



# FUSION X-Par 8Z Photometric Report

Report 2024-06-04-1

GLP German Light Products GmbH  
GLP LightLab

Maximum Total Lumens	1540 lm
Maximum Intensity	45900 cd
Energy Efficiency Class	B
Energy Efficiency Index	0.69
Power Consumption	78 $\frac{\text{kWh}}{1000 \text{ h}}$
Lamp	80W RGBL
Serial Number	23060100042
Measurement Date	2024-06-04 16:58



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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, RGBL	34°	36°	41°	43°	45°	46°
Medium, RGBL	19°	20°	27°	28°	32°	33°
Narrow, RGBL	7.3°	7.4°	14°	14°	18°	19°

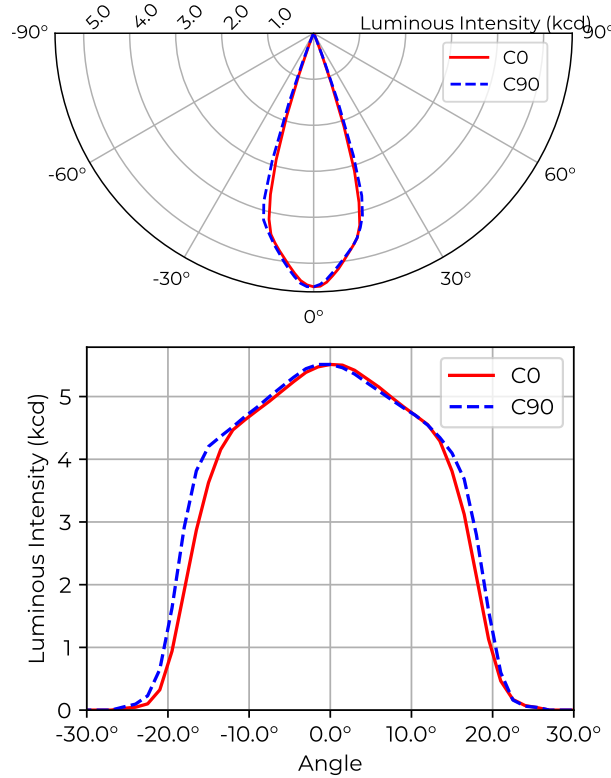
Table 2: Summary of luminous flux and intensity for different fixture configurations.

Beam	Total Lumen Output	Peak Luminous Intensity)
Wide, RGBL	1.54 klm	5.54 kcd
Medium, RGBL	1.34 klm	13.0 kcd
Narrow, RGBL	909 lm	45.9 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, RGBL	Diameter [m]	0.63	3.2	4.7	6.3	7.9	9.5	11	13	14	16	
	Illuminance [lx]	5.51k	220	98	55	35	24	18	14	11	8.8	
Medium, RGBL	Diameter [m]	0.35	1.7	2.6	3.5	4.3	5.2	6.1	7.0	7.8	8.7	
	Illuminance [lx]	12.9k	520	230	130	83	57	42	32	26	21	
Narrow, RGBL	Diameter [m]	0.13	0.64	0.97	1.3	1.6	1.9	2.3	2.6	2.9	3.2	
	Illuminance [lx]	45.6k	1.8k	810	460	290	200	150	110	90	73	

## 1.1 Wide, RGBL Beam



Type B measurement, 1296 data points.

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

		C0	C90
Beam Angle	50 %	34°	36°
Field Angle	10 %	41°	43°
Cutoff Angle	3 %	45°	46°

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

		Flux (lm)
Half-Peak Output	@50 %	1350
Tenth-Peak Output	@10 %	1520
Total Lumen Output	@3 %	1540

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

$$\text{illuminance} = \frac{5510 \text{ lx}}{(\text{distance [m]})^2}$$

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

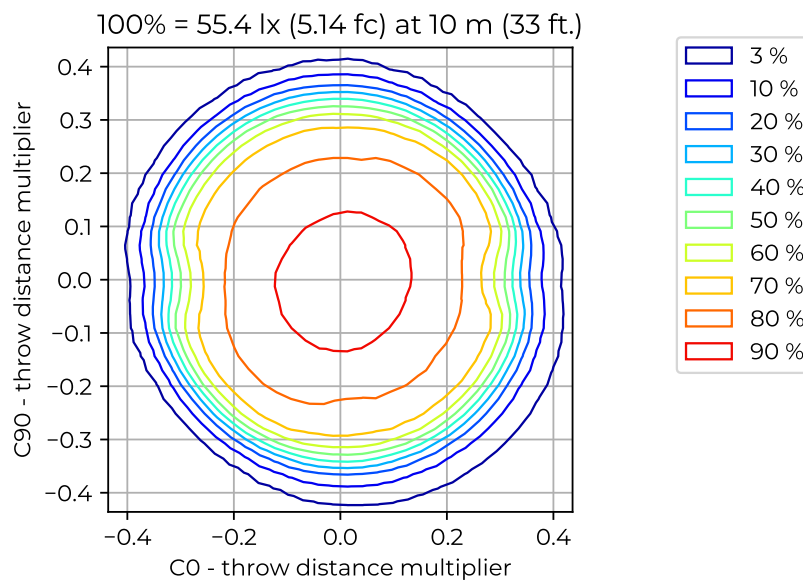
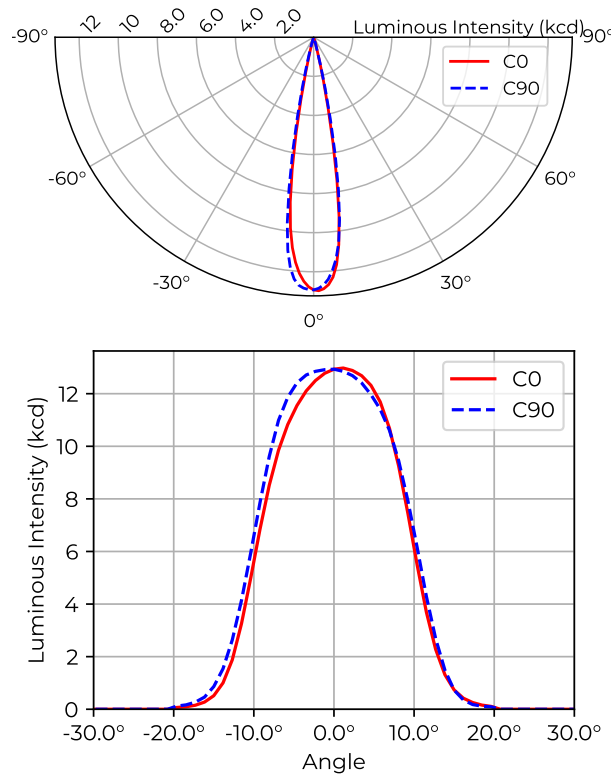


Figure 2: Iso-illuminance diagram of projected beam. Wide, RGBL  
dist. from origin = throw dist. × throw dist. multiplier

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

Parameter	Factor	Projection Distance [m]								
		5	7.5	10	12.5	15	17.5	20	22.5	25
Diameter [m]	0.63	3.2	4.7	6.3	7.9	9.5	11	13	14	16
Illuminance [lx]	5.51k	220	98	55	35	24	18	14	11	8.8

## 1.2 Medium, RGBL Beam



Type B measurement, 1296 data points.

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

		C0	C90
Beam Angle	50 %	19°	20°
Field Angle	10 %	27°	28°
Cutoff Angle	3 %	32°	33°

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

		Flux (lm)
Half-Peak Output	@50 %	982
Tenth-Peak Output	@10 %	1300
Total Lumen Output	@3 %	1340

$$\text{diameter} = 0.35 \times \text{distance}$$

$$\text{illuminance} = \frac{12\,900 \text{ lx}}{(\text{distance [m]})^2}$$

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

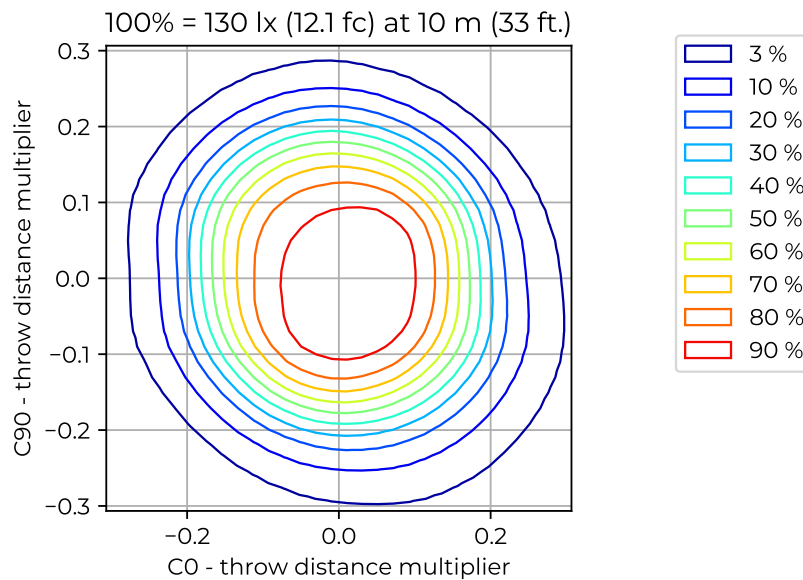
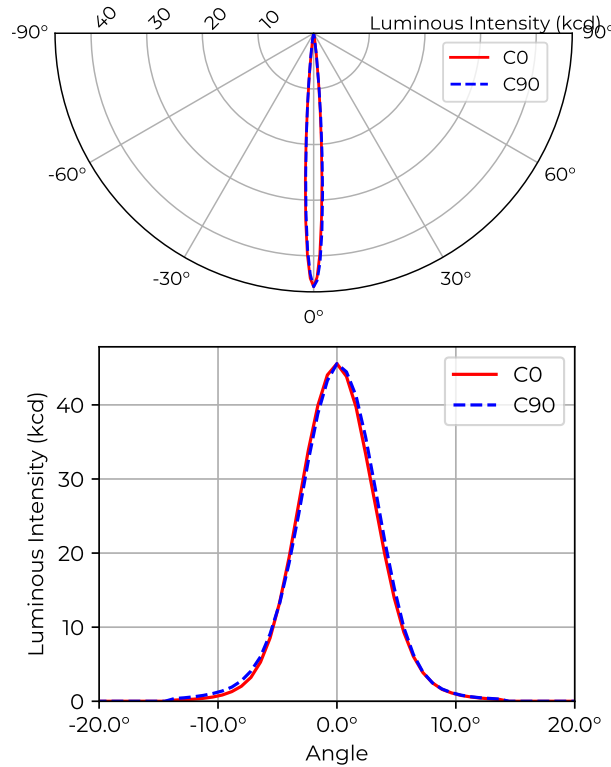


Figure 4: Iso-illuminance diagram of projected beam. Medium, RGBL  
dist. from origin = throw dist. × throw dist. multiplier

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

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	0.35	1.7	2.6	3.5	4.3	5.2	6.1	7.0	7.8	8.7	
Illuminance [lx]	12.9k	520	230	130	83	57	42	32	26	21	

### 1.3 Narrow, RGBL Beam



Type B measurement, 1296 data points.

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

	C0	C90
Beam Angle 50 %	7.3°	7.4°
Field Angle 10 %	14°	14°
Cutoff Angle 3 %	18°	19°

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

	Flux (lm)	
Half-Peak Output @50 %	430	
Tenth-Peak Output @10 %	807	
Total Lumen Output @3 %	909	

$$\text{diameter} = 0.13 \times \text{distance}$$

$$\text{illuminance} = \frac{45\,600 \text{ lx}}{(\text{distance [m]})^2}$$

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

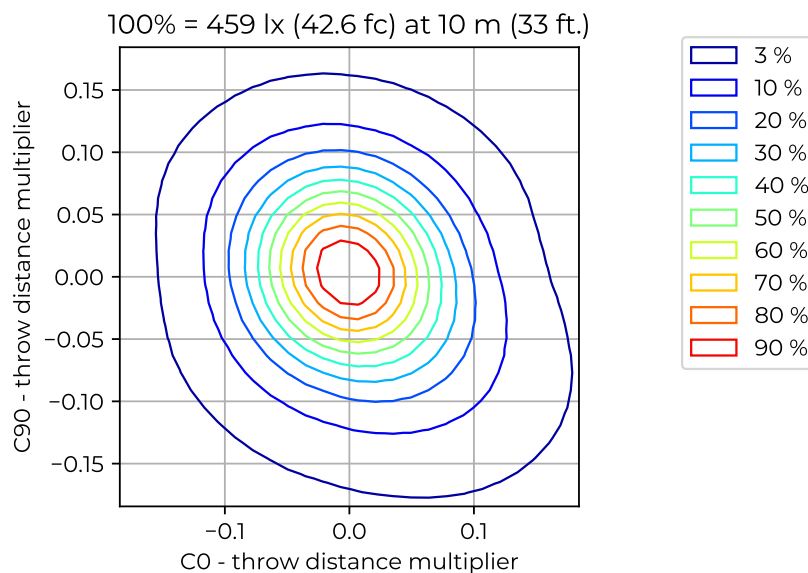


Figure 6: Iso-illuminance diagram of projected beam. Narrow, RGBL  
dist. from origin = throw dist. × throw dist. multiplier

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

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	0.13	0.64	0.97	1.3	1.6	1.9	2.3	2.6	2.9	3.2	
Illuminance [lx]	45.6k	1.8k	810	460	290	200	150	110	90	73	