



S500  
Photometric Report

Report 2024-03-04-2

GLP German Light Products GmbH  
GLP LightLab

Maximum Total Lumens	10700 lm
Maximum Intensity	907000 cd
Energy Efficiency Class	B
Energy Efficiency Index	0.74
Power Consumption	583 $\frac{\text{kWh}}{1000 \text{ h}}$
Lamp	S500Prototype
Measurement Date	2024-03-04 16:11
Analysis SW Version	2.8.6-2-g023e27d



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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
TLO, Wide	35°	34°	40°	40°	42°	42°
TLO, Medium	16°	16°	19°	19°	20°	20°
TLO, Narrow	6.9°	6.8°	7.5°	7.6°	7.8°	8.1°

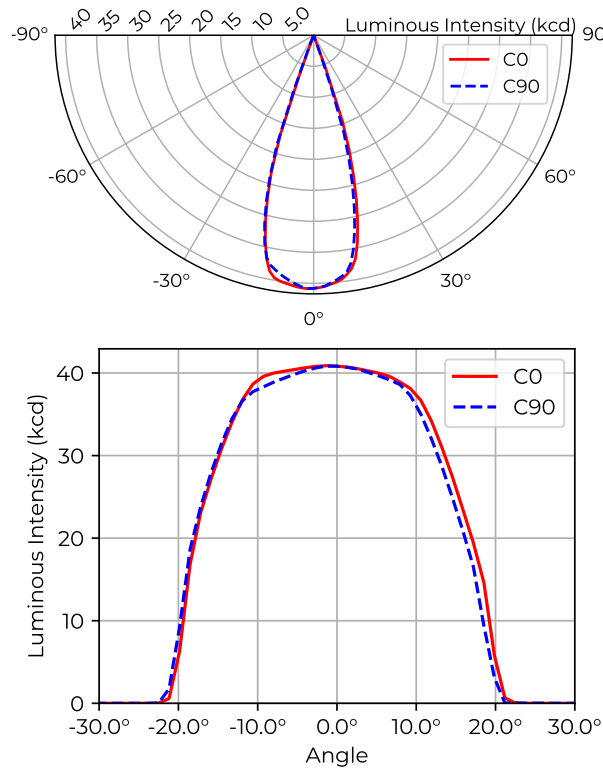
Table 2: Summary of luminous flux and intensity for different fixture configurations.

Beam	Total Lumen Output	Peak Luminous Intensity)
TLO, Wide	10.7 klm	40.9 kcd
TLO, Medium	10.2 klm	178 kcd
TLO, Narrow	9.32 klm	907 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	
TLO, Wide	Diameter [m]	0.62	3.1	4.6	6.2	7.7	9.3	11	12	14	15	
	Illuminance [lx]	40.8k	1.6k	730	410	260	180	130	100	81	65	
TLO, Medium	Diameter [m]	0.28	1.4	2.1	2.8	3.5	4.2	4.9	5.6	6.3	7.0	
	Illuminance [lx]	178k	7.1k	3.2k	1.8k	1.1k	790	580	440	350	280	
TLO, Narrow	Diameter [m]	0.12	0.60	0.90	1.2	1.5	1.8	2.1	2.4	2.7	3.0	
	Illuminance [lx]	901k	36k	16k	9.0k	5.8k	4.0k	2.9k	2.3k	1.8k	1.4k	

## 1.1 TLO, Wide Beam



Type B measurement, 1296 data points.

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

		C0	C90
Beam Angle	50 %	35°	34°
Field Angle	10 %	40°	40°
Cutoff Angle	3 %	42°	42°

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

		Flux (lm)
Half-Peak Output	@50 %	9310
Tenth-Peak Output	@10 %	10 600
Total Lumen Output	@3 %	10 700

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

$$\text{illuminance} = \frac{40\,800 \text{ lx}}{(\text{distance [m]})^2}$$

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

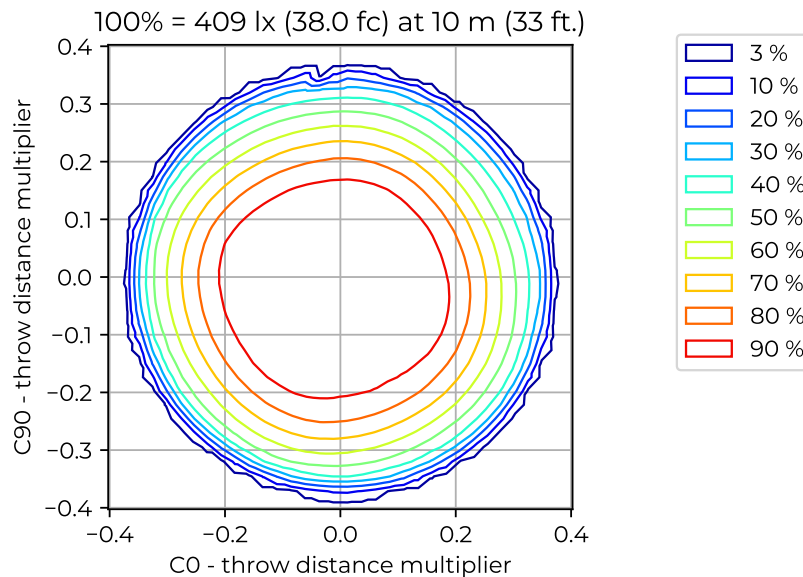
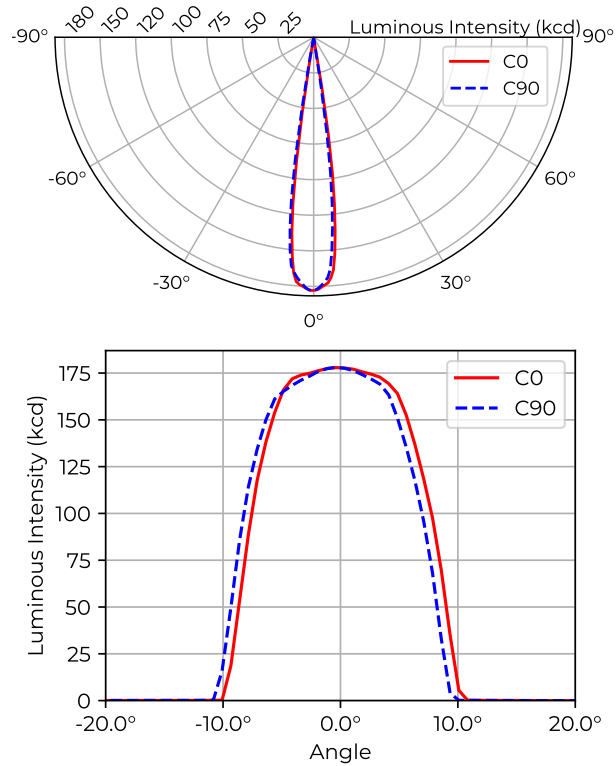


Figure 2: Iso-illuminance diagram of projected beam. TLO, Wide  
dist. from origin = throw dist. × throw dist. multiplier

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

Parameter	Factor	Projection Distance [m]								
		5	7.5	10	12.5	15	17.5	20	22.5	25
Diameter [m]	0.62	3.1	4.6	6.2	7.7	9.3	11	12	14	15
Illuminance [lx]	40.8k	1.6k	730	410	260	180	130	100	81	65

## 1.2 TLO, Medium Beam



Type B measurement, 1296 data points.

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

		C0	C90
Beam Angle	50 %	16°	16°
Field Angle	10 %	19°	19°
Cutoff Angle	3 %	20°	20°

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

		Flux (lm)
Half-Peak Output	@50 %	8700
Tenth-Peak Output	@10 %	10 100
Total Lumen Output	@3 %	10 200

$$\text{diameter} = 0.28 \times \text{distance}$$

$$\text{illuminance} = \frac{178\,000 \text{ lx}}{(\text{distance [m]})^2}$$

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

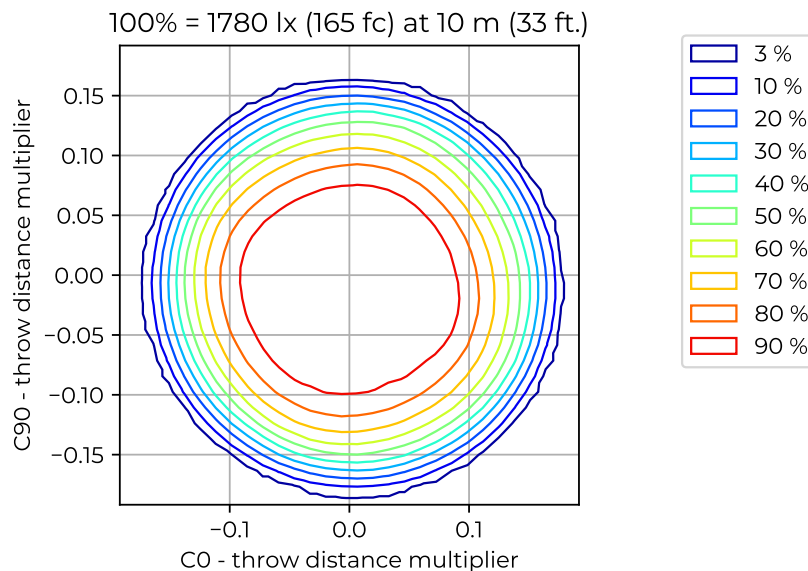
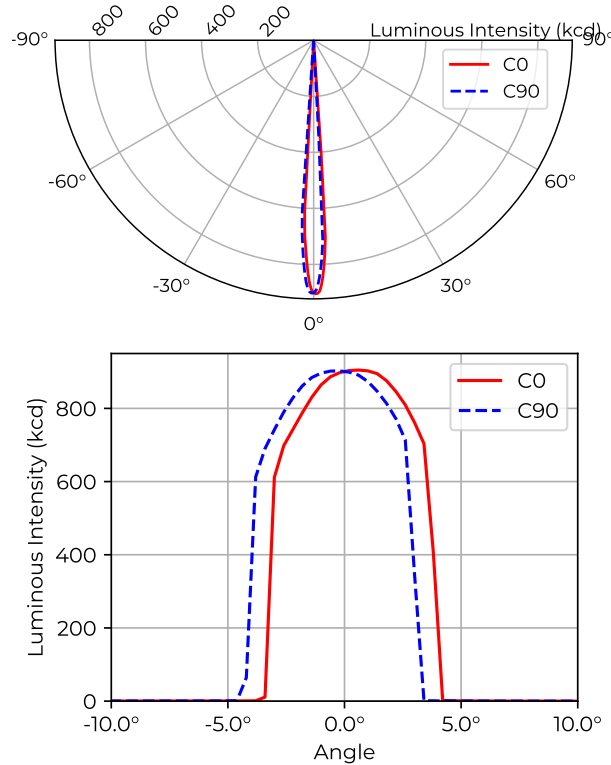


Figure 4: Iso-illuminance diagram of projected beam. TLO, Medium  
dist. from origin = throw dist. × throw dist. multiplier

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

Parameter	Factor	Projection Distance [m]									
		5	7.5	10	12.5	15	17.5	20	22.5	25	
Diameter [m]	0.28	1.4	2.1	2.8	3.5	4.2	4.9	5.6	6.3	7.0	
Illuminance [lx]	178k	7.1k	3.2k	1.8k	1.1k	790	580	440	350	280	

### 1.3 TLO, Narrow Beam



Type B measurement, 1296 data points.

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

		C0	C90
Beam Angle	50 %	6.9°	6.8°
Field Angle	10 %	7.5°	7.6°
Cutoff Angle	3 %	7.8°	8.1°

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

		Flux (lm)
Half-Peak Output	@50 %	8680
Tenth-Peak Output	@10 %	9280
Total Lumen Output	@3 %	9320

$$\text{diameter} = 0.12 \times \text{distance}$$

$$\text{illuminance} = \frac{901\,000 \text{ lx}}{(\text{distance [m]})^2}$$

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

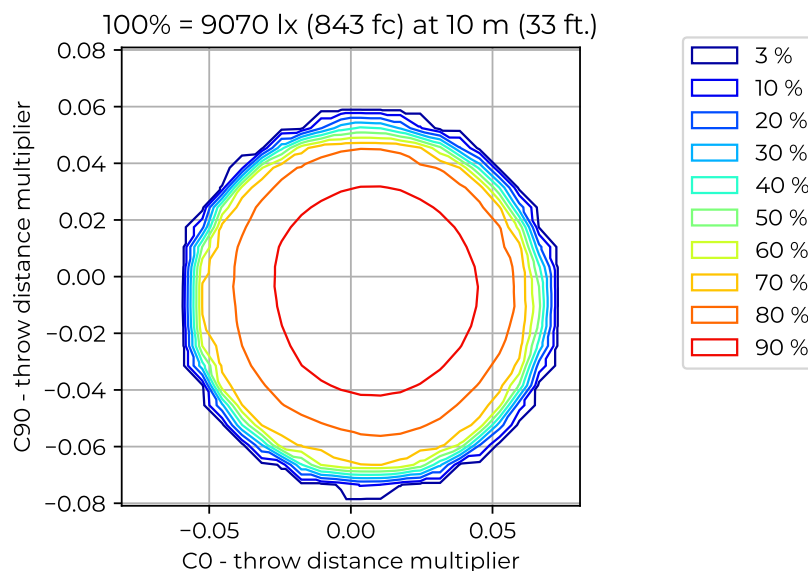


Figure 6: Iso-illuminance diagram of projected beam. TLO, Narrow  
dist. from origin = throw dist. × throw dist. multiplier

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

Parameter	Factor	Projection Distance [m]								
		5	7.5	10	12.5	15	17.5	20	22.5	25
Diameter [m]	0.12	0.60	0.90	1.2	1.5	1.8	2.1	2.4	2.7	3.0
Illuminance [lx]	901k	36k	16k	9.0k	5.8k	4.0k	2.9k	2.3k	1.8k	1.4k