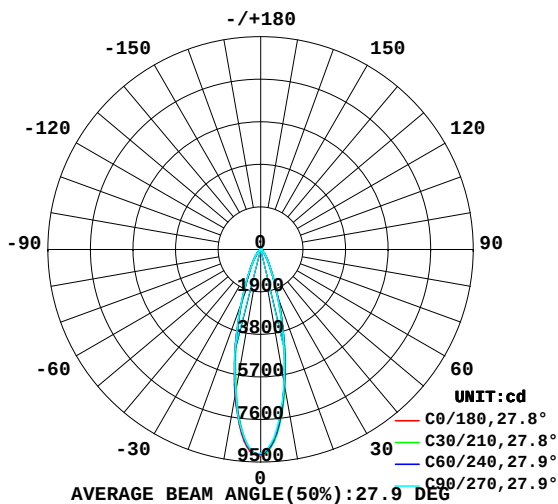


LUMINAIRE PHOTOMETRIC TEST REPORT

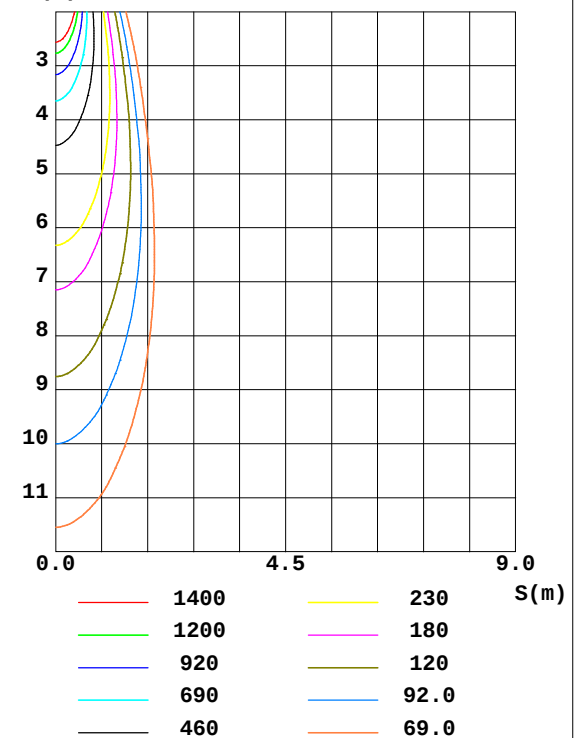
Test:U:221.1V I:0.1270A P:27.10W PF:0.9650 Lamp Flux:3119.11x1 lm		
NAME: PS-TL30W40KD2480RA-G	TYPE:LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 115.10 lm/W			
MODEL	PS-TL30W40KD2480RA-G	I _{max} (cd)	9209	S/MH(C0/180)	0.45
NOMINAL POWER(W)	30	LOR(%)	100.0	S/MH(C90/270)	0.45
RATED VOLTAGE(V)	222	TOTAL FLUX(lm)	3119.1	η UP, DN(C0-180)	1.7, 45.3
NOMINAL FLUX(lm)	3119.11	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.7, 51.3
LAMPS INSIDE	1	η up(%)	3.4	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	221.1	η down(%)	96.6	CIBSE SHR MAX	0.50

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	6104	6181	6035	5824	6591	6426	6462	6687	0- 10	727.3	727.3	23.3,23.3
20	2243	2270	2208	2110	2538	2452	2533	2692	10- 20	1129	1856	59.5,59.5
30	743.5	749.8	740.2	725.2	843.0	826.1	851.5	900.7	20- 30	634.2	2491	79.8,79.8
40	302.4	300.6	292.0	281.8	337.6	325.4	338.5	357.1	30- 40	318.3	2809	90.1,90.1
50	88.33	86.25	84.44	76.67	106.0	96.89	102.0	110.6	40- 50	144.7	2954	94.7,94.7
60	13.20	13.79	13.25	12.58	17.11	17.08	17.33	17.88	50- 60	36.78	2990	95.9,95.9
70	5.811	5.917	6.064	6.026	9.734	9.554	9.308	9.120	60- 70	10.15	3000	96.2,96.2
80	2.262	2.524	2.330	1.950	7.731	7.567	7.467	7.639	70- 80	7.101	3008	96.4,96.4
90	2.020	2.002	2.052	2.086	7.108	7.046	6.971	6.920	80- 90	4.614	3012	96.6,96.6
100	3.747	3.724	3.833	3.896	7.810	7.745	7.688	7.630	90-100	5.540	3018	96.8,96.8
110	7.441	7.401	7.606	7.729	9.429	9.392	9.290	9.165	100-110	7.306	3025	97,97
120	13.46	13.37	13.57	13.78	12.84	12.79	12.62	12.45	110-120	10.52	3036	97.3,97.3
130	20.53	20.29	20.33	20.64	17.67	17.55	17.30	17.09	120-130	14.25	3050	97.8,97.8
140	27.48	27.14	26.97	27.46	24.57	24.42	23.93	23.73	130-140	17.10	3067	98.3,98.3
150	35.25	34.71	33.81	34.86	33.44	33.13	31.96	32.32	140-150	18.53	3085	98.9,98.9
160	43.24	42.33	40.84	41.97	42.08	40.79	38.83	39.95	150-160	17.32	3103	99.5,99.5
170	46.20	45.07	43.83	43.96	45.45	43.24	41.47	42.37	160-170	12.20	3115	99.9,99.9
180	45.58	43.70	42.10	42.53	45.72	43.71	42.10	42.55	170-180	4.140	3119	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT: lm		

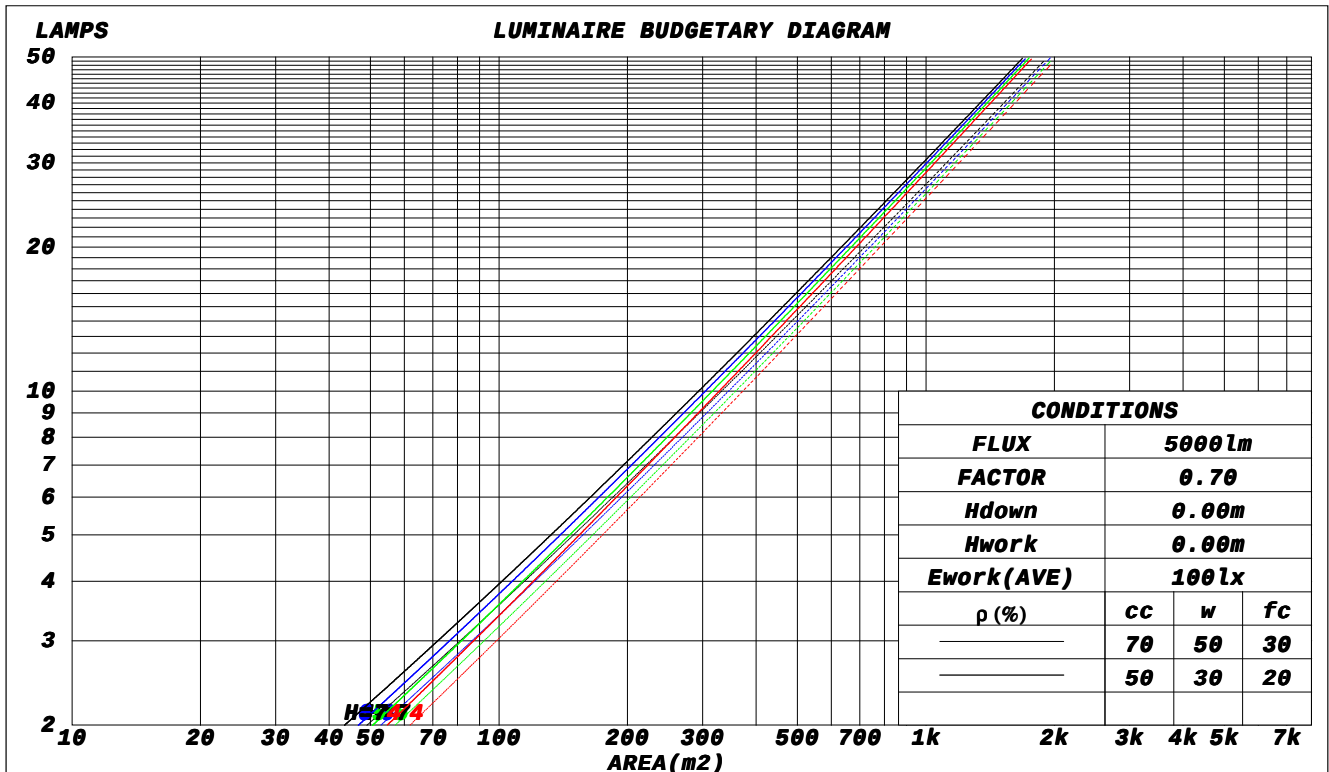
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-11-07

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:27.10W PF:0.9650 Lamp Flux:3119.11x1 lm		
NAME: PS-TL30W40KD2480RA-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	1.11	1.08	1.06	1.08	1.06	1.04	1.04	1.02	1.01	.99	.98	.97	.95	.94	.94	.92
2.0	1.04	1.00	.97	1.02	.99	.96	.98	.96	.93	.95	.93	.91	.92	.90	.89	.87
3.0	.98	.94	.90	.97	.93	.89	.94	.90	.88	.91	.88	.86	.88	.86	.84	.82
4.0	.93	.88	.84	.92	.87	.84	.89	.85	.82	.87	.84	.81	.85	.82	.80	.78
5.0	.88	.83	.80	.87	.83	.79	.85	.81	.78	.83	.80	.77	.81	.78	.76	.75
6.0	.84	.79	.75	.83	.78	.75	.81	.77	.74	.80	.76	.73	.78	.75	.73	.71
7.0	.80	.75	.72	.80	.75	.71	.78	.74	.71	.77	.73	.70	.75	.72	.70	.68
8.0	.77	.72	.68	.76	.71	.68	.75	.71	.68	.74	.70	.67	.73	.69	.67	.65
9.0	.74	.69	.65	.73	.68	.65	.72	.68	.65	.71	.67	.64	.70	.67	.64	.63
10.0	.71	.66	.63	.70	.66	.63	.69	.65	.62	.68	.65	.62	.68	.64	.62	.60



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:27.10W PF:0.9650 Lamp Flux:3119.11x1 lm											
NAME: PS-TL30W40KD2480RA-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	.163	.093	.029	.155	.088	.028	.141	.081	.026	.127	.073	.024	.115	.067	.022		
2.0	.153	.084	.026	.147	.081	.025	.134	.075	.023	.123	.069	.022	.113	.064	.020		
3.0	.144	.077	.023	.138	.074	.022	.128	.069	.021	.118	.065	.020	.109	.060	.019		
4.0	.136	.071	.021	.131	.069	.020	.122	.065	.019	.113	.061	.018	.106	.057	.017		
5.0	.128	.065	.019	.124	.064	.019	.116	.061	.018	.109	.057	.017	.102	.054	.016		
6.0	.122	.061	.017	.118	.060	.017	.111	.057	.017	.105	.054	.016	.098	.052	.015		
7.0	.116	.057	.016	.113	.056	.016	.106	.054	.015	.101	.052	.015	.095	.049	.015		
8.0	.111	.054	.015	.108	.053	.015	.102	.051	.015	.097	.049	.014	.092	.047	.014		
9.0	.106	.051	.014	.103	.050	.014	.098	.048	.014	.093	.047	.013	.089	.045	.013		
10.0	.101	.048	.013	.099	.048	.013	.094	.046	.013	.090	.045	.013	.086	.043	.012		

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	.172	.168	.158	.148	.115	.109	.103	.066	.063	.060	.021	.020	.019	
2.0	.180	.159	.141	.154	.137	.122	.106	.095	.085	.061	.055	.050	.020	.018	.016	
3.0	.167	.140	.119	.143	.121	.103	.098	.084	.072	.057	.049	.043	.018	.016	.014	
4.0	.156	.125	.102	.134	.108	.089	.092	.075	.062	.053	.044	.037	.017	.014	.012	
5.0	.146	.113	.089	.126	.098	.078	.086	.069	.055	.050	.040	.032	.016	.013	.011	
6.0	.138	.104	.079	.119	.090	.069	.082	.063	.049	.048	.037	.029	.015	.012	.010	
7.0	.131	.096	.072	.113	.083	.062	.078	.058	.044	.045	.034	.026	.015	.011	.009	
8.0	.125	.090	.065	.108	.078	.057	.074	.055	.040	.043	.032	.024	.014	.011	.008	
9.0	.120	.084	.060	.103	.073	.053	.071	.051	.037	.042	.030	.022	.013	.010	.007	
10.0	.115	.080	.056	.099	.069	.049	.069	.049	.035	.040	.029	.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:221.1V I:0.1270A P:27.10W PF:0.9650 Lamp Flux:3119.11x1 lm										
NAME: PS-TL30W40KD2480RA-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	18.0	18.8	18.3	19.0	19.2	17.9	18.7	18.2	18.9	19.1
3H	17.9	18.6	18.2	18.9	19.1	17.7	18.5	18.1	18.7	19.0
4H	17.8	18.5	18.1	18.8	19.1	17.7	18.4	18.0	18.6	18.9
6H	17.7	18.4	18.1	18.7	19.0	17.6	18.3	18.0	18.6	18.9
8H	17.7	18.3	18.0	18.6	18.9	17.6	18.2	17.9	18.5	18.8
12H	17.6	18.2	18.0	18.6	18.9	17.5	18.1	17.9	18.4	18.8
4H 2H	17.8	18.5	18.1	18.7	19.0	17.7	18.4	18.0	18.6	18.9
3H	17.6	18.2	18.0	18.6	18.9	17.5	18.1	17.9	18.4	18.8
4H	17.6	18.1	18.0	18.5	18.9	17.5	18.0	17.9	18.4	18.7
6H	17.5	18.0	17.9	18.4	18.8	17.4	17.9	17.8	18.3	18.7
8H	17.5	17.9	17.9	18.3	18.7	17.3	17.8	17.8	18.2	18.6
12H	17.4	17.8	17.9	18.2	18.7	17.3	17.7	17.8	18.1	18.6
8H 4H	17.4	17.9	17.9	18.3	18.7	17.3	17.8	17.8	18.2	18.6
6H	17.4	17.7	17.8	18.2	18.7	17.2	17.6	17.7	18.1	18.5
8H	17.3	17.6	17.8	18.1	18.6	17.2	17.5	17.7	18.0	18.5
12H	17.3	17.6	17.8	18.1	18.6	17.2	17.4	17.7	17.9	18.5
12H 4H	17.4	17.8	17.8	18.2	18.7	17.3	17.7	17.7	18.1	18.6
6H	17.3	17.6	17.8	18.1	18.6	17.2	17.5	17.7	18.0	18.5
8H	17.3	17.5	17.8	18.0	18.6	17.1	17.4	17.7	17.9	18.5
Variations with the observer position at spacings:										
S = 1.0H	+ 2.4 / - 8.2					+ 2.4 / - 8.0				
1.5H	+ 3.7 / - 7.4					+ 3.7 / - 7.0				
2.0H	+ 5.6 / - 6.6					+ 5.5 / - 6.4				

CIE Pub.117 Corrected 3119 lm Total Lamp Luminous Flux. (8log(F/F0) = 4.0)

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:27.10W PF:0.9650 Lamp Flux:3119.11x1 lm		
NAME: PS-TL30W40KD2480RA-G	TYPE: LED	
MFR.:		

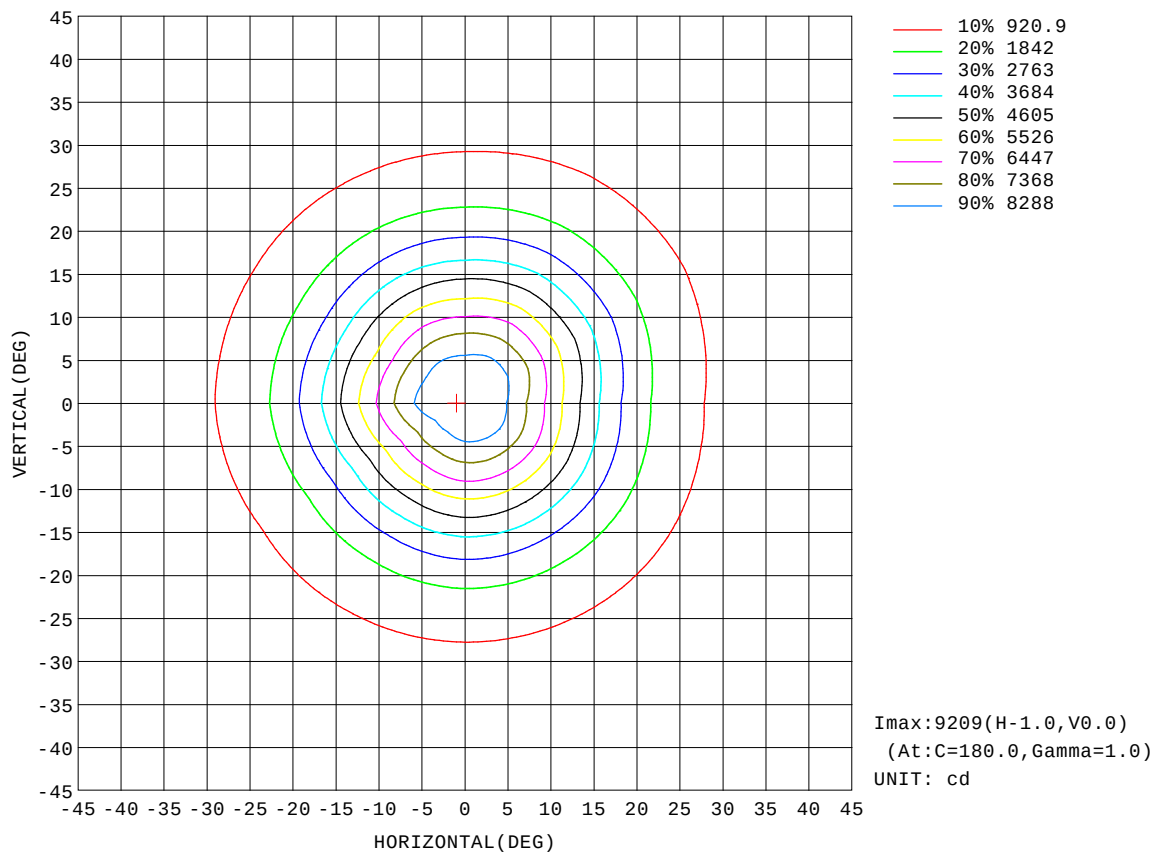
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	85	79	75	85	79	75	84	78	75	71
0.80	93	87	83	92	86	83	91	86	82	78
1.00	97	92	88	96	91	88	94	91	87	82
1.25	102	96	93	100	95	92	98	94	91	86
1.50	104	99	96	103	98	95	100	97	94	89
2.00	107	103	99	105	102	98	102	99	97	91
2.50	109	105	102	107	103	101	103	101	98	92
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	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:221.1V I:0.1270A P:27.10W PF:0.9650 Lamp Flux:3119.11x1 lm		
NAME: PS-TL30W40KD2480RA-G	TYPE: LED	
MFR.:		

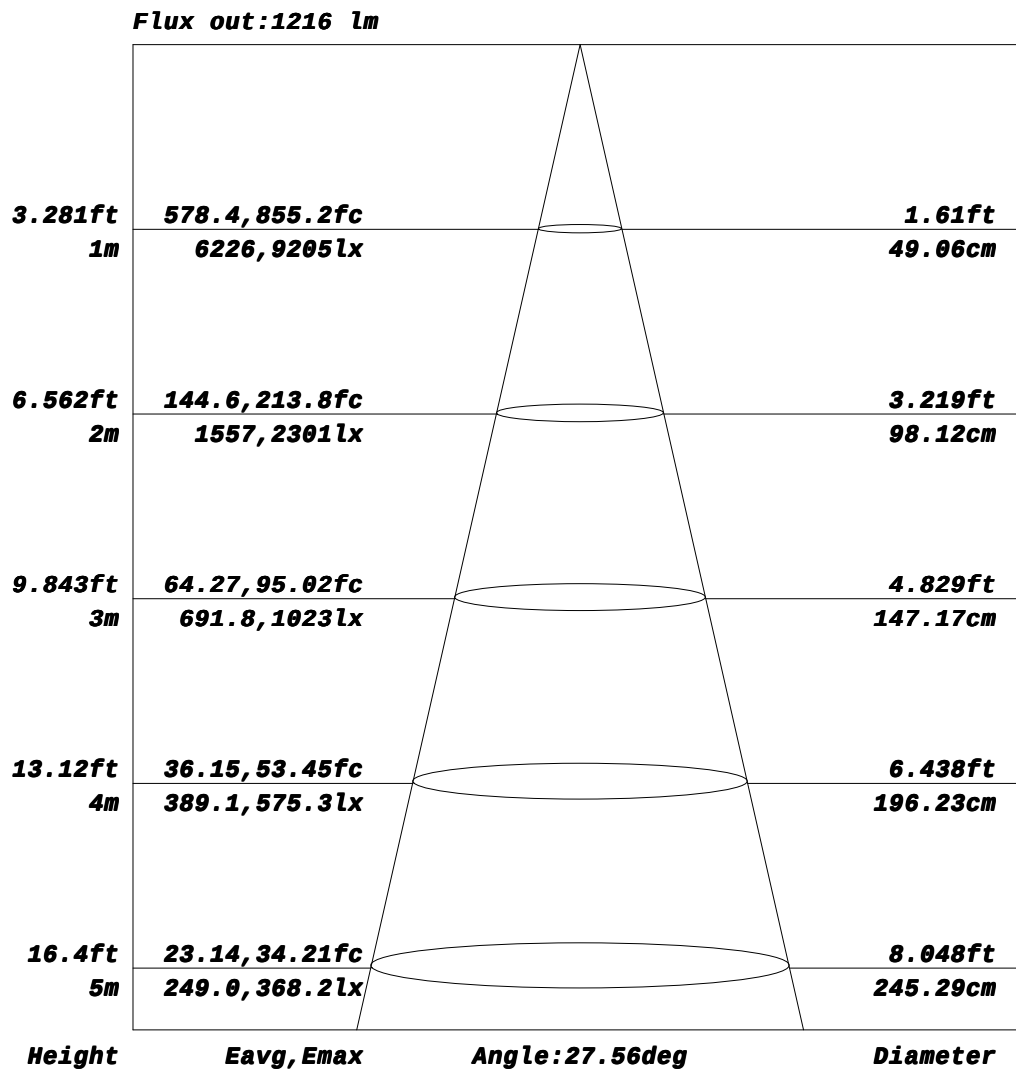


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-11-07

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:27.10W PF:0.9650 Lamp Flux:3119.1lx1 lm		
NAME: PS-TL30W40KD2480RA-G	TYPE: LED	
MFR.:		



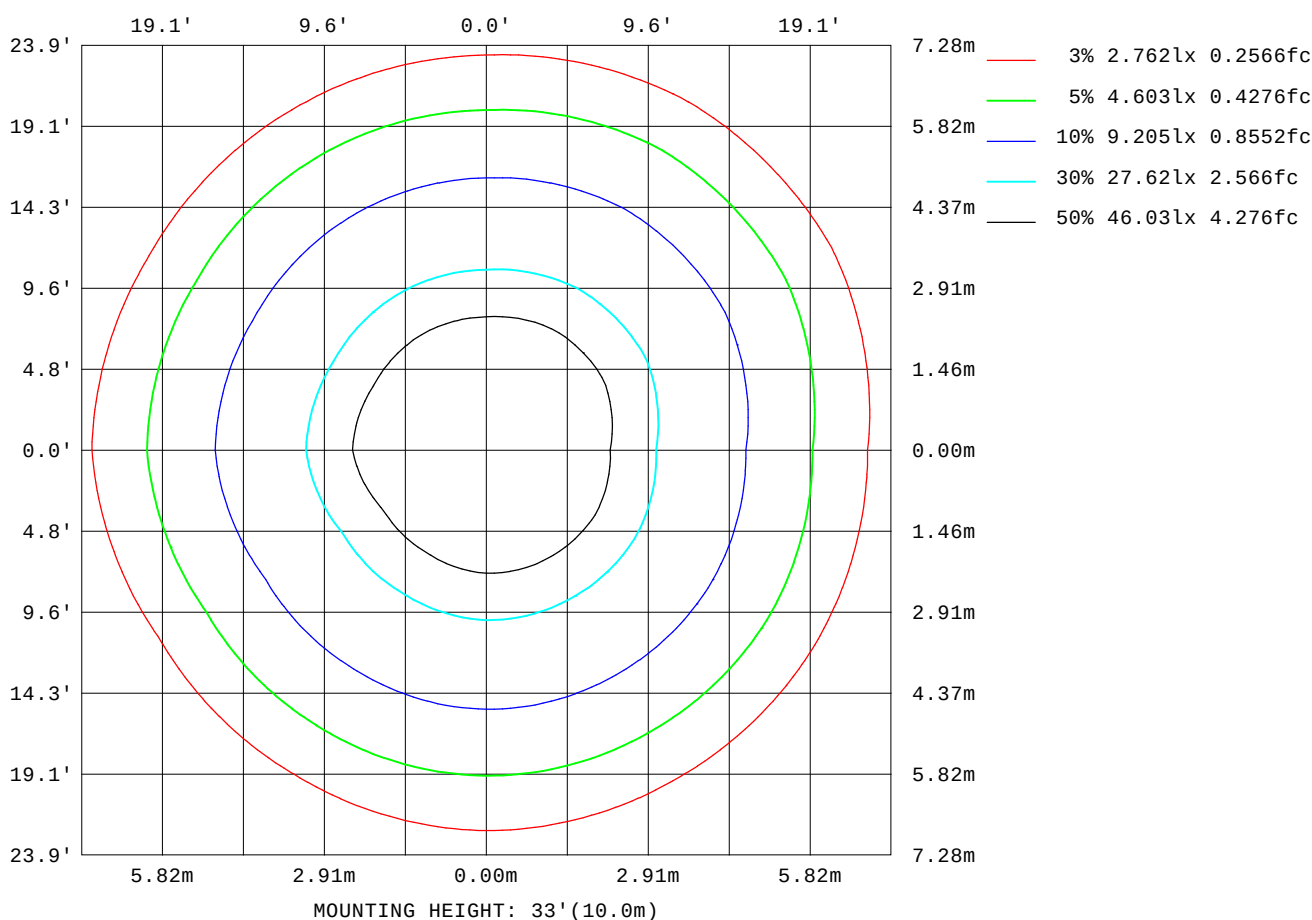
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

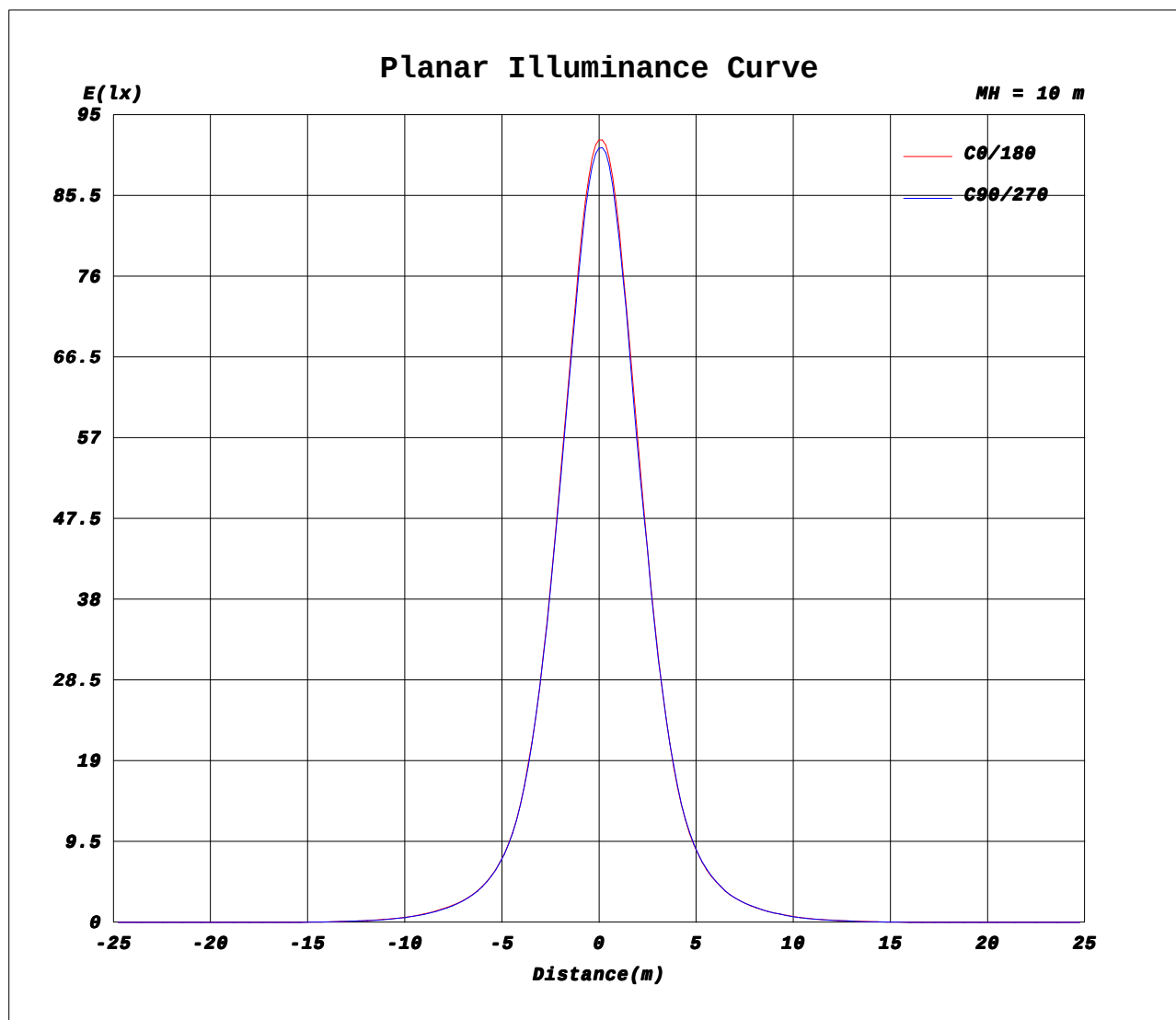
Test:U:221.1V I:0.1270A P:27.10W PF:0.9650 Lamp Flux:3119.11x1 lm		
NAME: PS-TL30W40KD2480RA-G	TYPE: LED	
MFR.:		



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 GO-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:27.10W PF:0.9650 Lamp Flux:3119.11x1 lm		
NAME: PS-TL30W40KD2480RA-G	TYPE: LED	
MFR.:		

Table--1

UNIT: cd

C (DEG) γ (DEG)	C (DEG)																		
	0	30	60	90	120	150	180	210	240	270	300	330							
0	9203	9174	9139	9108	9070	9064	9203	9174	9139	9108	9070	9064							
5	8236	8312	8210	8110	7918	7939	8576	8418	8497	8460	8619	8540							
10	6104	6234	6127	6035	5816	5833	6591	6345	6506	6462	6751	6623							
15	3916	4019	3945	3885	3709	3711	4375	4204	4311	4341	4587	4494							
20	2243	2287	2253	2208	2115	2106	2538	2419	2485	2533	2728	2657							
25	1241	1260	1236	1232	1188	1187	1406	1352	1385	1429	1520	1496							
30	743	758	741	740	724	726	843	817	835	852	909	892							
35	468	470	460	462	446	450	526	501	512	527	564	551							
40	302	306	296	292	280	283	338	323	328	338	358	356							
45	171	172	167	165	155	158	198	185	191	195	213	209							
50	88.3	86.9	85.6	84.4	75.0	78.3	106	93.9	99.8	102	111	110							
55	27.8	30.9	29.0	26.7	25.0	23.1	39.8	35.4	37.5	38.1	43.7	45.0							
60	13.2	13.9	13.7	13.3	12.6	12.5	17.1	16.9	17.3	17.3	18.1	17.7							
65	7.74	8.08	8.03	7.86	7.59	7.64	11.4	11.3	11.3	11.5	11.7	11.4							
70	5.81	5.87	5.96	6.06	6.02	6.03	9.73	9.65	9.46	9.31	9.22	9.02							
75	4.90	4.81	4.83	5.03	4.73	4.63	9.47	9.32	9.18	9.07	8.90	8.88							
80	2.26	2.65	2.40	2.33	1.93	1.97	7.73	7.58	7.55	7.47	7.66	7.62							
85	1.58	1.56	1.59	1.61	1.65	1.62	6.67	6.65	6.56	6.51	6.43	6.45							
90	2.02	1.99	2.02	2.05	2.11	2.07	7.11	7.08	7.01	6.97	6.91	6.93							
95	2.73	2.68	2.72	2.78	2.85	2.79	7.45	7.41	7.35	7.32	7.27	7.28							
100	3.75	3.69	3.75	3.83	3.93	3.86	7.81	7.78	7.71	7.69	7.63	7.63							
105	5.28	5.20	5.29	5.40	5.54	5.45	8.40	8.39	8.31	8.28	8.19	8.20							
110	7.44	7.35	7.45	7.61	7.78	7.68	9.43	9.44	9.35	9.29	9.16	9.17							
115	10.2	10.1	10.2	10.4	10.6	10.5	11.0	11.0	10.9	10.8	10.6	10.6							
120	13.5	13.3	13.4	13.6	13.8	13.7	12.8	12.9	12.7	12.6	12.4	12.5							
125	16.9	16.7	16.8	16.9	17.2	17.1	15.0	15.1	14.9	14.8	14.6	14.6							
130	20.5	20.2	20.3	20.3	20.7	20.6	17.7	17.7	17.4	17.3	17.1	17.1							
135	24.0	23.7	23.7	23.6	24.1	24.0	20.7	20.8	20.5	20.3	20.0	20.1							
140	27.5	27.2	27.1	27.0	27.4	27.5	24.6	24.6	24.3	23.9	23.7	23.8							
145	31.2	31.0	30.7	30.3	31.0	31.2	28.9	28.9	28.5	28.3	27.8	28.0							
150	35.2	35.0	34.4	33.8	34.6	35.1	33.4	33.5	32.8	32.0	32.2	32.5							
155	39.4	39.1	38.3	37.4	38.2	39.1	38.0	37.8	36.8	35.7	36.2	36.8							
160	43.2	42.9	41.8	40.8	41.4	42.5	42.1	41.4	40.2	38.8	39.5	40.4							
165	45.8	45.3	44.0	43.3	43.4	44.4	44.8	43.6	42.2	41.0	41.5	42.6							
170	46.2	45.7	44.5	43.8	43.6	44.3	45.5	43.9	42.6	41.5	41.9	42.9							
175	45.7	45.0	43.7	43.0	42.6	43.3	44.9	43.4	42.0	41.0	41.3	42.3							
180	45.6	44.5	42.9	42.2	42.0	43.0	45.7	44.3	43.1	42.1	42.1	43.0							

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: