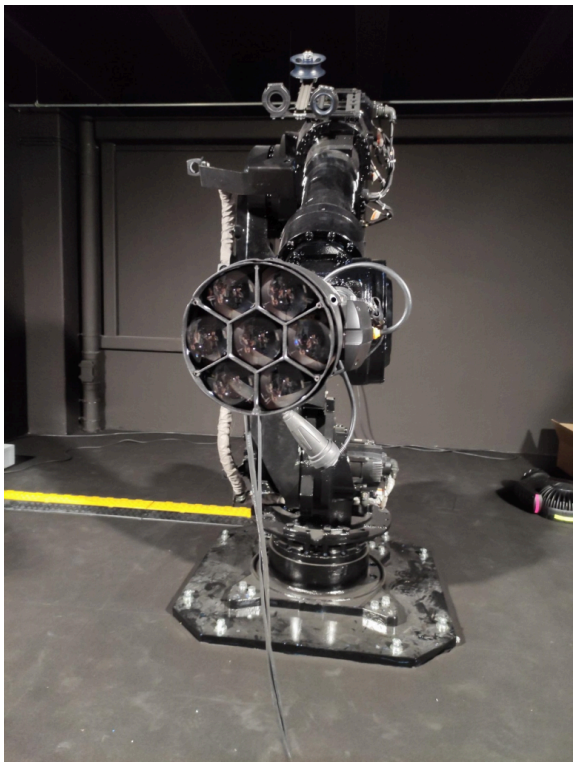
X5 Compact
Photometric Report

Report 2022-07-26-1

GLP German Light Products GmbH
GLP LightLab

Maximum Total Lumens	3980	lm
Maximum Intensity	648000	cd
Energy Efficiency Class	C	
Energy Efficiency Index	1.10	
Power Consumption	324	$\frac{\text{kW h}}{1000\ \text{h}}$

Serial Number	Proto A
Measurement Date	2022-07-26 12:30
Software Version	2.8.0



Contents

1 Light Distribution

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

Beam	Beam Angle (50 %) C0	C90	Field Angle (10 %) C0	C90	Cutoff Angle (3 %) C0	C90
Narrow, TLO	3.6°	3.7°	4.4°	4.7°	4.8°	5.1°
Medium, TLO	17°	17°	25°	25°	28°	28°
Wide, TLO	37°	37°	57°	57°	67°	66°

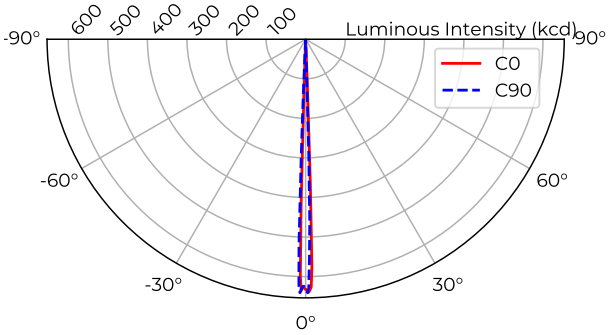
Table 2: Summary of luminous flux and intensity for different fixture configurations.

Beam	Total Lumen Output	Peak Luminous Intensity)
Narrow, TLO	2.08 klm	648 kcd
Medium, TLO	3.22 klm	41.1 kcd
Wide, TLO	3.98 klm	10.7 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.

			Projection Distance [m]								
Beam	Parameter	Factor	5	7.5	10	12.5	15	17.5	20	22.5	25
Narrow, TLO	Diameter [m]	0.064	0.32	0.48	0.64	0.80	0.96	1.1	1.3	1.4	1.6
	Illuminance [lx]	631k	25k	11k	6.3k	4.0k	2.8k	2.1k	1.6k	1.2k	1.0k
Medium, TLO	Diameter [m]	0.31	1.5	2.3	3.1	3.8	4.6	5.3	6.1	6.9	7.6
	Illuminance [lx]	41.0k	1.6k	730	410	260	180	130	100	81	66
Wide, TLO	Diameter [m]	0.67	3.3	5.0	6.7	8.3	10.0	12	13	15	17
	Illuminance [lx]	10.7k	430	190	110	69	48	35	27	21	17

1.1 Narrow, TLO Beam



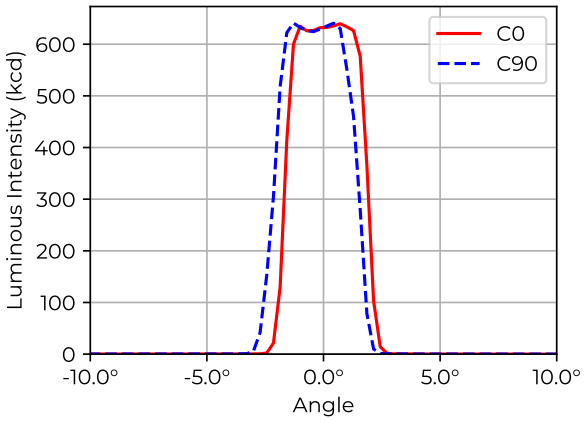


Figure 1: Polar and cartesian light intensity distributions. Narrow, TLO

Type B measurement, 1296 data points.

Table 4: Opening angles for different intensity thresholds. Narrow, TLO

		C0	C90
Beam Angle	50 %	3.6°	3.7°
Field Angle	10 %	4.4°	4.7°
Cutoff Angle	3 %	4.8°	5.1°

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

		Flux (lm)
Half-Peak Output	@50 %	1770
Tenth-Peak Output	@10 %	2050
Total Lumen Output	@3 %	2080

$$\text{diameter} = 0.064 \times \text{distance}$$

$$\text{illuminance} = \frac{631\,000\,\text{lx}}{(\text{distance}\ [\text{m}])^2}$$

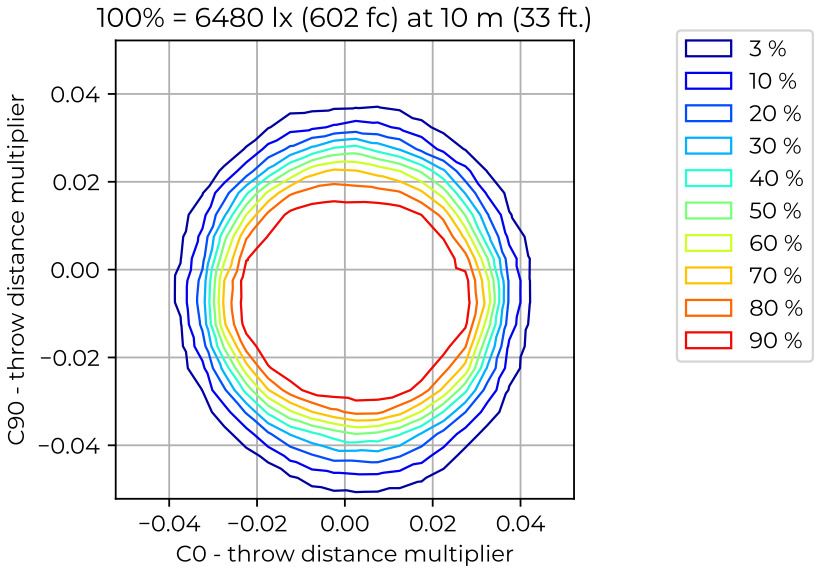


Figure 2: Iso-illuminance diagram of projected beam. Narrow, TLO
dist. from origin = throw dist. × throw dist. multiplier

Table 6: Quick calculation diagram for illuminance and beam diameter. Narrow, TLO

		Projection Distance [m]								
Parameter	Factor	5	7.5	10	12.5	15	17.5	20	22.5	25
Diameter [m]	0.064	0.32	0.48	0.64	0.80	0.96	1.1	1.3	1.4	1.6
Illuminance [lx]	631k	25k	11k	6.3k	4.0k	2.8k	2.1k	1.6k	1.2k	1.0k

1.2 Medium, TLO Beam

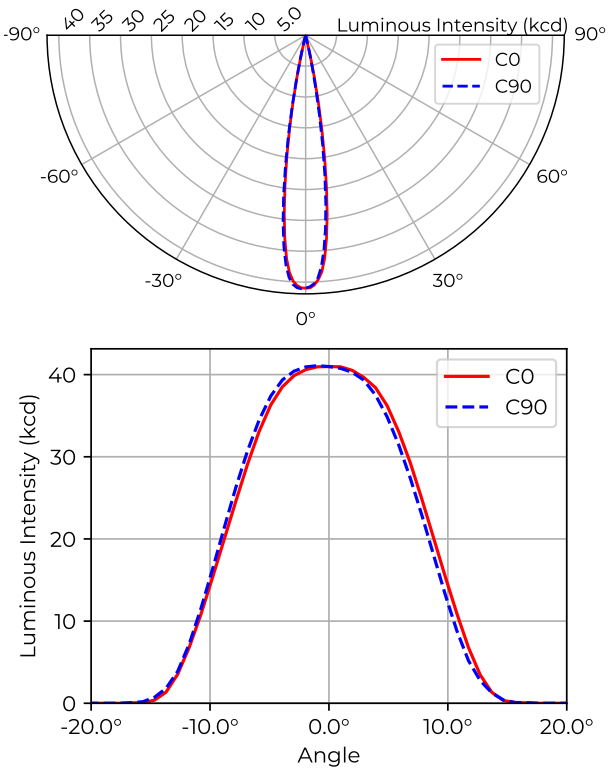


Figure 3: Polar and cartesian light intensity distributions. Medium, TLO

Type B measurement, 1296 data points.

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

		C0	C90
Beam Angle	50 %	17°	17°
Field Angle	10 %	25°	25°
Cutoff Angle	3 %	28°	28°

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

		Flux (lm)
Half-Peak Output	@50 %	2280
Tenth-Peak Output	@10 %	3130
Total Lumen Output	@3 %	3220

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

$$\text{illuminance} = \frac{41\,000\,\text{lx}}{(\text{distance [m]})^2}$$

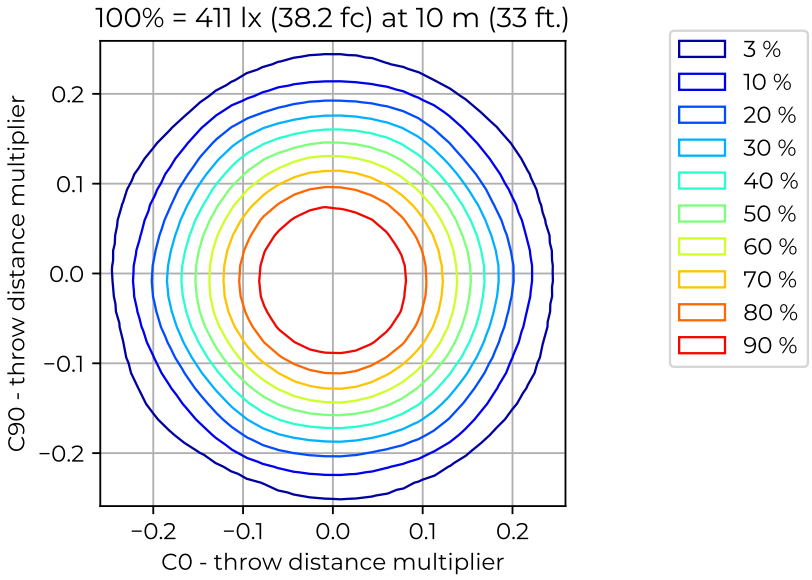
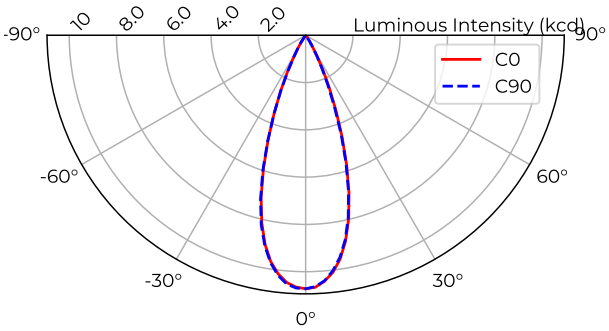


Figure 4: Iso-illuminance diagram of projected beam. Medium, TLO
dist. from origin = throw dist. × throw dist. multiplier

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

		Projection Distance [m]								
Parameter	Factor	5	7.5	10	12.5	15	17.5	20	22.5	25
Diameter [m]	0.31	1.5	2.3	3.1	3.8	4.6	5.3	6.1	6.9	7.6
Illuminance [lx]	41.0k	1.6k	730	410	260	180	130	100	81	66

1.3 Wide, TLO Beam



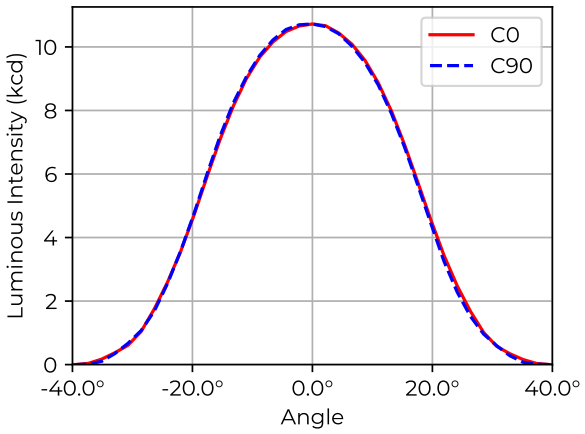


Figure 5: Polar and cartesian light intensity distributions. Wide, TLO

Type B measurement, 1296 data points.

Table 10: Opening angles for different intensity thresholds. Wide, TLO

		C0	C90
Beam Angle	50 %	37°	37°
Field Angle	10 %	57°	57°
Cutoff Angle	3 %	67°	66°

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

		Flux (lm)
Half-Peak Output	@50 %	2610
Tenth-Peak Output	@10 %	3820
Total Lumen Output	@3 %	3980

$$\text{diameter} = 0.67 \times \text{distance}$$

$$\text{illuminance} = \frac{10\,700\,\text{lx}}{(\text{distance [m]})^2}$$

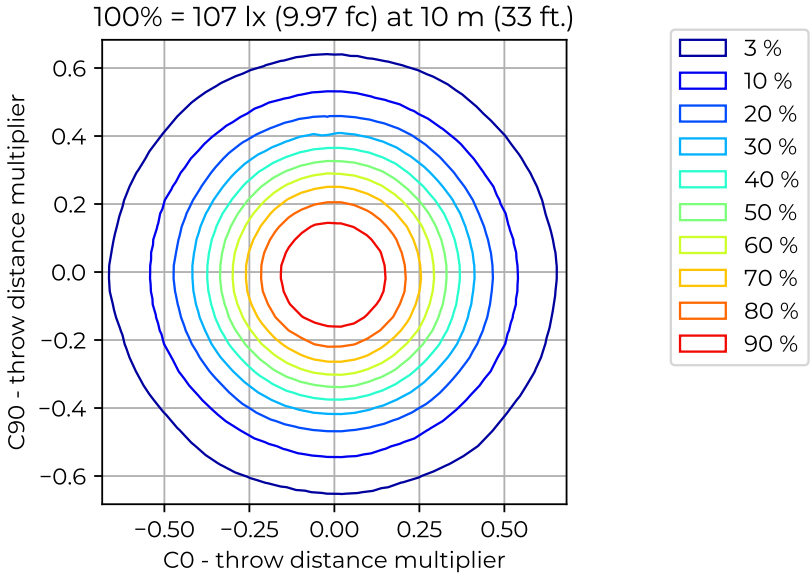


Figure 6: Iso-illuminance diagram of projected beam. Wide, TLO
dist. from origin = throw dist. × throw dist. multiplier

Table 12: Quick calculation diagram for illuminance and beam diameter. Wide, TLO

		Projection Distance [m]								
Parameter	Factor	5	7.5	10	12.5	15	17.5	20	22.5	25
Diameter [m]	0.67	3.3	5.0	6.7	8.3	10.0	12	13	15	17
Illuminance [lx]	10.7k	430	190	110	69	48	35	27	21	17

2 Colors

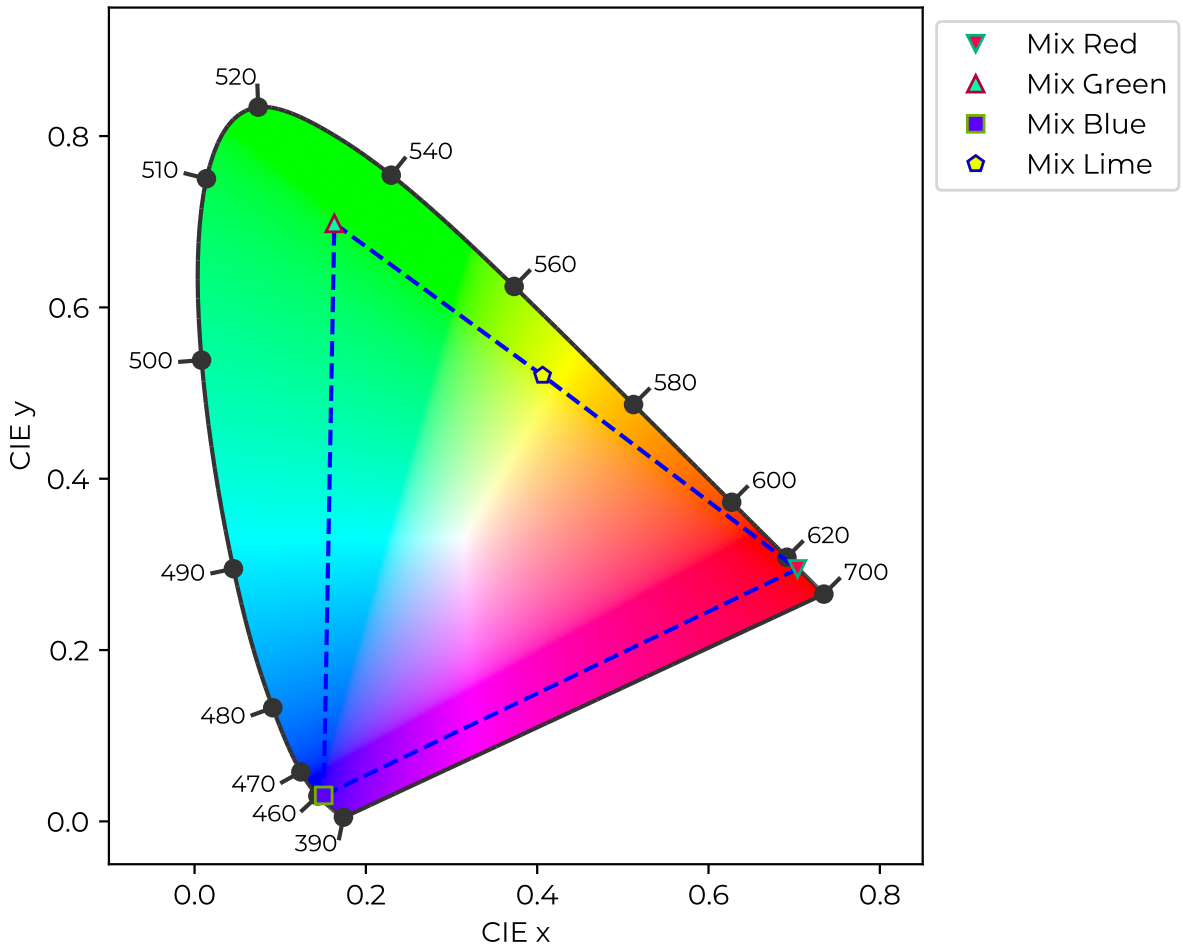


Figure 7: Chromaticity coordinates of device colors in a CIE 1931 chromaticity diagram. Gamut of color mixing system is outlined with dashed lines.

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
Mix Red	0.704, 0.295	0.549, 0.345
Mix Green	0.163, 0.698	0.0591, 0.379
Mix Blue	0.151, 0.0303	0.197, 0.0594
Mix Lime	0.406, 0.521	0.193, 0.37