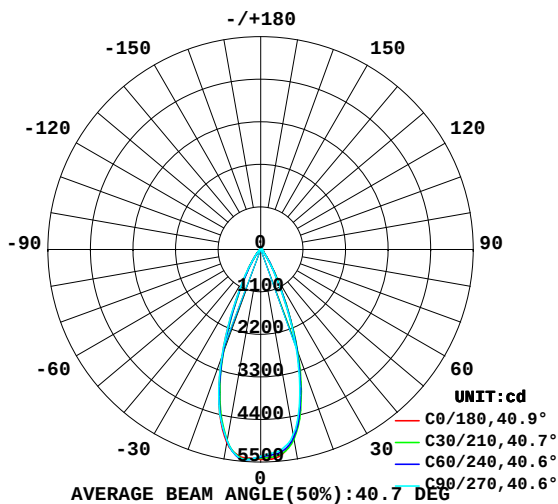


LUMINAIRE PHOTOMETRIC TEST REPORT

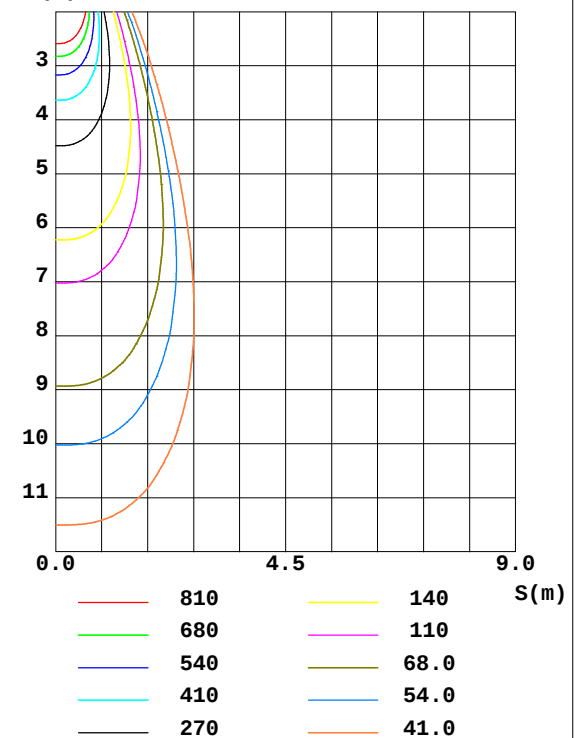
Test:U:220.6V I:0.1310A P:27.80W PF:0.9650 Lamp Flux:2885.86x1 lm		
NAME: PS-TL30W40KD3880RA-D	TYPE: LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 103.81 lm/W			
MODEL	PS-TL30W40KD3880RA-D	I _{max} (cd)	5452	S/MH(C0/180)	0.63
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	0.62
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	2885.9	η UP, DN(C0-180)	1.7, 45.8
NOMINAL FLUX(lm)	2885.86	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.7, 50.8
LAMPS INSIDE	1	η up(%)	3.4	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	220.6	η down(%)	96.6	CIBSE SHR MAX	0.65

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: 2018-11-07

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	4925	4957	4857	4761	5066	5024	5021	5066	0- 10	498.6	498.6	17.3,17.3
20	2735	2767	2669	2525	2921	2844	2947	3113	10- 20	1098	1596	55.3,55.3
30	781.9	772.7	721.3	682.8	849.5	812.0	882.5	985.3	20- 30	745.5	2342	81.2,81.2
40	203.7	203.2	186.9	178.6	220.9	207.9	223.2	252.7	30- 40	273.7	2616	90.6,90.6
50	70.73	69.75	66.49	64.13	78.86	74.47	77.33	86.12	40- 50	97.21	2713	94,94
60	28.24	27.92	26.71	26.07	31.53	30.32	31.83	35.13	50- 60	42.82	2756	95.5,95.5
70	9.842	10.03	9.466	8.926	13.60	13.23	14.07	15.45	60- 70	19.87	2776	96.2,96.2
80	1.456	1.452	1.389	1.330	5.598	5.594	5.585	5.581	70- 80	6.879	2782	96.4,96.4
90	1.732	1.716	1.801	1.880	6.410	6.392	6.292	6.206	80- 90	3.977	2786	96.6,96.6
100	3.557	3.551	3.742	3.911	7.406	7.373	7.276	7.186	90-100	5.129	2792	96.7,96.7
110	7.328	7.328	7.613	7.856	9.058	9.018	8.873	8.737	100-110	7.124	2799	97,97
120	12.60	12.56	12.86	13.17	11.84	11.80	11.57	11.37	110-120	10.02	2809	97.3,97.3
130	18.83	18.69	18.88	19.31	16.58	16.54	16.17	15.82	120-130	13.22	2822	97.8,97.8
140	25.49	25.26	25.14	25.84	23.21	23.07	22.40	22.21	130-140	16.00	2838	98.3,98.3
150	32.96	32.35	31.77	32.73	31.09	30.63	29.53	29.72	140-150	17.30	2855	98.9,98.9
160	39.38	38.34	37.62	38.03	38.06	36.85	35.83	36.19	150-160	15.96	2871	99.5,99.5
170	40.92	39.77	39.05	38.95	39.92	38.25	37.58	38.02	160-170	10.90	2882	99.9,99.9
180	42.26	40.68	39.78	40.05	42.37	40.69	39.71	40.06	170-180	3.759	2886	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

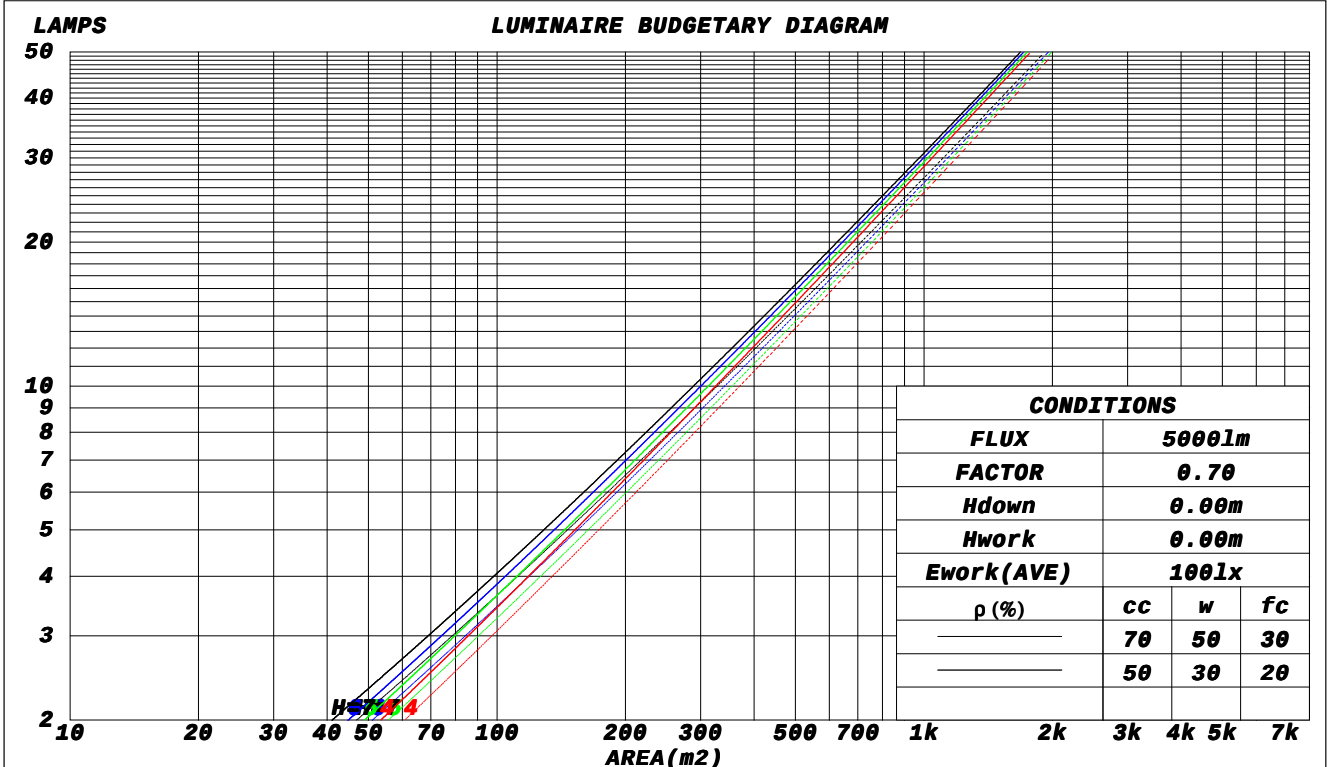
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-11-07

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:0.1310A P:27.80W PF:0.9650 Lamp Flux:2885.86x1 lm		
NAME: PS-TL30W40KD3880RA-D	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	1.10	1.08	1.06	1.08	1.06	1.04	1.03	1.02	1.00	.99	.98	.97	.95	.94	.93	.91
2.0	1.04	.99	.97	1.02	.98	.95	.98	.95	.93	.94	.92	.90	.91	.89	.88	.86
3.0	.97	.93	.89	.96	.92	.88	.93	.89	.87	.90	.87	.85	.87	.85	.83	.81
4.0	.92	.87	.83	.91	.86	.82	.88	.84	.81	.86	.83	.80	.84	.81	.79	.77
5.0	.87	.82	.78	.86	.81	.77	.84	.80	.76	.82	.78	.76	.80	.77	.75	.73
6.0	.83	.77	.74	.82	.77	.73	.80	.76	.72	.78	.75	.72	.77	.73	.71	.70
7.0	.79	.73	.70	.78	.73	.69	.76	.72	.69	.75	.71	.68	.74	.70	.68	.66
8.0	.75	.70	.66	.74	.69	.66	.73	.69	.65	.72	.68	.65	.71	.67	.64	.63
9.0	.72	.66	.63	.71	.66	.63	.70	.65	.62	.69	.65	.62	.68	.64	.62	.60
10.0	.69	.63	.60	.68	.63	.60	.67	.63	.60	.66	.62	.59	.65	.62	.59	.58



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2018-11-07

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:0.1310A P:27.80W PF:0.9650 Lamp Flux:2885.86x1 lm											
NAME: PS-TL30W40KD3880RA-D						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	.168	.095	.030	.160	.091	.029	.145	.083	.027	.132	.076	.024	.120	.069	.022		
2.0	.158	.087	.027	.151	.083	.026	.139	.077	.024	.128	.072	.022	.117	.066	.021		
3.0	.149	.079	.024	.143	.077	.023	.133	.072	.022	.123	.067	.021	.114	.063	.020		
4.0	.141	.073	.021	.136	.071	.021	.127	.067	.020	.118	.063	.019	.110	.060	.018		
5.0	.133	.068	.020	.129	.066	.019	.121	.063	.019	.113	.060	.018	.106	.057	.017		
6.0	.127	.063	.018	.123	.062	.018	.116	.059	.017	.109	.057	.017	.103	.054	.016		
7.0	.121	.060	.017	.117	.058	.017	.111	.056	.016	.105	.054	.016	.099	.052	.015		
8.0	.115	.056	.016	.112	.055	.016	.106	.053	.015	.101	.051	.015	.096	.049	.014		
9.0	.110	.053	.015	.107	.052	.015	.102	.051	.014	.097	.049	.014	.093	.047	.014		
10.0	.105	.051	.014	.103	.050	.014	.098	.048	.014	.094	.047	.013	.090	.045	.013		

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	.197	.184	.172	.169	.158	.148	.115	.109	.102	.066	.063	.060	.021	.020	.019	
2.0	.181	.159	.141	.155	.137	.122	.106	.095	.085	.061	.055	.050	.020	.018	.016	
3.0	.168	.140	.118	.144	.121	.102	.099	.084	.072	.057	.049	.042	.018	.016	.014	
4.0	.157	.125	.101	.135	.108	.088	.093	.076	.062	.054	.044	.037	.017	.014	.012	
5.0	.148	.114	.089	.127	.098	.077	.087	.069	.054	.051	.040	.032	.016	.013	.011	
6.0	.140	.104	.079	.120	.090	.069	.083	.063	.049	.048	.037	.029	.016	.012	.010	
7.0	.133	.097	.071	.114	.084	.062	.079	.059	.044	.046	.035	.026	.015	.011	.009	
8.0	.127	.090	.065	.109	.078	.057	.076	.055	.040	.044	.032	.024	.014	.011	.008	
9.0	.122	.085	.060	.105	.074	.052	.073	.052	.037	.042	.031	.022	.014	.010	.007	
10.0	.117	.080	.056	.101	.070	.049	.070	.049	.035	.041	.029	.021	.013	.010	.007	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-11-07

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:0.1310A P:27.80W PF:0.9650 Lamp Flux:2885.86x1 lm										
NAME: PS-TL30W40KD3880RA-D					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	17.3	18.1	17.6	18.3	18.5	16.9	17.7	17.1	17.9	18.1
3H	17.3	18.0	17.6	18.3	18.6	16.9	17.6	17.2	17.9	18.1
4H	17.2	17.9	17.6	18.2	18.5	16.8	17.5	17.1	17.8	18.1
6H	17.1	17.8	17.5	18.1	18.4	16.7	17.4	17.1	17.7	18.0
8H	17.1	17.7	17.5	18.1	18.4	16.7	17.3	17.0	17.6	17.9
12H	17.1	17.7	17.4	18.0	18.3	16.6	17.2	17.0	17.6	17.9
4H 2H	17.2	17.9	17.5	18.2	18.4	16.8	17.5	17.1	17.7	18.0
3H	17.2	17.8	17.6	18.1	18.5	16.8	17.4	17.2	17.7	18.1
4H	17.1	17.7	17.5	18.1	18.4	16.7	17.3	17.1	17.7	18.0
6H	17.0	17.5	17.5	17.9	18.3	16.6	17.1	17.1	17.5	17.9
8H	17.0	17.5	17.4	17.9	18.3	16.6	17.0	17.0	17.5	17.9
12H	17.0	17.4	17.4	17.8	18.3	16.5	17.0	17.0	17.4	17.9
8H 4H	17.0	17.5	17.5	17.9	18.3	16.6	17.1	17.0	17.5	17.9
6H	16.9	17.3	17.4	17.7	18.2	16.5	16.9	17.0	17.3	17.8
8H	16.9	17.2	17.4	17.7	18.2	16.4	16.8	17.0	17.3	17.8
12H	16.8	17.1	17.3	17.6	18.1	16.4	16.7	16.9	17.2	17.7
12H 4H	16.9	17.4	17.4	17.8	18.3	16.5	17.0	17.0	17.4	17.9
6H	16.8	17.2	17.3	17.7	18.2	16.4	16.8	16.9	17.2	17.8
8H	16.8	17.1	17.3	17.6	18.1	16.4	16.7	16.9	17.2	17.7
Variations with the observer position at spacings:										
S = 1.0H	+ 2.3 / - 3.8					+ 2.1 / - 3.7				
1.5H	+ 3.7 / - 2.9					+ 3.4 / - 2.8				
2.0H	+ 3.3 / - 2.8					+ 3.1 / - 2.7				

CIE Pub.117 Corrected 2886 lm Total Lamp Luminous Flux. (8log(F/F0) = 3.7)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-11-07

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:0.1310A P:27.80W PF:0.9650 Lamp Flux:2885.86x1 lm		
NAME: PS-TL30W40KD3880RA-D	TYPE: LED	
MFR.:		

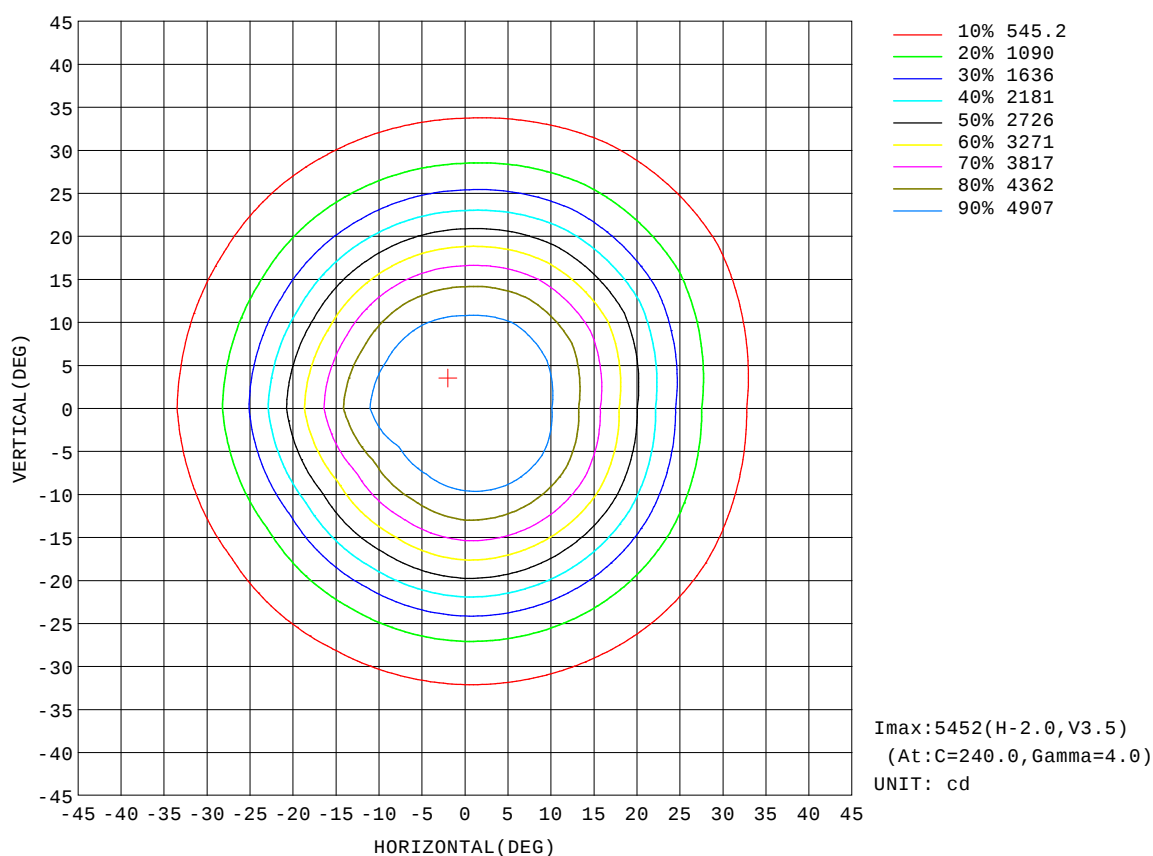
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	86	79	75	85	79	75	84	79	75	71
0.80	93	87	83	92	87	83	91	86	83	79
1.00	98	92	88	97	91	88	95	91	87	83
1.25	102	96	93	100	96	92	98	94	91	86
1.50	104	99	96	103	99	95	100	97	94	89
2.00	107	103	100	105	102	99	102	99	97	91
2.50	109	105	102	107	103	101	103	101	98	92
3.00	111	107	104	108	105	103	105	102	100	93
4.00	113	110	107	110	108	106	106	104	103	94
5.00	114	112	110	111	109	108	107	105	104	95
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: 2018-11-07

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:0.1310A P:27.80W PF:0.9650 Lamp Flux:2885.86x1 lm		
NAME: PS-TL30W40KD3880RA-D	TYPE: LED	
MFR.:		

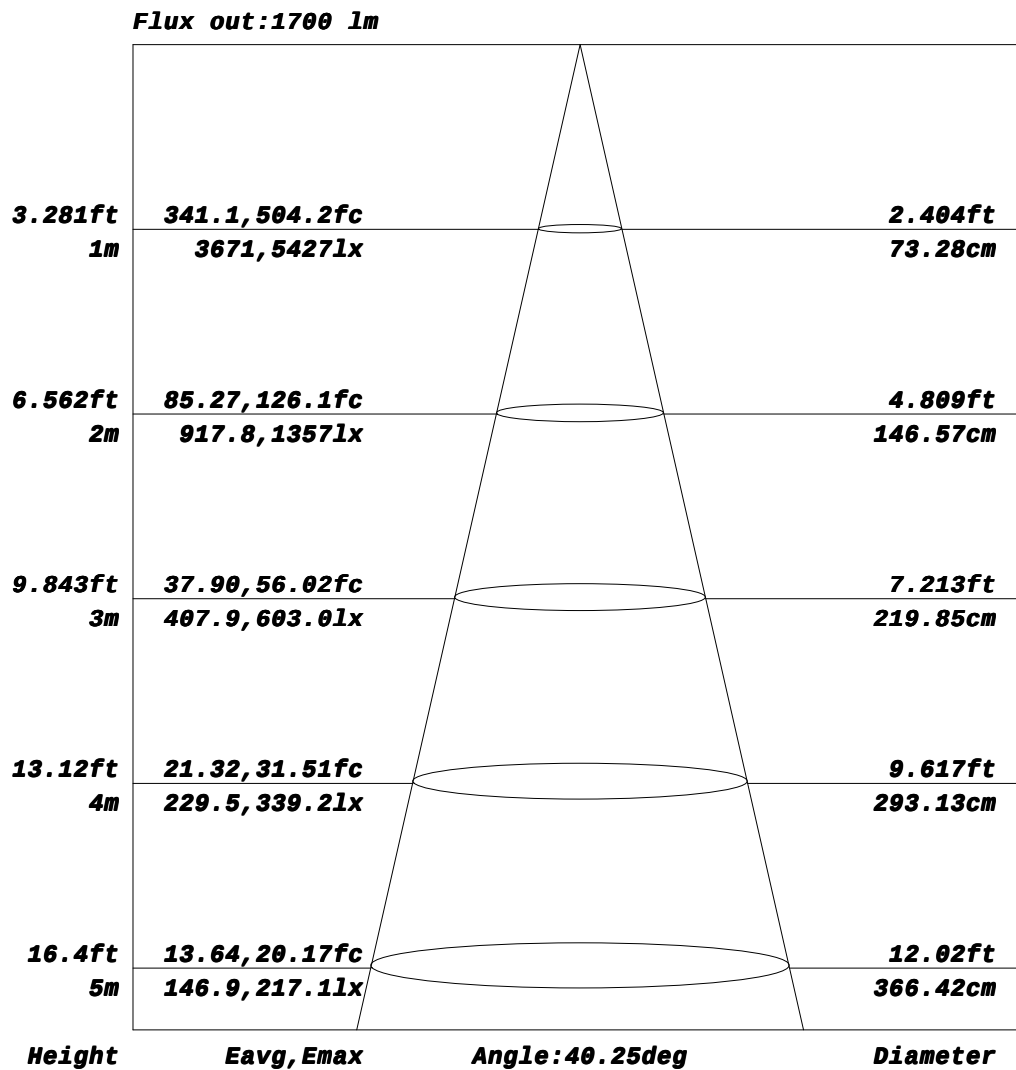


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-11-07

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:0.1310A P:27.80W PF:0.9650 Lamp Flux:2885.86x1 lm		
NAME: PS-TL30W40KD3880RA-D	TYPE: LED	
MFR.:		



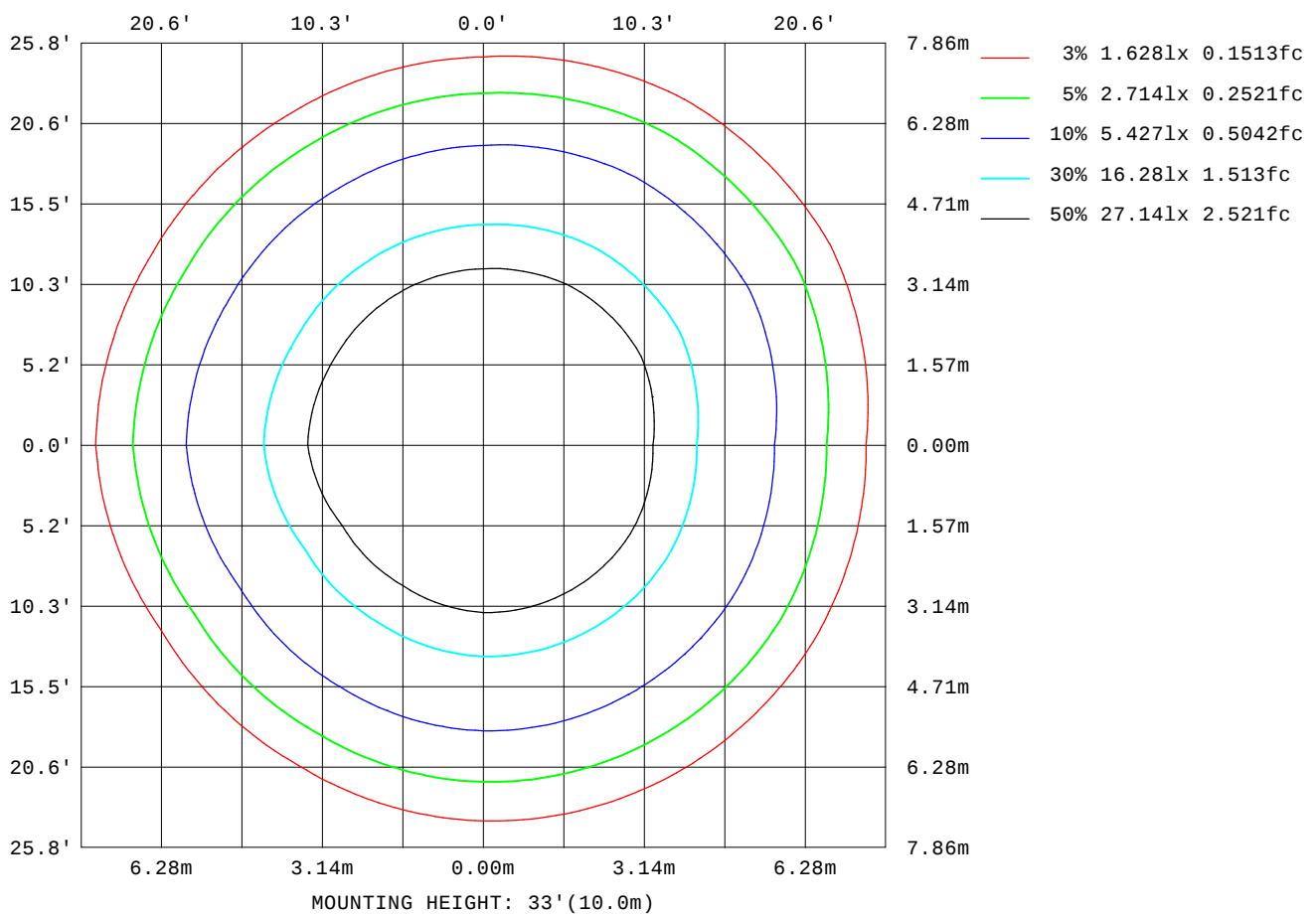
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-11-07

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

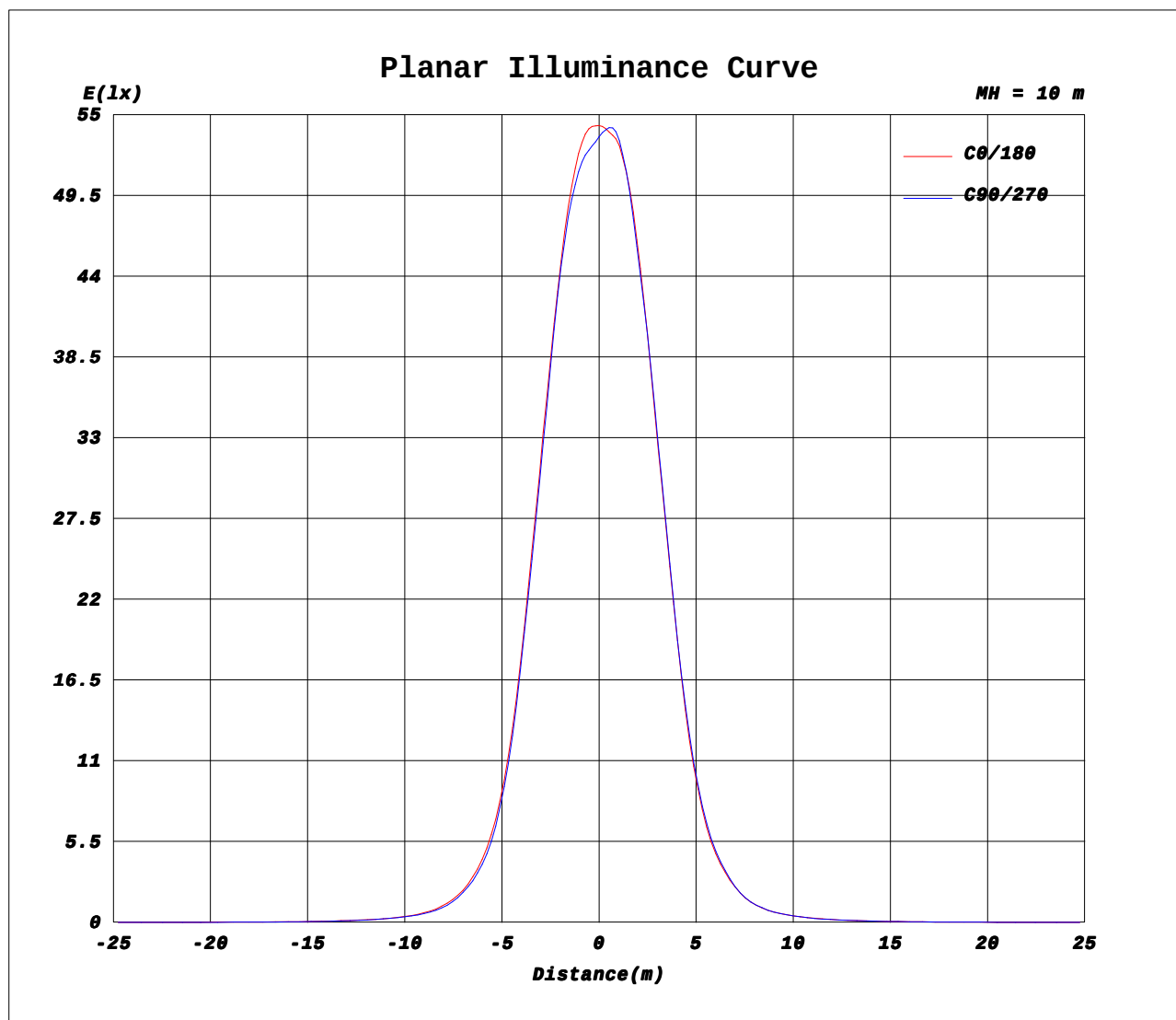
Test:U:220.6V I:0.1310A P:27.80W PF:0.9650 Lamp Flux:2885.86x1 lm		
NAME: PS-TL30W40KD3880RA-D	TYPE: LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-11-07

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: 2018-11-07

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:0.1310A P:27.80W PF:0.9650 Lamp Flux:2885.86x1 lm		
NAME: PS-TL30W40KD3880RA-D	TYPE: LED	
MFR.:		

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	5427	5400	5371	5349	5328	5330	5427	5400	5371	5349	5328	5330						
5	5374	5338	5291	5239	5202	5215	5397	5430	5450	5446	5433	5388						
10	4925	4981	4934	4857	4756	4766	5066	5010	5038	5021	5090	5043						
15	3983	4056	3991	3908	3744	3733	4163	4084	4144	4184	4300	4268						
20	2735	2799	2735	2669	2529	2522	2921	2818	2870	2947	3115	3112						
25	1530	1566	1521	1460	1360	1363	1660	1582	1622	1713	1869	1874						
30	782	794	751	721	675	691	849	802	822	883	985	986						
35	398	411	393	375	343	356	444	412	417	446	514	509						
40	204	211	196	187	176	181	221	207	209	223	251	254						
45	117	118	112	108	103	106	129	120	123	127	142	143						
50	70.7	71.2	68.3	66.5	63.1	65.2	78.9	73.7	75.2	77.3	85.8	86.4						
55	44.7	45.7	42.7	41.6	39.8	41.0	49.4	45.8	47.3	49.6	54.1	55.0						
60	28.2	28.5	27.4	26.7	25.9	26.3	31.5	30.0	30.6	31.8	34.9	35.4						
65	18.3	18.3	17.8	17.5	16.7	17.0	21.4	20.7	21.1	22.0	23.5	23.9						
70	9.84	10.3	9.74	9.47	8.92	8.93	13.6	13.1	13.4	14.1	15.3	15.6						
75	4.07	4.79	4.12	3.45	2.45	2.51	8.59	7.81	8.15	8.69	9.41	9.47						
80	1.46	1.48	1.43	1.39	1.33	1.33	5.60	5.60	5.59	5.59	5.58	5.59						
85	1.36	1.33	1.35	1.38	1.43	1.42	5.90	5.92	5.85	5.77	5.69	5.69						
90	1.73	1.70	1.73	1.80	1.89	1.87	6.41	6.43	6.36	6.29	6.20	6.21						
95	2.44	2.39	2.46	2.55	2.70	2.66	6.90	6.90	6.84	6.77	6.69	6.69						
100	3.56	3.50	3.60	3.74	3.93	3.89	7.41	7.41	7.33	7.28	7.18	7.19						
105	5.21	5.12	5.27	5.44	5.69	5.63	8.11	8.11	8.03	7.96	7.84	7.85						
110	7.33	7.26	7.40	7.61	7.88	7.83	9.06	9.07	8.97	8.87	8.73	8.74						
115	9.83	9.75	9.88	10.1	10.4	10.4	10.3	10.3	10.2	10.0	9.86	9.89						
120	12.6	12.5	12.6	12.9	13.2	13.1	11.8	11.9	11.7	11.6	11.3	11.4						
125	15.6	15.4	15.6	15.8	16.2	16.1	13.9	14.0	13.8	13.6	13.3	13.3						
130	18.8	18.6	18.8	18.9	19.4	19.3	16.6	16.6	16.4	16.2	15.8	15.9						
135	22.1	21.9	22.0	22.0	22.5	22.5	19.7	19.8	19.5	19.1	18.7	18.9						
140	25.5	25.3	25.2	25.1	25.7	25.9	23.2	23.3	22.9	22.4	22.2	22.3						
145	29.1	28.9	28.6	28.3	29.0	29.5	27.1	27.1	26.5	26.1	25.8	26.0						
150	33.0	32.7	32.0	31.8	32.3	33.1	31.1	31.0	30.2	29.5	29.5	30.0						
155	36.6	36.2	35.3	35.0	35.4	36.3	35.0	34.7	33.6	33.0	33.0	33.7						
160	39.4	38.8	37.8	37.6	37.7	38.3	38.1	37.3	36.4	35.8	35.8	36.6						
165	40.7	40.0	39.0	38.8	38.7	39.0	39.6	38.4	37.7	37.3	37.3	38.0						
170	40.9	40.2	39.3	39.1	38.8	39.1	39.9	38.6	37.9	37.6	37.7	38.3						
175	41.7	40.9	39.9	39.6	39.4	39.8	40.7	39.4	38.5	38.1	38.2	39.0						
180	42.3	41.2	40.2	39.8	39.7	40.4	42.4	41.1	40.3	39.7	39.7	40.4						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-11-07

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: