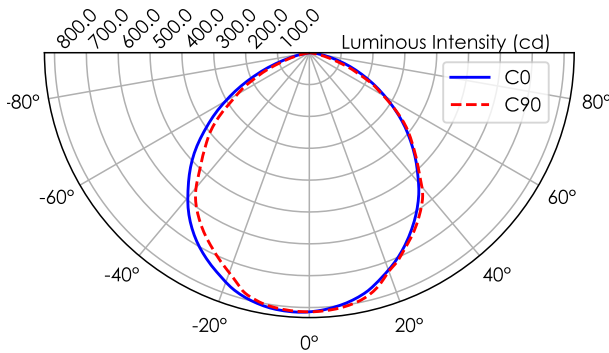


Figure 8: Iso-illuminance diagram of projected beam. Plate Green
dist. from origin = throw dist. x throw dist. multiplier

Table 15: Quick calculation diagram for illuminance and beam diameter. Plate Green

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	1.90	9.5	14.0	19.0	24.0	29.0	33.0	38.0	43.0	48.0	
Illuminance [lx]	3630	150.0	65.0	36.0	23.0	16.0	12.0	9.1	7.2	5.8	

1.5 Plate Blue Beam



Type Type B measurement with a total of 3721 data points.

Table 16: Opening angles for different intensity thresholds. Plate Blue

		C0	C90
Beam Angle	50 %	103.5°	101.0°
Field Angle	10 %	150.1°	145.7°
Cutoff Angle	3 %	162.3°	158.0°

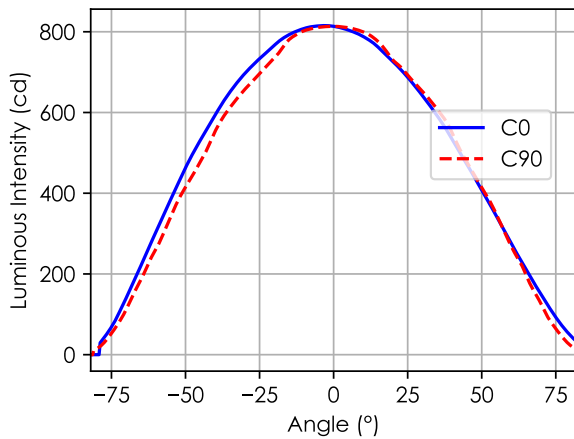


Table 17: Luminous flux, integrated over the beam for several minimum threshold intensities. Plate Blue

		Flux (lm)
Half-Peak Output	@50 %	1397
Tenth-Peak Output	@10 %	1908
Total Lumen Output	@3 %	1949

$$\text{diameter} = 1.9 \times \text{distance}$$

$$\text{illuminance} = \frac{815.00 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 9: Polar and cartesian light intensity distributions. Plate Blue

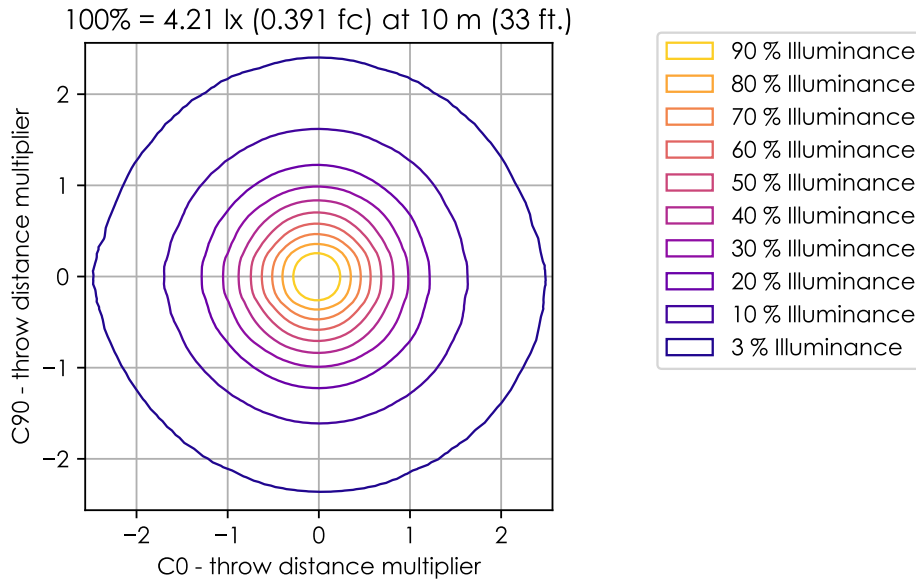
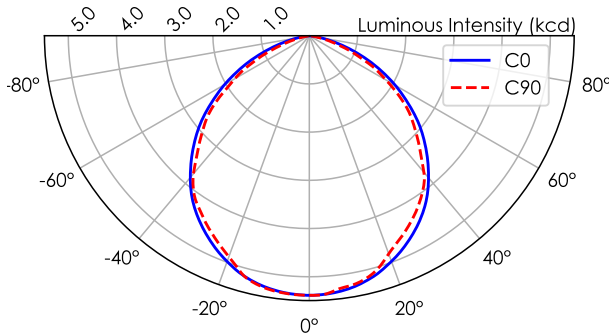


Figure 10: Iso-illuminance diagram of projected beam. Plate Blue
 dist. from origin = throw dist. × throw dist. multiplier

Table 18: Quick calculation diagram for illuminance and beam diameter. Plate Blue

Parameter	Factor	Projection Distance [m]								
		5	7.5	10	12.5	15	17.5	20	22.5	25
Diameter [m]	1.90	9.5	14.0	19.0	24.0	28.0	33.0	38.0	43.0	47.0
Illuminance [lx]	815	33.0	14.0	8.2	5.2	3.6	2.7	2.0	1.6	1.3

1.6 Plate Full Beam



Type Type B measurement with a total of 3721 data points.

Table 19: Opening angles for different intensity thresholds. Plate Full

		C0	C90
Beam Angle	50 %	106.8°	103.2°
Field Angle	10 %	151.5°	146.1°
Cutoff Angle	3 %	163.0°	158.0°

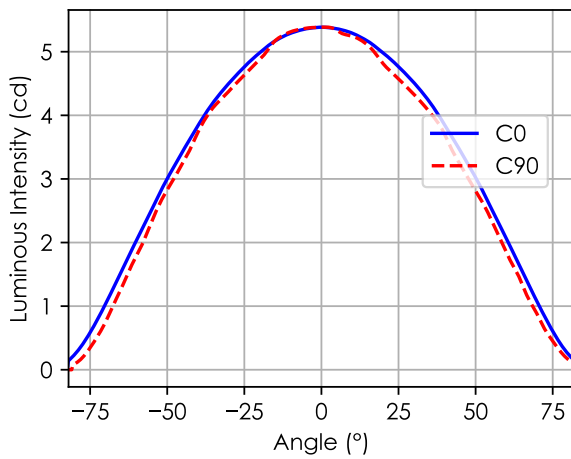


Table 20: Luminous flux, integrated over the beam for several minimum threshold intensities. Plate Full

		Flux (lm)
Half-Peak Output	@50 %	9700
Tenth-Peak Output	@10 %	12 990
Total Lumen Output	@3 %	13 180

$$\text{diameter} = 1.9 \times \text{distance}$$

$$\text{illuminance} = \frac{5390.00 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 11: Polar and cartesian light intensity distributions. Plate Full

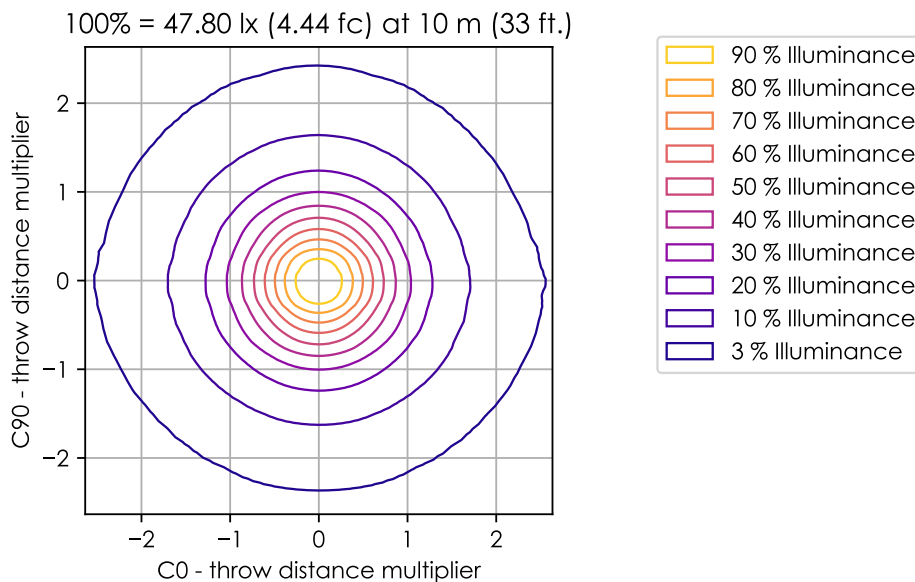


Figure 12: Iso-illuminance diagram of projected beam. Plate Full
 dist. from origin = throw dist. × throw dist. multiplier

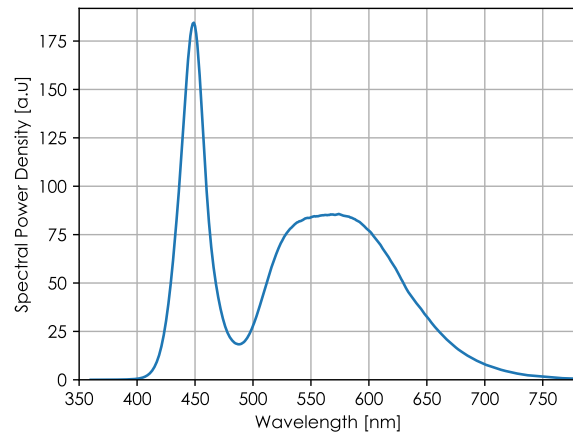
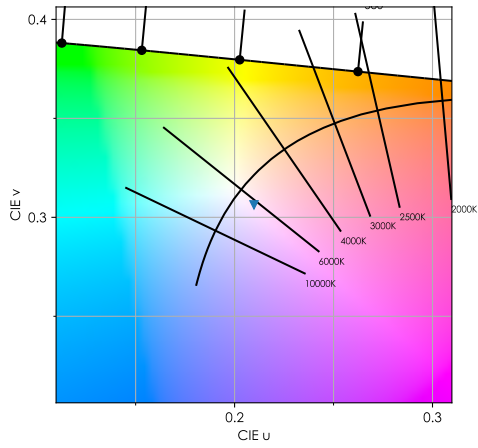
Table 21: Quick calculation diagram for illuminance and beam diameter. Plate Full

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	1.90	9.5	14.0	19.0	24.0	29.0	33.0	38.0	43.0	48.0	
Illuminance [lx]	5390	220.0	96.0	54.0	34.0	24.0	18.0	13.0	11.0	8.6	

2 White Quality – Open

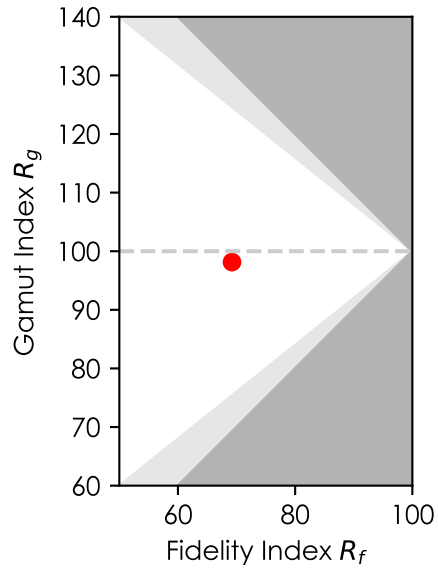
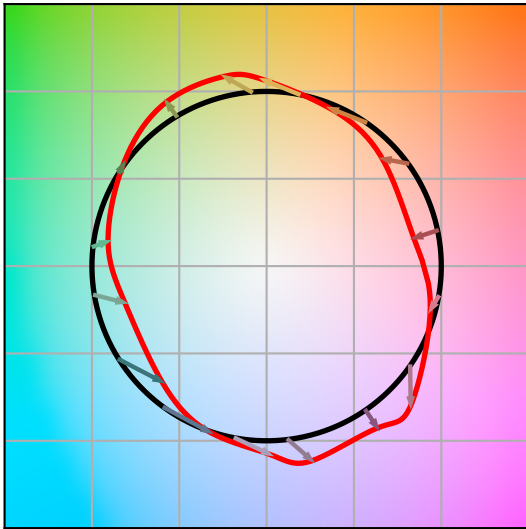
Table 22: Color metrics for Open measurement.

Metric	Value
CCT	6234 K
CCT Duv	-0.009926
CRI Ra	77
TLCI-2015	50
TM-30-15 Rf	69
TM-30-15 Rg	98
CIE 1931 x	0.3196
CIE 1931 y	0.3111
CIE 1960 u	0.2098
CIE 1960 v	0.3063

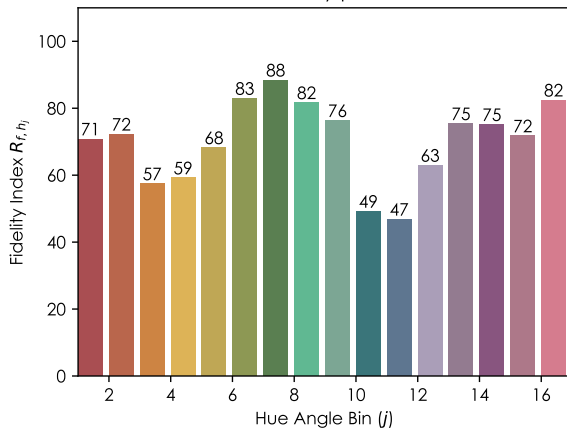


2.1 TM-30-15

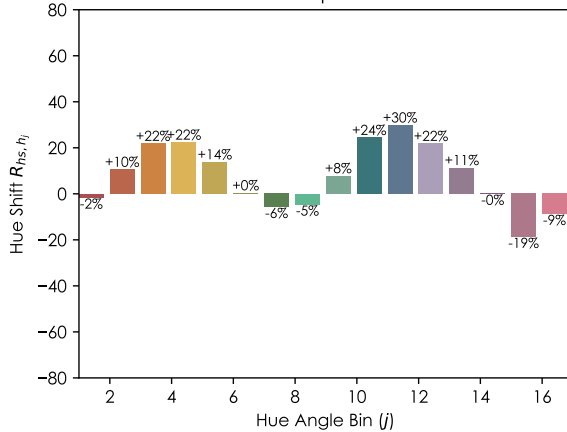
Color Vector Graphic



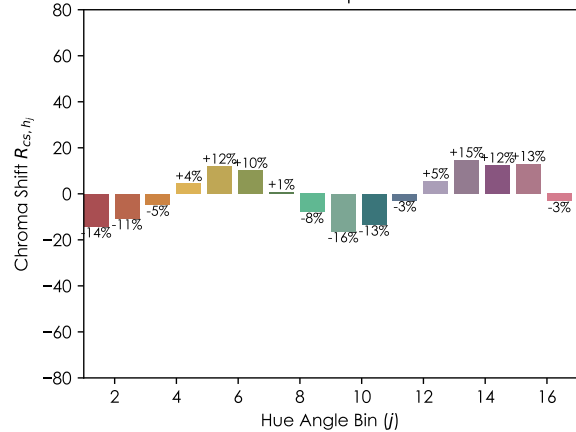
Color Fidelity per Sector

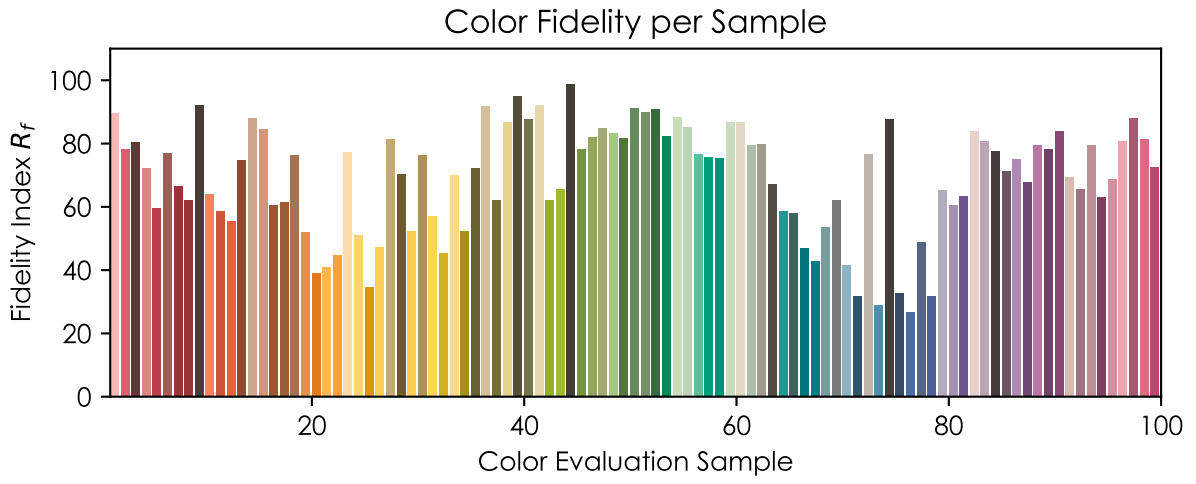


Hue Shift per Sector

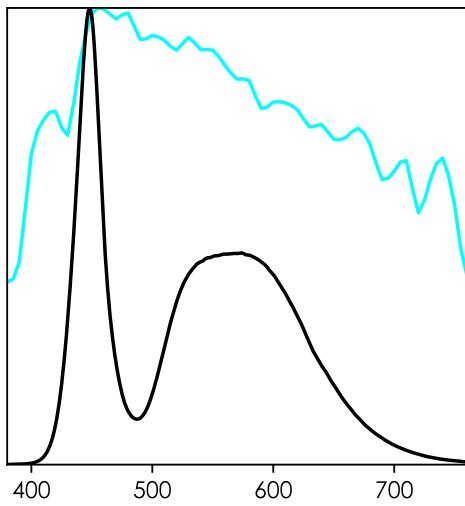
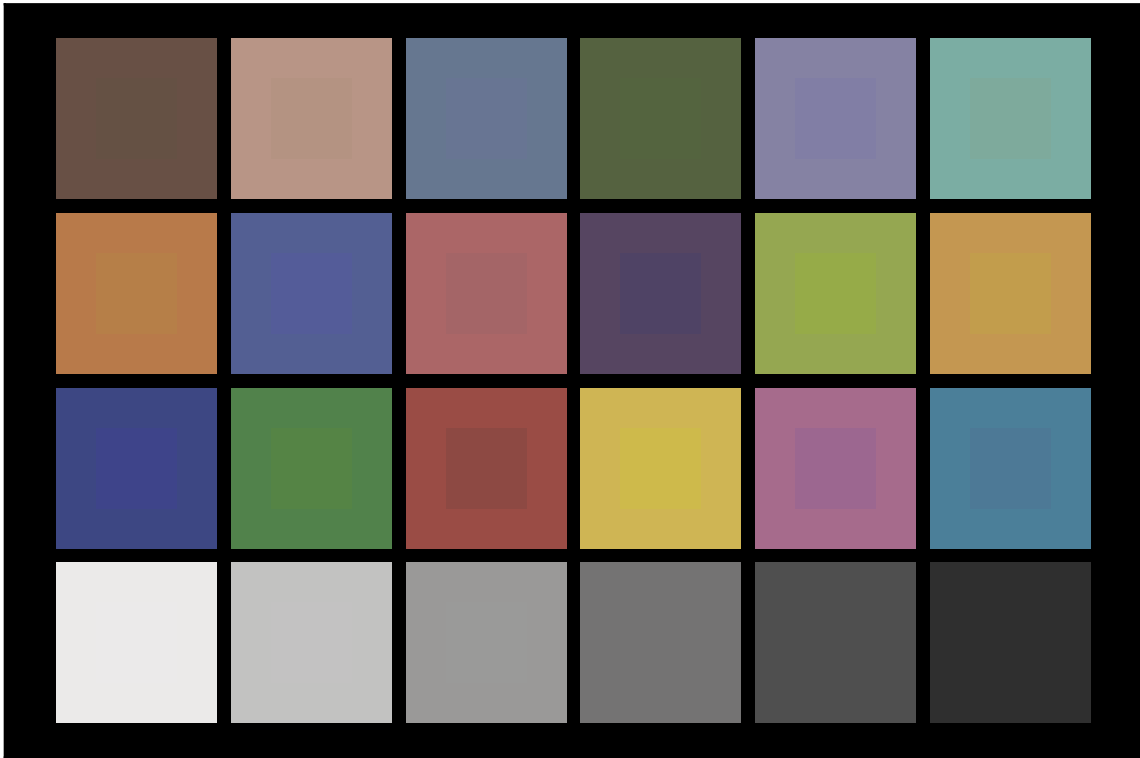


Chroma Shift per Sector





2.2 TLCI-2012



Sector	Lightness	Chroma	Hue
R	4	2	1
R/Y	0	0	-1
Y	-2	-2	-6
Y/G	-1	-2	0
G	-2	-2	3
G/C	1	0	4
C	2	0	0
C/B	4	0	-4
B	0	-3	-4
B/M	2	-3	3
M	2	-2	4
M/R	4	0	7

3 Fixed Colors

Planckian Locus
CIE 1931 Chromaticity Diagram - CIE 1931 2 Degree Standard Observer

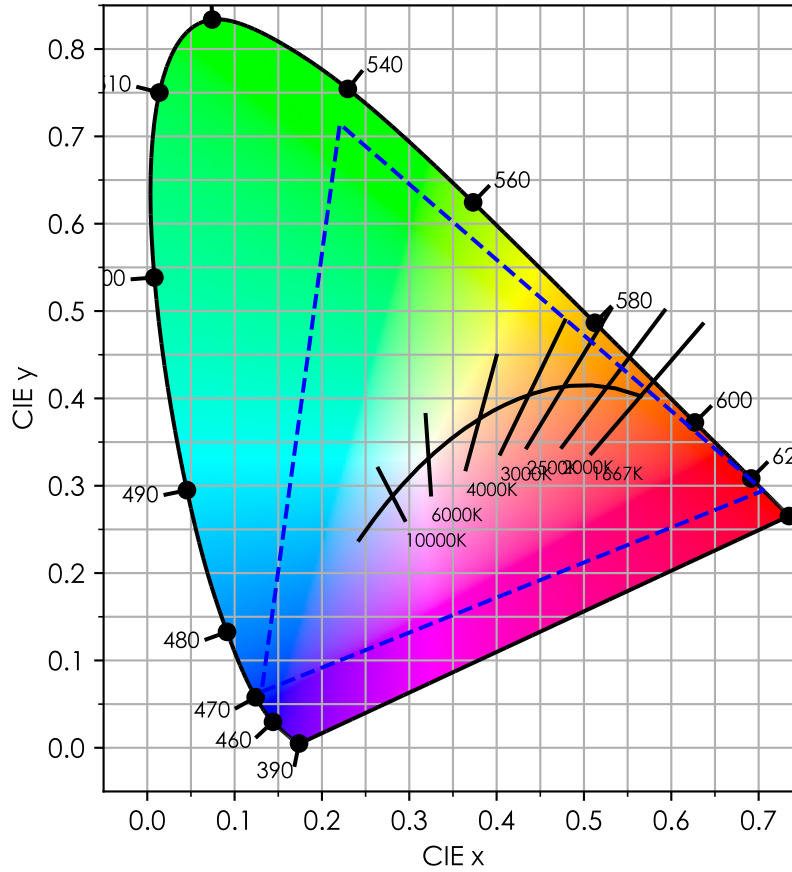






Table 23: Absolute coordinates of fixed colors. The given color swatch is for illustrative purposes only, actual color can differ from print or screen colors.

Color	CIE 1931 xy	CIE UCS uv
 Mix Red	0.71, 0.29	0.55, 0.34
 Mix Green	0.22, 0.71	0.08, 0.39
 Mix Blue	0.13, 0.06	0.15, 0.11
 Mix White	0.32, 0.31	0.21, 0.31

