


光学检测报告

报告编号.....:	OPSZ201805186-G01	
主检 (印刷体姓名 + 签名).....:	朱明祥	
审批 (印刷体姓名 + 签名).....:	赵俊	
签发日期.....:	2018-06-06	
总页数.....:	27页	
检测实验室.....:	苏州欧普照明有限公司实验室	
地址.....:	江苏省苏州市吴江区吴江市汾湖经济开发区汾杨路东侧	
申请人名称.....:	苏州欧普照明有限公司	
地址.....:	江苏省苏州市吴江区吴江市汾湖经济开发区汾杨路东侧	
检测规范:		
标准.....:	<input checked="" type="checkbox"/> GB/T 9468-2008 <input type="checkbox"/> 依据客户委托要求 <input checked="" type="checkbox"/> IES-LM-79-08	
检验结果.....:	数据见检测结果汇总	
可能的检测结论:		
- 被试品符合测试要求:	P (符合 Pass)	
- 被试品不符合测试要求.....:	F (不符合 Fail)	
- 测试条款不适用于被试品.....:	N/A (不适合 Not applicable)	
- 被试品未被检测.....:	N/T (未被检测 Not tested)	
一般说明:		
本报告所提及的检测结果仅对被测样品负责。		
本报告中样品信息来源于客户,实验室不负责其真实性。		
未经签发实验室书面同意,不得复制本报告的任何部分。		
测试结果已经包括了测试设备和测试方法方面的不确定度考虑。		

样品名称	嵌入式灯具	规格型号	见样品说明
项目名称	商用平台筒灯	研发项目编号	2170310081
委托部门	系统一室	制造商	苏州欧普照明有限公司
委托人/联系人	祝文雪	联系电话	13862195330
产品商标	/	样品数量	5 只
送样日期	2018-05-31	检测类别	委托测试
验讫日期	2018-06-06	环境温度	25±1℃

使用设备

<input type="checkbox"/> YF1000 光色电综合分析系统	编号SH011110002	有效期 2019-3-13
<input checked="" type="checkbox"/> YF1000 光色电综合分析系统	编号SH011110004	有效期 2018-7-31
<input type="checkbox"/> YF1000 光色电综合分析系统	编号SH011110008	有效期 2019-3-13
<input type="checkbox"/> GMS-2000 立式分布式光度计	编号SH011120002	有效期 2018-7-24
<input checked="" type="checkbox"/> G0-V 1920 卧式分布式光度计	编号SH011120005	有效期 2018-7-24
<input type="checkbox"/> 手持式照度计	编号SH014110002	
<input type="checkbox"/> LFA-3000		

检测项目

<input checked="" type="checkbox"/> 光色电	<input checked="" type="checkbox"/> 自吸收系数	<input checked="" type="checkbox"/> 配光曲线	<input type="checkbox"/> 光源启动上升时间
<input type="checkbox"/> 频闪			

样品说明

样品编号	样品描述	备注
01001	平台筒灯 8 寸 40w4000k	
02001	平台筒灯8寸30w4000k	
03001	平台筒灯8寸20w4000k	
04001	平台筒灯7寸20w4000k	
05001	平台筒灯7寸15w4000k	

样品图片





报告编号: OPSZ201805186-G01

检测结果汇总

样品 编 号	电参数				光参数			色品参数					配光参数				光度修正	
	I (A)	U (V)	P (W)	PF	Φ (lm)	Φ_e (m W)	光效 (lm/ W)	x	y	CCT (K)	Ra	SDCM	中心光 强 (cd)	最大光 强 (cd)	光束角°		自吸收 系数	修正光 通量
															0°- 180°	90°- 270°		
01001	0.178	220.0	38.4	0.981	3752.1	11606	97.8	0.3863	0.3769	3844	84.2	5.2	/	/	/	/	1.055	3959.4
02001	0.140	220.0	30.0	0.978	2939.9	9113.3	97.9	0.3850	0.3755	3868	84.4	5.0	/	/	/	/	1.055	3102.4
03001	0.100	220.0	20.0	0.909	1989.7	6177.8	99.4	0.3838	0.3745	3893	84.7	4.7	/	/	/	/	1.055	2099.6
04001	0.101	220.2	20.1	0.905	2013.1	/	100.2	0.3861	0.3764	3847	85.0	5.2	1026.9	1031.0	91.5	91.8	/	/
05001	0.075	220.2	15.0	0.904	1518.0	/	101.5	0.3838	0.3746	3893	85.3	4.7	779.8	787.0	91.9	92.2	/	/
备注: 附件		<input checked="" type="checkbox"/> 光源光谱测试数据 <input checked="" type="checkbox"/> 分布光度数据 <input type="checkbox"/> 光通维持率 <input type="checkbox"/> 光源启动上升时间数据																

***** 报告结束 *****

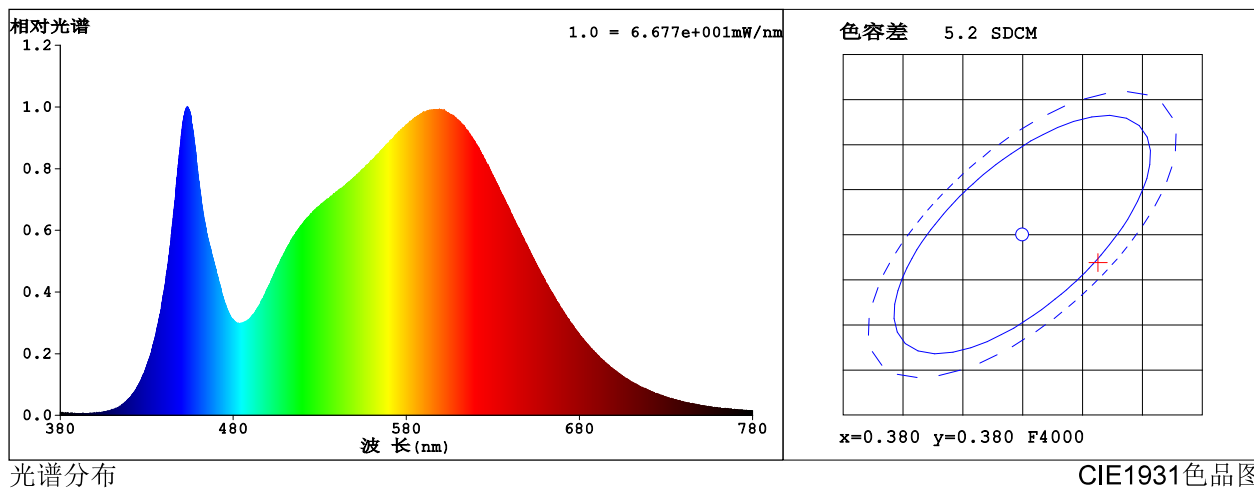
光源光谱测试报告

样品名称	:	测试日期	: 2018-06-06 09:38:50
样品型号	: 平台筒灯8寸40w4000k	样品状态	:
样品编号	: OPSZ201805186-01001	测试仪器	: HaasSuite(EVERFINE)
制造厂商	:	测试人员	: JJY
备注	: 0h		

测试条件

环境温度	: 25.3Deg	环境湿度	: 65.0%
测试范围	: 380nm-780nm	峰值IP	: 50144 (77%)
测量模式	: 快速测试	积分时间	: 58 ms
		灵敏度	: 高

光谱参数



光谱分布

CIE1931色品图

CIE颜色参数

色品坐标: $x = 0.3863$ $y = 0.3769$ / $u' = 0.2289$ $v' = 0.5025$ ($duv = -1.59e-03$)
相关色温: CCT=3844K 主波长: $\lambda_d = 580.5nm$ 色纯度: Purity=29.1%
峰值波长: $\lambda_p = 454nm$ 半峰带宽: FWHM=26.3nm 色比: R=19.2% G=77.3% B=3.6%

显色指数: $R_a = 84.2$

R1 = 83	R2 = 91	R3 = 95	R4 = 82	R5 = 83	R6 = 87	R7 = 86
R8 = 66	R9 = 16	R10 = 77	R11 = 81	R12 = 64	R13 = 85	R14 = 98
R15 = 78						

光度&辐射度参数

光通量 $\Phi = 3752.1 lm$ 光效: 97.79 lm/W 辐射通量 $\Phi_e = 11.606 W$

电参数

电压 $V = 220.0 V$ 电流 $I = 0.1777 A$ 功率 $P = 38.37 W$ 功率因数 $PF = 0.9814$

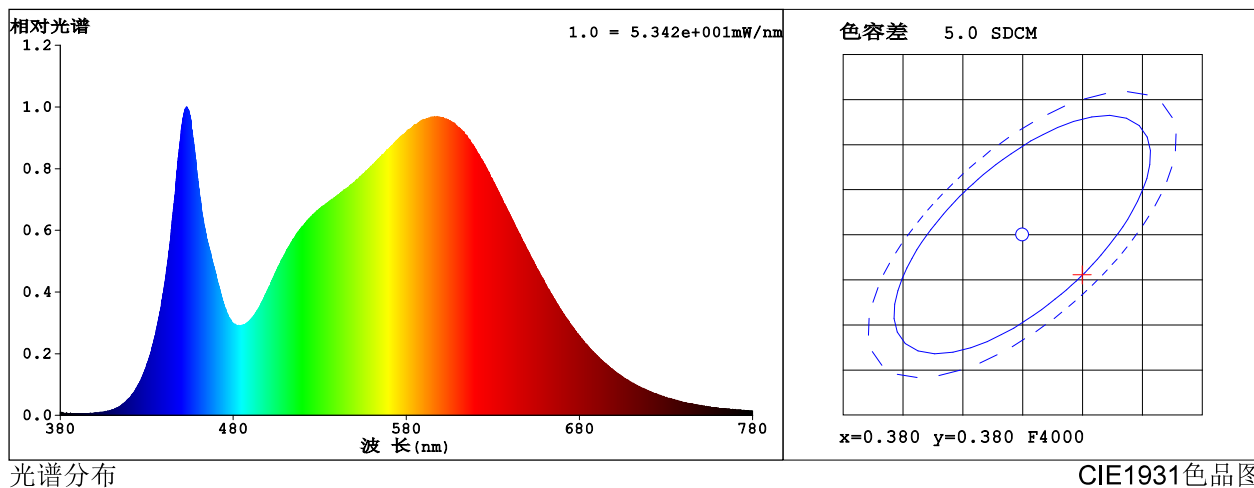
光源光谱测试报告

样品名称	:	测试日期	: 2018-06-06 09:55:10
样品型号	: 平台筒灯8寸30w4000k	样品状态	:
样品编号	: OPSZ201805186-02001	测试仪器	: HaasSuite(EVERFINE)
制造厂商	:	测试人员	: JJY
备注	: 0h		

测试条件

环境温度	: 25.3Deg	环境湿度	: 65.0%
测试范围	: 380nm-780nm	峰值IP	: 52723 (80%)
测量模式	: 快速测试	积分时间	: 78 ms
		灵敏度	: 高

光谱参数



CIE颜色参数

色品坐标: $x = 0.3850$ $y = 0.3755$ / $u' = 0.2286$ $v' = 0.5017$ ($duv = -1.87e-03$)
相关色温: CCT=3868K 主波长: $\lambda_d = 580.6nm$ 色纯度: Purity=28.2%
峰值波长: $\lambda_p = 453nm$ 半峰带宽: FWHM=25.8nm 色比: R=19.1% G=77.3% B=3.6%

显色指数: $R_a = 84.4$

R1 = 83 R2 = 91 R3 = 95 R4 = 83 R5 = 83 R6 = 87 R7 = 86
R8 = 67 R9 = 17 R10 = 77 R11 = 81 R12 = 65 R13 = 85 R14 = 97 R15 = 78

光度&辐射度参数

光通量 $\Phi = 2939.9 lm$ 光效: 97.90 lm/W 辐射通量 $\Phi_e = 9.1133 W$

电参数

电压 $V = 220.0 V$ 电流 $I = 0.1396 A$ 功率 $P = 30.03 W$ 功率因数 $PF = 0.9777$

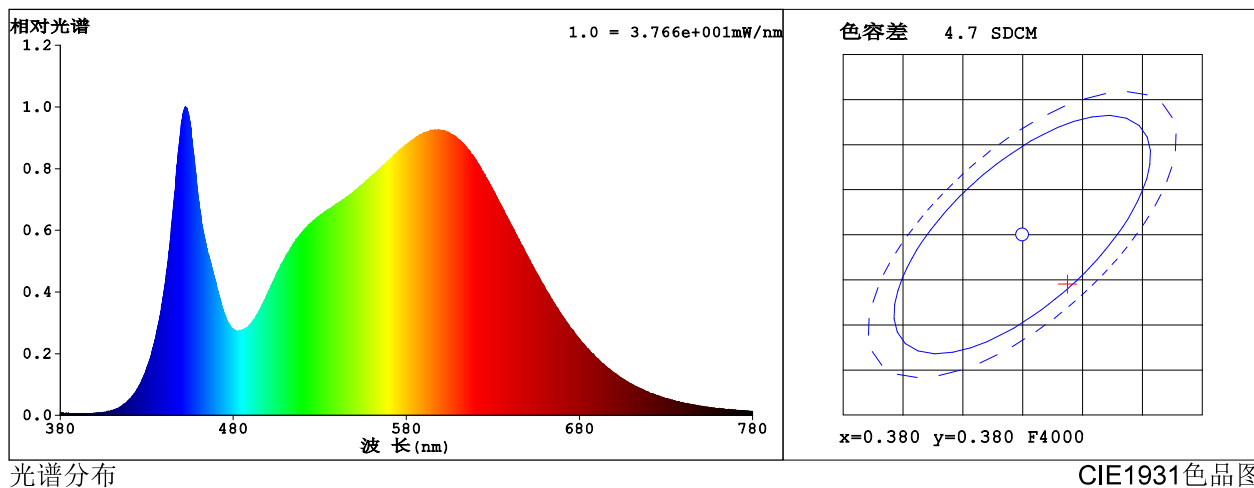
光源光谱测试报告

样品名称	:	测试日期	: 2018-06-06 10:12:58
样品型号	: 平台筒灯8寸20w4000k	样品状态	:
样品编号	: OPSZ201805186-03001	测试仪器	: HaasSuite(EVERFINE)
制造厂商	:	测试人员	: JJY
备注	: 0h		

测试条件

环境温度	: 25.3Deg	环境湿度	: 65.0%
测试范围	: 380nm-780nm	峰值IP	: 52876 (81%)
测量模式	: 快速测试	积分时间	: 116 ms
		灵敏度	: 高

光谱参数



CIE颜色参数

色品坐标: $x = 0.3838$ $y = 0.3745$ / $u' = 0.2282$ $v' = 0.5011$ ($duv = -2.00e-03$)
相关色温: CCT=3893K 主波长: $\lambda_d = 580.6nm$ 色纯度: Purity=27.6%
峰值波长: $\lambda_p = 452nm$ 半峰带宽: FWHM=24.5nm 色比: R=19.1% G=77.3% B=3.6%

显色指数: $R_a = 84.7$

R1 = 84	R2 = 91	R3 = 95	R4 = 83	R5 = 83	R6 = 87	R7 = 87
R8 = 68	R9 = 19	R10 = 77	R11 = 82	R12 = 64	R13 = 86	R14 = 97
R15 = 79						

光度&辐射度参数

光通量 $\Phi = 1989.7 lm$ 光效: 99.38 lm/W 辐射通量 $\Phi_e = 6.1778 W$

电参数

电压 $V = 220.0 V$ 电流 $I = 0.1001 A$ 功率 $P = 20.02 W$ 功率因数 $PF = 0.9090$

光源光谱测试报告

样品名称 :
样品型号 : 平台筒灯7寸20w4000k
样品编号 : OPSZ201805186-04001
制造厂商 :
备注 : 0h

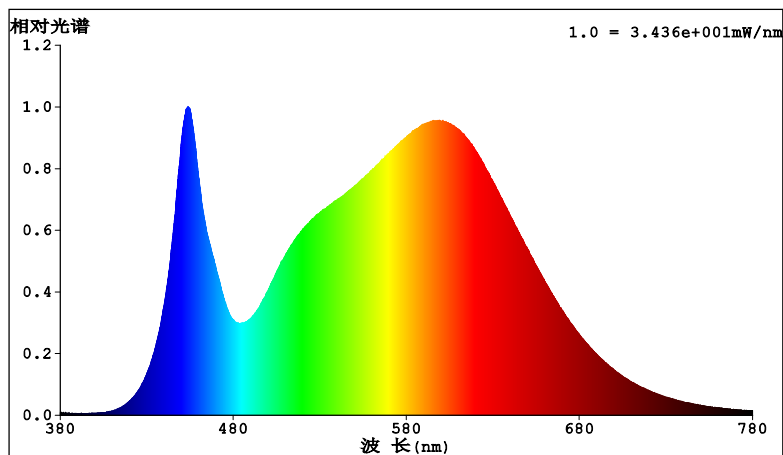
测试日期 : 2018-06-06 10:31:47
样品状态 :
测试仪器 : HaasSuite(EVERFINE)
测试人员 : JJY

测试条件

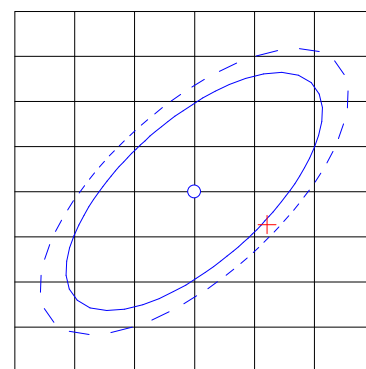
环境温度 : 25.3Deg
测试范围 : 380nm-780nm
测量模式 : 快速测试

环境湿度 : 65.0%
峰值IP : 49928 (76%)
积分时间 : 116 ms
灵敏度 : 高

光谱参数



色容差 5.2 SDCM



光谱分布

CIE1931色品图

CIE颜色参数

色品坐标: $x = 0.3861$ $y = 0.3764$ / $u' = 0.2290$ $v' = 0.5022$ ($duv = -1.78e-03$)

相关色温: CCT=3847K 主波长: $\lambda_d = 580.6\text{nm}$ 色纯度: Purity=28.8%

峰值波长: $\lambda_p = 454\text{nm}$ 半峰带宽: FWHM=25.5nm 色比: R=19.3% G=77.0% B=3.7%

显色指数: Ra = 85.0

R1 = 84 R2 = 92 R3 = 96 R4 = 83 R5 = 84 R6 = 88 R7 = 86
R8 = 68 R9 = 20 R10 = 79 R11 = 81 R12 = 65 R13 = 86 R14 = 98 R15 = 79

光度&辐射度参数

电参数

光源光谱测试报告

样品名称 :
样品型号 : 平台筒灯7寸15w4000k
样品编号 : OPSZ201805186-05001
制造厂商 :
备注 : 0h

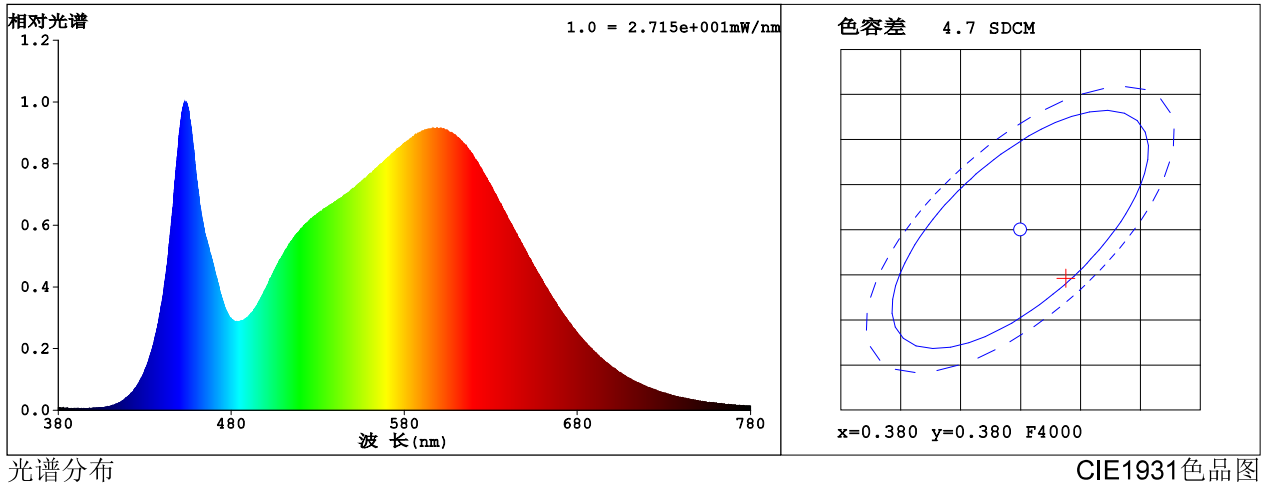
测试日期 : 2018-06-06 10:51:49
样品状态 :
测试仪器 : HaasSuite(EVERFINE)
测试人员 : JJY

测试条件

环境温度 : 25.3Deg
测试范围 : 380nm-780nm
测量模式 : 快速测试

环境湿度 : 65.0%
峰值IP : 52869 (81%)
积分时间 : 162 ms
灵敏度 : 高

光谱参数



光谱分布

CIE1931色品图

CIE颜色参数

色品坐标: $x = 0.3838$ $y = 0.3746$ / $u' = 0.2282$ $v' = 0.5011$ ($duv = -1.96e-03$)

相关色温: CCT=3893K 主波长: $\lambda_d = 580.6\text{nm}$ 色纯度: Purity=27.6%

峰值波长: $\lambda_p = 453\text{nm}$ 半峰带宽: FWHM=24.8nm 色比: R=19.2% G=77.1% B=3.7%

显色指数: $R_a = 85.3$

R1=85 R2=92 R3=96 R4=83 R5=84 R6=88 R7=87
R8=68 R9=21 R10=79 R11=82 R12=65 R13=87 R14=98 R15=80

光度&辐射度参数

电参数

PHOTOMETRIC RESULTS



Name:	OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K		
Program:	Far-C15-G1-Downlight		
Lum. flux:	2013.06 lm	Av. Voltage:	220.1891 V
Efficacy:	100.19 lm/ W	Av. Current:	0.10087 A
Maximum:	1030.970 cd	Av. Power:	20.091 W
FluxCone-90:	1497.51 lm	Av. Power Factor:	0.9045
FluxCone-120:	1894.73 lm	Company:	Oppl
Date:	6/1/2018 3:07:30 PM	Operator:	SLY

Protocol

LiTG-class: A51
UTE-class: 1.00 C
IES-class: 67 - 94 - 99 - 100 - 100
TM5-class: BZ1

Divergences in the plane through maximum intensity:

	Horizontal	Vertical
One half peak divergence	91.5°	91.8°
Half peak side angle (left)	-45.3°	-46.3°
Half peak side angle (right)	46.2°	45.6°
One tenth peak divergence	121.5°	121.4°
Tenth peak side angle (left)	-60.3°	-61.0°
Tenth peak side angle (right)	61.2°	60.5°

C-planes:	0.0°	15.0°	30.0°	45.0°	60.0°	75.0°	90.0°	105.0°	120.0°	135.0°
	150.0°	165.0°	180.0°	195.0°	210.0°	225.0°	240.0°	255.0°	270.0°	285.0°
	300.0°	315.0°	330.0°	345.0°						

Gamma:	0.0°	1.0°	2.0°	3.0°	4.0°	5.0°	6.0°	7.0°	8.0°	9.0°
	10.0°	11.0°	12.0°	13.0°	14.0°	15.0°	16.0°	17.0°	18.0°	19.0°
	20.0°	21.0°	22.0°	23.0°	24.0°	25.0°	26.0°	27.0°	28.0°	29.0°
	30.0°	31.0°	32.0°	33.0°	34.0°	35.0°	36.0°	37.0°	38.0°	39.0°
	40.0°	41.0°	42.0°	43.0°	44.0°	45.0°	46.0°	47.0°	48.0°	49.0°
	50.0°	51.0°	52.0°	53.0°	54.0°	55.0°	56.0°	57.0°	58.0°	59.0°
	60.0°	61.0°	62.0°	63.0°	64.0°	65.0°	66.0°	67.0°	68.0°	69.0°
	70.0°	71.0°	72.0°	73.0°	74.0°	75.0°	76.0°	77.0°	78.0°	79.0°
	80.0°	81.0°	82.0°	83.0°	84.0°	85.0°	86.0°	87.0°	88.0°	89.0°
	90.0°	91.0°	92.0°	93.0°	94.0°	95.0°	96.0°	97.0°	98.0°	99.0°
	100.0°									

PHOTOMETRIC RESULTS



Name:	OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K		
Program:	Far-C15-G1-Downlight		
Lum. flux:	2013.06 lm	Av. Voltage:	220.1891 V
Efficacy:	100.19 lm/ W	Av. Current:	0.10087 A
Maximum:	1030.970 cd	Av. Power:	20.091 W
FluxCone-90:	1497.51 lm	Av. Power Factor:	0.9045
FluxCone-120:	1894.73 lm	Company:	Oppl
Date:	6/1/2018 3:07:30 PM	Operator:	SLY

Electrical protocol OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K / C-Plane measurement

[deg]	U [V]	I [A]	P [W]	PF
0.0	220.1830	0.10089	20.092	0.9045
15.0	220.1820	0.10088	20.092	0.9045
30.0	220.1900	0.10087	20.091	0.9046
45.0	220.1900	0.10086	20.089	0.9045
60.0	220.1900	0.10087	20.091	0.9046
75.0	220.1900	0.10086	20.089	0.9045
90.0	220.1910	0.10086	20.088	0.9045
105.0	220.1910	0.10085	20.085	0.9045
120.0	220.1900	0.10089	20.095	0.9046
135.0	220.1920	0.10088	20.094	0.9046
150.0	220.1910	0.10087	20.092	0.9046
165.0	220.1900	0.10087	20.091	0.9046
180.0	220.1830	0.10089	20.092	0.9045
195.0	220.1820	0.10088	20.092	0.9045
210.0	220.1900	0.10087	20.091	0.9046
225.0	220.1900	0.10086	20.089	0.9045
240.0	220.1900	0.10087	20.091	0.9046
255.0	220.1900	0.10086	20.089	0.9045
270.0	220.1910	0.10086	20.088	0.9045
285.0	220.1910	0.10085	20.085	0.9045
300.0	220.1900	0.10089	20.095	0.9046
315.0	220.1920	0.10088	20.094	0.9046
330.0	220.1910	0.10087	20.092	0.9046
345.0	220.1900	0.10087	20.091	0.9046



OPPLE Lighting Lab

欧普照明实验室

Electrical protocol OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K / C-Plane measurement

PHOTOMETRIC RESULTS



Name:	OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K		
Program:	Far-C15-G1-Downlight		
Lum. flux:	2013.06 lm	Av. Voltage:	220.1891 V
Efficacy:	100.19 lm/ W	Av. Current:	0.10087 A
Maximum:	1030.970 cd	Av. Power:	20.091 W
FluxCone-90:	1497.51 lm	Av. Power Factor:	0.9045
FluxCone-120:	1894.73 lm	Company:	Oppl
Date:	6/1/2018 3:07:30 PM	Operator:	SLY

Zonal flux OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K / C-Plane measurement

Gamm a [°]	Imin [cd/klm]	Imax [cd/klm]	Imean [cd/klm]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
0.0	1024.9	1026.9	1026.1	0.00	0.00	0.00	0.00
1.0	1024.9	1026.9	1026.1	0.98	0.98	0.05	0.05
2.0	1024.9	1026.9	1026.3	2.95	3.93	0.15	0.20
3.0	1024.9	1027.9	1026.5	4.91	8.84	0.24	0.44
4.0	1025.9	1028.9	1026.9	6.87	15.71	0.34	0.78
5.0	1025.9	1030.0	1027.3	8.84	24.55	0.44	1.22
6.0	1025.9	1030.0	1027.7	10.80	35.35	0.54	1.76
7.0	1024.9	1031.0	1027.8	12.76	48.11	0.63	2.39
8.0	1024.9	1031.0	1028.0	14.71	62.82	0.73	3.12
9.0	1023.9	1031.0	1027.8	16.66	79.48	0.83	3.95
10.0	1022.8	1031.0	1026.9	18.59	98.07	0.92	4.87
11.0	1020.8	1030.0	1025.2	20.50	118.58	1.02	5.89
12.0	1017.8	1027.9	1022.8	22.39	140.97	1.11	7.00
13.0	1013.7	1024.9	1019.7	24.24	165.21	1.20	8.21
14.0	1009.6	1021.8	1016.1	26.06	191.26	1.29	9.50
15.0	1004.5	1017.8	1011.7	27.84	219.10	1.38	10.88
16.0	999.5	1012.7	1006.4	29.57	248.67	1.47	12.35
17.0	992.3	1006.6	1000.6	31.26	279.93	1.55	13.91
18.0	986.2	1001.5	994.1	32.89	312.82	1.63	15.54
19.0	978.1	994.4	986.7	34.46	347.28	1.71	17.25
20.0	968.9	986.2	978.3	35.96	383.24	1.79	19.04



OPPLE Lighting Lab

欧普照明实验室

Zonal flux OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K / C-Plane measurement

Gamm a [°]	Imin [cd/klm]	Imax [cd/klm]	Imean [cd/klm]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
21.0	958.8	978.1	969.1	37.39	420.63	1.86	20.90
22.0	947.6	968.9	959.0	38.74	459.38	1.92	22.82
23.0	934.4	957.8	947.0	39.99	499.37	1.99	24.81
24.0	921.2	946.6	934.5	41.14	540.51	2.04	26.85
25.0	905.9	933.4	920.3	42.17	582.68	2.09	28.95
26.0	890.7	920.1	905.7	43.10	625.79	2.14	31.09
27.0	874.4	903.9	889.3	43.92	669.70	2.18	33.27
28.0	857.1	887.6	872.4	44.60	714.30	2.22	35.48
29.0	838.8	870.3	855.1	45.20	759.50	2.25	37.73
30.0	822.5	853.0	837.9	45.71	805.21	2.27	40.00
31.0	805.3	835.8	820.4	46.15	851.36	2.29	42.29
32.0	789.0	818.5	803.5	46.52	897.89	2.31	44.60
33.0	771.7	803.2	786.8	46.85	944.74	2.33	46.93
34.0	755.4	785.9	770.2	47.12	991.86	2.34	49.27
35.0	737.1	769.7	753.0	47.30	1039.16	2.35	51.62
36.0	718.8	751.4	735.4	47.39	1086.55	2.35	53.98
37.0	700.5	735.1	718.1	47.41	1133.96	2.35	56.33
38.0	681.2	716.8	699.7	47.32	1181.28	2.35	58.68
39.0	661.9	699.5	680.6	47.11	1228.40	2.34	61.02
40.0	639.5	680.2	659.9	46.75	1275.15	2.32	63.34
41.0	615.1	659.9	638.3	46.23	1321.38	2.30	65.64
42.0	591.7	638.5	615.2	45.54	1366.92	2.26	67.90
43.0	564.3	615.1	590.5	44.66	1411.58	2.22	70.12
44.0	538.9	590.7	564.4	43.59	1455.17	2.17	72.29
45.0	510.4	564.3	537.3	42.34	1497.51	2.10	74.39
46.0	479.9	536.8	508.2	40.89	1538.40	2.03	76.42
47.0	448.4	508.4	478.5	39.24	1577.64	1.95	78.37
48.0	417.9	476.8	447.3	37.42	1615.06	1.86	80.23
49.0	386.4	447.4	416.4	35.47	1650.53	1.76	81.99
50.0	356.9	415.8	385.2	33.42	1683.95	1.66	83.65
51.0	325.4	382.3	354.0	31.27	1715.22	1.55	85.20
52.0	294.9	349.8	321.9	29.00	1744.23	1.44	86.65
53.0	263.3	319.3	291.2	26.67	1770.90	1.32	87.97
54.0	233.8	289.8	261.2	24.35	1795.24	1.21	89.18
55.0	206.4	259.3	231.9	22.01	1817.26	1.09	90.27
56.0	180.0	230.8	203.9	19.69	1836.95	0.98	91.25
57.0	155.6	204.4	177.9	17.46	1854.41	0.87	92.12
58.0	133.2	176.9	153.7	15.33	1869.74	0.76	92.88
59.0	114.9	153.5	132.2	13.36	1883.10	0.66	93.54
60.0	99.6	130.1	113.8	11.62	1894.73	0.58	94.12



OPPLE Lighting Lab

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Zonal flux OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K / C-Plane measurement

Gamm a [°]	Imin [cd/klm]	Imax [cd/klm]	Imean [cd/klm]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
61.0	88.5	112.9	99.4	10.18	1904.91	0.51	94.63
62.0	79.3	99.6	88.6	9.06	1913.97	0.45	95.08
63.0	73.2	88.5	79.9	8.19	1922.16	0.41	95.48
64.0	67.1	79.3	72.7	7.49	1929.65	0.37	95.86
65.0	63.0	72.2	67.4	6.93	1936.58	0.34	96.20
66.0	59.0	67.1	63.2	6.52	1943.10	0.32	96.52
67.0	55.9	63.0	59.4	6.16	1949.26	0.31	96.83
68.0	50.8	59.0	55.1	5.80	1955.06	0.29	97.12
69.0	47.8	54.9	51.4	5.43	1960.50	0.27	97.39
70.0	43.7	50.8	47.5	5.08	1965.57	0.25	97.64
71.0	40.7	46.8	44.0	4.73	1970.30	0.23	97.88
72.0	37.6	43.7	40.5	4.39	1974.69	0.22	98.09
73.0	34.6	40.7	37.3	4.07	1978.76	0.20	98.30
74.0	31.5	37.6	34.3	3.76	1982.52	0.19	98.48
75.0	28.5	34.6	31.3	3.46	1985.99	0.17	98.65
76.0	25.4	31.5	28.6	3.18	1989.17	0.16	98.81
77.0	23.4	28.5	25.8	2.90	1992.06	0.14	98.96
78.0	21.4	25.4	23.4	2.63	1994.70	0.13	99.09
79.0	18.3	23.4	21.1	2.39	1997.09	0.12	99.21
80.0	16.3	21.4	18.8	2.15	1999.24	0.11	99.31
81.0	14.2	19.3	16.6	1.91	2001.15	0.10	99.41
82.0	12.2	17.3	14.6	1.69	2002.84	0.08	99.49
83.0	11.2	15.3	12.8	1.49	2004.32	0.07	99.57
84.0	9.2	13.2	11.1	1.30	2005.62	0.06	99.63
85.0	7.1	11.2	9.2	1.11	2006.73	0.06	99.69
86.0	6.1	9.2	7.8	0.93	2007.66	0.05	99.73
87.0	4.1	8.1	6.2	0.77	2008.43	0.04	99.77
88.0	3.1	6.1	5.0	0.61	2009.04	0.03	99.80
89.0	2.0	5.1	3.7	0.47	2009.52	0.02	99.82
90.0	2.0	4.1	2.7	0.35	2009.87	0.02	99.84
91.0	2.0	3.1	2.5	0.29	2010.16	0.01	99.86
92.0	2.0	3.1	2.6	0.28	2010.44	0.01	99.87
93.0	2.0	3.1	2.8	0.29	2010.73	0.01	99.88
94.0	2.0	3.1	2.8	0.31	2011.04	0.02	99.90
95.0	2.0	3.1	3.0	0.32	2011.36	0.02	99.92
96.0	2.0	3.1	3.0	0.33	2011.68	0.02	99.93
97.0	3.1	4.1	3.1	0.33	2012.02	0.02	99.95
98.0	3.1	4.1	3.2	0.34	2012.36	0.02	99.96
99.0	3.1	4.1	3.3	0.35	2012.71	0.02	99.98
100.0	3.1	4.1	3.3	0.36	2013.06	0.02	100.00



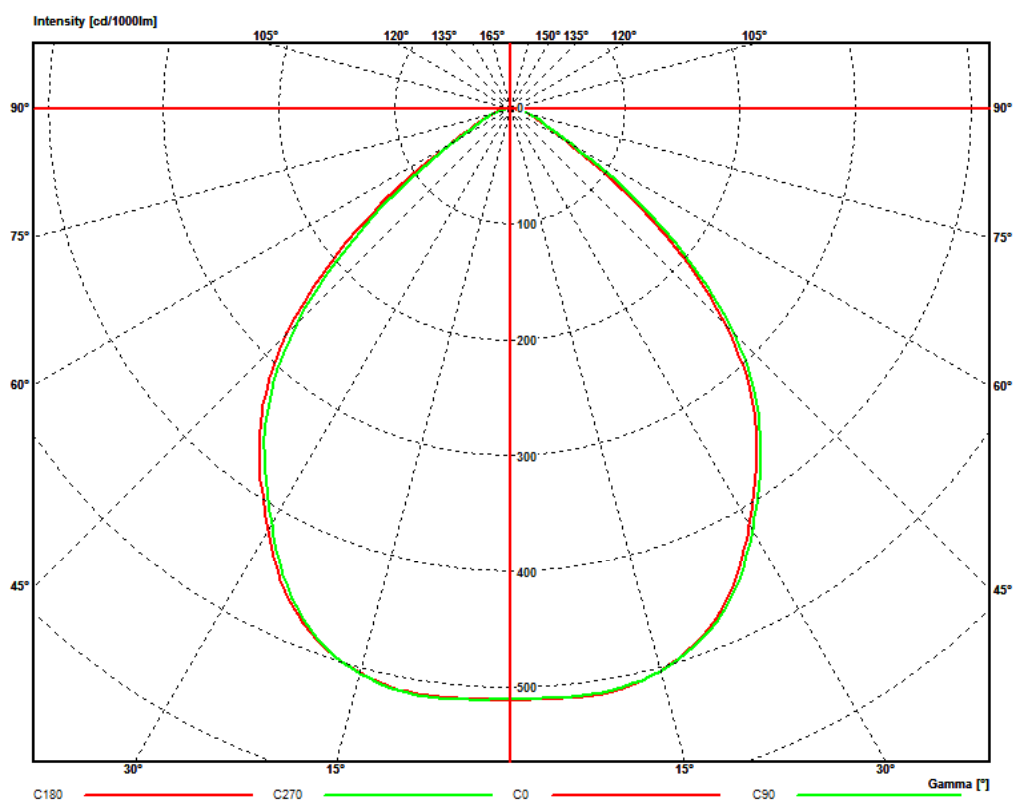
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欧普照明实验室

PHOTOMETRIC RESULTS



Name:	OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K		
Program:	Far-C15-G1-Downlight		
Lum. flux:	2013.06 lm	Av. Voltage:	220.1891 V
Efficacy:	100.19 lm/ W	Av. Current:	0.10087 A
Maximum:	1030.970 cd	Av. Power:	20.091 W
FluxCone-90:	1497.51 lm	Av. Power Factor:	0.9045
FluxCone-120:	1894.73 lm	Company:	Oppl
Date:	6/1/2018 3:07:30 PM	Operator:	SLY

Polar diagram OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K / C-Plane measurement

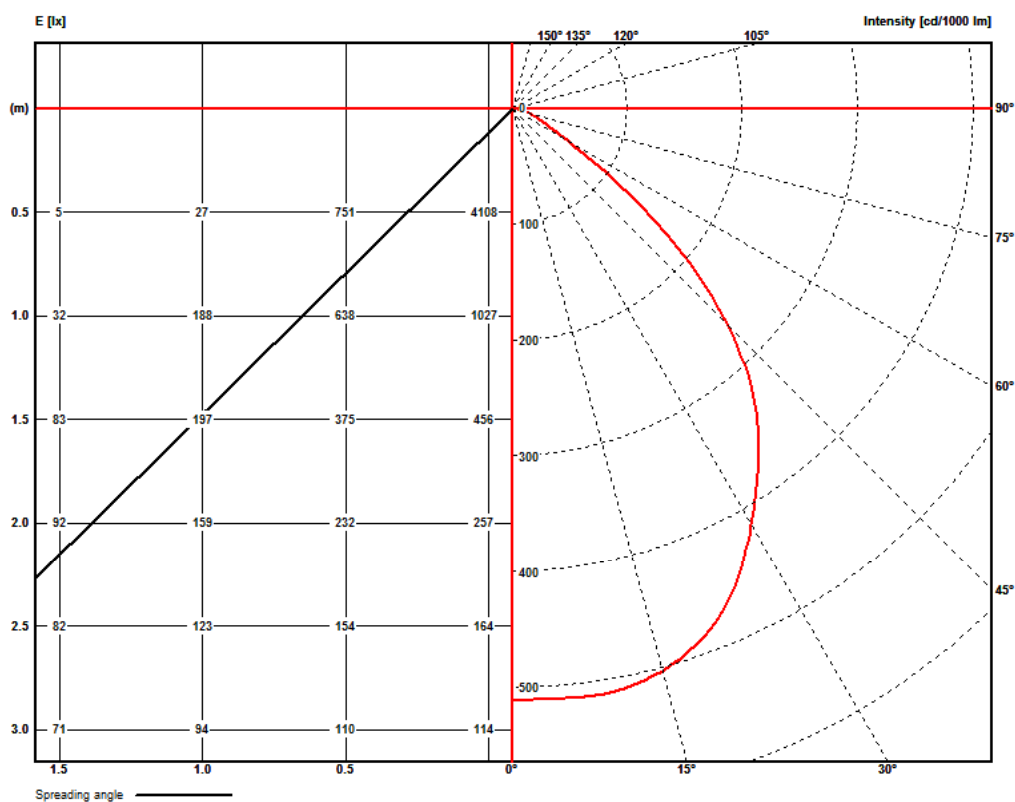


PHOTOMETRIC RESULTS



Name:	OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K		
Program:	Far-C15-G1-Downlight		
Lum. flux:	2013.06 lm	Av. Voltage:	220.1891 V
Efficacy:	100.19 lm/ W	Av. Current:	0.10087 A
Maximum:	1030.970 cd	Av. Power:	20.091 W
FluxCone-90:	1497.51 lm	Av. Power Factor:	0.9045
FluxCone-120:	1894.73 lm	Company:	Oppl
Date:	6/1/2018 3:07:30 PM	Operator:	SLY

Illuminance and Intensity diagram OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K / C-Plane measurement





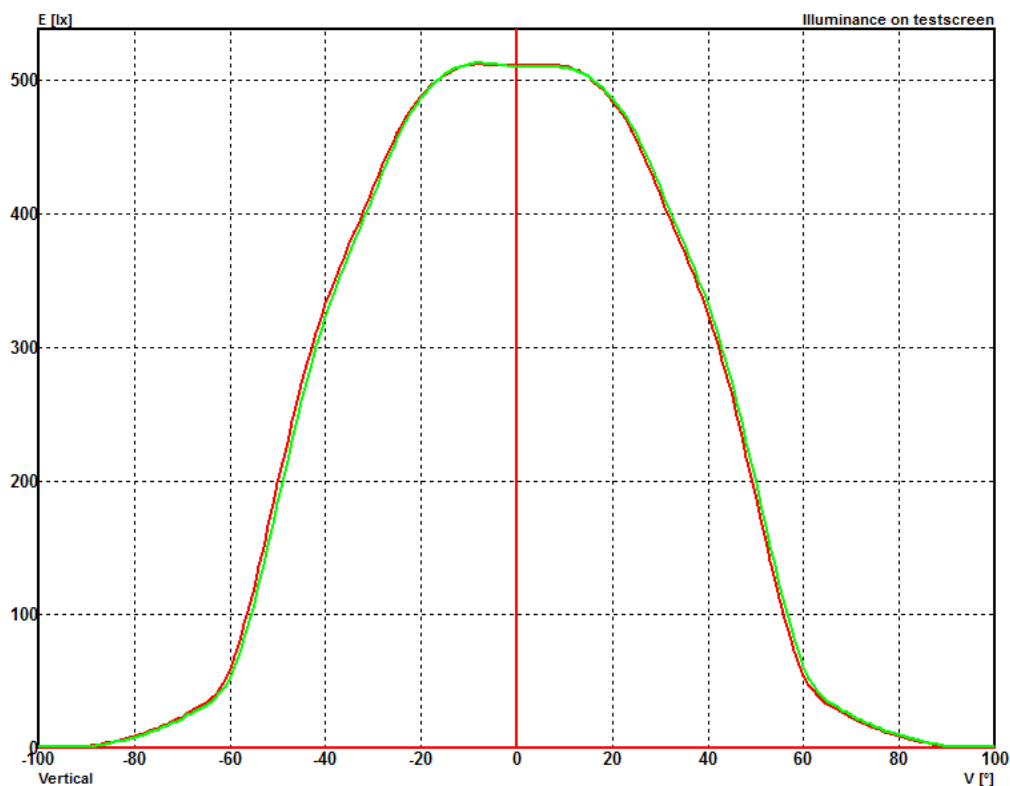
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PHOTOMETRIC RESULTS



Name:	OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K		
Program:	Far-C15-G1-Downlight		
Lum. flux:	2013.06 lm	Av. Voltage:	220.1891 V
Efficacy:	100.19 lm/ W	Av. Current:	0.10087 A
Maximum:	1030.970 cd	Av. Power:	20.091 W
FluxCone-90:	1497.51 lm	Av. Power Factor:	0.9045
FluxCone-120:	1894.73 lm	Company:	Oppl
Date:	6/1/2018 3:07:30 PM	Operator:	SLY

Cartesian diagram OPSZ201805186-04001-PingTaiTongDeng7Cun20W4000K / C-Plane measurement



PHOTOMETRIC RESULTS



Name:	OPSZ201805186-05001-PingTaiTongDeng7Cun15W4000K		
Program:	Far-C15-G1-Downlight		
Lum. flux:	1518.04 lm	Av. Voltage:	220.2037 V
Efficacy:	101.54 lm/ W	Av. Current:	0.07509 A
Maximum:	786.954 cd	Av. Power:	14.950 W
FluxCone-90:	1129.11 lm	Av. Power Factor:	0.9041
FluxCone-120:	1429.90 lm	Company:	Oppl
Date:	6/1/2018 4:11:16 PM	Operator:	SLY

Protocol

LiTG-class: A51
UTE-class: 1.00 C
IES-class: 67 - 94 - 99 - 100 - 100
TM5-class: BZ1

Divergences in the plane through maximum intensity:

	Horizontal	Vertical
One half peak divergence	91.9°	92.2°
Half peak side angle (left)	-44.5°	-46.7°
Half peak side angle (right)	47.4°	45.6°
One tenth peak divergence	120.8°	120.6°
Tenth peak side angle (left)	-59.0°	-60.9°
Tenth peak side angle (right)	61.8°	59.7°

C-planes:	0.0°	15.0°	30.0°	45.0°	60.0°	75.0°	90.0°	105.0°	120.0°	135.0°
	150.0°	165.0°	180.0°	195.0°	210.0°	225.0°	240.0°	255.0°	270.0°	285.0°
	300.0°	315.0°	330.0°	345.0°						

Gamma:	0.0°	1.0°	2.0°	3.0°	4.0°	5.0°	6.0°	7.0°	8.0°	9.0°
	10.0°	11.0°	12.0°	13.0°	14.0°	15.0°	16.0°	17.0°	18.0°	19.0°
	20.0°	21.0°	22.0°	23.0°	24.0°	25.0°	26.0°	27.0°	28.0°	29.0°
	30.0°	31.0°	32.0°	33.0°	34.0°	35.0°	36.0°	37.0°	38.0°	39.0°
	40.0°	41.0°	42.0°	43.0°	44.0°	45.0°	46.0°	47.0°	48.0°	49.0°
	50.0°	51.0°	52.0°	53.0°	54.0°	55.0°	56.0°	57.0°	58.0°	59.0°
	60.0°	61.0°	62.0°	63.0°	64.0°	65.0°	66.0°	67.0°	68.0°	69.0°
	70.0°	71.0°	72.0°	73.0°	74.0°	75.0°	76.0°	77.0°	78.0°	79.0°
	80.0°	81.0°	82.0°	83.0°	84.0°	85.0°	86.0°	87.0°	88.0°	89.0°
	90.0°	91.0°	92.0°	93.0°	94.0°	95.0°	96.0°	97.0°	98.0°	99.0°
	100.0°									

PHOTOMETRIC RESULTS



Name:	OPSZ201805186-05001-PingTaiTongDeng7Cun15W4000K		
Program:	Far-C15-G1-Downlight		
Lum. flux:	1518.04 lm	Av. Voltage:	220.2037 V
Efficacy:	101.54 lm/ W	Av. Current:	0.07509 A
Maximum:	786.954 cd	Av. Power:	14.950 W
FluxCone-90:	1129.11 lm	Av. Power Factor:	0.9041
FluxCone-120:	1429.90 lm	Company:	Oppl
Date:	6/1/2018 4:11:16 PM	Operator:	SLY

Electrical protocol OPSZ201805186-05001-PingTaiTongDeng7Cun15W4000K / C-Plane measurement

[deg]	U [V]	I [A]	P [W]	PF
0.0	220.2020	0.07509	14.950	0.9041
15.0	220.2020	0.07511	14.953	0.9041
30.0	220.1970	0.07510	14.952	0.9042
45.0	220.1990	0.07509	14.949	0.9041
60.0	220.2050	0.07509	14.949	0.9041
75.0	220.2060	0.07509	14.950	0.9042
90.0	220.2050	0.07509	14.950	0.9042
105.0	220.2050	0.07510	14.952	0.9042
120.0	220.2070	0.07510	14.950	0.9041
135.0	220.2050	0.07510	14.952	0.9042
150.0	220.2060	0.07507	14.946	0.9041
165.0	220.2050	0.07508	14.947	0.9041
180.0	220.2020	0.07509	14.950	0.9041
195.0	220.2020	0.07511	14.953	0.9041
210.0	220.1970	0.07510	14.952	0.9042
225.0	220.1990	0.07509	14.949	0.9041
240.0	220.2050	0.07509	14.949	0.9041
255.0	220.2060	0.07509	14.950	0.9042
270.0	220.2050	0.07509	14.950	0.9042
285.0	220.2050	0.07510	14.952	0.9042
300.0	220.2070	0.07510	14.950	0.9041
315.0	220.2050	0.07510	14.952	0.9042
330.0	220.2060	0.07507	14.946	0.9041
345.0	220.2050	0.07508	14.947	0.9041



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Electrical protocol OPSZ201805186-05001-PingTaiTongDeng7Cun15W4000K / C-Plane measurement

PHOTOMETRIC RESULTS



Name:	OPSZ201805186-05001-PingTaiTongDeng7Cun15W4000K		
Program:	Far-C15-G1-Downlight		
Lum. flux:	1518.04 lm	Av. Voltage:	220.2037 V
Efficacy:	101.54 lm/ W	Av. Current:	0.07509 A
Maximum:	786.954 cd	Av. Power:	14.950 W
FluxCone-90:	1129.11 lm	Av. Power Factor:	0.9041
FluxCone-120:	1429.90 lm	Company:	Oppl
Date:	6/1/2018 4:11:16 PM	Operator:	SLY

Zonal flux OPSZ201805186-05001-PingTaiTongDeng7Cun15W4000K / C-Plane measurement

Gamm a [°]	Imin [cd/klm]	Imax [cd/klm]	Imean [cd/klm]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
0.0	778.8	779.8	779.4	0.00	0.00	0.00	0.00
1.0	778.6	779.8	779.4	0.75	0.75	0.05	0.05
2.0	778.5	780.1	779.4	2.24	2.98	0.15	0.20
3.0	778.5	780.5	779.6	3.73	6.71	0.25	0.44
4.0	778.3	781.1	779.7	5.22	11.93	0.34	0.79
5.0	778.3	781.6	780.0	6.71	18.64	0.44	1.23
6.0	778.4	782.3	780.3	8.20	26.84	0.54	1.77
7.0	778.5	783.1	780.7	9.69	36.53	0.64	2.41
8.0	778.2	784.1	781.1	11.18	47.71	0.74	3.14
9.0	777.5	785.2	781.3	12.66	60.37	0.83	3.98
10.0	776.1	786.1	781.2	14.14	74.51	0.93	4.91
11.0	774.0	786.6	780.6	15.61	90.12	1.03	5.94
12.0	771.3	787.0	779.3	17.05	107.17	1.12	7.06
13.0	768.0	786.4	777.2	18.47	125.64	1.22	8.28
14.0	763.9	785.2	774.4	19.86	145.50	1.31	9.58
15.0	759.2	783.2	770.9	21.22	166.71	1.40	10.98
16.0	753.4	780.0	766.6	22.53	189.24	1.48	12.47
17.0	747.3	776.6	761.6	23.80	213.04	1.57	14.03
18.0	739.7	772.0	755.8	25.02	238.06	1.65	15.68
19.0	731.2	766.7	749.0	26.18	264.24	1.72	17.41
20.0	722.2	760.1	741.3	27.28	291.52	1.80	19.20



OPPLE Lighting Lab

欧普照明实验室

Zonal flux OPSZ201805186-05001-PingTaiTongDeng7Cun15W4000K / C-Plane measurement

Gamm a [°]	Imin [cd/klm]	Imax [cd/klm]	Imean [cd/klm]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
21.0	711.6	753.4	732.6	28.30	319.82	1.86	21.07
22.0	700.4	745.0	723.1	29.25	349.07	1.93	23.00
23.0	688.7	736.0	712.1	30.11	379.19	1.98	24.98
24.0	675.5	724.9	700.2	30.88	410.07	2.03	27.01
25.0	661.8	714.1	687.5	31.55	441.62	2.08	29.09
26.0	649.9	701.1	674.7	32.16	473.78	2.12	31.21
27.0	637.0	687.5	661.6	32.70	506.47	2.15	33.36
28.0	625.1	674.0	648.7	33.17	539.65	2.19	35.55
29.0	612.9	661.3	636.2	33.62	573.26	2.21	37.76
30.0	600.6	647.9	623.8	34.02	607.28	2.24	40.00
31.0	589.1	635.7	611.8	34.39	641.67	2.27	42.27
32.0	577.8	622.5	599.9	34.71	676.38	2.29	44.56
33.0	565.0	611.4	588.3	35.00	711.39	2.31	46.86
34.0	553.8	599.3	576.5	35.25	746.64	2.32	49.18
35.0	540.9	588.0	564.4	35.43	782.07	2.33	51.52
36.0	527.8	576.0	552.0	35.55	817.62	2.34	53.86
37.0	514.4	564.0	539.6	35.60	853.22	2.35	56.21
38.0	500.6	551.3	526.7	35.59	888.81	2.34	58.55
39.0	486.3	539.0	513.3	35.50	924.31	2.34	60.89
40.0	470.3	525.1	499.0	35.30	959.61	2.33	63.21
41.0	452.5	512.4	484.0	35.00	994.62	2.31	65.52
42.0	434.9	497.7	468.0	34.59	1029.21	2.28	67.80
43.0	415.7	482.3	451.2	34.05	1063.26	2.24	70.04
44.0	394.0	465.8	432.7	33.36	1096.62	2.20	72.24
45.0	371.2	449.3	412.9	32.50	1129.11	2.14	74.38
46.0	348.4	429.8	391.3	31.45	1160.56	2.07	76.45
47.0	324.0	409.9	368.8	30.23	1190.79	1.99	78.44
48.0	298.7	388.1	344.7	28.84	1219.64	1.90	80.34
49.0	273.7	363.9	320.0	27.30	1246.93	1.80	82.14
50.0	249.5	341.8	295.4	25.66	1272.59	1.69	83.83
51.0	224.0	316.9	270.0	23.92	1296.51	1.58	85.41
52.0	199.9	290.8	244.2	22.07	1318.58	1.45	86.86
53.0	176.4	265.8	219.4	20.17	1338.75	1.33	88.19
54.0	154.7	242.2	195.1	18.27	1357.02	1.20	89.39
55.0	133.5	216.9	171.8	16.38	1373.40	1.08	90.47
56.0	114.4	192.4	149.4	14.52	1387.92	0.96	91.43
57.0	97.7	168.8	129.3	12.74	1400.66	0.84	92.27
58.0	84.7	147.6	111.1	11.12	1411.77	0.73	93.00
59.0	74.1	126.8	95.8	9.67	1421.44	0.64	93.64
60.0	66.7	109.0	83.2	8.45	1429.90	0.56	94.19

Zonal flux OPSZ201805186-05001-PingTaiTongDeng7Cun15W4000K / C-Plane measurement

Gamm a [°]	Imin [cd/klm]	Imax [cd/klm]	Imean [cd/klm]	Zonal flux [lm]	Sum. zonal flux [lm]	Rel. zonal flux [%]	Sum. rel. zonal flux [%]
61.0	60.6	93.3	73.5	7.48	1437.37	0.49	94.69
62.0	55.5	81.7	66.2	6.73	1444.10	0.44	95.13
63.0	51.2	72.5	60.2	6.15	1450.25	0.40	95.53
64.0	48.2	65.6	55.3	5.67	1455.92	0.37	95.91
65.0	45.1	59.5	51.3	5.28	1461.20	0.35	96.26
66.0	42.0	54.7	47.9	4.95	1466.15	0.33	96.58
67.0	39.1	51.1	44.9	4.67	1470.82	0.31	96.89
68.0	36.3	48.0	41.9	4.40	1475.21	0.29	97.18
69.0	33.6	44.8	38.9	4.12	1479.34	0.27	97.45
70.0	30.7	41.9	36.0	3.85	1483.19	0.25	97.70
71.0	28.4	38.7	33.3	3.59	1486.77	0.24	97.94
72.0	25.8	35.8	30.7	3.33	1490.10	0.22	98.16
73.0	23.6	33.0	28.2	3.08	1493.18	0.20	98.36
74.0	21.5	30.7	25.8	2.84	1496.02	0.19	98.55
75.0	19.4	28.0	23.6	2.61	1498.63	0.17	98.72
76.0	17.5	25.6	21.4	2.39	1501.02	0.16	98.88
77.0	15.7	23.4	19.3	2.17	1503.19	0.14	99.02
78.0	13.9	21.2	17.4	1.97	1505.16	0.13	99.15
79.0	12.3	19.3	15.7	1.78	1506.94	0.12	99.27
80.0	10.9	17.4	13.9	1.59	1508.53	0.11	99.37
81.0	9.3	15.6	12.3	1.42	1509.95	0.09	99.47
82.0	7.9	13.8	10.8	1.25	1511.20	0.08	99.55
83.0	6.6	12.2	9.3	1.09	1512.29	0.07	99.62
84.0	5.4	10.8	7.9	0.94	1513.23	0.06	99.68
85.0	4.3	9.3	6.6	0.79	1514.02	0.05	99.74
86.0	3.2	7.9	5.4	0.66	1514.68	0.04	99.78
87.0	2.2	6.6	4.3	0.53	1515.21	0.04	99.81
88.0	1.3	5.5	3.3	0.41	1515.63	0.03	99.84
89.0	1.2	4.3	2.4	0.31	1515.94	0.02	99.86
90.0	1.2	3.4	1.8	0.23	1516.17	0.02	99.88
91.0	1.2	2.3	1.6	0.19	1516.35	0.01	99.89
92.0	1.2	1.8	1.5	0.17	1516.52	0.01	99.90
93.0	1.3	1.8	1.6	0.17	1516.69	0.01	99.91
94.0	1.3	1.8	1.6	0.17	1516.87	0.01	99.92
95.0	1.4	1.9	1.7	0.18	1517.05	0.01	99.93
96.0	1.4	1.9	1.7	0.19	1517.23	0.01	99.95
97.0	1.5	2.0	1.8	0.19	1517.43	0.01	99.96
98.0	1.6	2.1	1.8	0.20	1517.62	0.01	99.97
99.0	1.6	2.1	1.9	0.20	1517.83	0.01	99.99
100.0	1.7	2.2	2.0	0.21	1518.04	0.01	100.00



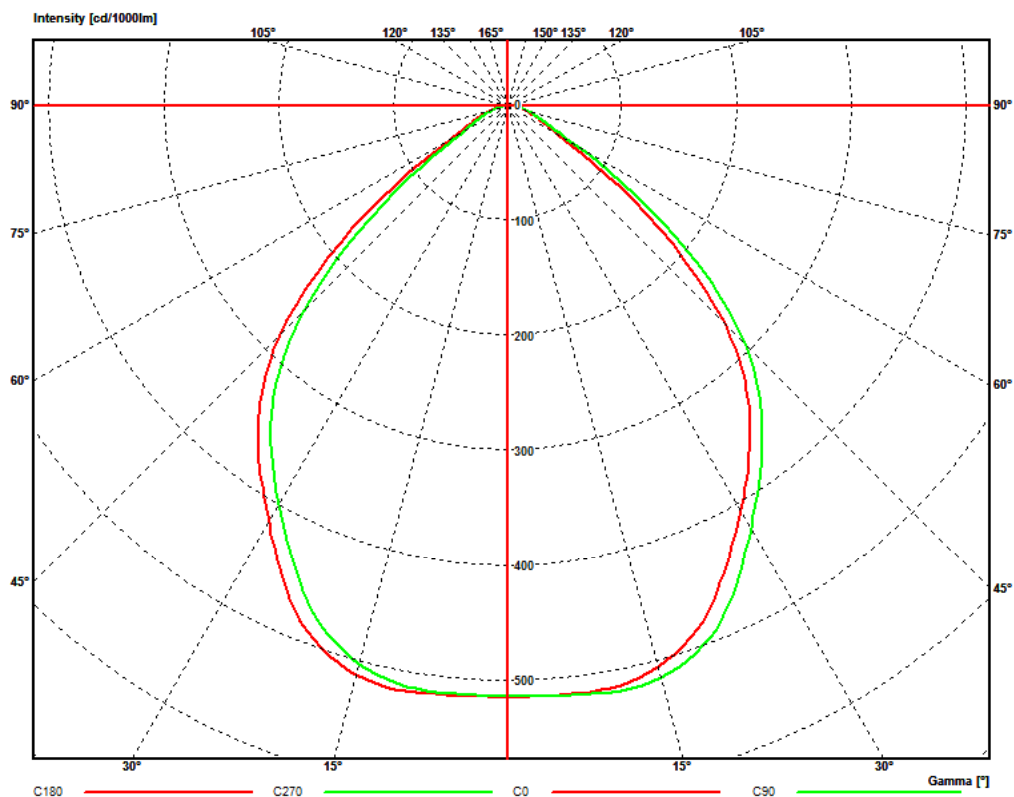
OPPLE Lighting Lab
欧普照明实验室

PHOTOMETRIC RESULTS



Name:	OPSZ201805186-05001-PingTaiTongDeng7Cun15W4000K		
Program:	Far-C15-G1-Downlight		
Lum. flux:	1518.04 lm	Av. Voltage:	220.2037 V
Efficacy:	101.54 lm/ W	Av. Current:	0.07509 A
Maximum:	786.954 cd	Av. Power:	14.950 W
FluxCone-90:	1129.11 lm	Av. Power Factor:	0.9041
FluxCone-120:	1429.90 lm	Company:	Oppl
Date:	6/1/2018 4:11:16 PM	Operator:	SLY

Polar diagram OPSZ201805186-05001-PingTaiTongDeng7Cun15W4000K / C-Plane measurement



Suzhou. OPPLÉ Light Co., Ltd.
E-mail: niefenfen@opple.com

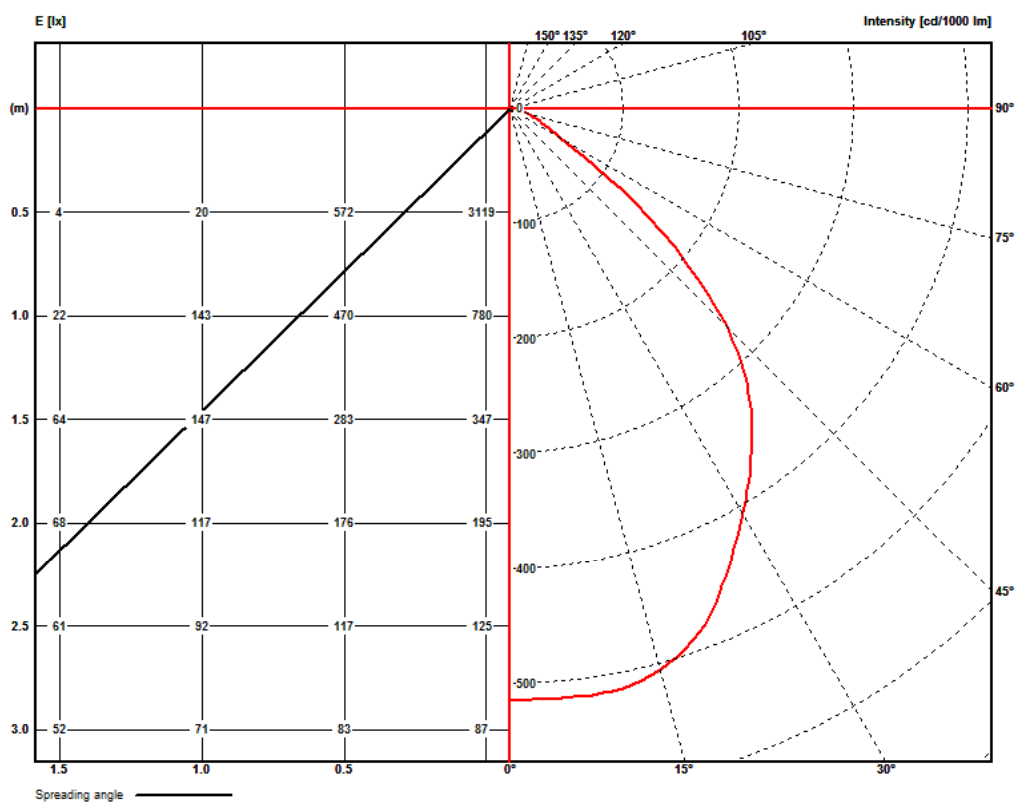
Tel. 0512 - 63828888 - 7681

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Illuminance and Intensity diagram OPSZ201805186-05001-PingTaiTongDeng7Cun15W4000K / C-Plane measurement





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FluxCone-120:	1429.90 lm	Company:	Opplc
Date:	6/1/2018 4:11:16 PM	Operator:	SLY

Cartesian diagram OPSZ201805186-05001-PingTaiTongDeng7Cun15W4000K / C-Plane measurement

