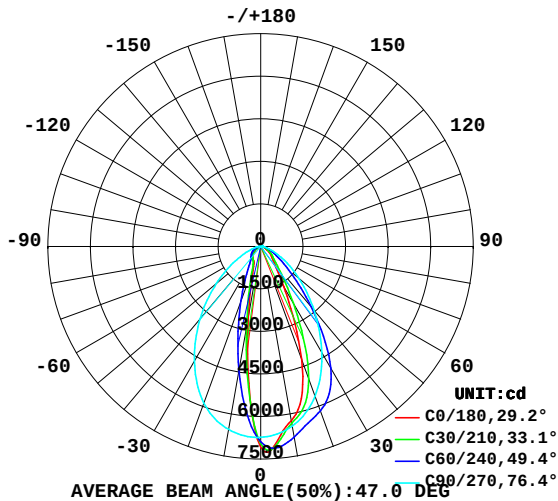


LUMINAIRE PHOTOMETRIC TEST REPORT

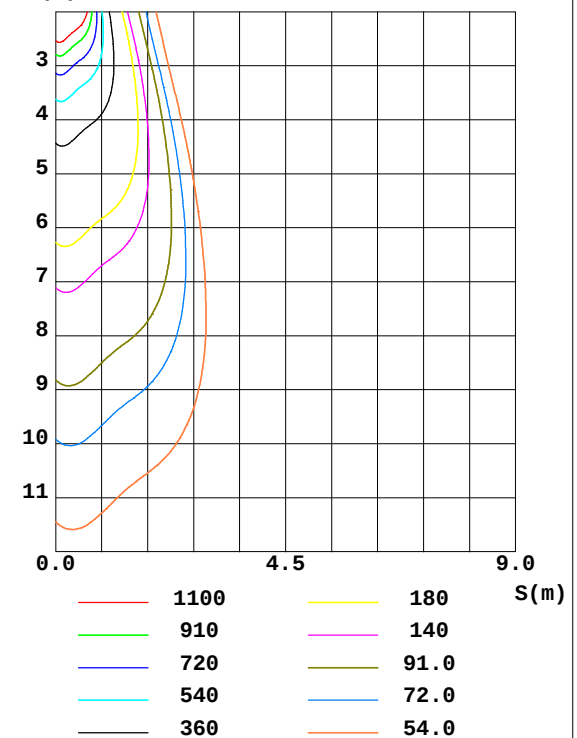
Test:U:220.2V I:0.2960A P:63.40W PF:0.9710 Lamp Flux:6489.83x1 lm		
NAME: PS-TLL-65W	TYPE: LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 102.36 lm/W			
MODEL	PS-TLL-65W	I _{max} (cd)	7257	S/MH(C0/180)	0.69
NOMINAL POWER(W)	65	LOR(%)	100.0	S/MH(C90/270)	1.02
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	6489.8	η UP, DN(C0-180)	1.6, 49.0
NOMINAL FLUX(lm)	6489.83	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.8, 47.6
LAMPS INSIDE	1	η up(%)	3.4	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	220.2	η down(%)	96.6	CIBSE SHR MAX	0.60

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: 2018-04-23

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	6239	6575	6433	3225	2561	3648	6547	6585	0- 10	553.9	553.9	8.54,8.54
20	4225	5557	5610	1266	745.9	1467	5872	5634	10- 20	1224	1778	27.4,27.4
30	1631	3624	4318	645.2	544.6	710.1	4683	3704	20- 30	1378	3156	48.6,48.6
40	738.6	1863	2932	483.0	454.0	507.0	3325	1898	30- 40	1157	4313	66.5,66.5
50	496.0	925.8	1777	370.7	311.6	392.0	2049	947.5	40- 50	838.6	5152	79.4,79.4
60	286.3	493.4	944.9	246.5	190.3	267.4	1055	504.6	50- 60	561.1	5713	88,88
70	144.2	258.9	395.6	149.5	123.6	167.3	434.2	270.3	60- 70	332.1	6045	93.1,93.1
80	52.78	98.67	136.6	70.55	67.49	87.06	153.0	114.9	70- 80	167.5	6212	95.7,95.7
90	8.549	14.82	20.65	17.59	20.70	26.92	26.45	21.18	80- 90	54.78	6267	96.6,96.6
100	10.02	16.46	24.00	21.53	18.69	27.69	28.49	22.81	90-100	22.31	6290	96.9,96.9
110	9.881	18.62	30.54	27.65	22.78	32.52	35.11	24.56	100-110	24.61	6314	97.3,97.3
120	12.78	23.56	38.13	36.49	29.42	39.71	41.58	28.38	110-120	28.03	6342	97.7,97.7
130	20.50	30.94	45.00	46.34	37.98	48.58	47.41	33.75	120-130	31.58	6374	98.2,98.2
140	30.83	39.02	50.73	56.05	49.69	57.41	51.32	39.97	130-140	33.38	6407	98.7,98.7
150	42.96	47.86	55.86	63.48	61.37	64.43	54.53	47.01	140-150	32.09	6439	99.2,99.2
160	56.56	55.91	60.50	66.86	66.72	67.22	58.14	53.49	150-160	26.81	6466	99.6,99.6
170	67.22	61.14	64.44	66.34	66.06	66.69	62.41	57.83	160-170	17.65	6484	99.9,99.9
180	66.66	65.52	66.53	62.99	67.05	65.49	66.27	63.03	170-180	6.127	6490	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT: lm		

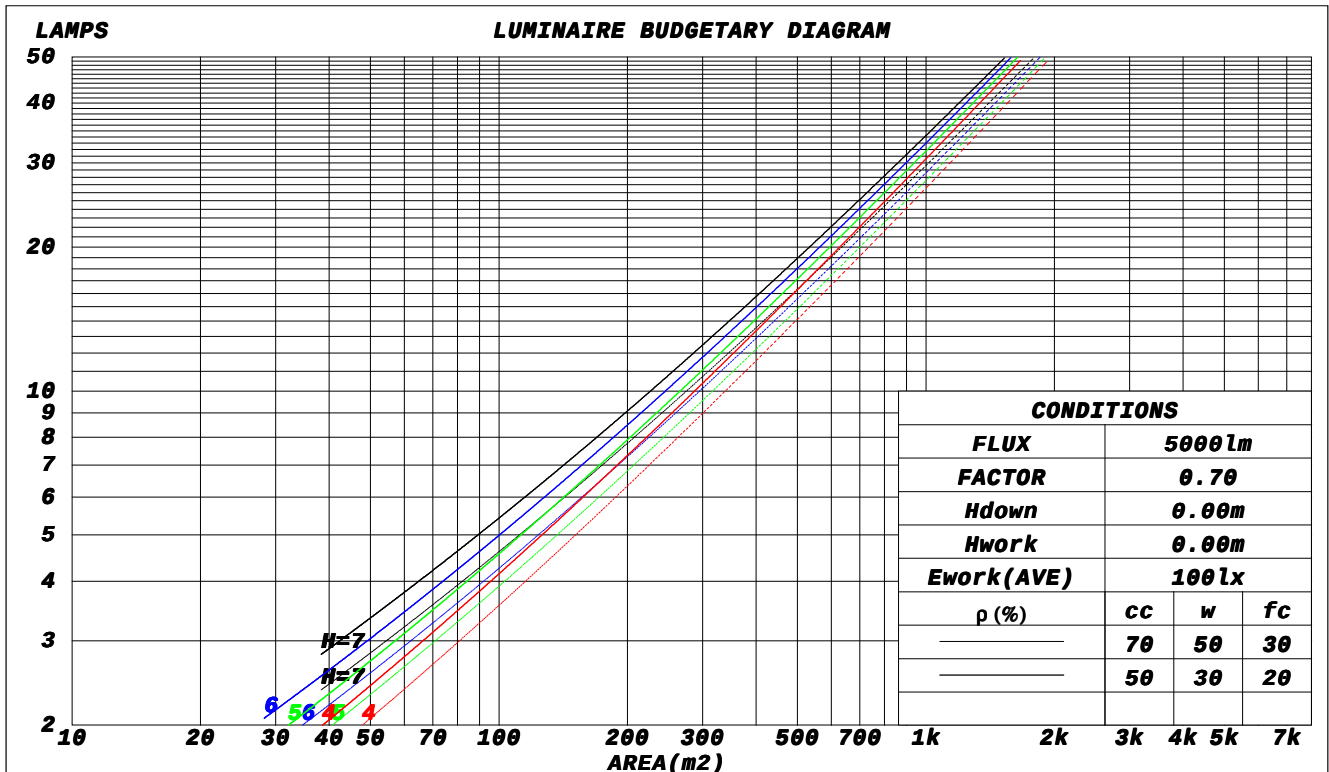
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-04-23

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:220.2V I:0.2960A P:63.40W PF:0.9710 Lamp Flux:6489.83x1 lm		
NAME: PS-TLL-65W	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	1.07	1.04	1.01	1.04	1.01	.99	.90	.97	.95	.95	.93	.92	.91	.90	.88	.86
2.0	.97	.91	.87	.95	.90	.86	.91	.87	.83	.87	.84	.81	.84	.81	.79	.77
3.0	.88	.81	.76	.86	.80	.76	.83	.78	.74	.80	.76	.72	.77	.74	.71	.69
4.0	.80	.73	.68	.79	.72	.67	.76	.71	.66	.74	.69	.65	.71	.67	.64	.62
5.0	.74	.67	.61	.73	.66	.61	.70	.64	.60	.68	.63	.59	.66	.62	.58	.56
6.0	.68	.61	.56	.67	.60	.55	.65	.59	.55	.63	.58	.54	.61	.57	.53	.51
7.0	.63	.56	.51	.62	.55	.51	.61	.54	.50	.59	.54	.49	.57	.53	.49	.47
8.0	.59	.52	.47	.58	.51	.47	.57	.50	.46	.55	.50	.46	.54	.49	.45	.44
9.0	.55	.48	.43	.54	.48	.43	.53	.47	.43	.52	.46	.43	.51	.46	.42	.41
10.0	.52	.45	.40	.51	.45	.40	.50	.44	.40	.49	.43	.40	.48	.43	.39	.38



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2018-04-23

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:220.2V I:0.2960A P:63.40W PF:0.9710 Lamp Flux:6489.83x1 lm											
NAME: PS-TLL-65W						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	.235	.134	.042	.227	.130	.041	.213	.122	.039	.199	.115	.037	.186	.108	.035		
2.0	.224	.123	.038	.217	.119	.037	.204	.113	.035	.192	.108	.034	.181	.102	.032		
3.0	.210	.112	.033	.204	.109	.033	.193	.104	.032	.182	.100	.031	.173	.096	.030		
4.0	.197	.102	.030	.192	.100	.030	.182	.096	.029	.172	.093	.028	.164	.089	.027		
5.0	.185	.094	.027	.180	.092	.027	.171	.089	.026	.163	.086	.026	.155	.083	.025		
6.0	.173	.087	.025	.169	.086	.025	.161	.083	.024	.154	.080	.024	.147	.077	.023		
7.0	.163	.081	.023	.160	.080	.023	.153	.077	.022	.146	.075	.022	.140	.073	.021		
8.0	.154	.075	.021	.151	.074	.021	.144	.072	.021	.138	.070	.020	.133	.068	.020		
9.0	.146	.071	.020	.143	.070	.020	.137	.068	.019	.132	.066	.019	.126	.064	.019		
10.0	.139	.066	.018	.136	.066	.018	.130	.064	.018	.125	.062	.018	.121	.061	.017		

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	.217	.217	.217	.185	.185	.185	.126	.126	.126	.073	.073	.073	.023	.023	.023	
1.0	.202	.183	.167	.172	.157	.143	.118	.108	.099	.068	.063	.058	.022	.020	.019	
2.0	.190	.159	.133	.162	.137	.115	.111	.095	.080	.064	.055	.047	.021	.018	.015	
3.0	.180	.141	.109	.154	.121	.095	.106	.084	.067	.061	.049	.039	.020	.016	.013	
4.0	.171	.127	.093	.146	.109	.081	.101	.076	.057	.058	.045	.034	.019	.015	.011	
5.0	.163	.116	.081	.140	.100	.070	.096	.070	.050	.056	.041	.029	.018	.013	.010	
6.0	.156	.107	.072	.134	.093	.063	.092	.065	.044	.054	.038	.026	.017	.012	.009	
7.0	.149	.100	.065	.128	.086	.057	.089	.061	.040	.051	.036	.024	.017	.012	.008	
8.0	.143	.094	.060	.123	.081	.052	.085	.057	.037	.050	.034	.022	.016	.011	.007	
9.0	.138	.089	.056	.119	.077	.049	.082	.054	.034	.048	.032	.021	.015	.010	.007	
10.0	.133	.084	.052	.114	.073	.046	.079	.052	.032	.046	.030	.019	.015	.010	.006	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-04-23

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:220.2V I:0.2960A P:63.40W PF:0.9710 Lamp Flux:6489.83x1 lm										
NAME: PS-TLL-65W					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	21.6	22.8	21.9	23.0	23.3	27.6	28.8	27.9	29.0	29.3
3H	22.2	23.3	22.5	23.6	23.8	28.2	29.3	28.5	29.6	29.8
4H	22.4	23.4	22.8	23.7	24.0	28.4	29.4	28.7	29.7	30.0
6H	22.5	23.5	22.9	23.8	24.1	28.5	29.5	28.9	29.8	30.1
8H	22.6	23.5	22.9	23.8	24.2	28.5	29.5	28.9	29.8	30.1
12H	22.6	23.4	22.9	23.8	24.1	28.5	29.4	28.9	29.8	30.1
4H 2H	22.5	23.5	22.8	23.8	24.1	27.5	28.6	27.9	28.9	29.2
3H	23.2	24.1	23.6	24.4	24.8	28.3	29.2	28.7	29.5	29.9
4H	23.5	24.3	23.9	24.7	25.1	28.6	29.4	29.0	29.7	30.1
6H	23.7	24.4	24.1	24.8	25.2	28.8	29.5	29.2	29.9	30.3
8H	23.7	24.4	24.2	24.8	25.3	28.9	29.5	29.3	29.9	30.4
12H	23.7	24.3	24.2	24.8	25.2	28.9	29.5	29.4	29.9	30.4
8H 4H	23.9	24.5	24.3	24.9	25.4	28.5	29.2	29.0	29.6	30.1
6H	24.1	24.7	24.6	25.1	25.6	28.8	29.4	29.3	29.8	30.3
8H	24.2	24.7	24.7	25.2	25.7	29.0	29.4	29.5	29.9	30.4
12H	24.3	24.7	24.8	25.2	25.7	29.0	29.5	29.6	30.0	30.5
12H 4H	23.9	24.5	24.4	24.9	25.4	28.5	29.1	29.0	29.5	30.0
6H	24.2	24.7	24.7	25.2	25.7	28.8	29.3	29.3	29.8	30.3
8H	24.3	24.8	24.9	25.3	25.8	29.0	29.4	29.5	29.9	30.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.6 / - 0.7					+ 0.6 / - 0.7				
1.5H	+ 1.0 / - 0.6					+ 0.9 / - 1.3				
2.0H	+ 0.9 / - 0.9					+ 2.0 / - 1.9				

CIE Pub.117 Corrected 6490 lm Total Lamp Luminous Flux. (8log(F/F0) = 6.5)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-04-23

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:220.2V I:0.2960A P:63.40W PF:0.9710 Lamp Flux:6489.83x1 lm		
NAME: PS-TLL-65W	TYPE: LED	
MFR.:		

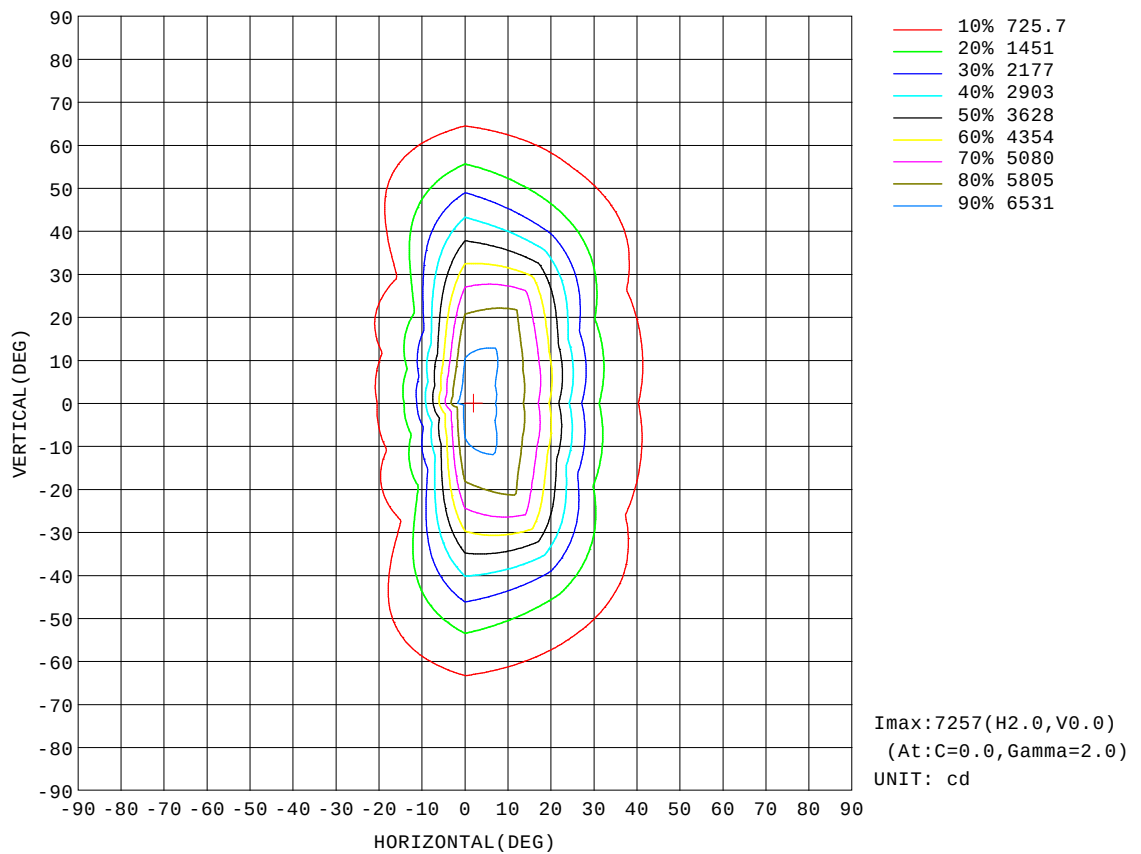
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	71	61	56	70	61	56	69	61	56	51
0.80	80	71	65	79	70	65	77	69	64	59
1.00	86	78	73	85	77	72	83	78	71	66
1.25	92	84	79	91	84	78	88	82	77	71
1.50	96	89	84	94	88	83	91	86	82	75
2.00	101	95	90	99	93	89	96	91	87	80
2.50	104	98	93	102	96	92	98	93	90	82
3.00	106	101	97	104	99	96	100	96	93	85
4.00	109	105	101	107	103	100	102	99	97	88
5.00	111	107	104	108	105	102	103	101	99	89
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: 2018-04-23

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:220.2V I:0.2960A P:63.40W PF:0.9710 Lamp Flux:6489.83x1 lm		
NAME: PS-TLL-65W	TYPE: LED	
MFR.:		

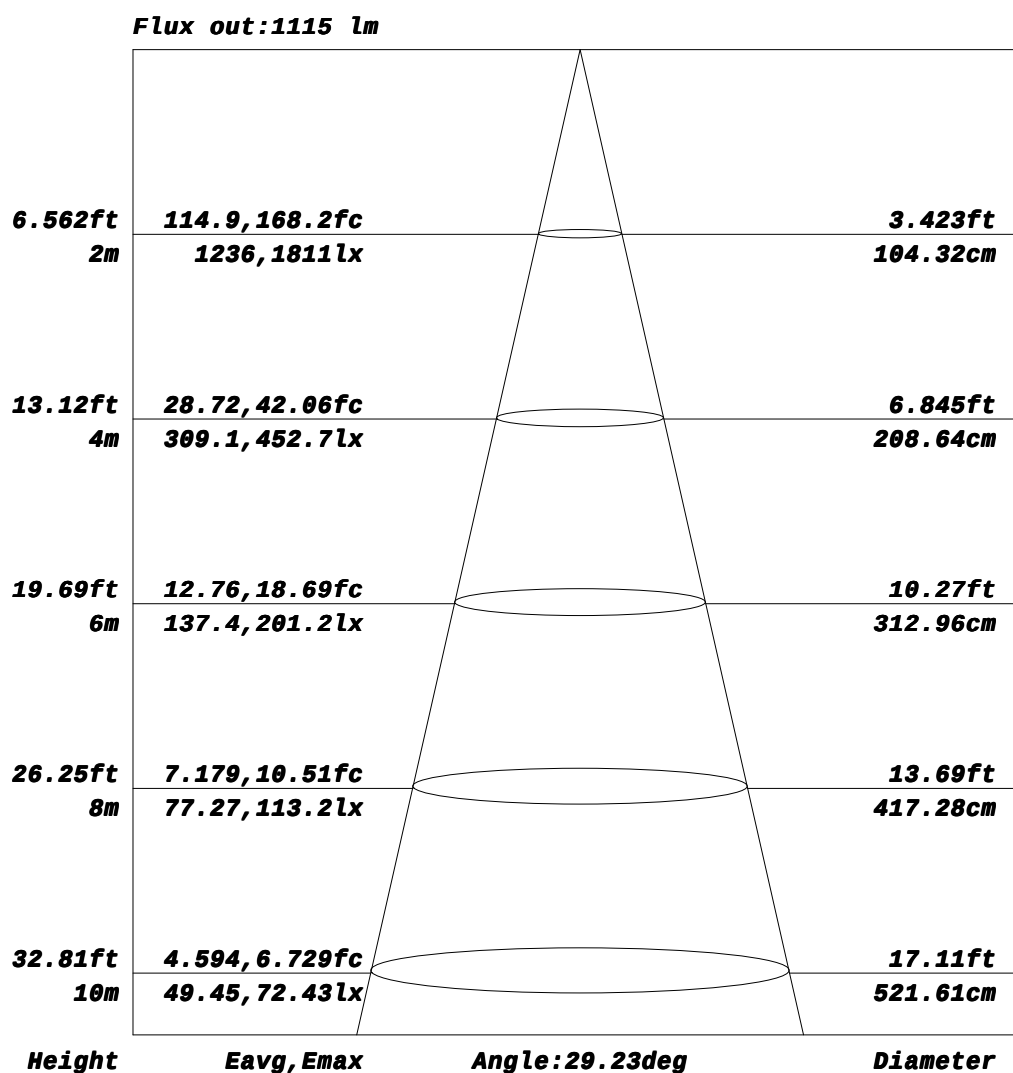


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-04-23

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:220.2V I:0.2960A P:63.40W PF:0.9710 Lamp Flux:6489.83x1 lm		
NAME: PS-TLL-65W	TYPE: LED	
MFR.:		



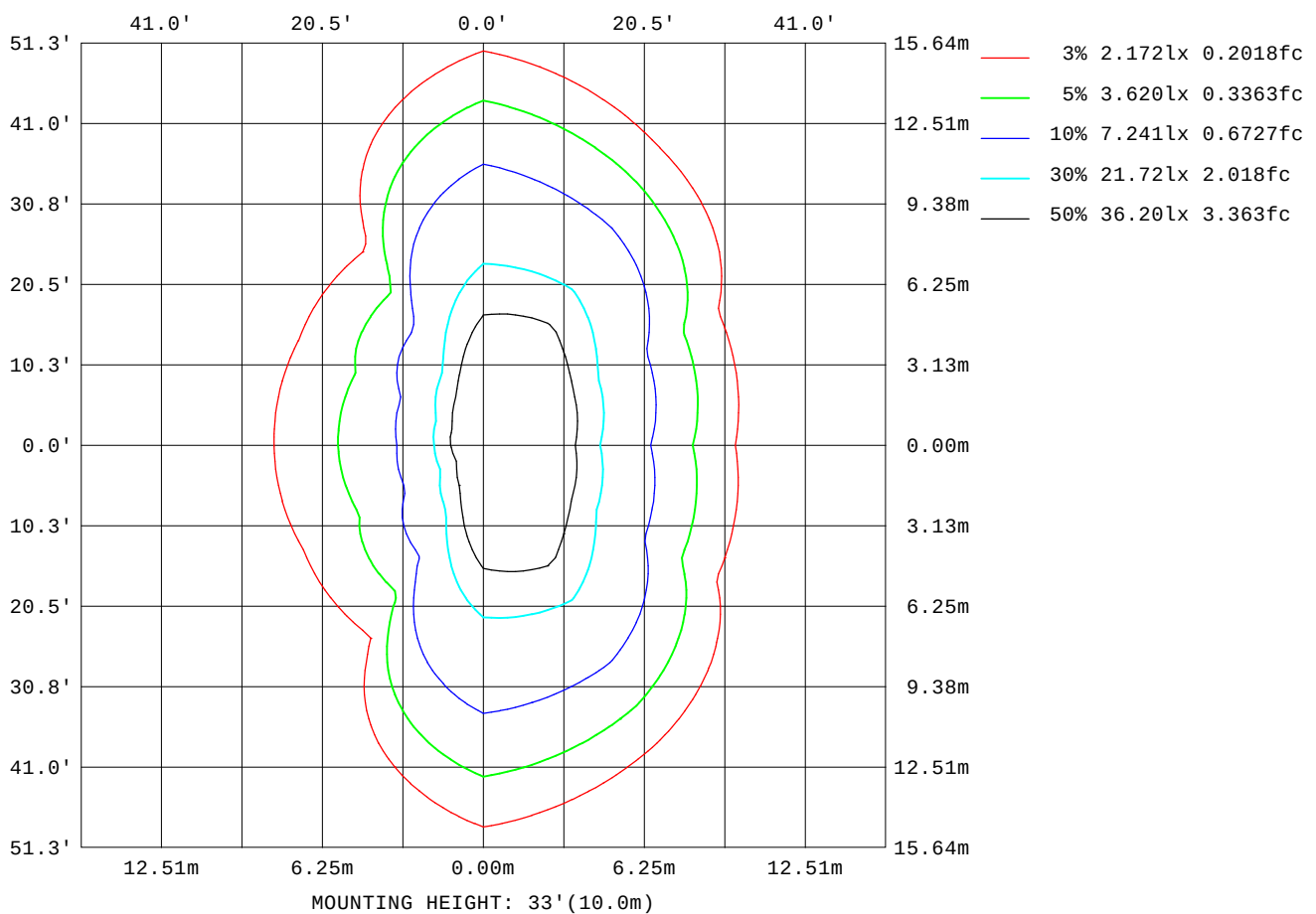
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-04-23

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

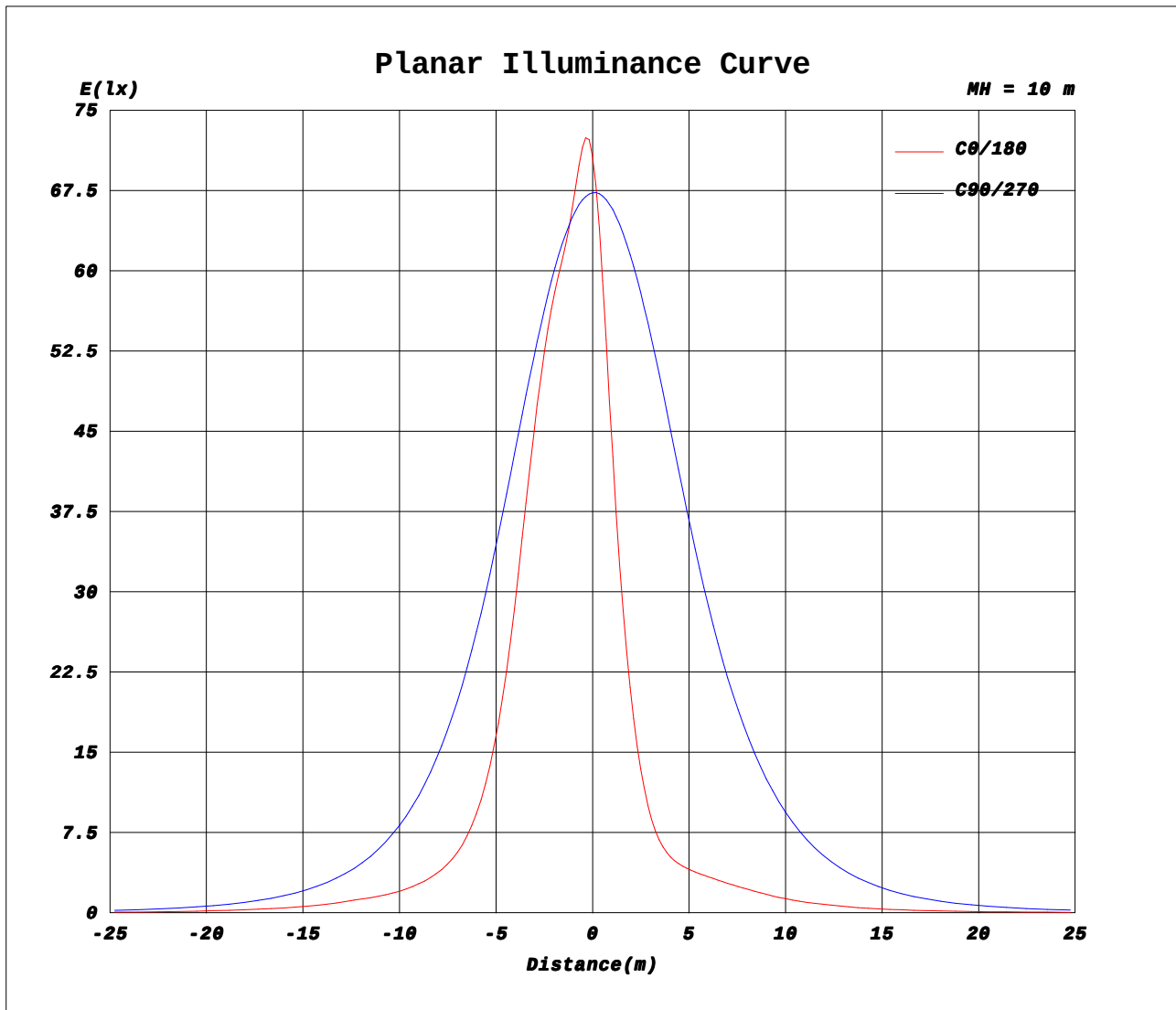
Test:U:220.2V I:0.2960A P:63.40W PF:0.9710 Lamp Flux:6489.83x1 lm		
NAME: PS-TLL-65W	TYPE: LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-04-23

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: 2018-04-23

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:220.2V I:0.2960A P:63.40W PF:0.9710 Lamp Flux:6489.83x1 lm		
NAME: PS-TLL-65W	TYPE: LED	
MFR.:		

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	7078	6958	6881	6729	6589	6554	7078	6958	6881	6729	6589	6554						
5	6868	6966	7118	6638	5374	4436	4841	4992	5852	6700	7071	6948						
10	6239	6328	6822	6433	3935	2515	2561	2860	4436	6547	6874	6296						
15	5550	5872	6452	6093	2674	1360	1301	1558	3106	6277	6507	5875						
20	4225	4948	6167	5610	1745	788	746	882	2052	5872	6207	5061						
25	2703	3573	5727	5007	1119	593	590	627	1325	5325	5769	3735						
30	1631	2303	4945	4318	761	529	545	548	872	4683	4988	2420						
35	1034	1452	3866	3607	592	491	507	506	647	3999	3916	1516						
40	739	963	2763	2932	513	453	454	471	543	3325	2803	993						
45	580	700	1895	2317	455	394	380	416	477	2666	1925	715						
50	496	557	1295	1777	412	329	312	351	433	2049	1330	565						
55	384	450	900	1327	357	256	239	278	381	1511	917	464						
60	286	354	633	945	296	197	190	215	319	1055	650	359						
65	207	270	458	630	239	152	153	168	260	691	472	275						
70	144	193	325	396	184	115	124	131	204	434	341	200						
75	94.2	126	216	241	132	84.5	95.3	99.0	151	266	236	134						
80	52.8	71.8	126	137	84.9	56.2	67.5	69.6	105	153	148	81.2						
85	20.8	29.5	53.9	57.4	44.2	29.6	40.0	42.4	59.6	70.6	71.2	39.3						
90	8.55	12.1	17.6	20.6	21.2	14.0	20.7	24.1	29.7	26.4	24.6	17.7						
95	10.1	13.4	18.4	24.7	22.9	15.9	17.6	23.7	28.7	29.6	24.3	19.7						
100	10.0	13.6	19.3	24.0	25.3	17.8	18.7	25.0	30.4	28.5	25.2	20.5						
105	9.80	13.4	20.8	26.5	28.4	20.0	20.4	26.5	33.0	31.9	26.3	20.7						
110	9.88	14.0	23.3	30.5	31.7	23.6	22.8	28.6	36.5	35.1	28.3	20.8						
115	10.7	15.1	26.2	34.4	35.6	27.9	25.7	31.7	39.9	38.2	30.8	21.6						
120	12.8	17.5	29.7	38.1	40.1	32.9	29.4	35.7	43.7	41.6	33.6	23.2						
125	16.0	20.7	33.4	41.7	44.4	38.4	33.8	40.2	47.9	44.7	36.6	25.2						
130	20.5	24.6	37.2	45.0	48.6	44.1	38.0	45.3	51.9	47.4	39.7	27.8						
135	25.5	28.9	40.9	48.0	52.9	49.7	43.1	50.6	55.5	49.6	42.6	31.0						
140	30.8	33.6	44.4	50.7	57.1	55.0	49.7	56.0	58.8	51.3	45.3	34.7						
145	36.8	38.6	48.0	53.3	60.5	59.8	56.0	61.1	61.5	52.9	48.0	38.8						
150	43.0	44.2	51.5	55.9	63.0	63.9	61.4	65.4	63.5	54.5	50.7	43.3						
155	49.7	49.7	54.5	58.2	64.9	66.7	65.1	68.1	64.7	56.2	53.0	47.9						
160	56.6	54.9	56.9	60.5	66.1	67.7	66.7	69.0	65.5	58.1	54.7	52.3						
165	62.9	58.7	59.2	62.5	66.6	67.3	66.5	68.4	66.0	60.3	56.5	55.6						
170	67.2	60.7	61.6	64.4	66.6	66.1	66.1	67.1	66.3	62.4	58.6	57.0						
175	68.0	62.5	64.1	65.9	66.1	64.2	66.1	65.6	66.4	64.5	61.6	58.0						
180	66.7	64.8	66.2	66.5	64.8	61.2	67.0	64.5	66.5	66.3	65.0	61.1						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-04-23

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: