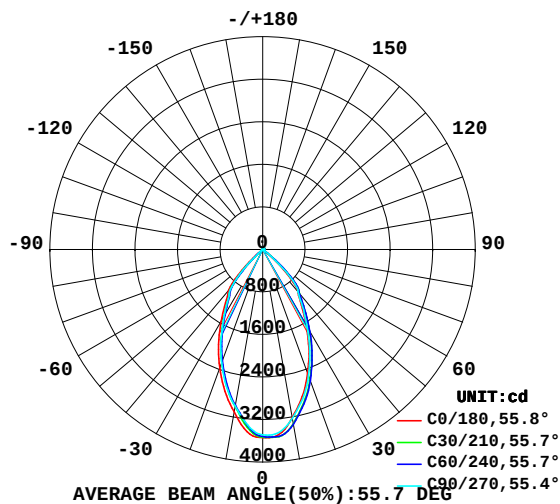


LUMINAIRE PHOTOMETRIC TEST REPORT

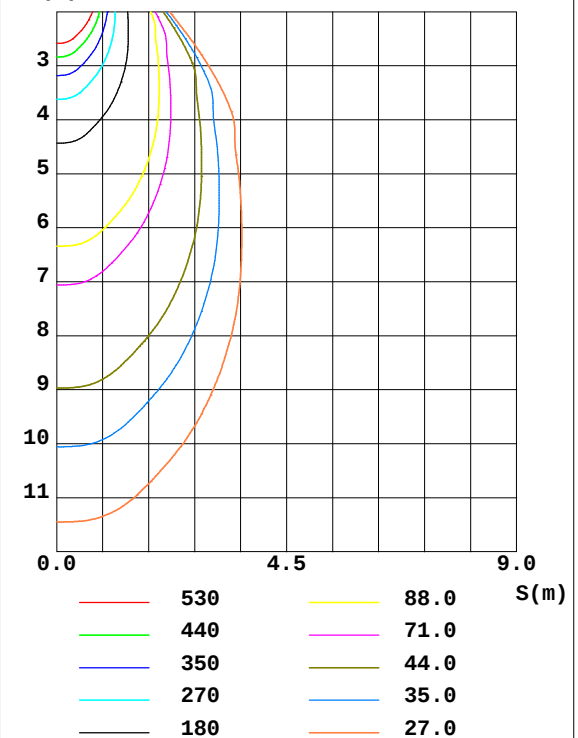
Test:U:220.6V I:0.1230A P:26.50W PF:0.9710 Lamp Flux:3404.75x1 lm		
NAME: PSJU-DL-30W-COB	TYPE: LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 128.48 lm/W			
MODEL	PSJU-DL-30W-COB	I _{max} (cd)	3540	S/MH(C0/180)	0.84
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	0.86
RATED VOLTAGE(V)	220.6	TOTAL FLUX(lm)	3404.7	η UP, DN(C0-180)	1.5, 49.5
NOMINAL FLUX(lm)	3404.75	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.6, 47.4
LAMPS INSIDE	1	η up(%)	3.1	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	220.6	η down(%)	96.9	CIBSE SHR MAX	0.85

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-07-19

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	3215	3332	3223	2976	3102	2985	2992	3223	0- 10	316.3	316.3	9.29,9.29
20	2479	2616	2521	2243	2368	2238	2267	2542	10- 20	778.5	1095	32.2,32.2
30	1635	1764	1675	1430	1568	1439	1460	1719	20- 30	912.8	2008	59,59
40	1035	1076	1037	875.6	996.5	878.0	906.6	1066	30- 40	780.8	2788	81.9,81.9
50	143.5	299.3	233.5	50.59	106.6	45.93	51.20	274.1	40- 50	437.5	3226	94.7,94.7
60	20.57	22.67	22.83	19.81	23.06	21.12	22.12	25.35	50- 60	42.09	3268	96,96
70	8.121	12.43	12.74	6.511	9.744	8.787	9.202	14.89	60- 70	16.52	3285	96.5,96.5
80	3.936	4.373	4.746	4.456	7.323	7.425	7.686	7.724	70- 80	7.544	3292	96.7,96.7
90	2.705	3.304	3.598	3.702	6.506	6.853	7.026	7.060	80- 90	6.065	3298	96.9,96.9
100	4.715	4.483	4.951	5.832	8.339	8.810	8.848	8.092	90-100	6.306	3304	97.1,97.1
110	7.974	7.476	7.969	9.348	11.22	11.81	11.67	10.57	100-110	8.630	3313	97.3,97.3
120	12.83	11.99	12.44	14.41	15.45	16.19	15.77	14.24	110-120	11.73	3325	97.7,97.7
130	19.36	18.16	18.54	20.73	20.81	21.38	20.69	19.04	120-130	15.17	3340	98.1,98.1
140	25.82	24.75	24.97	26.90	26.39	26.91	26.03	24.26	130-140	17.58	3358	98.6,98.6
150	31.31	30.56	30.41	31.72	31.25	31.32	30.33	28.94	140-150	17.72	3375	99.1,99.1
160	36.35	35.54	35.16	35.93	35.93	35.35	34.35	33.26	150-160	15.19	3390	99.6,99.6
170	40.73	39.67	38.80	39.11	39.81	38.77	37.72	37.18	160-170	10.45	3401	99.9,99.9
180	42.62	41.53	40.46	40.12	42.70	41.55	40.40	40.15	170-180	3.808	3405	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

