S500
Photometric Report

Report 2024-02-26-1

GLP German Light Products GmbH
GLP LightLab

Maximum Total Lumens	14800	lm
Maximum Intensity	1240000	cd
Energy Efficiency Class	B	
Energy Efficiency Index	0.54	
Power Consumption	586	$\frac{kW\,h}{1000\,h}$
Lamp	S500Prototype	
Measurement Date	2024-02-26 16:13	

Contents

1 Light Distribution

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

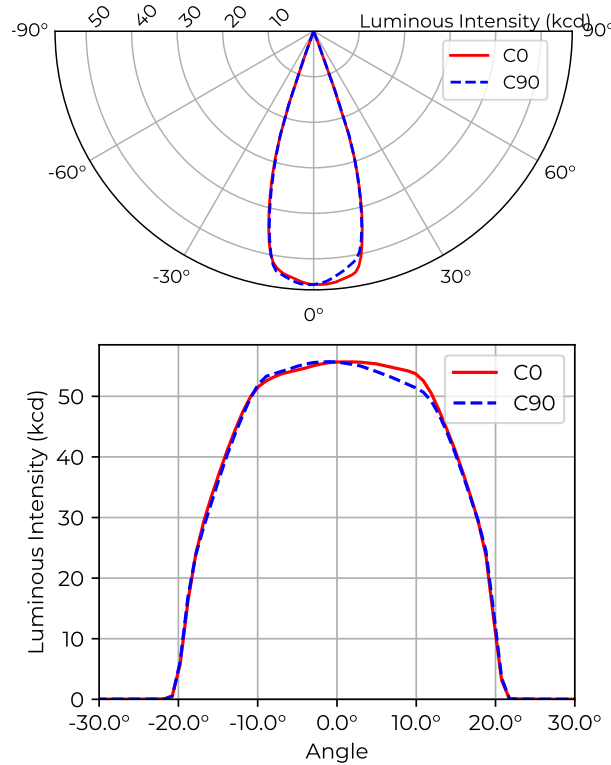| Beam	Beam Angle (50 %)		Field Angle (10 %)		Cutoff Angle (3 %)	
	C0	C90	C0	C90	C0	C90
Wide, S500TLO	35°	35°	40°	40°	41°	41°
Medium, S500TLO	16°	16°	19°	19°	20°	20°
Narrow, S500TLO	6.9°	6.9°	7.7°	7.7°	7.8°	7.8°

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

Beam	Total Lumen Output	Peak Luminous Intensity)
Wide, S500TLO	14.8 klm	55.8 kcd
Medium, S500TLO	14.0 klm	243 kcd
Narrow, S500TLO	12.8 klm	1.24 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
Wide, S500TLO	Diameter [m]	0.64	3.2	4.8	6.4	7.9	9.5	11	13	14	16
	Illuminance [lx]	55.7k	2.2k	990	560	360	250	180	140	110	89
Medium, S500TLO	Diameter [m]	0.28	1.4	2.1	2.8	3.5	4.2	4.9	5.6	6.3	7.0
	Illuminance [lx]	242k	9.7k	4.3k	2.4k	1.6k	1.1k	790	610	480	390
Narrow, S500TLO	Diameter [m]	0.12	0.60	0.90	1.2	1.5	1.8	2.1	2.4	2.7	3.0
	Illuminance [lx]	1.23M	49k	22k	12k	7.9k	5.5k	4.0k	3.1k	2.4k	2.0k

1.1 Wide, S500TLO Beam

Type B measurement, 3844 data points.

Table 4: Opening angles for different intensity thresholds. Wide, S500TLO

		C0	C90
Beam Angle	50 %	35°	35°
Field Angle	10 %	40°	40°
Cutoff Angle	3 %	41°	41°

Table 5: Luminous flux, integrated over the beam for several minimum threshold intensities. Wide, S500TLO

		Flux (lm)
Half-Peak Output	@50 %	12 900
Tenth-Peak Output	@10 %	14 700
Total Lumen Output	@3 %	14 800

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

$$\text{illuminance} = \frac{55\,700\,\text{lx}}{(\text{distance [m]})^2}$$

Figure 1: Polar and cartesian light intensity distributions. Wide, S500TLO
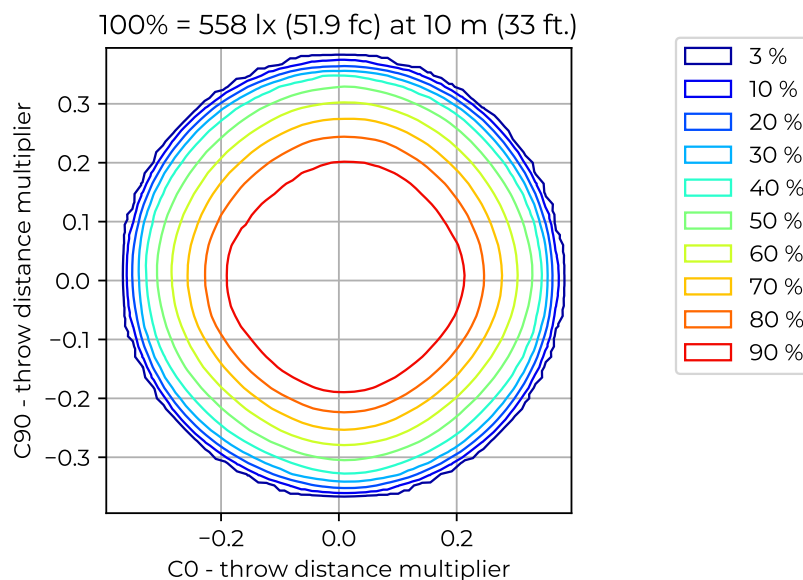

Figure 2: Iso-illuminance diagram of projected beam. Wide, S500TLO
dist. from origin = throw dist. × throw dist. multiplier

Table 6: Quick calculation diagram for illuminance and beam diameter. Wide, S500TLO

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	7.9	9.5	11	13	14	16
Illuminance [lx]	55.7k	2.2k	990	560	360	250	180	140	110	89

1.2 Medium, S500TLO Beam

Type B measurement, 3844 data points.

Table 7: Opening angles for different intensity thresholds. Medium, S500TLO

		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. Medium, S500TLO

		Flux (lm)
Half-Peak Output	@50 %	12 000
Tenth-Peak Output	@10 %	13 900
Total Lumen Output	@3 %	14 000

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

$$\text{illuminance} = \frac{242\,000\,\text{lx}}{(\text{distance [m]})^2}$$

Figure 3: Polar and cartesian light intensity distributions. Medium, S500TLO
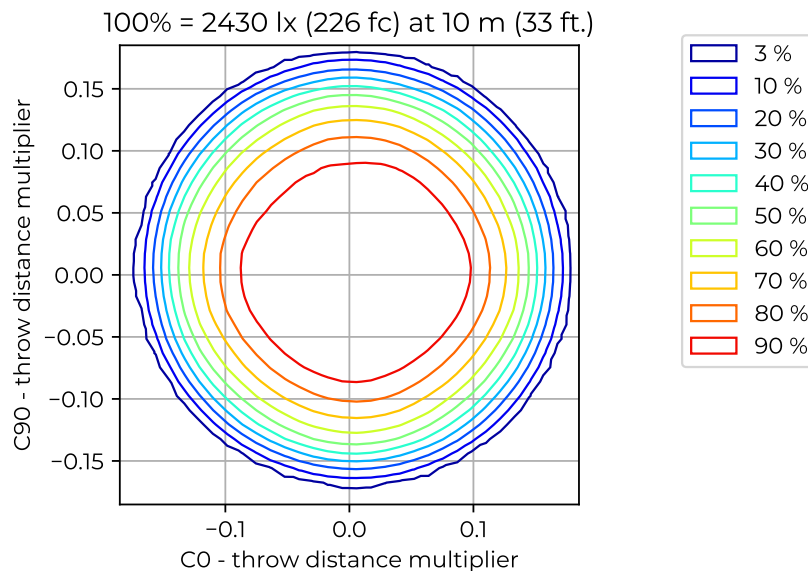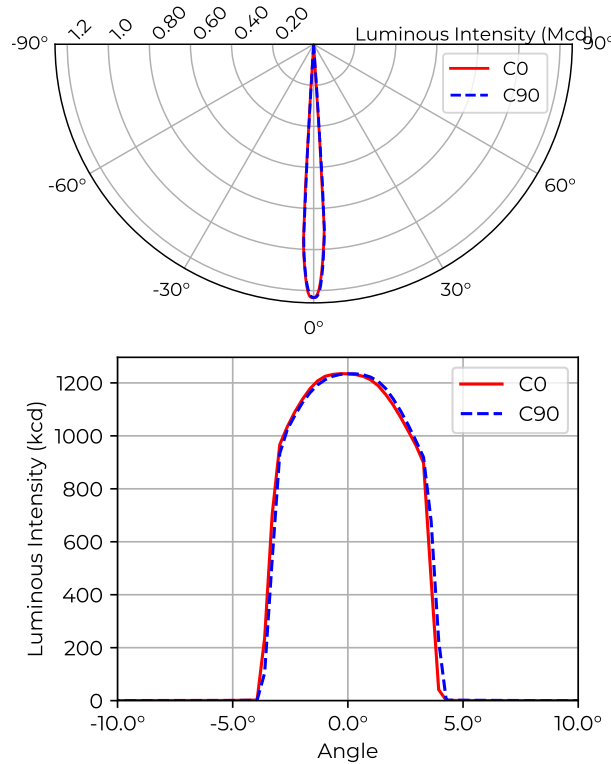
Figure 4: Iso-illuminance diagram of projected beam. Medium, S500TLO
dist. from origin = throw dist. × throw dist. multiplier

Table 9: Quick calculation diagram for illuminance and beam diameter. Medium, S500TLO

Parameter	Factor	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]	242k	9.7k	4.3k	2.4k	1.6k	1.1k	790	610	480	390

(Projection Distance [m] spans the numeric columns 5 through 25.)

1.3   Narrow, S500TLO Beam

Type B measurement, 3844 data points.

Table 10: Opening angles for different intensity thresholds. Narrow, S500TLO

		C0	C90
Beam Angle	50 %	6.9°	6.9°
Field Angle	10 %	7.7°	7.7°
Cutoff Angle	3 %	7.8°	7.8°

Table 11: Luminous flux, integrated over the beam for several minimum threshold intensities. Narrow, S500TLO

		Flux (lm)
Half-Peak Output	@50 %	12 000
Tenth-Peak Output	@10 %	12 700
Total Lumen Output	@3 %	12 800

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

$$\text{illuminance} = \frac{1\,230\,000\,\text{lx}}{(\text{distance [m]})^2}$$

Figure 5: Polar and cartesian light intensity distributions. Narrow, S500TLO
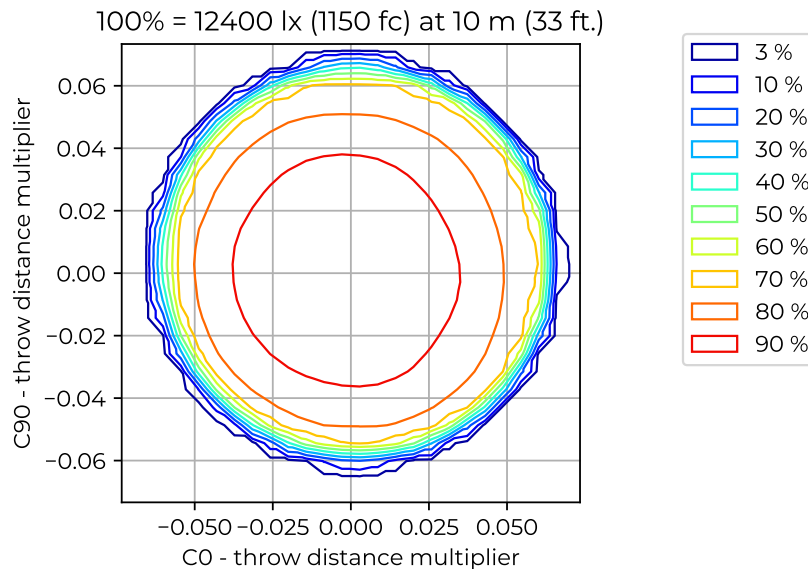

100% = 12400 lx (1150 fc) at 10 m (33 ft.)

Figure 6: Iso-illuminance diagram of projected beam. Narrow, S500TLO
dist. from origin = throw dist. × throw dist. multiplier

Table 12: Quick calculation diagram for illuminance and beam diameter. Narrow, S500TLO

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]	1.23M	49k	22k	12k	7.9k	5.5k	4.0k	3.1k	2.4k	2.0k