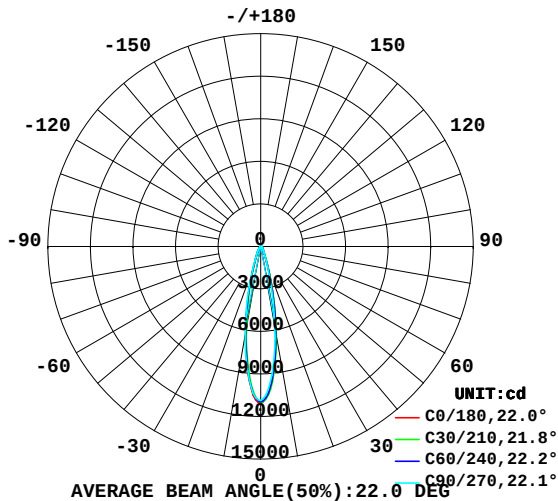


LUMINAIRE PHOTOMETRIC TEST REPORT

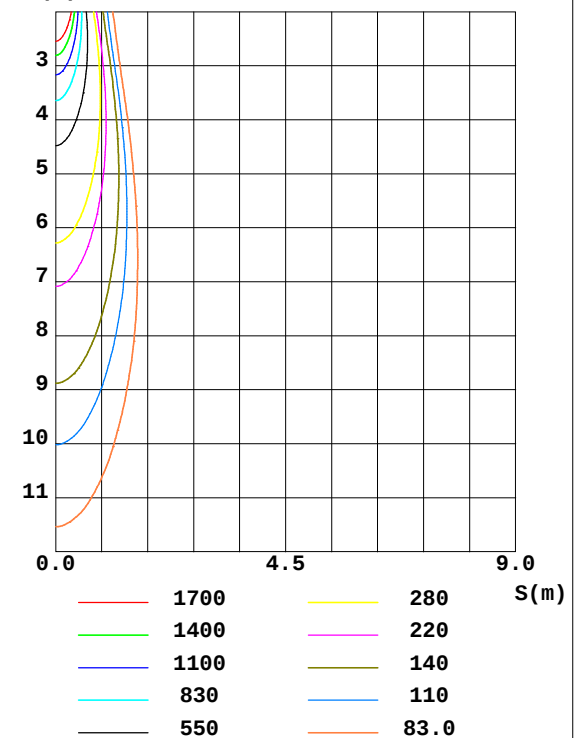
Test:U:220.6V I:0.1310A P:27.90W PF:0.9650 Lamp Flux:2512.2x1 lm		
NAME: PS-TL30W40KD2480RA-D	TYPE: LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 90.04 lm/W			
MODEL	PS-TL30W40KD2480RA-D	I _{max} (cd)	11043	S/MH(C0/180)	0.37
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	0.36
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	2512.2	η UP, DN(C0-180)	1.7, 45.5
NOMINAL FLUX(lm)	2512.2	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.7, 51.0
LAMPS INSIDE	1	η up(%)	3.4	CIBSE SHR NOM	0.00
TEST VOLTAGE(V)	220.6	η down(%)	96.6	CIBSE SHR MAX	1.00

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	619.0	631.1	582.0	524.8	616.0	597.0	632.1	686.1	0- 10	782.6	782.6	31.2,31.2
20	143.7	143.7	131.7	117.4	141.5	139.2	155.0	182.0	10- 20	897.3	1680	66.9,66.9
30	45.97	44.78	43.10	40.16	46.20	45.20	49.00	54.28	20- 30	363.6	2043	81.3,81.3
40	18.11	17.59	17.03	16.13	17.95	18.13	20.16	22.75	30- 40	188.1	2232	88.8,88.8
50	8.037	8.151	7.670	7.854	8.568	7.995	8.926	9.731	40- 50	94.46	2326	92.6,92.6
60	4.286	4.103	3.859	4.042	4.733	4.217	4.491	4.924	50- 60	54.97	2381	94.8,94.8
70	1.828	1.771	1.578	1.516	2.297	2.040	2.195	2.365	60- 70	30.61	2412	96,96
80	0.1777	0.1803	0.1664	0.1526	0.6159	0.6126	0.6133	0.6527	70- 80	10.61	2422	96.4,96.4
90	0.1620	0.1634	0.1708	0.1752	0.6340	0.6267	0.6171	0.6146	80- 90	4.102	2426	96.6,96.6
100	0.2634	0.2638	0.2788	0.2889	0.6427	0.6344	0.6274	0.6269	90-100	4.596	2431	96.8,96.8
110	0.5136	0.5189	0.5561	0.5834	0.7529	0.7423	0.7273	0.7123	100-110	5.577	2436	97,97
120	1.013	1.022	1.075	1.113	1.050	1.041	1.017	0.9888	110-120	8.178	2445	97.3,97.3
130	1.597	1.596	1.630	1.669	1.403	1.387	1.356	1.330	120-130	11.34	2456	97.8,97.8
140	2.137	2.124	2.137	2.195	1.965	1.949	1.886	1.838	130-140	13.46	2469	98.3,98.3
150	2.785	2.753	2.684	2.827	2.777	2.743	2.597	2.614	140-150	14.80	2484	98.9,98.9
160	3.575	3.491	3.323	3.516	3.565	3.445	3.195	3.348	150-160	14.19	2498	99.5,99.5
170	3.998	3.836	3.646	3.683	3.880	3.644	3.463	3.635	160-170	10.30	2509	99.9,99.9
180	3.674	3.472	3.343	3.398	3.697	3.476	3.325	3.403	170-180	3.437	2512	100,100
DEG	LUMINOUS INTENSITY:×10cd									UNIT:lm		

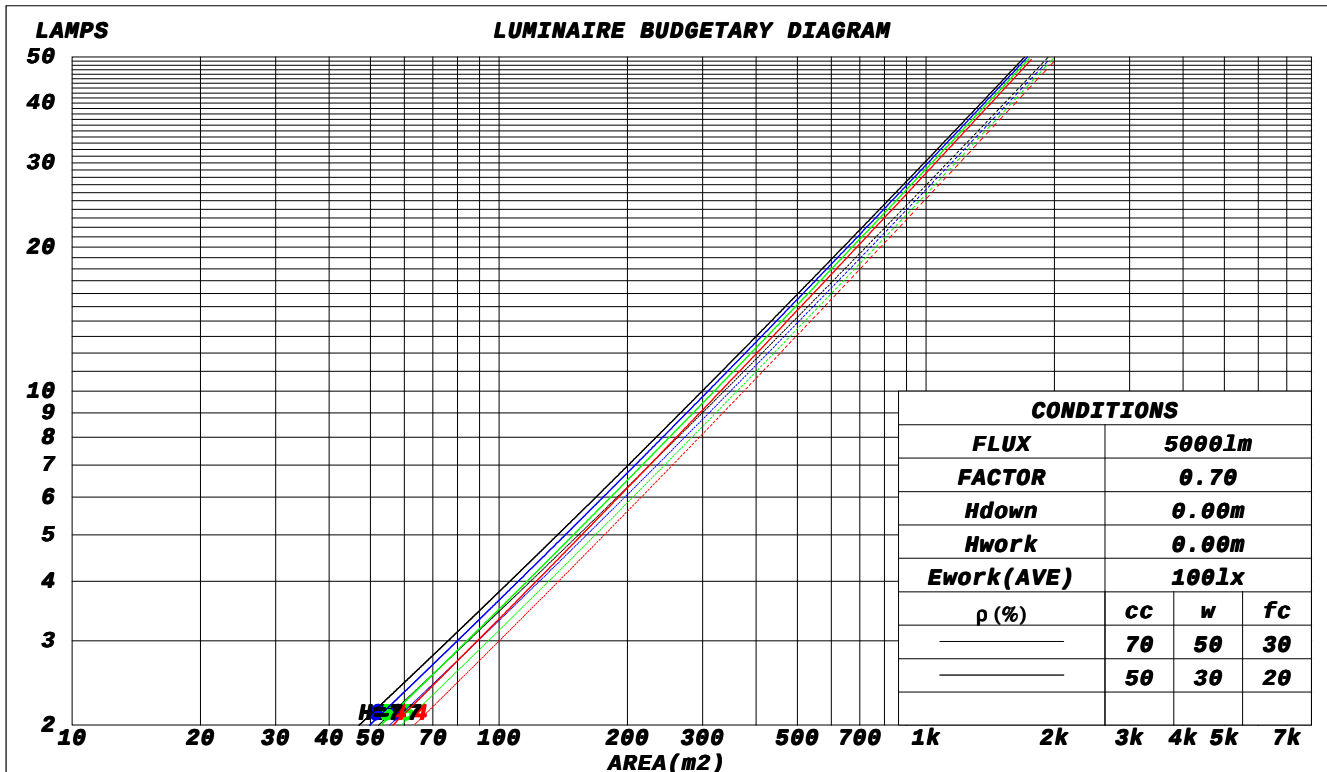
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-11-07