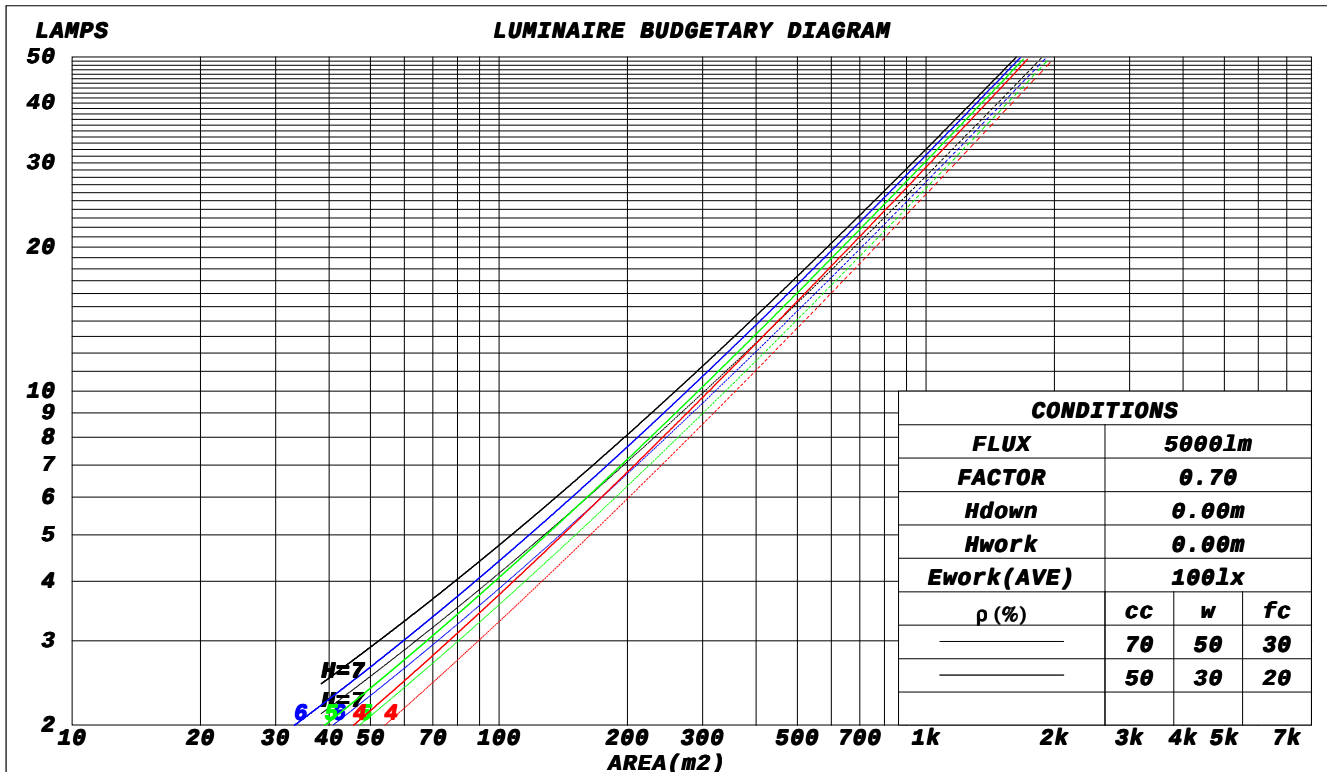
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-07-19

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.267
 Humidity:65.0%
 Test Distance:8.000m [K=0.7063]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.6V I:0.1230A P:26.50W PF:0.9710 Lamp Flux:3404.75x1 lm		
NAME: PSJU-DL-30W-COB	TYPE:LED	
MFR.:		

ρ_{CC}	80%			70%			50%			30%			10%			0
ρ_W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.18	1.18	1.18	1.15	1.15	1.15	1.09	1.09	1.09	1.04	1.04	1.04	.99	.99	.99	.97
1.0	1.09	1.07	1.04	1.07	1.04	1.02	1.02	1.00	.99	.98	.96	.95	.94	.93	.92	.90
2.0	1.01	.97	.93	.99	.95	.92	.95	.92	.89	.92	.89	.87	.88	.86	.84	.83
3.0	.93	.88	.84	.92	.87	.83	.89	.84	.81	.86	.82	.79	.83	.80	.78	.76
4.0	.86	.80	.76	.85	.80	.75	.82	.78	.74	.80	.76	.73	.78	.74	.72	.70
5.0	.80	.74	.69	.79	.73	.69	.77	.72	.68	.75	.71	.67	.73	.69	.66	.65
6.0	.75	.68	.64	.74	.68	.63	.72	.67	.63	.70	.66	.62	.69	.64	.61	.60
7.0	.70	.63	.59	.69	.63	.59	.67	.62	.58	.66	.61	.57	.64	.60	.57	.55
8.0	.65	.59	.54	.65	.58	.54	.63	.58	.54	.62	.57	.53	.61	.56	.53	.52
9.0	.61	.55	.51	.61	.55	.51	.59	.54	.50	.58	.53	.50	.57	.53	.49	.48
10.0	.58	.51	.47	.57	.51	.47	.56	.51	.47	.55	.50	.47	.54	.50	.46	.45



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2017-07-19

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
 Humidity: 65.0%
 Test Distance: 8.000m [K=0.7063]
 Remarks:

WEC AND CCEC

Test:U:220.6V I:0.1230A P:26.50W PF:0.9710 Lamp Flux:3404.75x1 lm											
NAME: PSJU-DL-30W-COB						TYPE: LED					
MFR.:											

ρ_{CC}	80%			70%			50%			30%			10%			0
ρ_W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.192	.109	.035	.184	.105	.033	.170	.097	.031	.157	.090	.029	.144	.084	.027	
2.0	.184	.101	.031	.178	.098	.030	.166	.092	.029	.154	.086	.027	.144	.081	.026	
3.0	.176	.094	.028	.170	.091	.027	.160	.086	.026	.150	.082	.025	.140	.078	.024	
4.0	.168	.087	.026	.163	.085	.025	.153	.081	.024	.145	.078	.023	.136	.074	.023	
5.0	.160	.081	.024	.155	.080	.023	.147	.077	.023	.139	.073	.022	.132	.071	.021	
6.0	.152	.076	.022	.148	.075	.022	.141	.072	.021	.134	.070	.020	.127	.067	.020	
7.0	.145	.072	.020	.142	.071	.020	.135	.068	.020	.129	.066	.019	.123	.064	.019	
8.0	.139	.068	.019	.136	.067	.019	.130	.065	.018	.124	.063	.018	.119	.061	.018	
9.0	.133	.064	.018	.130	.063	.018	.124	.061	.017	.119	.060	.017	.114	.058	.017	
10.0	.127	.061	.017	.124	.060	.017	.119	.058	.016	.115	.057	.016	.110	.055	.016	

ρ_{CC}	80%			70%			50%			30%			10%			0
ρ_W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.214	.214	.214	.183	.183	.183	.125	.125	.125	.072	.072	.072	.023	.023	.023	
1.0	.196	.181	.168	.168	.156	.144	.115	.107	.100	.066	.062	.058	.021	.020	.019	
2.0	.182	.157	.135	.156	.135	.117	.107	.093	.082	.062	.054	.048	.020	.018	.016	
3.0	.171	.138	.112	.146	.119	.097	.100	.083	.068	.058	.048	.040	.019	.016	.013	
4.0	.161	.124	.095	.138	.107	.082	.095	.074	.058	.055	.044	.034	.018	.014	.011	
5.0	.153	.112	.082	.132	.097	.072	.091	.068	.050	.052	.040	.030	.017	.013	.010	
6.0	.146	.103	.073	.126	.089	.063	.087	.063	.045	.050	.037	.027	.016	.012	.009	
7.0	.140	.096	.065	.120	.083	.057	.083	.058	.040	.048	.034	.024	.016	.011	.008	
8.0	.134	.090	.059	.116	.078	.052	.080	.055	.037	.047	.032	.022	.015	.011	.007	
9.0	.129	.085	.055	.111	.074	.048	.077	.052	.034	.045	.031	.020	.015	.010	.007	
10.0	.125	.081	.051	.108	.070	.045	.075	.049	.032	.044	.029	.019	.014	.010	.006	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-07-19

