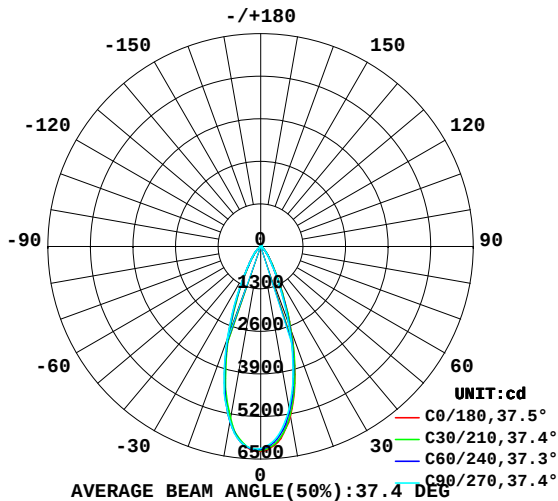


LUMINAIRE PHOTOMETRIC TEST REPORT

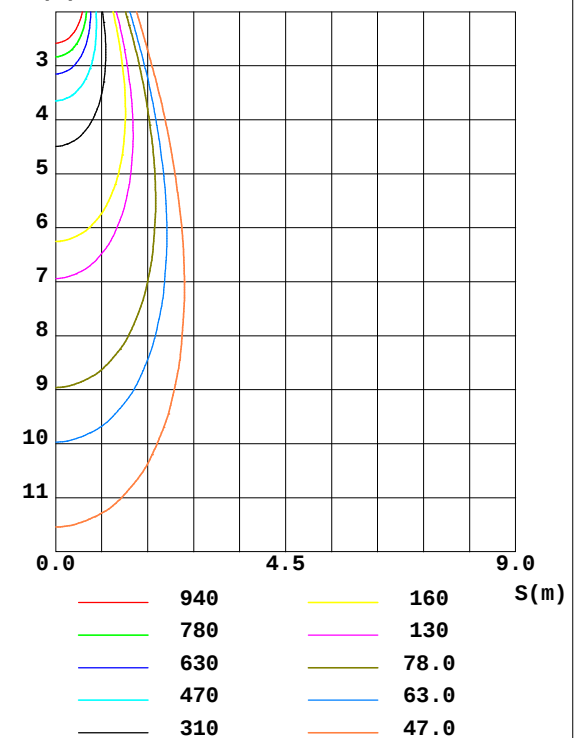
Test:U:221.1V I:0.1270A P:27.20W PF:0.9650 Lamp Flux:3101.92x1 lm		
NAME: PS-TL30W40KD3880RA-G	TYPE: LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 114.04 lm/W			
MODEL	PS-TL30W40KD3880RA-G	I _{max} (cd)	6262	S/MH(C0/180)	0.60
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	0.59
RATED VOLTAGE(V)	222	TOTAL FLUX(lm)	3101.9	η UP, DN(C0-180)	1.7, 45.1
NOMINAL FLUX(lm)	3101.92	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.7, 51.5
LAMPS INSIDE	1	η up(%)	3.4	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	221.1	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: 2018-11-07

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	5252	5162	5036	4941	5405	5380	5423	5480	0- 10	547.3	547.3	17.6,17.6
20	2712	2643	2514	2417	2882	2871	2984	3123	10- 20	1116	1663	53.6,53.6
30	888.0	862.3	810.8	780.3	950.4	944.8	1002	1078	20- 30	760.6	2423	78.1,78.1
40	336.7	321.7	306.4	296.2	361.2	352.5	374.9	393.9	30- 40	348.1	2772	89.3,89.3
50	98.06	90.74	86.17	77.85	110.6	103.6	115.6	124.8	40- 50	156.5	2928	94.4,94.4
60	18.23	17.57	16.70	16.00	21.40	20.64	21.66	22.69	50- 60	41.16	2969	95.7,95.7
70	8.947	8.613	8.315	7.997	12.46	11.87	11.91	12.65	60- 70	13.84	2983	96.2,96.2
80	2.486	2.409	2.068	1.562	7.278	7.099	7.304	7.573	70- 80	7.962	2991	96.4,96.4
90	2.059	2.072	2.149	2.189	6.861	6.770	6.644	6.566	80- 90	4.439	2995	96.6,96.6
100	4.048	4.090	4.265	4.350	7.958	7.852	7.718	7.622	90-100	5.585	3001	96.7,96.7
110	7.993	8.079	8.367	8.463	9.797	9.670	9.466	9.342	100-110	7.715	3009	97,97
120	13.68	13.76	14.04	14.16	12.99	12.80	12.50	12.33	110-120	10.87	3020	97.3,97.3
130	20.45	20.38	20.50	20.76	18.04	17.74	17.27	17.02	120-130	14.33	3034	97.8,97.8
140	27.38	27.23	27.10	27.60	24.99	24.51	23.73	23.58	130-140	17.19	3051	98.4,98.4
150	34.86	34.46	33.85	34.65	33.13	32.31	31.01	31.29	140-150	18.40	3070	99,99
160	41.52	40.77	40.01	40.36	40.40	38.84	37.40	37.89	150-160	16.86	3086	99.5,99.5
170	43.51	42.53	41.72	41.59	42.71	40.71	39.64	40.08	160-170	11.56	3098	99.9,99.9
180	44.64	42.85	41.60	41.94	44.82	42.85	41.48	41.94	170-180	3.985	3102	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

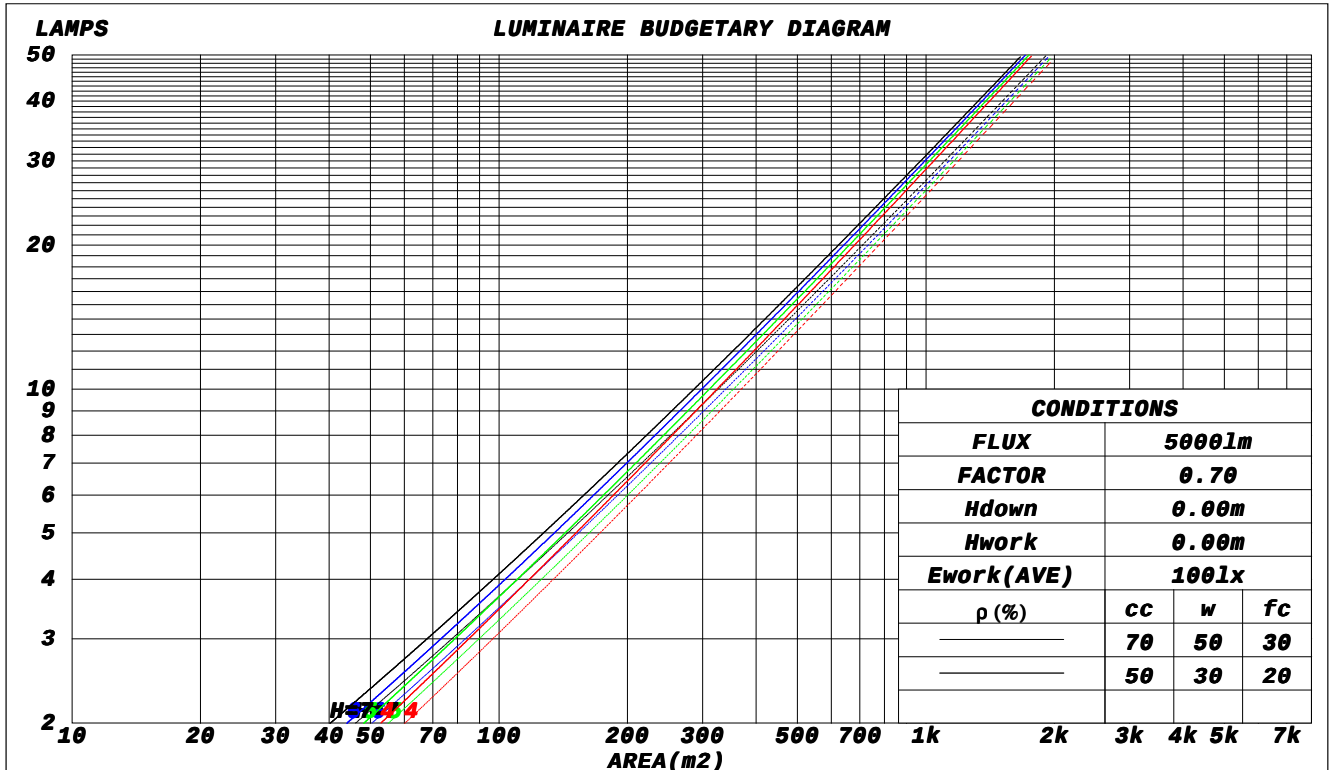
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-11-07

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:221.1V I:0.1270A P:27.20W PF:0.9650 Lamp Flux:3101.92x1 lm		
NAME: PS-TL30W40KD3880RA-G	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	1.03	.99	.96	1.01	.98	.95	.98	.95	.92	.94	.92	.90	.91	.89	.88	.86
3.0	.97	.93	.89	.95	.91	.88	.92	.89	.86	.90	.87	.84	.87	.85	.83	.81
4.0	.92	.86	.83	.90	.86	.82	.88	.84	.81	.85	.82	.79	.83	.80	.78	.77
5.0	.87	.81	.77	.85	.81	.77	.83	.79	.76	.81	.78	.75	.79	.76	.74	.72
6.0	.82	.77	.73	.81	.76	.72	.79	.75	.72	.78	.74	.71	.76	.73	.70	.69
7.0	.78	.73	.69	.77	.72	.68	.76	.71	.68	.74	.70	.67	.73	.69	.67	.65
8.0	.74	.69	.65	.74	.69	.65	.72	.68	.64	.71	.67	.64	.70	.66	.64	.62
9.0	.71	.66	.62	.70	.65	.62	.69	.65	.61	.68	.64	.61	.67	.63	.61	.59
10.0	.68	.63	.59	.67	.62	.59	.66	.62	.59	.65	.61	.58	.64	.61	.58	.57



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:221.1V I:0.1270A P:27.20W PF:0.9650 Lamp Flux:3101.92x1 lm											
NAME: PS-TL30W40KD3880RA-G						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	.169	.096	.031	.162	.092	.029	.147	.084	.027	.134	.077	.025	.122	.070	.023		
2.0	.160	.088	.027	.153	.084	.026	.141	.078	.024	.130	.073	.023	.119	.067	.021		
3.0	.151	.080	.024	.145	.078	.023	.135	.073	.022	.125	.068	.021	.116	.064	.020		
4.0	.143	.074	.022	.138	.072	.021	.129	.068	.020	.120	.064	.019	.112	.061	.019		
5.0	.135	.069	.020	.131	.067	.020	.123	.064	.019	.115	.061	.018	.108	.058	.017		
6.0	.129	.064	.018	.125	.063	.018	.118	.060	.018	.111	.058	.017	.105	.055	.016		
7.0	.122	.061	.017	.119	.059	.017	.113	.057	.016	.107	.055	.016	.101	.052	.015		
8.0	.117	.057	.016	.114	.056	.016	.108	.054	.015	.103	.052	.015	.098	.050	.015		
9.0	.112	.054	.015	.109	.053	.015	.104	.051	.015	.099	.050	.014	.094	.048	.014		
10.0	.107	.051	.014	.105	.051	.014	.100	.049	.014	.095	.047	.013	.091	.046	.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	.108	.102	.066	.063	.059	.021	.020	.019	
2.0	.181	.159	.141	.155	.137	.121	.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	.088	.127	.098	.077	.088	.069	.054	.051	.040	.032	.016	.013	.011	
6.0	.140	.104	.078	.121	.090	.068	.083	.063	.048	.048	.037	.029	.016	.012	.009	
7.0	.134	.097	.071	.115	.084	.062	.079	.059	.044	.046	.035	.026	.015	.011	.009	
8.0	.128	.090	.065	.110	.078	.056	.076	.055	.040	.044	.032	.024	.014	.011	.008	
9.0	.122	.085	.060	.105	.074	.052	.073	.052	.037	.043	.031	.022	.014	.010	.007	
10.0	.118	.081	.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:221.1V I:0.1270A P:27.20W PF:0.9650 Lamp Flux:3101.92x1 lm										
NAME: PS-TL30W40KD3880RA-G						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	18.7	19.6	19.0	19.8	20.0	18.3	19.1	18.6	19.3	19.6
3H	18.6	19.4	18.9	19.6	19.9	18.2	18.9	18.5	19.2	19.5
4H	18.6	19.3	18.9	19.6	19.8	18.1	18.8	18.4	19.1	19.4
6H	18.5	19.2	18.8	19.5	19.8	18.0	18.7	18.4	19.0	19.3
8H	18.4	19.1	18.8	19.4	19.7	18.0	18.6	18.3	19.0	19.3
12H	18.4	19.0	18.8	19.4	19.7	17.9	18.6	18.3	18.9	19.2
4H 2H	18.5	19.2	18.8	19.5	19.8	18.1	18.8	18.4	19.1	19.4
3H	18.4	19.0	18.8	19.4	19.7	18.0	18.6	18.3	18.9	19.3
4H	18.4	18.9	18.8	19.3	19.7	17.9	18.5	18.3	18.8	19.2
6H	18.3	18.8	18.7	19.2	19.6	17.8	18.3	18.3	18.7	19.1
8H	18.2	18.7	18.7	19.1	19.5	17.8	18.3	18.2	18.7	19.1
12H	18.2	18.6	18.6	19.0	19.5	17.7	18.2	18.2	18.6	19.1
8H 4H	18.2	18.7	18.7	19.1	19.5	17.8	18.2	18.2	18.7	19.1
6H	18.1	18.5	18.6	19.0	19.5	17.7	18.1	18.2	18.5	19.0
8H	18.1	18.4	18.6	18.9	19.4	17.7	18.0	18.2	18.5	19.0
12H	18.0	18.3	18.6	18.8	19.4	17.6	17.9	18.1	18.4	18.9
12H 4H	18.2	18.6	18.6	19.0	19.5	17.7	18.2	18.2	18.6	19.0
6H	18.1	18.4	18.6	18.9	19.4	17.6	18.0	18.1	18.5	19.0
8H	18.0	18.3	18.6	18.8	19.4	17.6	17.9	18.1	18.4	18.9
Variations with the observer position at spacings:										
S = 1.0H	+ 2.4 / - 7.2					+ 2.4 / - 7.3				
1.5H	+ 3.7 / - 6.9					+ 3.6 / - 6.8				
2.0H	+ 5.7 / - 5.6					+ 5.4 / - 5.2				

CIE Pub.117 Corrected 3102 lm Total Lamp Luminous Flux. (8log(F/F0) = 3.9)

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:221.1V I:0.1270A P:27.20W PF:0.9650 Lamp Flux:3101.92x1 lm		
NAME: PS-TL30W40KD3880RA-G	TYPE: LED	
MFR.:		

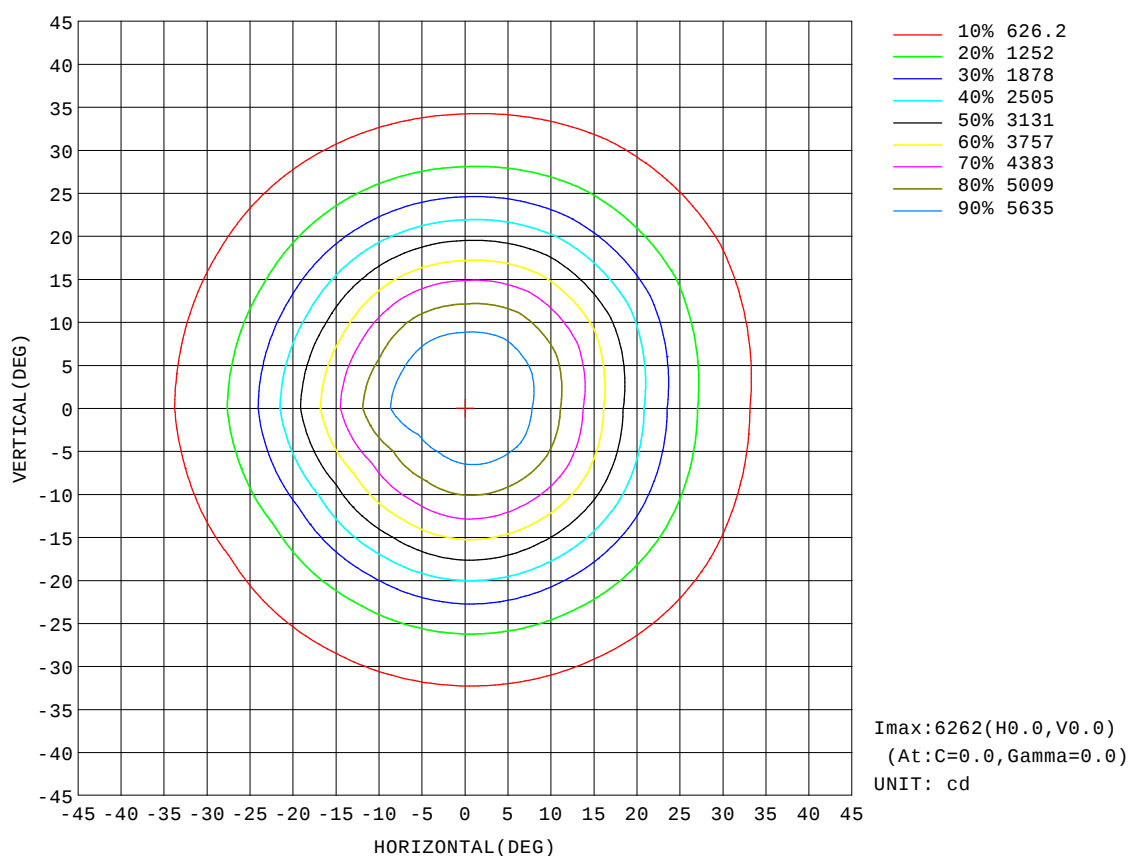
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	85	78	74	84	78	74	83	78	74	70
0.80	92	86	82	92	86	82	90	85	82	78
1.00	97	91	87	96	91	87	94	90	86	82
1.25	101	96	92	100	95	92	98	94	91	86
1.50	104	99	96	103	98	95	100	96	94	88
2.00	107	103	99	105	101	98	102	99	96	90
2.50	109	105	102	107	103	100	103	100	98	91
3.00	110	107	104	108	105	103	104	102	100	93
4.00	113	110	107	110	108	106	106	104	102	94
5.00	114	111	109	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:221.1V I:0.1270A P:27.20W PF:0.9650 Lamp Flux:3101.92x1 lm		
NAME: PS-TL30W40KD3880RA-G	TYPE: LED	
MFR.:		

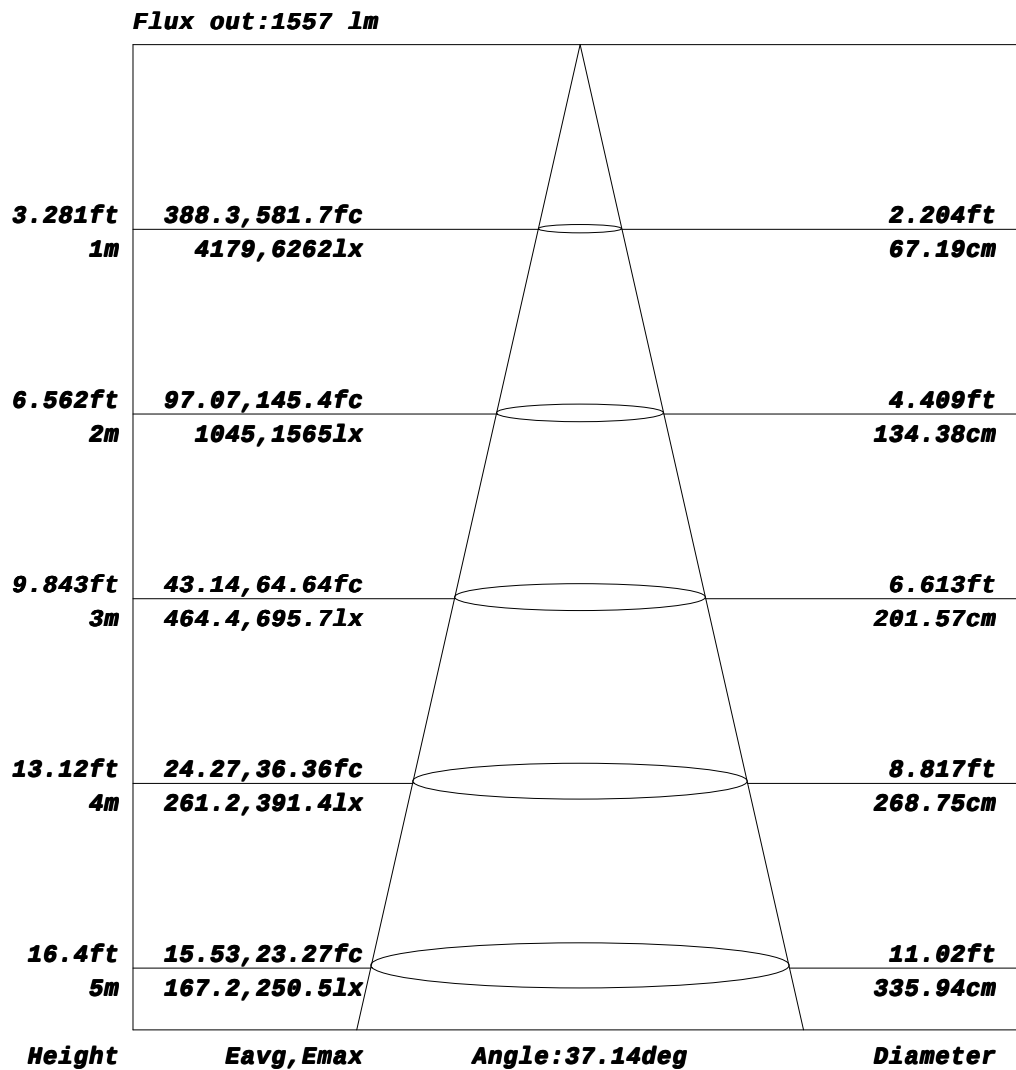


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-11-07

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:221.1V I:0.1270A P:27.20W PF:0.9650 Lamp Flux:3101.92x1 lm		
NAME: PS-TL30W40KD3880RA-G	TYPE: LED	
MFR.:		



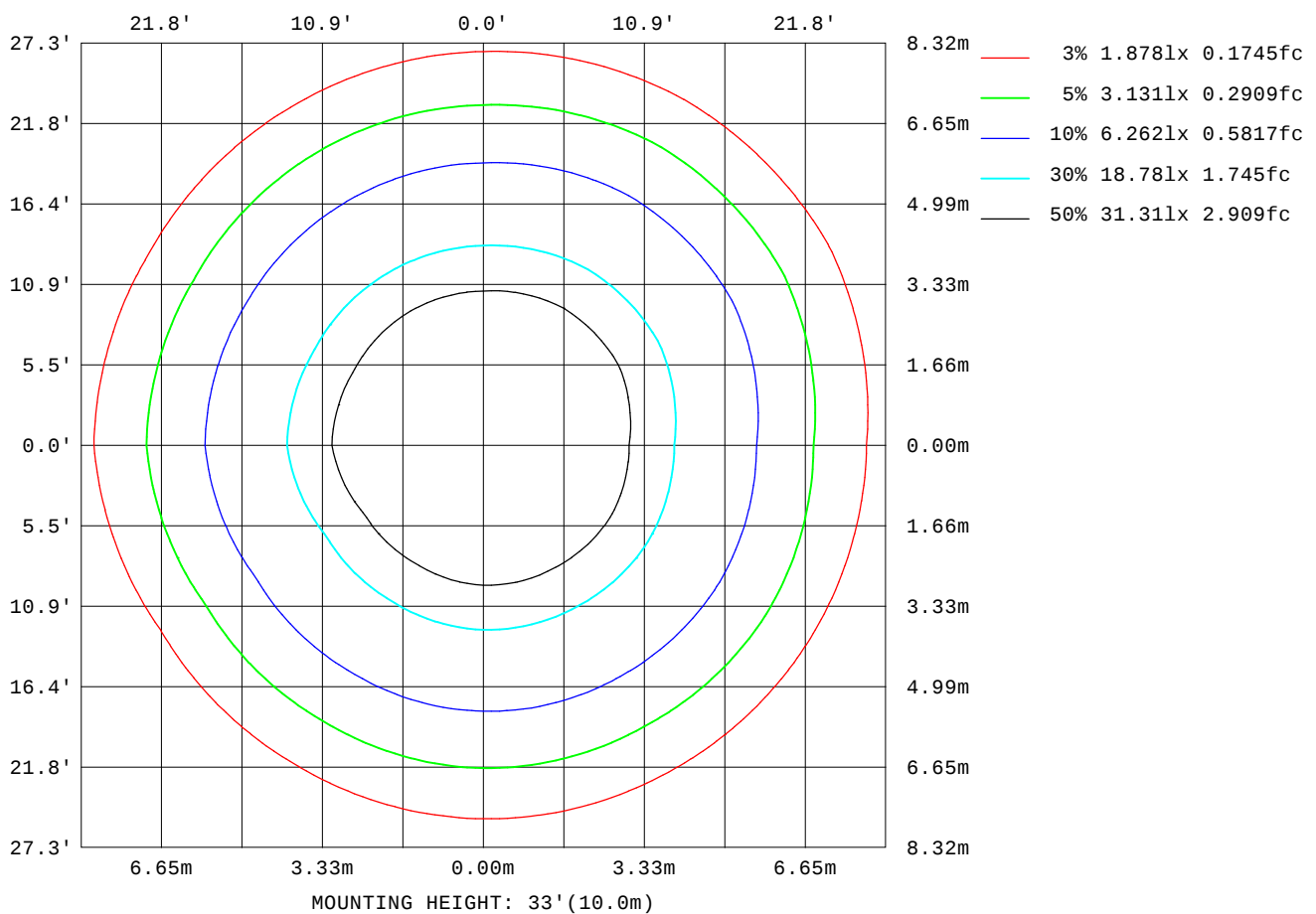
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

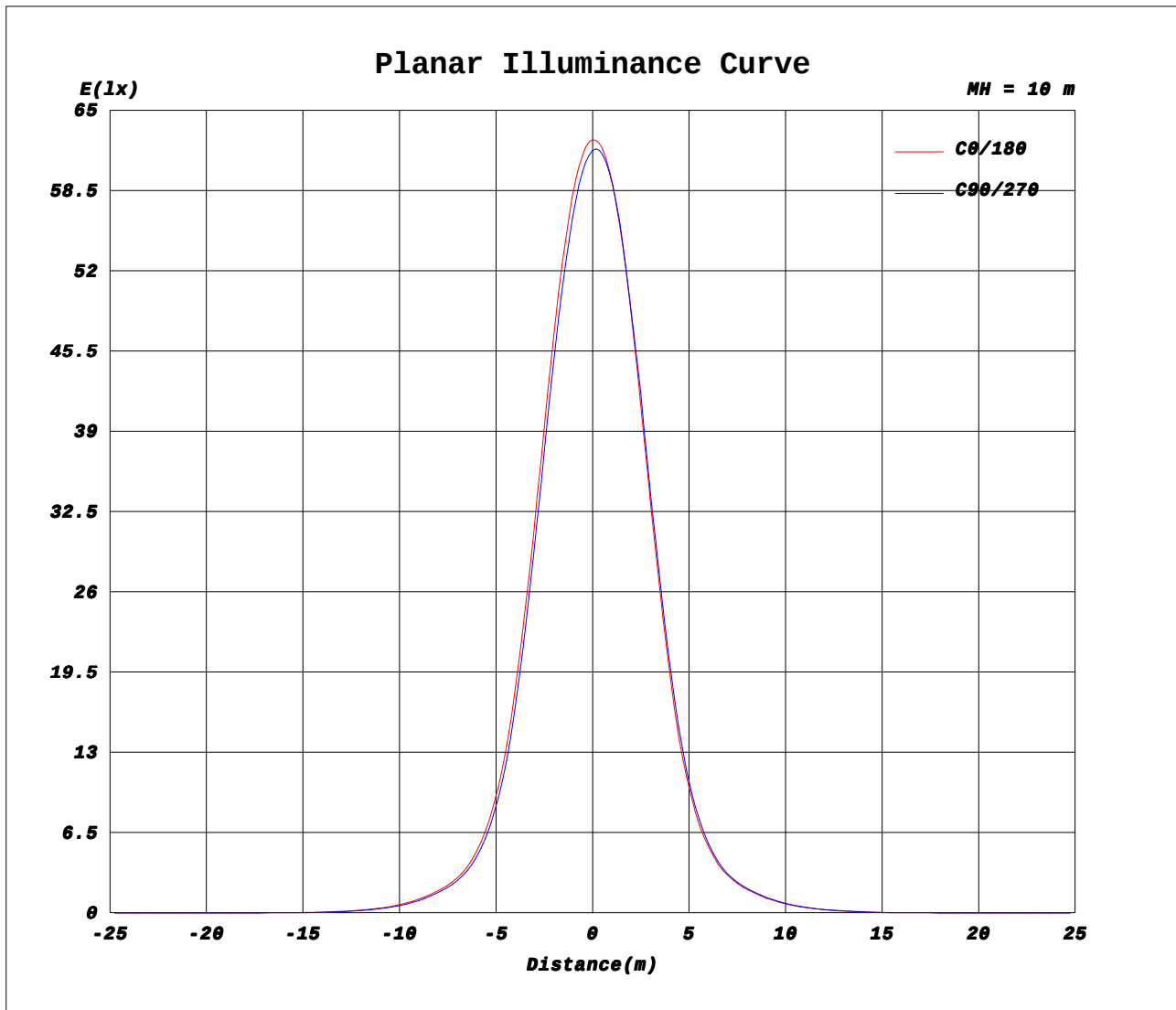
Test:U:221.1V I:0.1270A P:27.20W PF:0.9650 Lamp Flux:3101.92x1 lm		
NAME: PS-TL30W40KD3880RA-G	TYPE: LED	
MFR.:		



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:221.1V I:0.1270A P:27.20W PF:0.9650 Lamp Flux:3101.92x1 lm		
NAME: PS-TL30W40KD3880RA-G	TYPE: LED	
MFR.:		

Table--1

UNIT: cd

γ (DEG)	C (DEG)																	
	0	30	60	90	120	150	180	210	240	270	300	330						
0	6262	6233	6199	6174	6147	6137	6262	6233	6199	6174	6147	6137						
5	6007	5971	5891	5833	5765	5792	6085	6050	6076	6065	6086	6039						
10	5252	5222	5103	5036	4925	4956	5405	5328	5432	5423	5521	5438						
15	4051	4033	3898	3830	3700	3742	4254	4184	4300	4337	4491	4402						
20	2712	2705	2581	2514	2406	2427	2882	2814	2927	2984	3159	3087						
25	1585	1573	1491	1444	1364	1379	1694	1646	1713	1787	1907	1886						
30	888	889	835	811	775	785	950	927	963	1002	1083	1073						
35	519	513	486	479	461	470	559	537	558	577	620	613						
40	337	331	313	306	293	299	361	347	358	375	395	393						
45	196	186	176	171	159	165	210	195	210	222	241	237						
50	98.1	92.6	88.9	86.2	75.6	80.1	111	97.9	109	116	126	124						
55	35.0	35.0	31.7	29.5	26.4	26.8	42.4	38.4	43.2	47.8	52.9	52.8						
60	18.2	17.9	17.2	16.7	15.9	16.1	21.4	20.2	21.1	21.7	22.6	22.8						
65	12.5	12.2	11.9	11.7	11.2	11.3	15.6	14.8	15.0	15.4	15.9	16.2						
70	8.95	8.77	8.45	8.31	7.96	8.03	12.5	12.0	11.8	11.9	12.5	12.8						
75	5.78	5.73	5.42	5.17	4.96	5.08	10.1	9.69	9.49	9.41	9.92	10.2						
80	2.49	2.57	2.25	2.07	1.52	1.61	7.28	6.98	7.22	7.30	7.56	7.59						
85	1.61	1.59	1.63	1.65	1.68	1.65	6.33	6.29	6.18	6.10	6.02	6.05						
90	2.06	2.04	2.10	2.15	2.21	2.17	6.86	6.82	6.72	6.64	6.56	6.57						
95	2.86	2.84	2.92	3.00	3.09	3.03	7.39	7.34	7.23	7.16	7.08	7.08						
100	4.05	4.03	4.15	4.27	4.39	4.31	7.96	7.91	7.80	7.72	7.61	7.63						
105	5.77	5.75	5.91	6.06	6.22	6.10	8.73	8.68	8.55	8.45	8.34	8.35						
110	7.99	7.99	8.17	8.37	8.53	8.40	9.80	9.75	9.59	9.47	9.34	9.35						
115	10.7	10.7	10.9	11.1	11.3	11.1	11.2	11.1	11.0	10.8	10.6	10.7						
120	13.7	13.7	13.8	14.0	14.2	14.1	13.0	12.9	12.7	12.5	12.3	12.3						
125	16.9	16.9	17.1	17.2	17.5	17.3	15.3	15.2	14.9	14.6	14.4	14.5						
130	20.4	20.3	20.5	20.5	20.8	20.7	18.0	17.9	17.5	17.3	17.0	17.1						
135	23.9	23.7	23.8	23.8	24.2	24.1	21.2	21.2	20.6	20.3	20.0	20.1						
140	27.4	27.3	27.2	27.1	27.5	27.7	25.0	24.8	24.2	23.7	23.5	23.6						
145	31.0	30.9	30.7	30.4	31.0	31.3	29.0	28.7	28.0	27.3	27.3	27.5						
150	34.9	34.7	34.2	33.9	34.3	35.0	33.1	32.8	31.8	31.0	31.1	31.5						
155	38.5	38.4	37.5	37.2	37.5	38.3	37.2	36.6	35.4	34.5	34.6	35.3						
160	41.5	41.2	40.3	40.0	40.0	40.7	40.4	39.4	38.3	37.4	37.5	38.3						
165	43.0	42.7	41.7	41.4	41.2	41.6	42.3	40.8	39.9	39.1	39.2	39.9						
170	43.5	43.0	42.1	41.7	41.4	41.7	42.7	41.1	40.3	39.6	39.8	40.4						
175	44.2	43.5	42.3	41.8	41.4	42.1	43.2	41.8	40.7	40.1	40.2	41.0						
180	44.6	43.5	42.2	41.6	41.5	42.4	44.8	43.4	42.3	41.5	41.6	42.3						

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: