



FUSION X-Par 8Z
TLO Colors
Photometric Report

Report 2024-06-05-1

GLP German Light Products GmbH
GLP LightLab

Maximum Total Lumens	884 lm
Maximum Intensity	3290 cd
Energy Efficiency Class	B
Energy Efficiency Index	0.63
Power Consumption	44 $\frac{\text{kWh}}{1000\text{h}}$
Lamp	80W RGBL
Serial Number	23060100042
Measurement Date	2024-06-05 12:08



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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
Wide, Red	34°	36°	41°	43°	44°	46°
Wide, Green	33°	36°	41°	42°	44°	45°
Wide, Blue	34°	36°	41°	42°	44°	45°
Wide, Lime	34°	37°	41°	43°	45°	46°

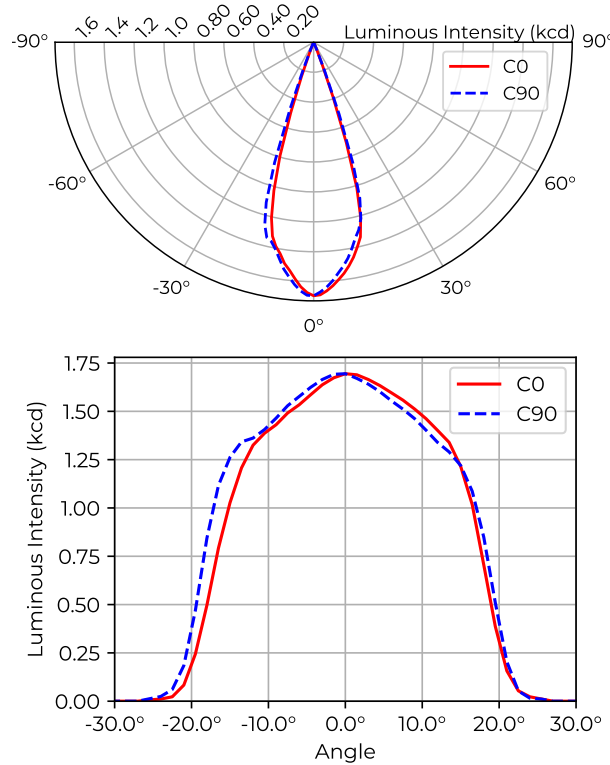
Table 2: Summary of luminous flux and intensity for different fixture configurations.

Beam	Total Lumen Output	Peak Luminous Intensity)
Wide, Red	461 lm	1.70 kcd
Wide, Green	884 lm	3.29 kcd
Wide, Blue	189 lm	681 cd
Wide, Lime	791 lm	2.76 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	
Wide, Red	Diameter [m]	0.63	3.1	4.7	6.3	7.8	9.4	11	13	14	16	
	Illuminance [lx]	1.69k	68	30	17	11	7.5	5.5	4.2	3.3	2.7	
Wide, Green	Diameter [m]	0.62	3.1	4.7	6.2	7.8	9.3	11	12	14	16	
	Illuminance [lx]	3.26k	130	58	33	21	15	11	8.2	6.4	5.2	
Wide, Blue	Diameter [m]	0.63	3.1	4.7	6.3	7.8	9.4	11	13	14	16	
	Illuminance [lx]	679	27	12	6.8	4.3	3.0	2.2	1.7	1.3	1.1	
Wide, Lime	Diameter [m]	0.64	3.2	4.8	6.4	8.0	9.6	11	13	14	16	
	Illuminance [lx]	2.75k	110	49	27	18	12	9.0	6.9	5.4	4.4	

1.1 Wide, Red Beam



Type B measurement, 1296 data points.

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

		C0	C90
Beam Angle	50 %	34°	36°
Field Angle	10 %	41°	43°
Cutoff Angle	3 %	44°	46°

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

		Flux (lm)
Half-Peak Output	@50 %	400
Tenth-Peak Output	@10 %	455
Total Lumen Output	@3 %	461

$$\text{diameter} = 0.63 \times \text{distance}$$

$$\text{illuminance} = \frac{1690 \text{ lx}}{(\text{distance [m]})^2}$$

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

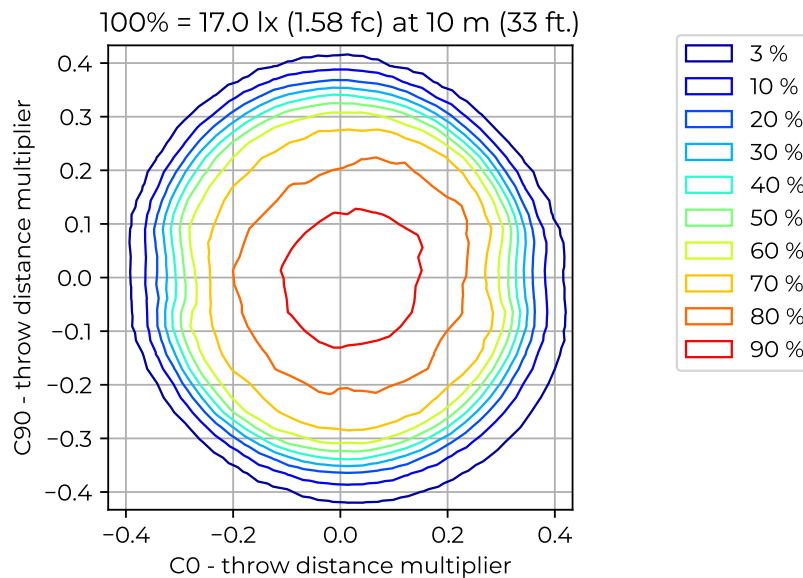
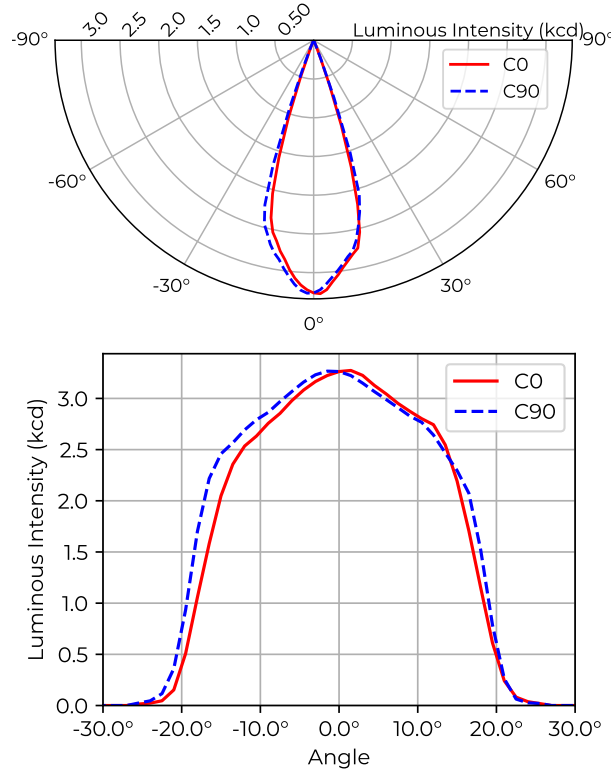


Figure 2: Iso-illuminance diagram of projected beam. Wide, Red
dist. from origin = throw dist. × throw dist. multiplier

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

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	0.63	3.1	4.7	6.3	7.8	9.4	11	13	14	16	
Illuminance [lx]	1.69k	68	30	17	11	7.5	5.5	4.2	3.3	2.7	

1.2 Wide, Green Beam



Type B measurement, 1296 data points.

Table 7: Opening angles for different intensity thresholds. Wide, Green

		C0	C90
Beam Angle	50 %	33°	36°
Field Angle	10 %	41°	42°
Cutoff Angle	3 %	44°	45°

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

		Flux (lm)
Half-Peak Output	@50 %	770
Tenth-Peak Output	@10 %	873
Total Lumen Output	@3 %	884

$$\text{diameter} = 0.62 \times \text{distance}$$

$$\text{illuminance} = \frac{3260 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 3: Polar and cartesian light intensity distributions. Wide, Green

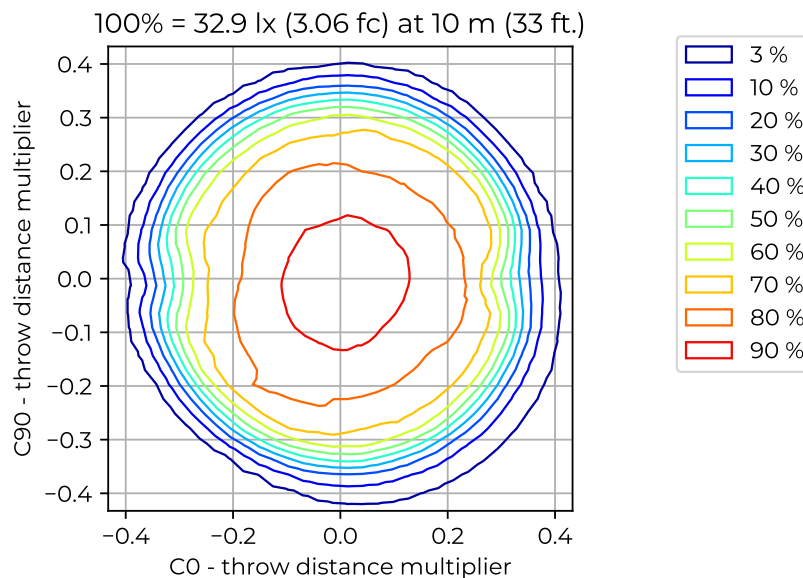
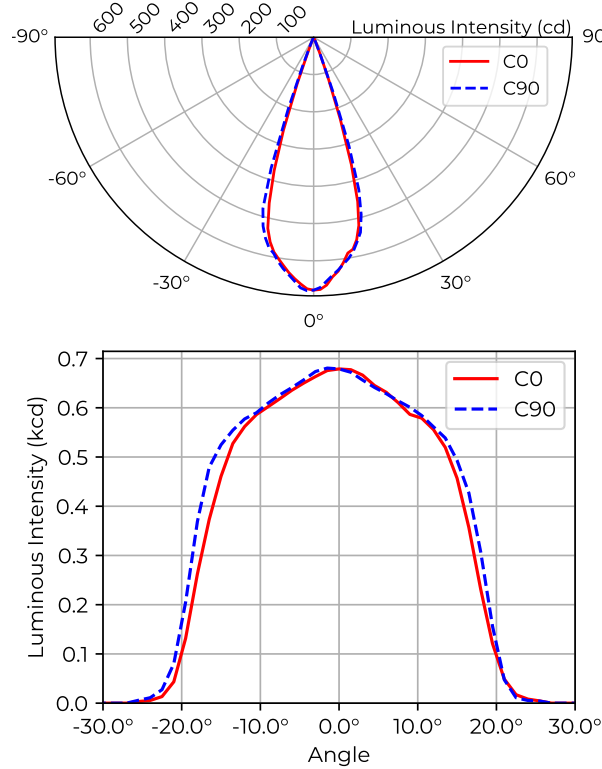


Figure 4: Iso-illuminance diagram of projected beam. Wide, Green
dist. from origin = throw dist. × throw dist. multiplier

Table 9: Quick calculation diagram for illuminance and beam diameter. Wide, Green

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	0.62	3.1	4.7	6.2	7.8	9.3	11	12	14	16	
Illuminance [lx]	3.26k	130	58	33	21	15	11	8.2	6.4	5.2	

1.3 Wide, Blue Beam



Type B measurement, 1296 data points.

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

		C0	C90
Beam Angle	50 %	34°	36°
Field Angle	10 %	41°	42°
Cutoff Angle	3 %	44°	45°

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

		Flux (lm)
Half-Peak Output	@50 %	167
Tenth-Peak Output	@10 %	187
Total Lumen Output	@3 %	189

$$\text{diameter} = 0.63 \times \text{distance}$$

$$\text{illuminance} = \frac{679 \text{ lx}}{(\text{distance [m]})^2}$$

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

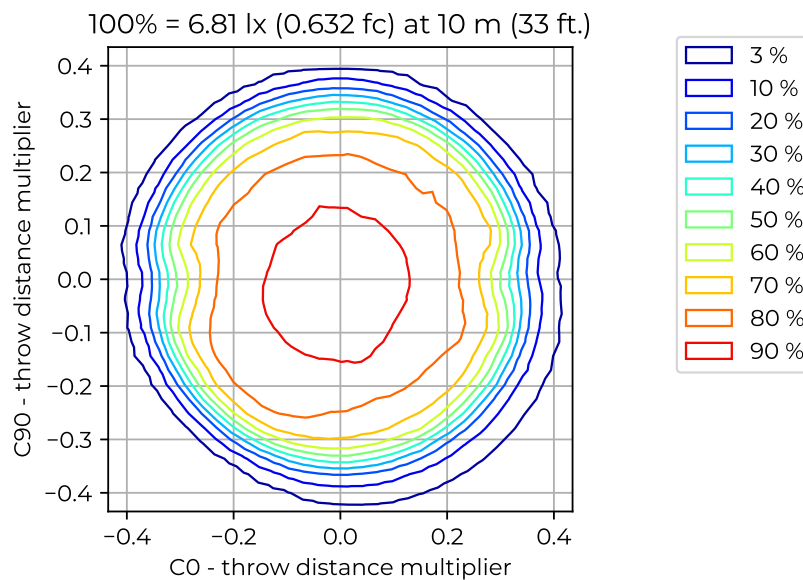
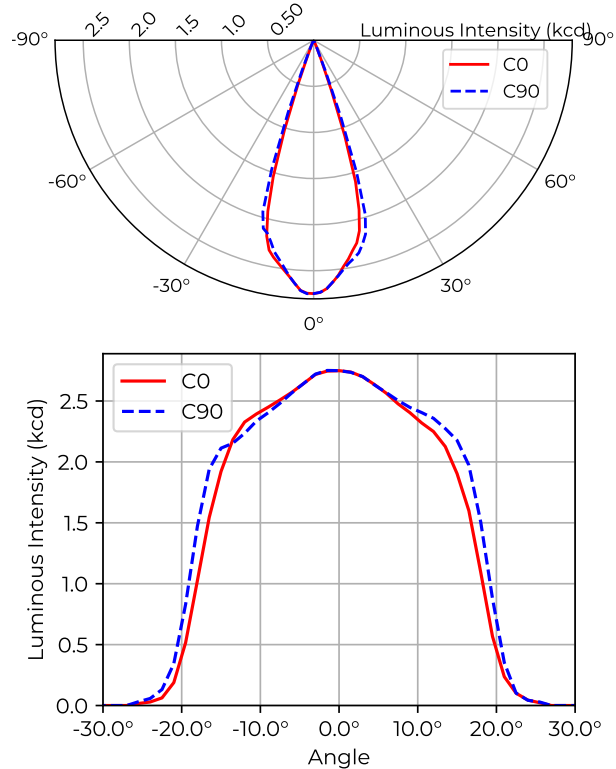


Figure 6: Iso-illuminance diagram of projected beam. Wide, Blue
dist. from origin = throw dist. × throw dist. multiplier

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

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	0.63	3.1	4.7	6.3	7.8	9.4	11	13	14	16	
Illuminance [lx]	679	27	12	6.8	4.3	3.0	2.2	1.7	1.3	1.1	

1.4 Wide, Lime Beam



Type B measurement, 1296 data points.

Table 13: Opening angles for different intensity thresholds. Wide, Lime

		C0	C90
Beam Angle	50 %	34°	37°
Field Angle	10 %	41°	43°
Cutoff Angle	3 %	45°	46°

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

		Flux (lm)
Half-Peak Output	@50 %	699
Tenth-Peak Output	@10 %	780
Total Lumen Output	@3 %	791

$$\text{diameter} = 0.64 \times \text{distance}$$

$$\text{illuminance} = \frac{2750 \text{ lx}}{(\text{distance [m]})^2}$$

Figure 7: Polar and cartesian light intensity distributions. Wide, Lime

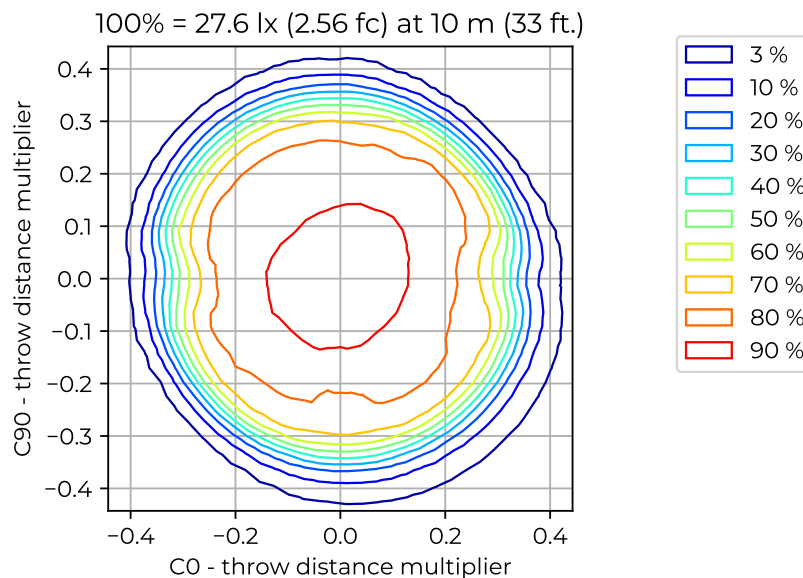


Figure 8: Iso-illuminance diagram of projected beam. Wide, Lime
dist. from origin = throw dist. × throw dist. multiplier

Table 15: Quick calculation diagram for illuminance and beam diameter. Wide, Lime

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	0.64	3.2	4.8	6.4	8.0	9.6	11	13	14	16	
Illuminance [lx]	2.75k	110	49	27	18	12	9.0	6.9	5.4	4.4	