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

Uncorrected UGR Table

Test:U:220.6V I:0.1230A P:26.50W PF:0.9710 Lamp Flux:3404.75x1 lm										
NAME: PSJU-DL-30W-COB					TYPE: LED					
MFR.:										
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	20.3	21.4	20.6	21.6	21.8	20.6	21.6	20.9	21.8	22.0
3H	20.2	21.1	20.5	21.3	21.6	20.4	21.3	20.7	21.6	21.9
4H	20.1	20.9	20.4	21.2	21.5	20.3	21.2	20.6	21.5	21.7
6H	20.0	20.8	20.3	21.1	21.4	20.2	21.0	20.6	21.3	21.6
8H	19.9	20.7	20.3	21.0	21.3	20.2	21.0	20.5	21.3	21.6
12H	19.9	20.6	20.3	21.0	21.3	20.1	20.9	20.5	21.2	21.5
4H 2H	20.1	20.9	20.4	21.2	21.5	20.3	21.2	20.6	21.5	21.7
3H	19.9	20.6	20.3	21.0	21.3	20.1	20.9	20.5	21.2	21.5
4H	19.8	20.5	20.2	20.8	21.2	20.0	20.7	20.4	21.1	21.4
6H	19.7	20.3	20.1	20.7	21.1	19.9	20.5	20.4	20.9	21.3
8H	19.6	20.2	20.1	20.6	21.0	19.9	20.4	20.3	20.8	21.3
12H	19.6	20.1	20.1	20.5	21.0	19.8	20.3	20.3	20.8	21.2
8H 4H	19.6	20.2	20.1	20.6	21.0	19.9	20.4	20.3	20.8	21.3
6H	19.5	20.0	20.0	20.4	20.9	19.8	20.2	20.3	20.7	21.2
8H	19.5	19.9	20.0	20.4	20.9	19.7	20.1	20.2	20.6	21.1
12H	19.4	19.8	20.0	20.3	20.8	19.7	20.0	20.2	20.5	21.1
12H 4H	19.6	20.1	20.0	20.5	21.0	19.8	20.3	20.3	20.7	21.2
6H	19.5	19.9	20.0	20.3	20.9	19.7	20.1	20.2	20.6	21.1
8H	19.4	19.8	20.0	20.3	20.8	19.7	20.0	20.2	20.5	21.0
Variations with the observer position at spacings:										
S = 1.0H	+ 3.2 / -13.4					+ 3.2 / -12.8				
1.5H	+ 2.9 / -13.5					+ 2.7 / -12.9				
2.0H	+ 7.0 / -10.8					+ 7.0 / -10.8				

CIE Pub.117 Corrected 3405 lm Total Lamp Luminous Flux. (8log(F/F0) = 4.3)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-07-19

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.6V I:0.1230A P:26.50W PF:0.9710 Lamp Flux:3404.75x1 lm		
NAME: PSJU-DL-30W-COB	TYPE: LED	
MFR.:		

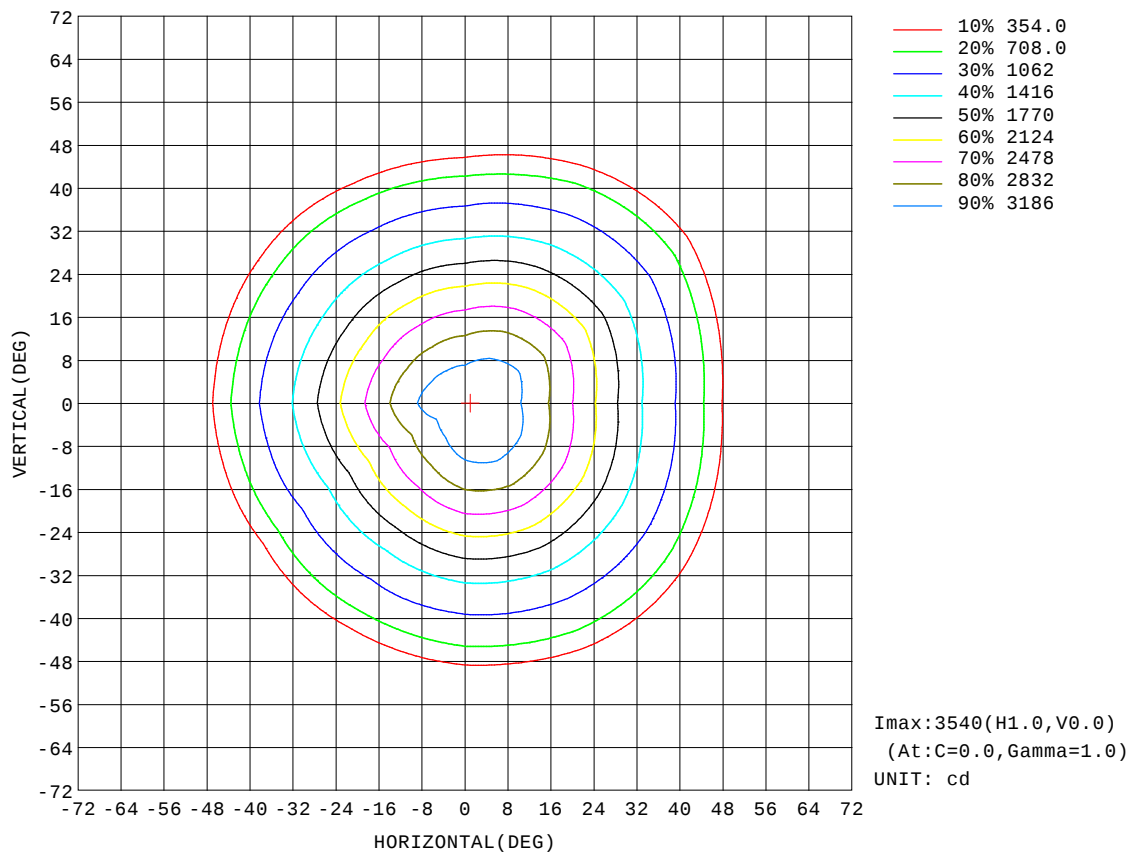
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	80	73	68	80	73	68	78	72	68	64
0.80	89	82	77	88	81	77	86	80	76	72
1.00	94	88	83	93	87	83	91	87	82	78
1.25	99	93	89	98	92	88	95	91	87	82
1.50	102	97	93	101	96	92	98	94	91	85
2.00	106	101	97	104	100	96	101	97	94	88
2.50	108	103	100	106	102	99	102	99	96	89
3.00	110	106	102	107	104	101	103	101	99	91
4.00	112	109	106	109	107	104	105	103	101	93
5.00	113	110	108	111	108	106	106	104	103	94
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-07-19

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

ISOCANDELA DIAGRAM

Test:U:220.6V I:0.1230A P:26.50W PF:0.9710 Lamp Flux:3404.75x1 lm		
NAME: PSJU-DL-30W-COB	TYPE: LED	
MFR.:		



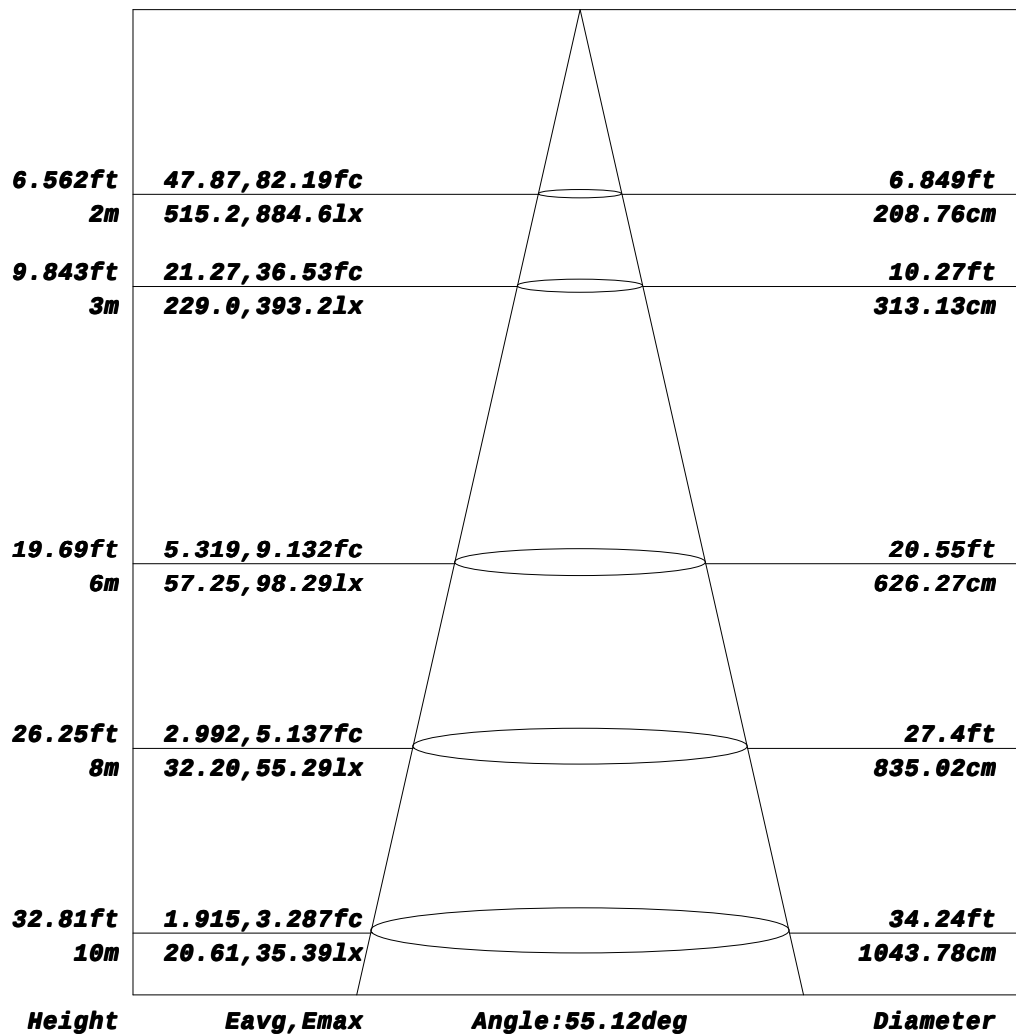
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-07-19

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

AAI Figure

Test:U:220.6V I:0.1230A P:26.50W PF:0.9710 Lamp Flux:3404.75x1 lm		
NAME: PSJU-DL-30W-COB	TYPE: LED	
MFR.:		

Flux out:1830 lm



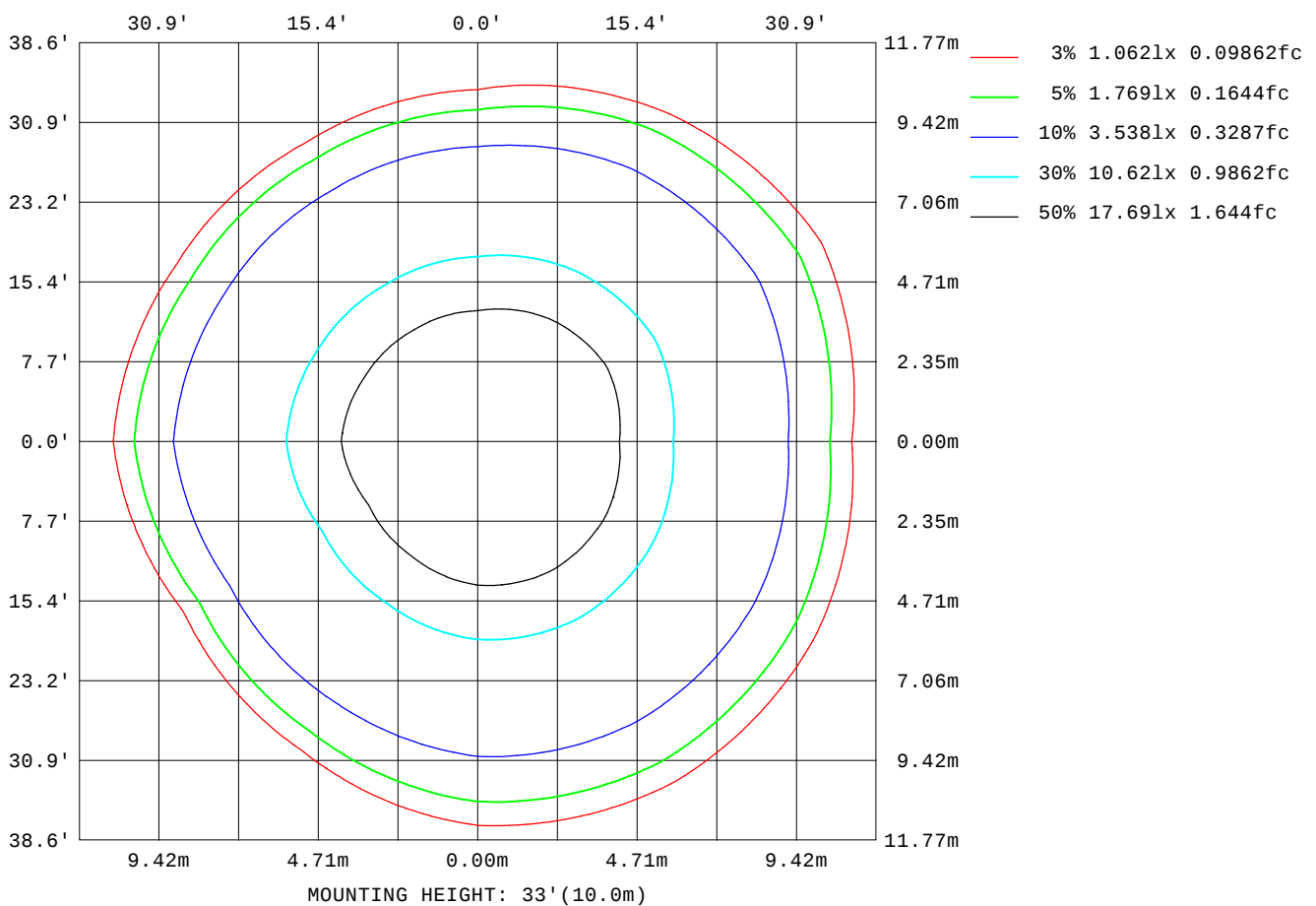
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-07-19

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

ISOLUX DIAGRAM

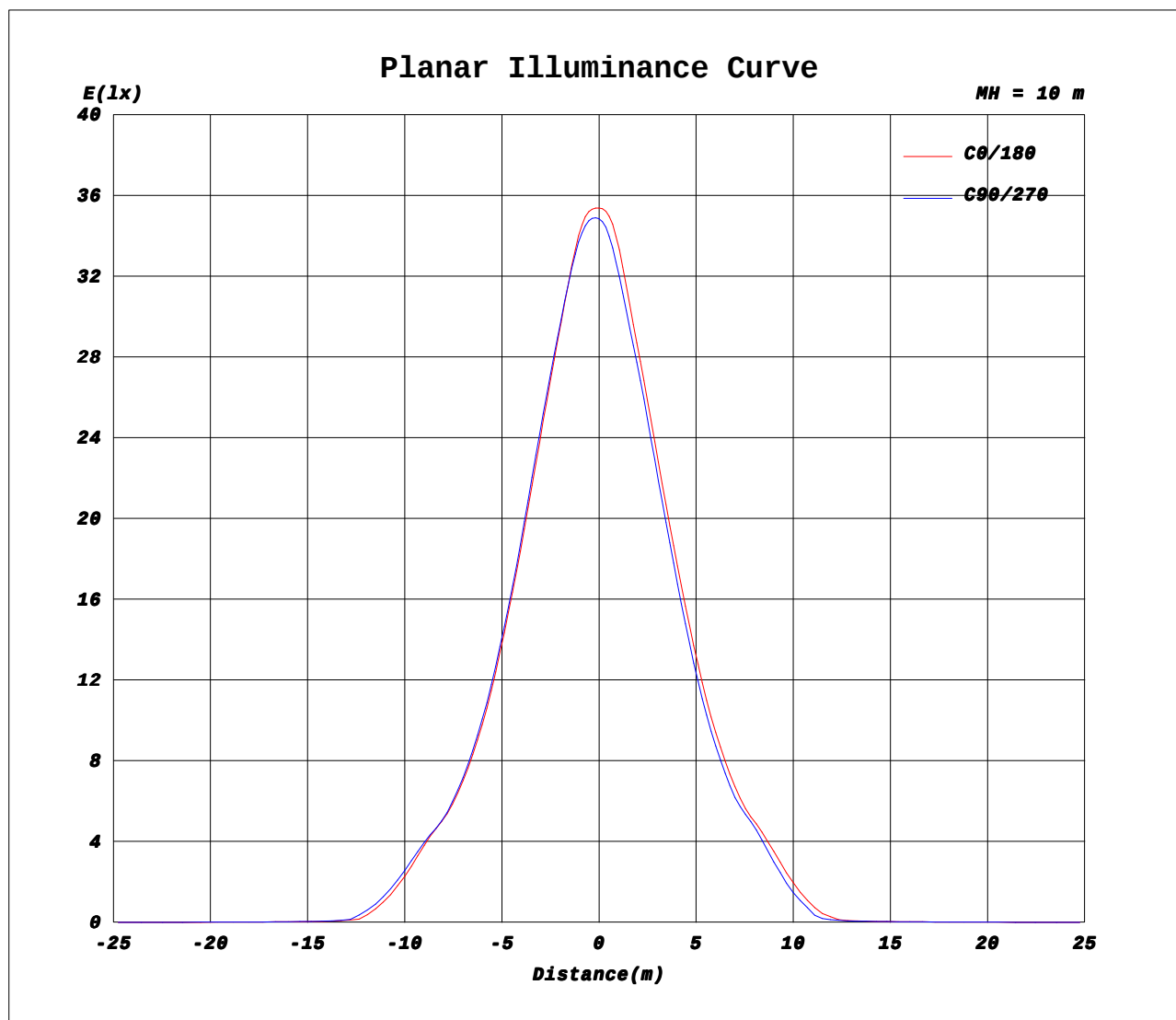
Test:U:220.6V I:0.1230A P:26.50W PF:0.9710 Lamp Flux:3404.75x1 lm		
NAME: PSJU-DL-30W-COB	TYPE: LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-07-19

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-07-19

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.6V I:0.1230A P:26.50W PF:0.9710 Lamp Flux:3404.75x1 lm											
NAME: PSJU-DL-30W-COB						TYPE: LED					
MFR.:											

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	3538	3531	3518	3486	3468	3478	3538	3531	3518	3486	3468	3478							
5	3495	3534	3528	3455	3319	3253	3437	3358	3321	3309	3417	3489							
10	3215	3325	3339	3223	3022	2930	3102	2997	2973	2992	3159	3286							
15	2870	2984	3004	2909	2693	2574	2761	2644	2616	2655	2846	2975							
20	2479	2603	2629	2521	2302	2184	2368	2255	2220	2267	2470	2614							
25	2065	2185	2205	2098	1881	1768	1975	1851	1810	1858	2069	2213							
30	1635	1751	1776	1675	1472	1389	1568	1460	1418	1460	1649	1790							
35	1278	1369	1381	1304	1141	1083	1225	1128	1099	1127	1286	1399							
40	1035	1077	1075	1037	928	824	996	895	861	907	1040	1092							
45	648	799	820	730	459	312	558	400	353	420	702	846							
50	143	284	315	233	60.5	40.7	107	48.3	43.5	51.2	203	345							
55	30.5	36.1	40.6	36.0	27.7	24.6	30.3	26.7	26.1	27.6	35.0	46.9							
60	20.6	22.1	23.2	22.8	20.8	18.8	23.1	21.3	20.9	22.1	24.5	26.2							
65	15.3	16.7	17.9	17.5	15.4	13.6	18.0	16.7	16.0	17.1	19.5	21.0							
70	8.12	12.0	12.8	12.7	6.84	6.18	9.74	8.78	8.80	9.20	13.8	16.0							
75	4.96	5.49	5.83	5.98	5.31	4.86	7.79	7.49	7.60	7.88	8.65	8.87							
80	3.94	4.24	4.51	4.75	4.61	4.30	7.32	7.36	7.49	7.69	7.77	7.68							
85	3.48	3.74	4.02	4.26	4.15	3.76	7.17	7.07	7.16	7.39	7.61	7.53							
90	2.71	3.13	3.48	3.60	3.65	3.76	6.51	6.77	6.93	7.03	6.97	7.15							
95	3.57	3.40	3.52	3.94	4.52	4.73	7.28	7.62	7.79	7.81	7.38	7.06							
100	4.71	4.45	4.51	4.95	5.67	5.99	8.34	8.73	8.89	8.85	8.28	7.90							
105	6.17	5.80	5.81	6.28	7.17	7.63	9.65	10.1	10.3	10.1	9.43	8.98							
110	7.97	7.51	7.45	7.97	9.04	9.66	11.2	11.7	11.9	11.7	10.8	10.3							
115	10.2	9.58	9.45	10.0	11.3	12.1	13.1	13.7	13.9	13.5	12.5	11.9							
120	12.8	12.1	11.9	12.4	14.0	14.9	15.5	16.1	16.3	15.8	14.6	13.9							
125	15.9	15.1	14.8	15.4	17.0	18.1	18.1	18.8	18.8	18.2	16.9	16.3							
130	19.4	18.4	18.0	18.5	20.2	21.3	20.8	21.4	21.3	20.7	19.3	18.8							
135	22.6	21.6	21.2	21.8	23.4	24.5	23.5	24.2	24.1	23.4	21.8	21.2							
140	25.8	25.0	24.5	25.0	26.4	27.4	26.4	27.0	26.8	26.0	24.6	23.9							
145	28.7	28.1	27.6	27.8	29.0	29.9	29.0	29.4	29.1	28.3	27.0	26.5							
150	31.3	30.9	30.3	30.4	31.3	32.1	31.3	31.5	31.1	30.3	29.1	28.7							
155	33.9	33.4	32.8	32.9	33.7	34.3	33.6	33.5	33.2	32.4	31.2	30.8							
160	36.4	35.9	35.2	35.2	35.7	36.2	35.9	35.6	35.1	34.4	33.4	33.1							
165	38.6	38.1	37.4	37.0	37.3	37.9	38.0	37.4	36.9	36.1	35.4	35.3							
170	40.7	40.1	39.2	38.8	38.9	39.3	39.8	39.1	38.5	37.7	37.1	37.2							
175	42.3	41.7	40.7	40.2	40.0	40.3	41.6	40.9	40.2	39.5	38.9	39.1							
180	42.6	42.0	41.1	40.5	40.0	40.2	42.7	41.9	41.2	40.4	40.1	40.2							

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2017-07-19

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.267
Humidity: 65.0%
Test Distance: 8.000m [K=0.7063]
Remarks: