

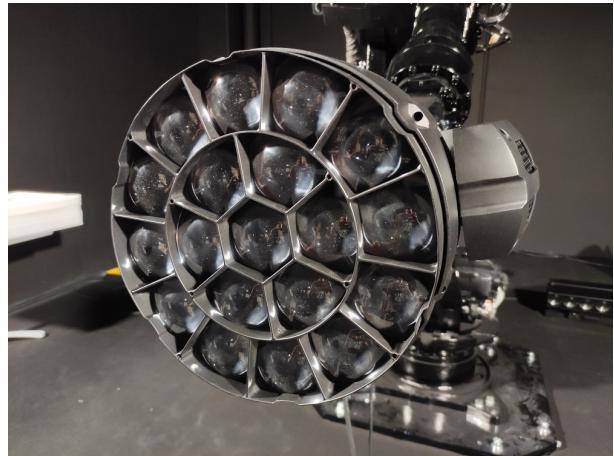


X5 Serial FieldTest Photometric Report

Report 2021-12-16-1

GLP German Light Products GmbH
GLP LightLab

Maximum Total Lumens	12500	lm
Maximum Intensity	1970000	cd
Energy Efficiency Class	B	
Energy Efficiency Index	0.78	
Power Consumption	722	$\frac{\text{kWh}}{1000\text{h}}$
Measurement Date	2021-12-16 12:44	
Software Version	2.6.0	





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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
RAW - 6500K, Wide	38°	38°	57°	57°	65°	66°
RAW - 6500K, Medium	18°	18°	25°	25°	28°	28°
RAW - 6500K, Narrow	3.6°	3.6°	5.0°	4.9°	5.4°	5.4°

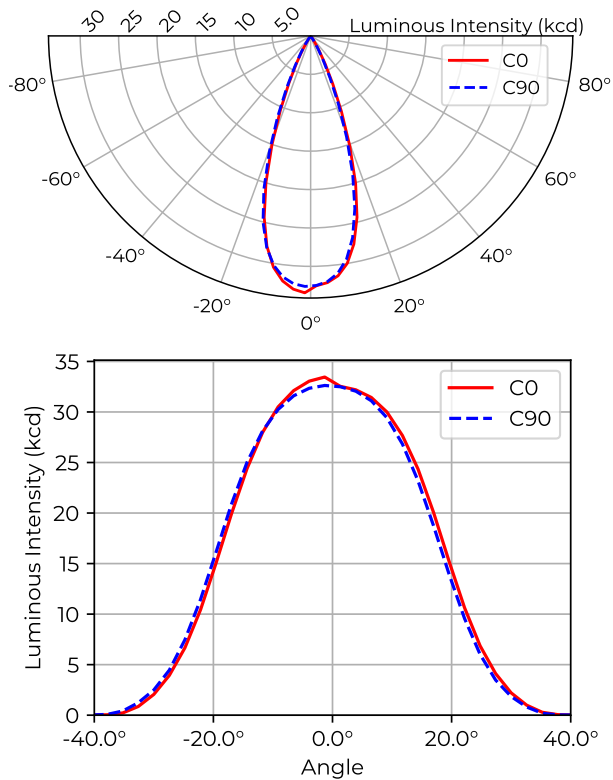
Table 2: Summary of luminous flux and intensity for different fixture configurations.

Beam	Total Lumen Output	Peak Luminous Intensity)
RAW - 6500K, Wide	12.5 klm	33.5 kcd
RAW - 6500K, Medium	10.2 klm	129 kcd
RAW - 6500K, Narrow	6.57 klm	1.97 Mcd

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	
RAW - 6500K, Wide	Diameter [m]	0.68	3.4	5.1	6.8	8.5	10	12	14	15	17	
	Illuminance [lx]	32.6k	1.3k	580	330	210	140	110	82	64	52	
RAW - 6500K, Medium	Diameter [m]	0.31	1.5	2.3	3.1	3.9	4.6	5.4	6.2	6.9	7.7	
	Illuminance [lx]	128k	5.1k	2.3k	1.3k	820	570	420	320	250	210	
RAW - 6500K, Narrow	Diameter [m]	0.063	0.32	0.47	0.63	0.79	0.95	1.1	1.3	1.4	1.6	
	Illuminance [lx]	1.97M	79k	35k	20k	13k	8.7k	6.4k	4.9k	3.9k	3.1k	

1.1 RAW - 6500K, Wide Beam



Type C measurement, 1296 data points.

Table 4: Opening angles for different intensity thresholds. RAW - 6500K, Wide

	C0	C90
Beam Angle	50 % 38°	38°
Field Angle	10 % 57°	57°
Cutoff Angle	3 % 65°	66°

Table 5: Luminous flux, integrated over the beam for several minimum threshold intensities. RAW - 6500K, Wide

	Flux (lm)
Half-Peak Output @50 %	8400
Tenth-Peak Output @10 %	12 000
Total Lumen Output @3 %	12 500

$$\text{diameter} = 0.68 \times \text{distance}$$

$$\text{illuminance} = \frac{32\,600 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 1: Polar and cartesian light intensity distributions. RAW - 6500K, Wide

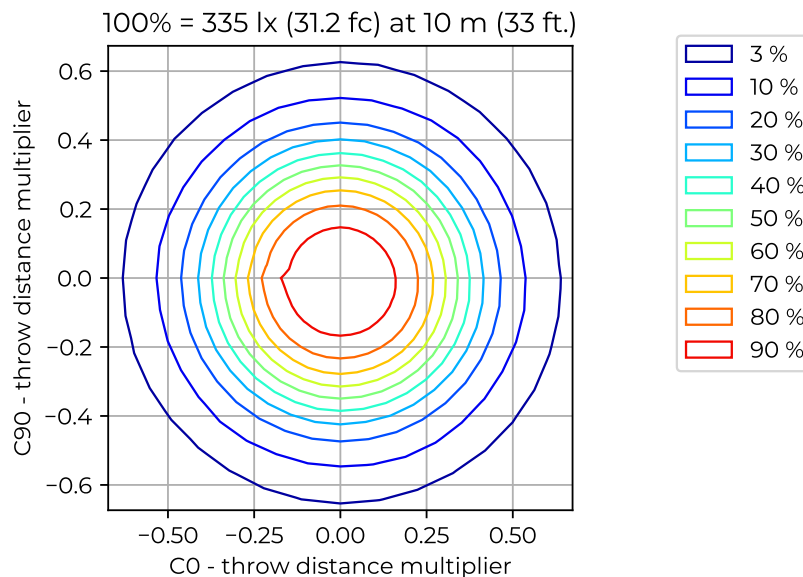
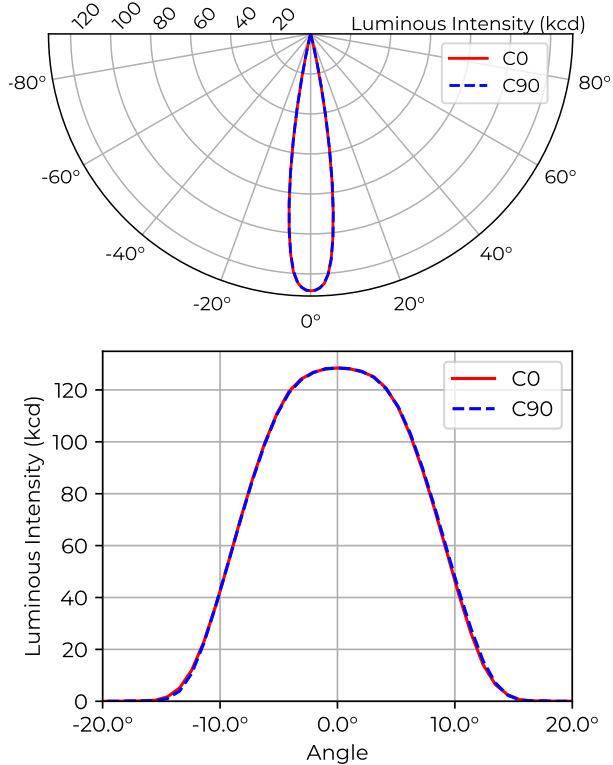


Figure 2: Iso-illuminance diagram of projected beam. RAW - 6500K, Wide
dist. from origin = throw dist. × throw dist. multiplier

Table 6: Quick calculation diagram for illuminance and beam diameter. RAW - 6500K, Wide

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	0.68	3.4	5.1	6.8	8.5	10	12	14	15	17	
Illuminance [lx]	32.6k	1.3k	580	330	210	140	110	82	64	52	

1.2 RAW - 6500K, Medium Beam



Type B measurement, 1296 data points.

Table 7: Opening angles for different intensity thresholds. RAW - 6500K, Medium

		C0	C90
Beam Angle	50 %	18°	18°
Field Angle	10 %	25°	25°
Cutoff Angle	3 %	28°	28°

Table 8: Luminous flux, integrated over the beam for several minimum threshold intensities. RAW - 6500K, Medium

		Flux (lm)
Half-Peak Output	@50 %	7350
Tenth-Peak Output	@10 %	9970
Total Lumen Output	@3 %	10 200

$$\text{diameter} = 0.31 \times \text{distance}$$

$$\text{illuminance} = \frac{128\,000 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 3: Polar and cartesian light intensity distributions. RAW - 6500K, Medium

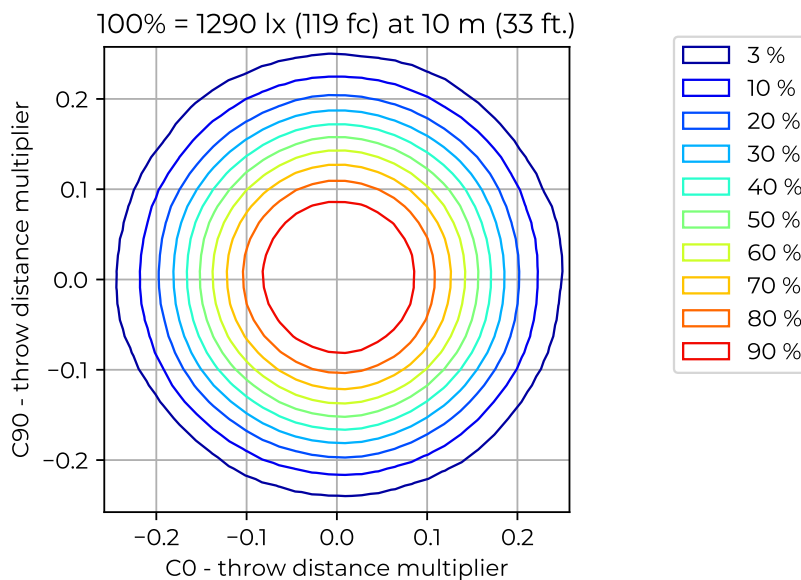
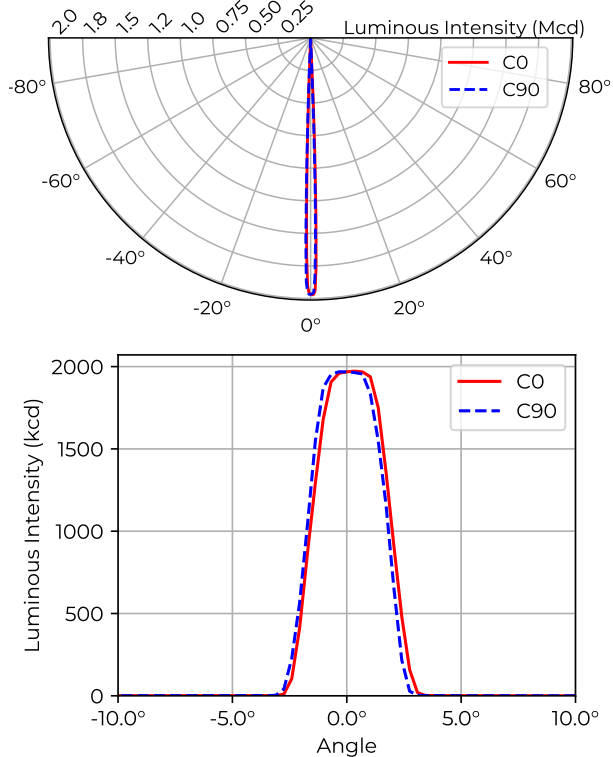


Figure 4: Iso-illuminance diagram of projected beam. RAW - 6500K, Medium
dist. from origin = throw dist. × throw dist. multiplier

Table 9: Quick calculation diagram for illuminance and beam diameter. RAW - 6500K, Medium

Parameter	Factor	Projection Distance [m]								
		5	7.5	10	12.5	15	17.5	20	22.5	25
Diameter [m]	0.31	1.5	2.3	3.1	3.9	4.6	5.4	6.2	6.9	7.7
Illuminance [lx]	128k	5.1k	2.3k	1.3k	820	570	420	320	250	210

1.3 RAW - 6500K, Narrow Beam



Type B measurement, 1296 data points.

Table 10: Opening angles for different intensity thresholds. RAW - 6500K, Narrow

	C0	C90
Beam Angle 50 %	3.6°	3.6°
Field Angle 10 %	5.0°	4.9°
Cutoff Angle 3 %	5.4°	5.4°

Table 11: Luminous flux, integrated over the beam for several minimum threshold intensities. RAW - 6500K, Narrow

	Flux (lm)	
Half-Peak Output @50 %	5000	
Tenth-Peak Output @10 %	6420	
Total Lumen Output @3 %	6570	

$$\text{diameter} = 0.063 \times \text{distance}$$

$$\text{illuminance} = \frac{1\,970\,000 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 5: Polar and cartesian light intensity distributions. RAW - 6500K, Narrow

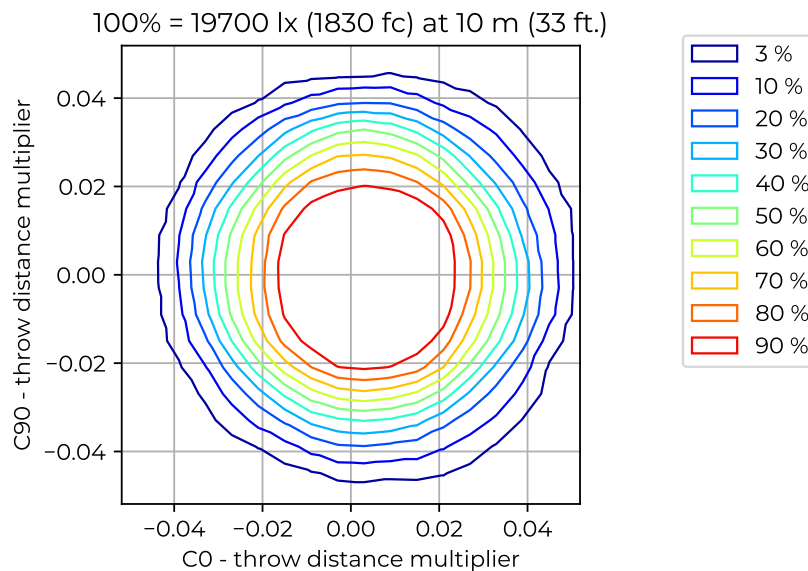


Figure 6: Iso-illuminance diagram of projected beam. RAW - 6500K, Narrow
dist. from origin = throw dist. × throw dist. multiplier

Table 12: Quick calculation diagram for illuminance and beam diameter. RAW - 6500K, Narrow

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	0.063	0.32	0.47	0.63	0.79	0.95	1.1	1.3	1.4	1.6	
Illuminance [lx]	1.97M	79k	35k	20k	13k	8.7k	6.4k	4.9k	3.9k	3.1k	

2 Colors

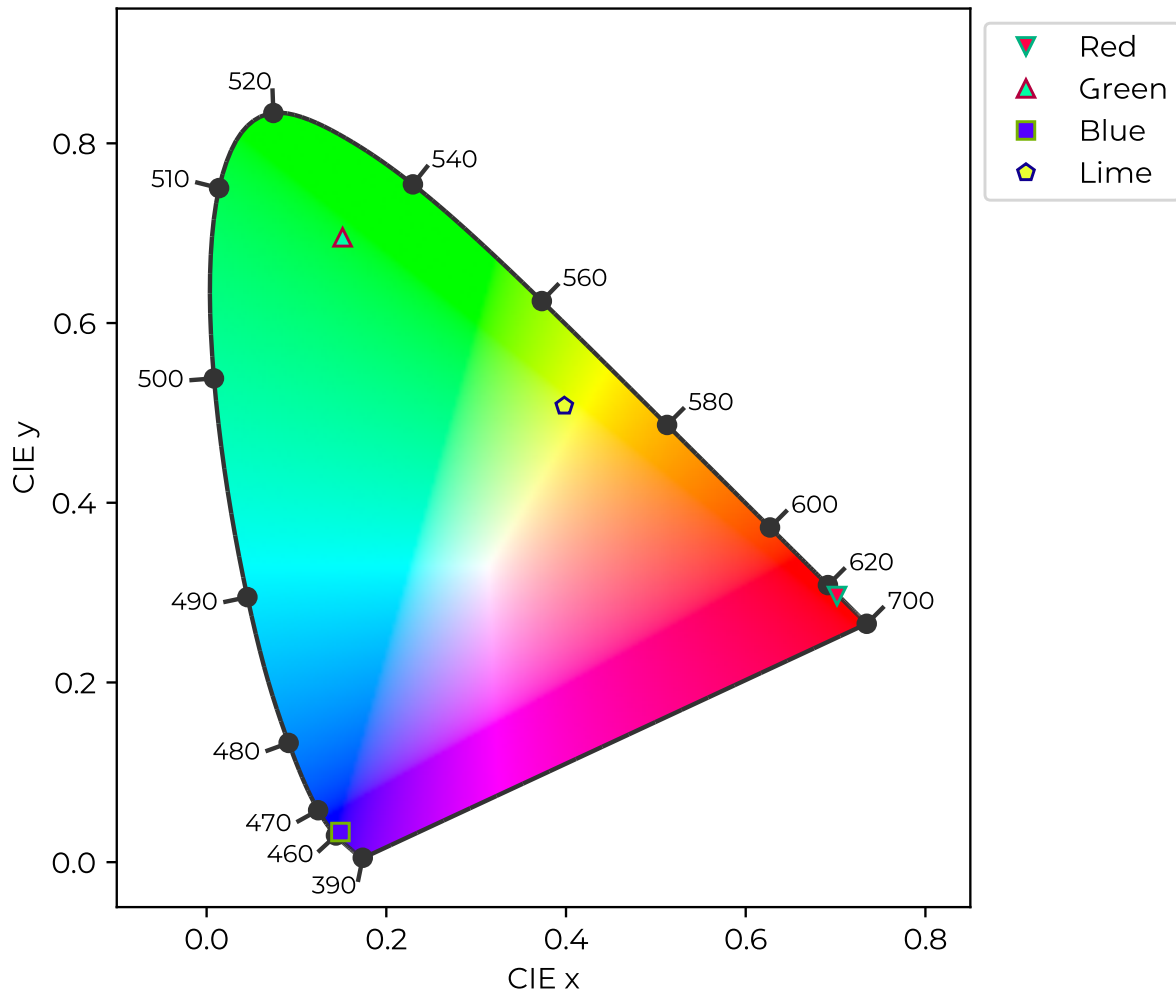


Figure 7: Chromaticity coordinates of device colors in a CIE 1931 chromaticity diagram.

Table 13: Chromaticity coordinates for figure 7, in CIE 1931 xy and CIE 1960 UCS uv coordinates. Color swatches are illustrative only, limited by screen and print color space. Color appearance will be different when used for illumination.

Color	xy	uv
Red	0.702, 0.296	0.545, 0.345
Green	0.151, 0.695	0.0548, 0.378
Blue	0.149, 0.0336	0.192, 0.0649
Lime	0.398, 0.508	0.192, 0.367