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:27.90W PF:0.9650 Lamp Flux:2512.2x1 lm		
NAME: PS-TL30W40KD2480RA-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	1.11	1.09	1.07	1.08	1.06	1.05	1.04	1.02	1.01	.99	.98	.97	.96	.95	.94	.92
2.0	1.04	1.01	.98	1.03	.99	.97	.99	.96	.94	.95	.93	.92	.92	.91	.89	.87
3.0	.99	.95	.91	.97	.93	.90	.94	.91	.89	.92	.89	.87	.89	.87	.85	.83
4.0	.94	.89	.86	.93	.89	.85	.90	.87	.84	.88	.85	.83	.86	.83	.81	.80
5.0	.90	.85	.81	.89	.84	.81	.87	.83	.80	.85	.81	.79	.83	.80	.78	.77
6.0	.86	.81	.78	.85	.81	.77	.83	.79	.76	.82	.78	.76	.80	.77	.75	.74
7.0	.83	.78	.74	.82	.77	.74	.80	.76	.73	.79	.75	.73	.78	.75	.72	.71
8.0	.80	.75	.71	.79	.74	.71	.78	.74	.71	.76	.73	.70	.75	.72	.70	.69
9.0	.77	.72	.69	.76	.72	.69	.75	.71	.68	.74	.71	.68	.73	.70	.68	.67
10.0	.74	.70	.67	.74	.69	.67	.73	.69	.66	.72	.68	.66	.71	.68	.66	.65



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:27.90W PF:0.9650 Lamp Flux:2512.2x1 lm											
NAME: PS-TL30W40KD2480RA-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	.159	.091	.029	.152	.086	.027	.137	.079	.025	.124	.071	.023	.112	.065	.021	
2.0	.149	.082	.025	.142	.078	.024	.130	.072	.022	.119	.067	.021	.109	.061	.019	
3.0	.139	.074	.022	.134	.072	.022	.123	.067	.020	.114	.062	.019	.105	.058	.018	
4.0	.131	.068	.020	.126	.066	.019	.117	.062	.018	.108	.058	.018	.101	.055	.017	
5.0	.123	.063	.018	.119	.061	.018	.111	.058	.017	.103	.055	.016	.096	.052	.015	
6.0	.116	.058	.017	.112	.057	.016	.105	.054	.016	.099	.051	.015	.093	.049	.014	
7.0	.110	.054	.015	.106	.053	.015	.100	.051	.015	.094	.048	.014	.089	.046	.014	
8.0	.104	.051	.014	.101	.050	.014	.096	.048	.014	.090	.046	.013	.086	.044	.013	
9.0	.099	.048	.013	.096	.047	.013	.091	.045	.013	.087	.044	.012	.082	.042	.012	
10.0	.094	.045	.013	.092	.044	.012	.088	.043	.012	.083	.041	.012	.079	.040	.011	

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	.196	.184	.173	.168	.158	.148	.115	.108	.103	.066	.063	.060	.021	.020	.019	
2.0	.180	.159	.142	.154	.137	.123	.105	.095	.085	.061	.055	.050	.020	.018	.016	
3.0	.166	.140	.119	.142	.121	.103	.098	.084	.073	.056	.049	.043	.018	.016	.014	
4.0	.154	.125	.103	.132	.108	.089	.091	.075	.063	.053	.044	.037	.017	.014	.012	
5.0	.144	.113	.090	.124	.098	.078	.085	.068	.055	.050	.040	.033	.016	.013	.011	
6.0	.136	.103	.080	.117	.090	.070	.081	.063	.049	.047	.037	.029	.015	.012	.010	
7.0	.129	.096	.072	.111	.083	.063	.076	.058	.045	.044	.034	.027	.014	.011	.009	
8.0	.122	.089	.066	.105	.077	.058	.073	.054	.041	.042	.032	.024	.014	.010	.008	
9.0	.117	.083	.061	.100	.072	.053	.070	.051	.038	.041	.030	.023	.013	.010	.007	
10.0	.112	.079	.057	.096	.068	.050	.067	.048	.035	.039	.028	.021	.013	.009	.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:27.90W PF:0.9650 Lamp Flux:2512.2x1 lm										
NAME: PS-TL30W40KD2480RA-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	18.0	17.5	18.2	18.4	16.9	17.7	17.2	17.9	18.1
3H	17.7	18.4	18.0	18.6	18.9	17.3	18.0	17.6	18.2	18.5
4H	17.7	18.3	18.0	18.6	18.9	17.3	17.9	17.6	18.2	18.5
6H	17.6	18.2	17.9	18.5	18.8	17.2	17.8	17.5	18.1	18.4
8H	17.6	18.2	17.9	18.5	18.8	17.2	17.8	17.5	18.1	18.4
12H	17.5	18.1	17.9	18.4	18.8	17.1	17.7	17.5	18.0	18.3
4H 2H	17.4	18.1	17.7	18.3	18.6	17.1	17.8	17.4	18.0	18.3
3H	17.9	18.4	18.2	18.8	19.1	17.5	18.1	17.9	18.4	18.7
4H	17.9	18.4	18.3	18.8	19.2	17.5	18.1	17.9	18.4	18.8
6H	17.8	18.3	18.2	18.7	19.1	17.5	17.9	17.9	18.3	18.7
8H	17.8	18.2	18.2	18.6	19.0	17.4	17.8	17.8	18.2	18.7
12H	17.7	18.1	18.2	18.5	19.0	17.4	17.8	17.8	18.2	18.6
8H 4H	17.8	18.2	18.2	18.6	19.1	17.4	17.9	17.9	18.3	18.7
6H	17.7	18.1	18.2	18.5	19.0	17.4	17.7	17.8	18.2	18.7
8H	17.7	18.0	18.2	18.5	19.0	17.3	17.6	17.8	18.1	18.6
12H	17.6	17.9	18.1	18.4	18.9	17.3	17.5	17.8	18.0	18.6
12H 4H	17.7	18.1	18.2	18.6	19.0	17.4	17.8	17.9	18.2	18.7
6H	17.7	18.0	18.2	18.5	19.0	17.3	17.6	17.8	18.1	18.6
8H	17.6	17.9	18.1	18.4	18.9	17.3	17.5	17.8	18.0	18.6
Variations with the observer position at spacings:										
S = 1.0H	+ 1.2 / - 1.6					+ 1.2 / - 1.7				
1.5H	+ 2.0 / - 1.1					+ 1.9 / - 1.1				
2.0H	+ 1.7 / - 1.2					+ 1.7 / - 1.4				

CIE Pub.117 Corrected 2512 lm Total Lamp Luminous Flux. (8log(F/F0) = 3.2)

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:27.90W PF:0.9650 Lamp Flux:2512.2x1 lm		
NAME: PS-TL30W40KD2480RA-D	TYPE: LED	
MFR.:		

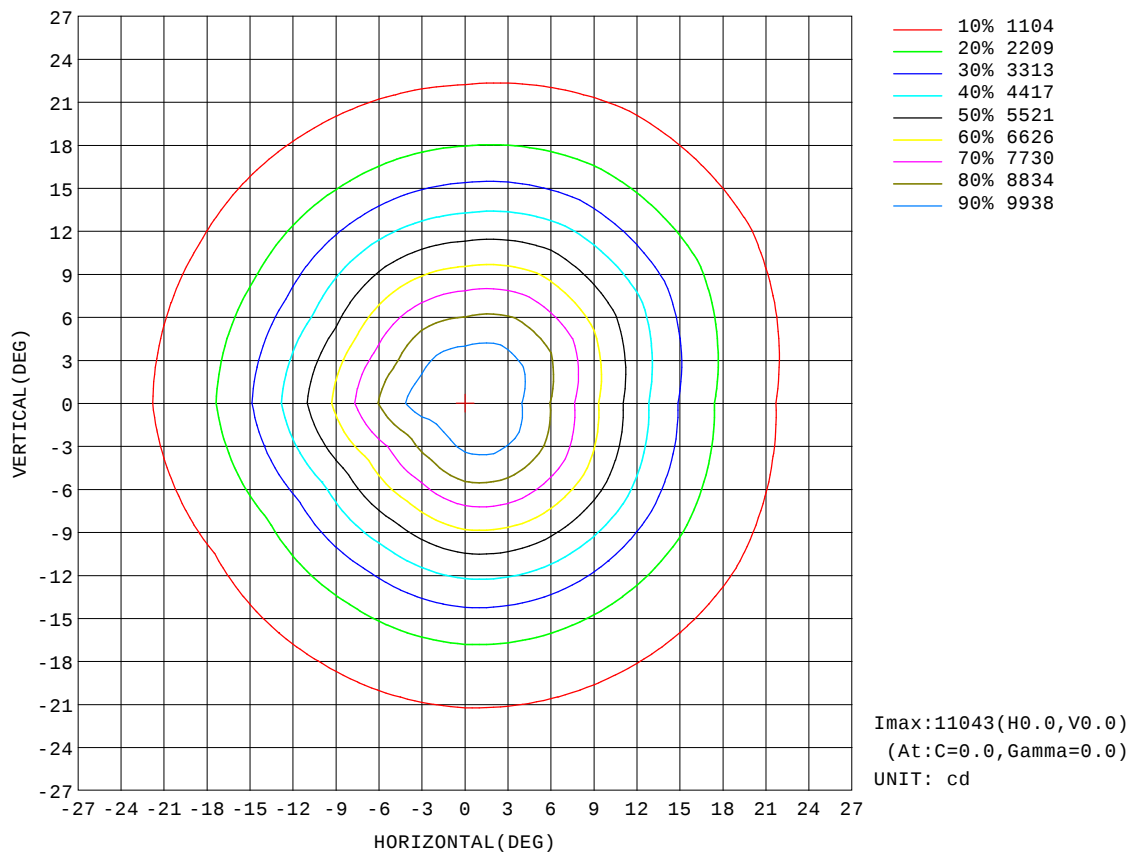
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	85	78	74	84	78	74	83	77	74	70
0.80	92	86	82	91	85	82	90	85	81	77
1.00	97	91	87	96	90	87	94	90	86	81
1.25	101	95	92	100	95	91	97	93	90	85
1.50	104	99	95	102	98	94	100	96	93	88
2.00	107	102	99	105	101	98	102	98	96	90
2.50	109	104	101	107	103	100	103	100	98	91
3.00	110	107	104	108	105	102	104	102	100	92
4.00	112	109	107	110	107	105	106	104	102	94
5.00	114	111	109	111	109	107	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:27.90W PF:0.9650 Lamp Flux:2512.2x1 lm		
NAME: PS-TL30W40KD2480RA-D	TYPE: LED	
MFR.:		

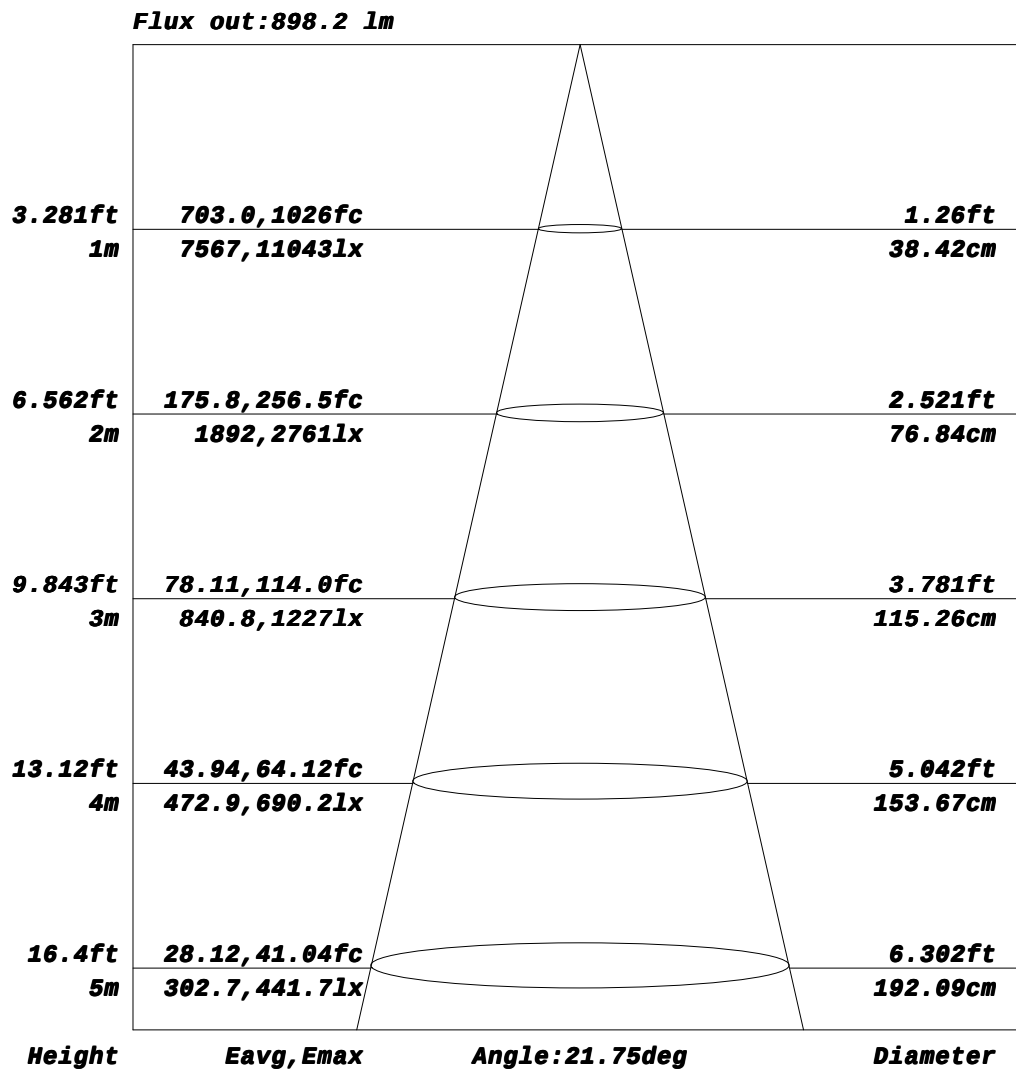


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-11-07

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:27.90W PF:0.9650 Lamp Flux:2512.2x1 lm		
NAME: PS-TL30W40KD2480RA-D	TYPE: LED	
MFR.:		



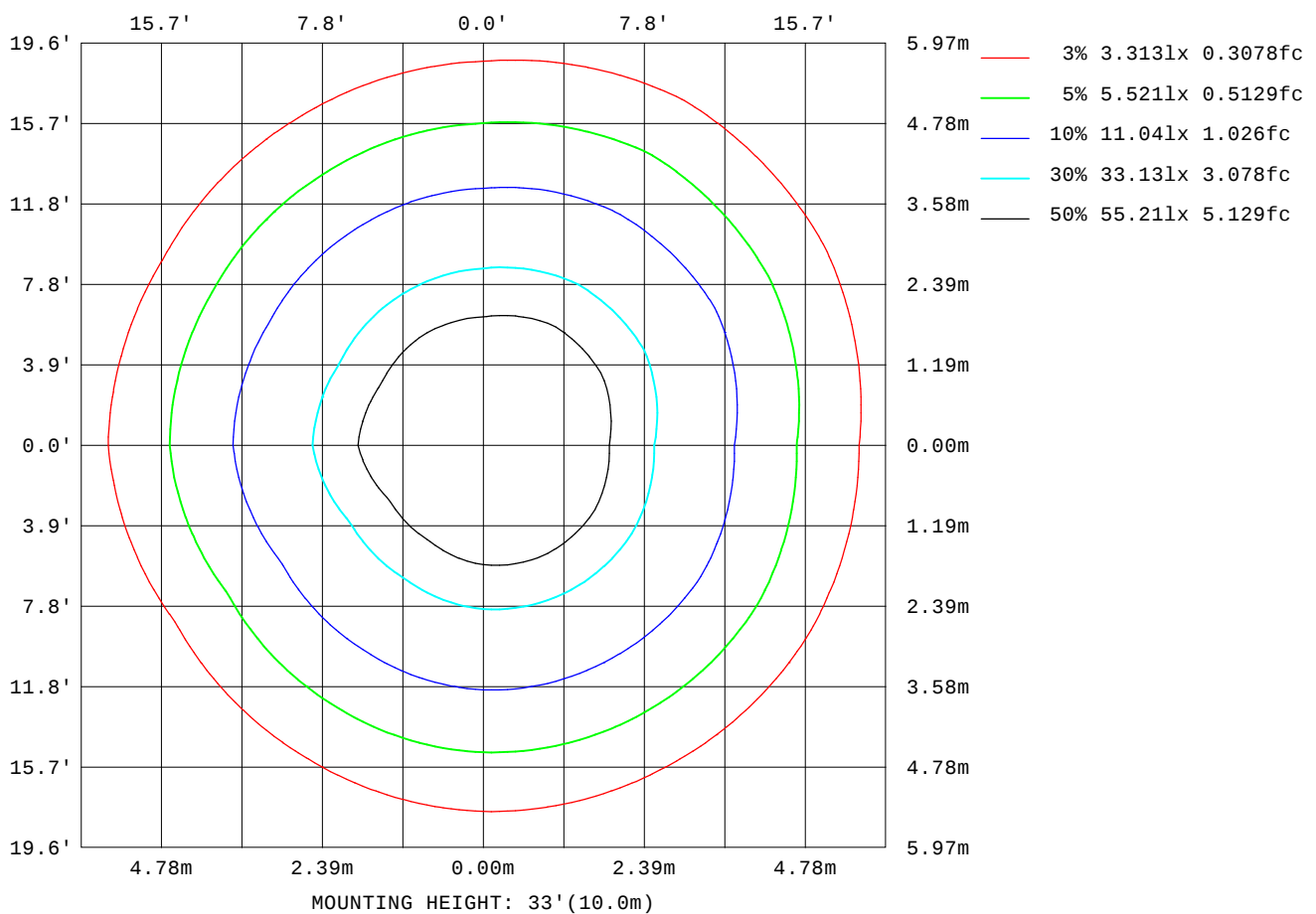
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

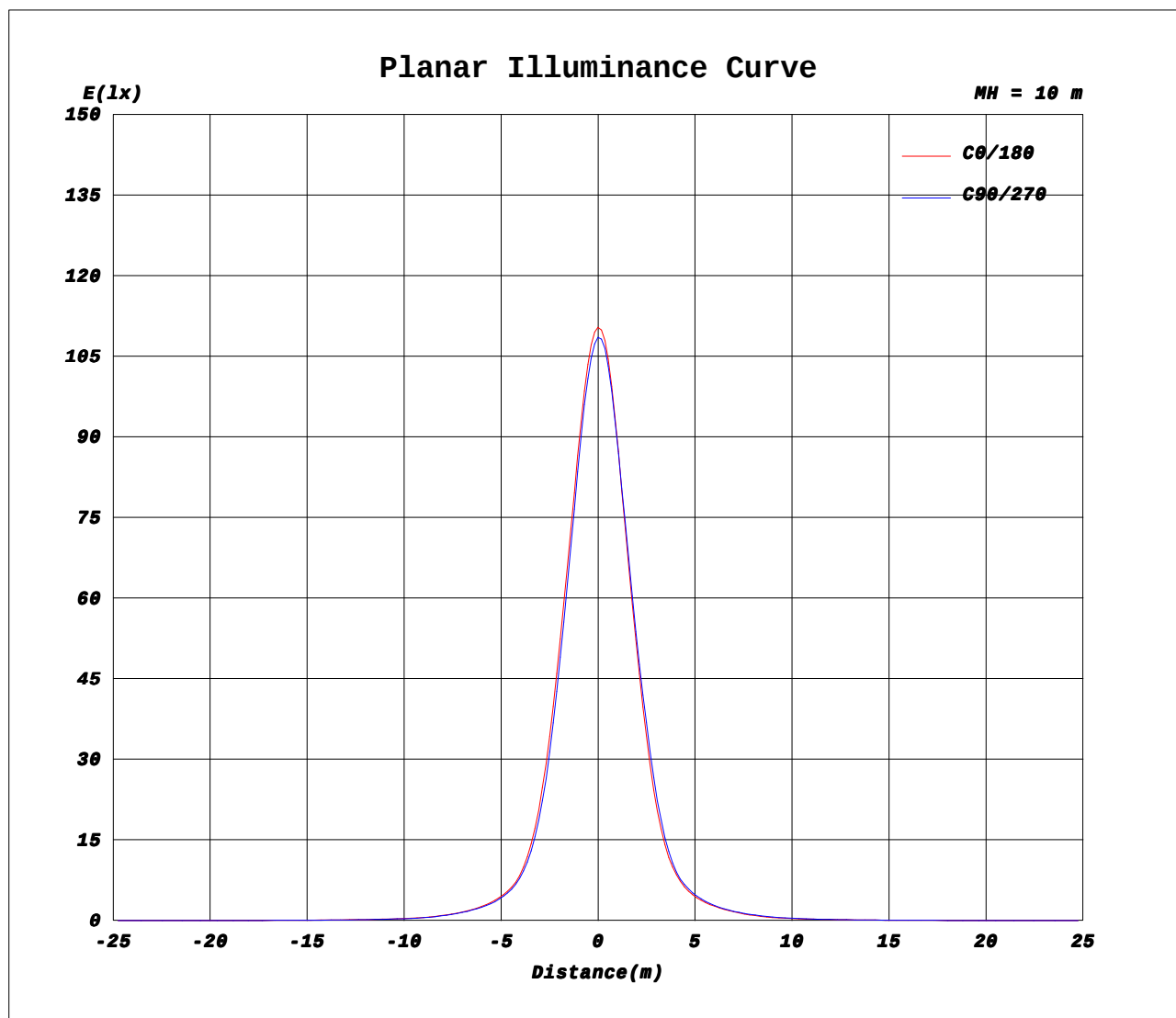
Test:U:220.6V I:0.1310A P:27.90W PF:0.9650 Lamp Flux:2512.2x1 lm		
NAME: PS-TL30W40KD2480RA-D	TYPE: LED	
MFR.:		



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:27.90W PF:0.9650 Lamp Flux:2512.2x1 lm		
NAME: PS-TL30W40KD2480RA-D	TYPE: LED	
MFR.:		

Table--1

UNIT: ×10cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	1104	1098	1095	1085	1077	1077	1104	1098	1095	1085	1077	1077						
5	939	960	946	912	859	851	948	914	938	941	985	985						
10	619	640	622	582	528	522	616	580	614	632	686	686						
15	325	331	315	293	262	256	323	301	325	350	396	397						
20	144	149	139	132	120	115	141	135	143	155	181	183						
25	73.6	76.1	72.5	69.4	65.2	62.7	73.9	72.1	74.6	79.6	89.5	87.9						
30	46.0	46.0	43.6	43.1	40.6	39.7	46.2	44.3	46.1	49.0	55.2	53.3						
35	29.2	28.6	27.4	27.9	26.3	26.1	30.0	28.0	29.7	31.7	34.9	34.5						
40	18.1	17.8	17.3	17.0	16.4	15.8	17.9	17.4	18.9	20.2	22.8	22.7						
45	11.2	11.6	11.3	10.7	10.9	10.5	11.5	11.2	11.4	12.8	14.6	13.8						
50	8.04	8.31	7.99	7.67	7.89	7.82	8.57	7.99	7.99	8.93	10.1	9.39						
55	5.96	5.87	5.67	5.49	5.59	5.77	6.32	5.77	5.70	6.30	7.10	6.86						
60	4.29	4.22	3.98	3.86	3.82	4.27	4.73	4.23	4.20	4.49	4.94	4.91						
65	3.07	2.99	2.81	2.68	2.53	2.94	3.45	3.07	3.10	3.27	3.47	3.58						
70	1.83	1.82	1.72	1.58	1.37	1.66	2.30	2.02	2.06	2.19	2.31	2.41						
75	0.79	0.78	0.75	0.67	0.52	0.63	1.29	1.13	1.18	1.23	1.25	1.33						
80	0.18	0.19	0.17	0.17	0.16	0.15	0.62	0.62	0.61	0.61	0.66	0.65						
85	0.13	0.13	0.14	0.14	0.14	0.14	0.61	0.61	0.60	0.59	0.59	0.58						
90	0.16	0.16	0.17	0.17	0.18	0.18	0.63	0.63	0.62	0.62	0.61	0.61						
95	0.20	0.20	0.21	0.21	0.22	0.22	0.64	0.63	0.63	0.62	0.62	0.62						
100	0.26	0.26	0.27	0.28	0.29	0.29	0.64	0.64	0.63	0.63	0.63	0.63						
105	0.36	0.35	0.37	0.38	0.40	0.40	0.67	0.67	0.66	0.66	0.65	0.65						
110	0.51	0.51	0.53	0.56	0.58	0.58	0.75	0.75	0.74	0.73	0.71	0.71						
115	0.74	0.73	0.76	0.80	0.83	0.83	0.89	0.88	0.87	0.85	0.83	0.83						
120	1.01	1.01	1.04	1.07	1.11	1.11	1.05	1.05	1.03	1.02	0.99	0.99						
125	1.31	1.30	1.33	1.36	1.40	1.40	1.22	1.21	1.20	1.18	1.16	1.16						
130	1.60	1.58	1.61	1.63	1.67	1.67	1.40	1.39	1.38	1.36	1.33	1.33						
135	1.86	1.85	1.86	1.88	1.92	1.93	1.63	1.63	1.61	1.58	1.54	1.54						
140	2.14	2.12	2.13	2.14	2.18	2.21	1.96	1.96	1.93	1.89	1.84	1.83						
145	2.44	2.42	2.42	2.40	2.48	2.51	2.36	2.36	2.32	2.28	2.21	2.21						
150	2.78	2.76	2.74	2.68	2.80	2.86	2.78	2.77	2.72	2.60	2.61	2.61						
155	3.17	3.14	3.10	2.99	3.12	3.23	3.18	3.17	3.07	2.91	2.99	3.02						
160	3.57	3.53	3.45	3.32	3.44	3.59	3.56	3.52	3.37	3.20	3.31	3.38						
165	3.91	3.85	3.72	3.60	3.66	3.81	3.84	3.74	3.57	3.41	3.53	3.65						
170	4.00	3.91	3.76	3.65	3.62	3.74	3.88	3.72	3.57	3.46	3.57	3.70						
175	3.82	3.74	3.57	3.48	3.41	3.50	3.69	3.52	3.37	3.31	3.41	3.53						
180	3.67	3.55	3.40	3.34	3.35	3.45	3.70	3.54	3.41	3.33	3.36	3.45						

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: