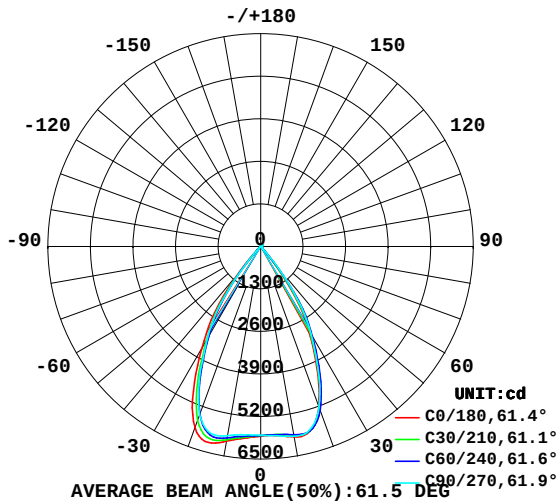


LUMINAIRE PHOTOMETRIC TEST REPORT

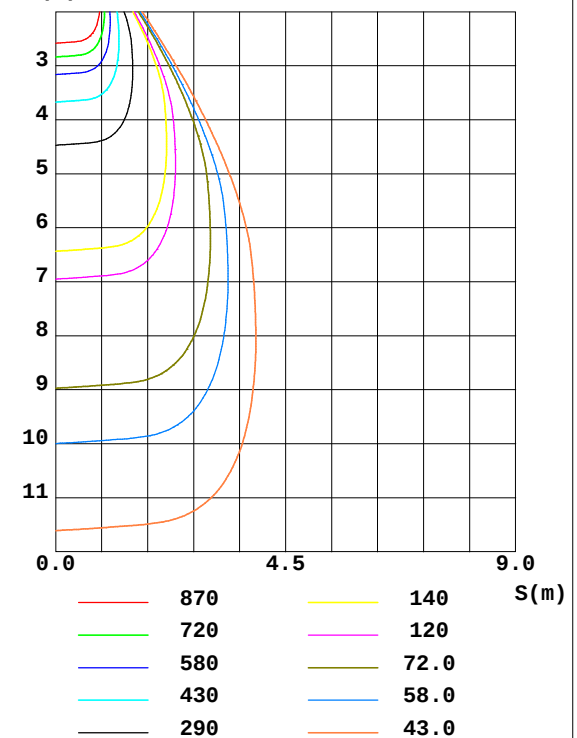
Test:U:220.1V I:0.2180A P:47.50W PF:0.9860 Lamp Flux:5760.97x1 lm		
NAME: PS-TL-50W30KD60RA80	TYPE: LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 121.28 lm/W			
MODEL	PS-TL-50W30KD60RA80	Imax(cd)	6198	S/MH(C0/180)	0.90
NOMINAL POWER(W)	50	LOR(%)	100.0	S/MH(C90/270)	0.92
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	5761.0	η UP, DN(C0-180)	1.5, 45.4
NOMINAL FLUX(lm)	5760.97	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.7, 51.4
LAMPS INSIDE	1	η up(%)	3.2	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	220.0	η down(%)	96.8	CIBSE SHR MAX	0.95

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: 2018-01-17

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	5913	5849	5892	6004	6044	5969	5871	5770	0- 10	557.1	557.1	9.67,9.67
20	5201	5288	5219	5094	5882	5551	5462	5564	10- 20	1643	2200	38.2,38.2
30	2932	3092	3071	2764	3609	3256	3273	3483	20- 30	1965	4165	72.3,72.3
40	425.2	546.9	624.8	372.3	1014	779.4	724.4	973.0	30- 40	1212	5377	93.3,93.3
50	33.04	36.59	38.66	27.23	56.50	45.31	48.02	52.93	40- 50	141.3	5519	95.8,95.8
60	13.57	14.72	14.88	12.71	22.51	20.03	20.35	21.48	50- 60	23.22	5542	96.2,96.2
70	7.830	8.432	8.347	7.818	13.62	12.92	12.66	13.13	60- 70	13.24	5555	96.4,96.4
80	5.476	6.101	6.097	5.698	12.79	12.26	12.02	12.18	70- 80	10.35	5565	96.6,96.6
90	2.625	2.429	2.396	2.572	12.04	11.36	11.28	11.76	80- 90	9.177	5575	96.8,96.8
100	5.878	5.359	5.362	5.770	13.71	14.01	13.00	13.37	90-100	8.717	5583	96.9,96.9
110	12.10	11.20	11.27	11.85	18.02	18.39	18.14	17.62	100-110	12.72	5596	97.1,97.1
120	21.33	20.06	19.89	20.84	24.02	24.64	24.30	23.50	110-120	18.14	5614	97.5,97.5
130	34.16	32.35	31.87	33.29	33.58	34.43	33.89	32.76	120-130	24.54	5639	97.9,97.9
140	50.18	47.67	46.55	48.56	46.80	47.46	46.01	45.43	130-140	30.90	5670	98.4,98.4
150	64.66	62.20	61.17	62.43	60.73	60.36	58.81	58.26	140-150	34.01	5704	99,99
160	71.92	70.49	69.57	69.22	69.53	67.88	66.45	66.16	150-160	30.19	5734	99.5,99.5
170	76.54	75.18	74.09	73.58	74.49	72.44	71.00	70.59	160-170	20.05	5754	99.9,99.9
180	81.17	78.92	77.07	77.16	81.54	78.97	76.00	77.19	170-180	7.190	5761	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT: lm		

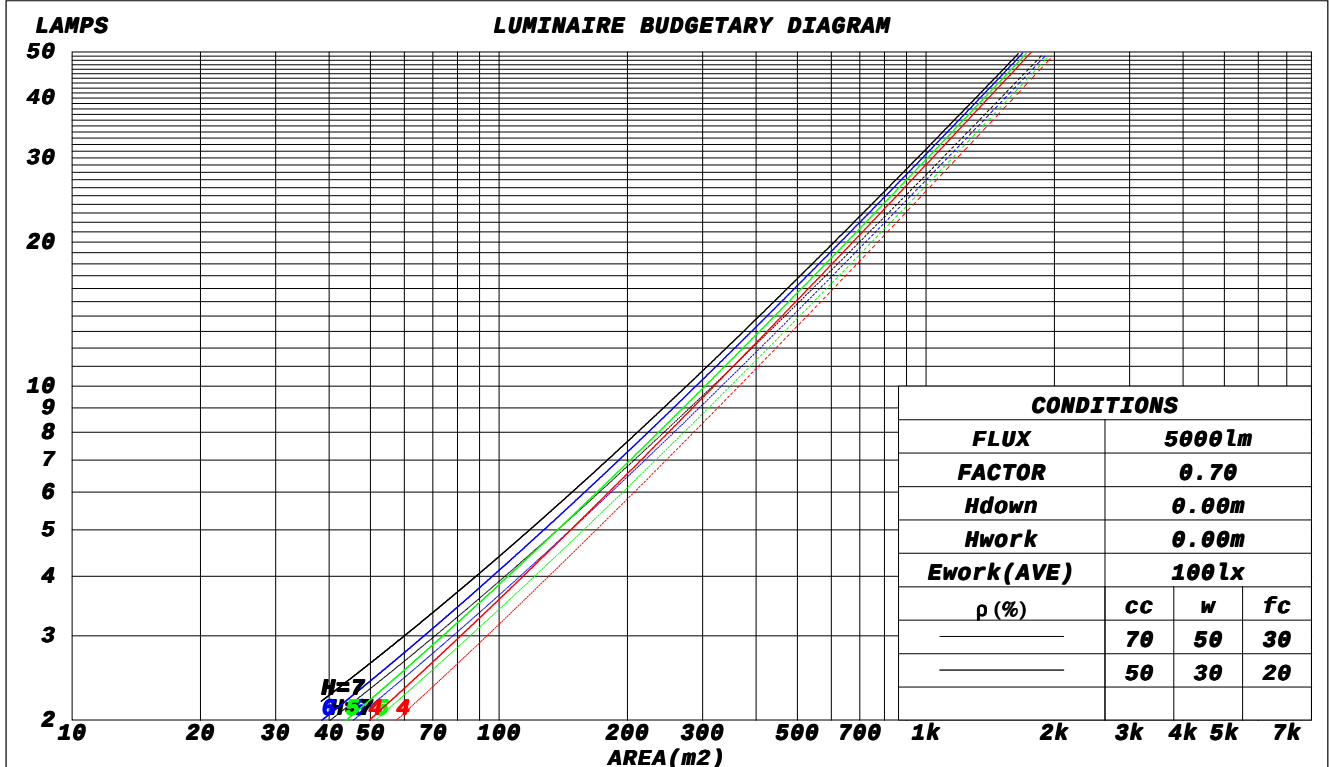
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-01-17

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:220.1V I:0.2180A P:47.50W PF:0.9860 Lamp Flux:5760.97x1 lm		
NAME: PS-TL-50W30KD60RA80	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	1.07	1.05	1.07	1.05	1.03	1.03	1.01	.99	.99	.97	.96	.95	.94	.93	.91
2.0	1.02	.98	.95	1.00	.97	.94	.97	.94	.91	.93	.91	.89	.90	.88	.86	.85
3.0	.96	.91	.87	.94	.89	.86	.91	.87	.84	.88	.85	.82	.85	.83	.81	.79
4.0	.89	.84	.80	.88	.83	.79	.85	.81	.78	.83	.80	.77	.81	.78	.75	.74
5.0	.84	.78	.74	.83	.77	.73	.81	.76	.72	.79	.75	.71	.77	.73	.71	.69
6.0	.79	.73	.69	.78	.72	.68	.76	.71	.68	.74	.70	.67	.73	.69	.66	.65
7.0	.74	.68	.64	.73	.68	.64	.72	.67	.63	.70	.66	.63	.69	.65	.62	.61
8.0	.70	.64	.60	.69	.64	.60	.68	.63	.59	.66	.62	.59	.65	.61	.58	.57
9.0	.66	.60	.56	.65	.60	.56	.64	.59	.56	.63	.58	.55	.62	.58	.55	.54
10.0	.62	.57	.53	.62	.56	.53	.61	.56	.52	.60	.55	.52	.59	.55	.52	.50



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2018-01-17

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:220.1V I:0.2180A P:47.50W PF:0.9860 Lamp Flux:5760.97x1 lm											
NAME: PS-TL-50W30KD60RA80						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	.179	.102	.032	.171	.097	.031	.156	.090	.029	.143	.083	.026	.131	.076	.024		
2.0	.170	.093	.029	.163	.090	.028	.151	.084	.026	.139	.078	.024	.129	.073	.023		
3.0	.161	.086	.026	.156	.083	.025	.145	.079	.024	.135	.074	.023	.126	.070	.022		
4.0	.153	.080	.023	.148	.078	.023	.139	.074	.022	.131	.070	.021	.123	.067	.020		
5.0	.146	.074	.022	.142	.073	.021	.134	.070	.020	.126	.066	.020	.119	.064	.019		
6.0	.140	.070	.020	.136	.069	.020	.128	.066	.019	.122	.063	.019	.115	.061	.018		
7.0	.133	.066	.019	.130	.065	.018	.124	.062	.018	.117	.060	.018	.112	.058	.017		
8.0	.128	.062	.018	.125	.061	.017	.119	.059	.017	.113	.057	.017	.108	.056	.016		
9.0	.123	.059	.017	.120	.058	.016	.114	.057	.016	.109	.055	.016	.105	.053	.015		
10.0	.118	.056	.016	.115	.056	.016	.110	.054	.015	.106	.053	.015	.101	.051	.015		

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	.215	.215	.215	.184	.184	.184	.125	.125	.125	.072	.072	.072	.023	.023	.023	
1.0	.196	.182	.170	.168	.156	.146	.115	.108	.101	.066	.062	.059	.021	.020	.019	
2.0	.181	.158	.138	.155	.136	.119	.106	.094	.083	.061	.055	.049	.020	.018	.016	
3.0	.169	.139	.115	.145	.120	.100	.099	.083	.070	.057	.049	.041	.018	.016	.013	
4.0	.158	.124	.098	.136	.107	.085	.094	.075	.060	.054	.044	.035	.017	.014	.012	
5.0	.150	.113	.085	.129	.097	.074	.089	.068	.052	.051	.040	.031	.017	.013	.010	
6.0	.143	.103	.075	.123	.090	.066	.085	.063	.046	.049	.037	.028	.016	.012	.009	
7.0	.136	.096	.068	.117	.083	.059	.081	.058	.042	.047	.034	.025	.015	.011	.008	
8.0	.131	.090	.062	.112	.078	.054	.078	.055	.038	.045	.032	.023	.015	.011	.008	
9.0	.126	.085	.057	.108	.073	.050	.075	.052	.035	.044	.030	.021	.014	.010	.007	
10.0	.121	.080	.053	.104	.070	.046	.072	.049	.033	.042	.029	.020	.014	.010	.007	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-01-17

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:220.1V I:0.2180A P:47.50W PF:0.9860 Lamp Flux:5760.97x1 lm										
NAME: PS-TL-50W30KD60RA80					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	23.2	24.1	23.5	24.4	24.6	23.9	24.8	24.2	25.0	25.2
3H	23.0	23.9	23.4	24.1	24.4	23.7	24.5	24.0	24.8	25.1
4H	23.0	23.8	23.3	24.0	24.3	23.6	24.4	23.9	24.7	25.0
6H	22.9	23.6	23.2	23.9	24.2	23.5	24.3	23.9	24.6	24.9
8H	22.8	23.5	23.2	23.9	24.2	23.5	24.2	23.8	24.5	24.8
12H	22.8	23.5	23.2	23.8	24.1	23.4	24.1	23.8	24.5	24.8
4H 2H	23.0	23.7	23.3	24.0	24.3	23.6	24.4	23.9	24.7	25.0
3H	22.8	23.4	23.1	23.8	24.1	23.4	24.1	23.8	24.4	24.8
4H	22.7	23.3	23.1	23.6	24.0	23.3	23.9	23.7	24.3	24.7
6H	22.6	23.1	23.0	23.5	23.9	23.2	23.8	23.7	24.2	24.6
8H	22.5	23.0	23.0	23.5	23.9	23.2	23.7	23.6	24.1	24.5
12H	22.5	23.0	23.0	23.4	23.9	23.2	23.6	23.6	24.0	24.5
8H 4H	22.5	23.0	23.0	23.4	23.9	23.2	23.7	23.6	24.1	24.5
6H	22.4	22.8	22.9	23.3	23.8	23.1	23.5	23.6	23.9	24.4
8H	22.4	22.8	22.9	23.2	23.7	23.1	23.4	23.6	23.9	24.4
12H	22.4	22.7	22.9	23.2	23.7	23.0	23.3	23.5	23.8	24.4
12H 4H	22.5	22.9	22.9	23.4	23.8	23.1	23.6	23.6	24.0	24.5
6H	22.4	22.7	22.9	23.2	23.7	23.0	23.4	23.5	23.9	24.4
8H	22.4	22.7	22.9	23.2	23.7	23.0	23.3	23.5	23.8	24.3
Variations with the observer position at spacings:										
S = 1.0H	+ 4.4 / -10.1					+ 4.3 / -11.4				
1.5H	+ 7.1 / - 9.7					+ 7.1 / -10.9				
2.0H	+ 3.1 / - 0.9					+ 4.0 / - 1.2				

CIE Pub.117 Corrected 5761 lm Total Lamp Luminous Flux. (8log(F/F0) = 6.1)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-01-17

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:220.1V I:0.2180A P:47.50W PF:0.9860 Lamp Flux:5760.97x1 lm		
NAME: PS-TL-50W30KD60RA80	TYPE: LED	
MFR.:		

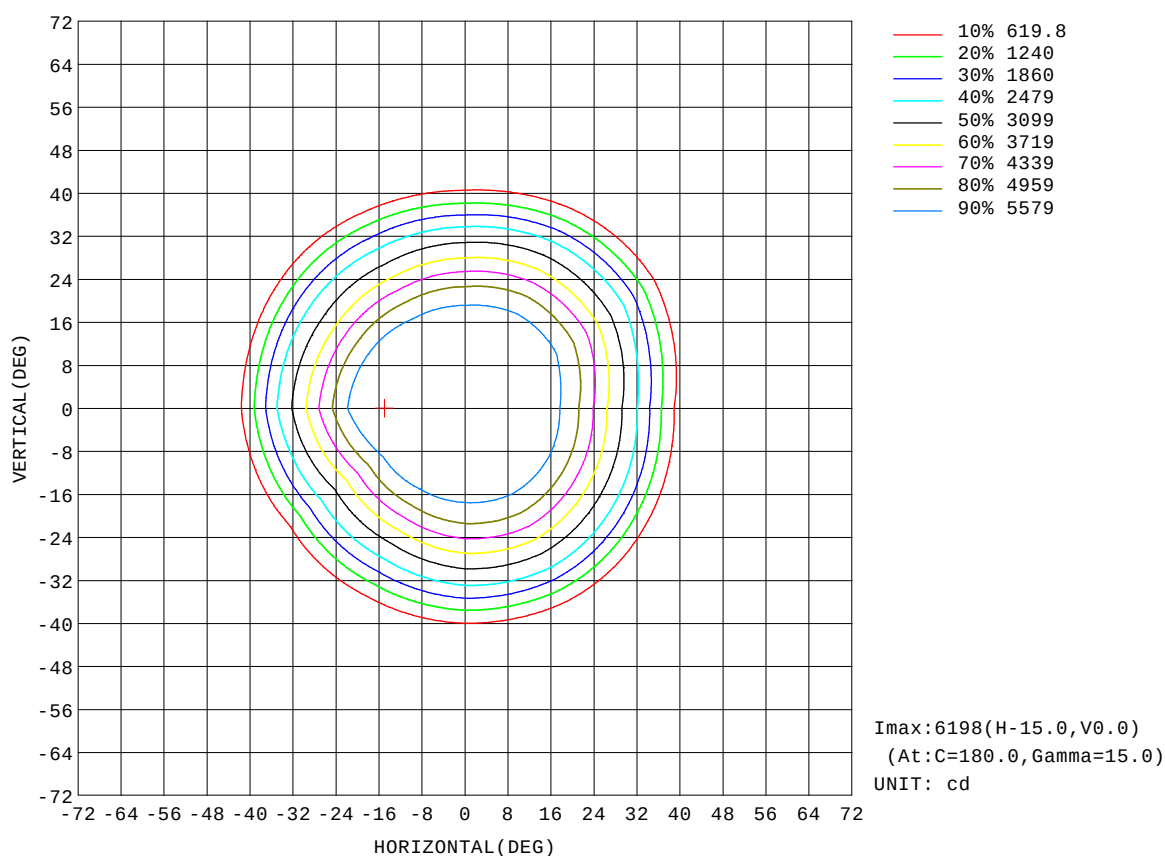
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	81	78	87	81	78	86	81	77	74
0.80	95	89	85	94	89	85	92	88	85	81
1.00	99	93	90	98	93	89	96	92	89	85
1.25	103	98	94	101	97	94	99	95	93	88
1.50	105	101	97	104	100	97	101	98	95	90
2.00	108	104	101	106	102	100	103	100	98	92
2.50	109	106	103	108	104	102	104	101	99	93
3.00	111	108	105	109	106	104	105	103	101	94
4.00	113	110	108	111	108	106	107	105	103	95
5.00	114	112	110	112	110	108	107	106	105	96
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: 2018-01-17

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:220.1V I:0.2180A P:47.50W PF:0.9860 Lamp Flux:5760.97x1 lm		
NAME: PS-TL-50W30KD60RA80	TYPE: LED	
MFR.:		

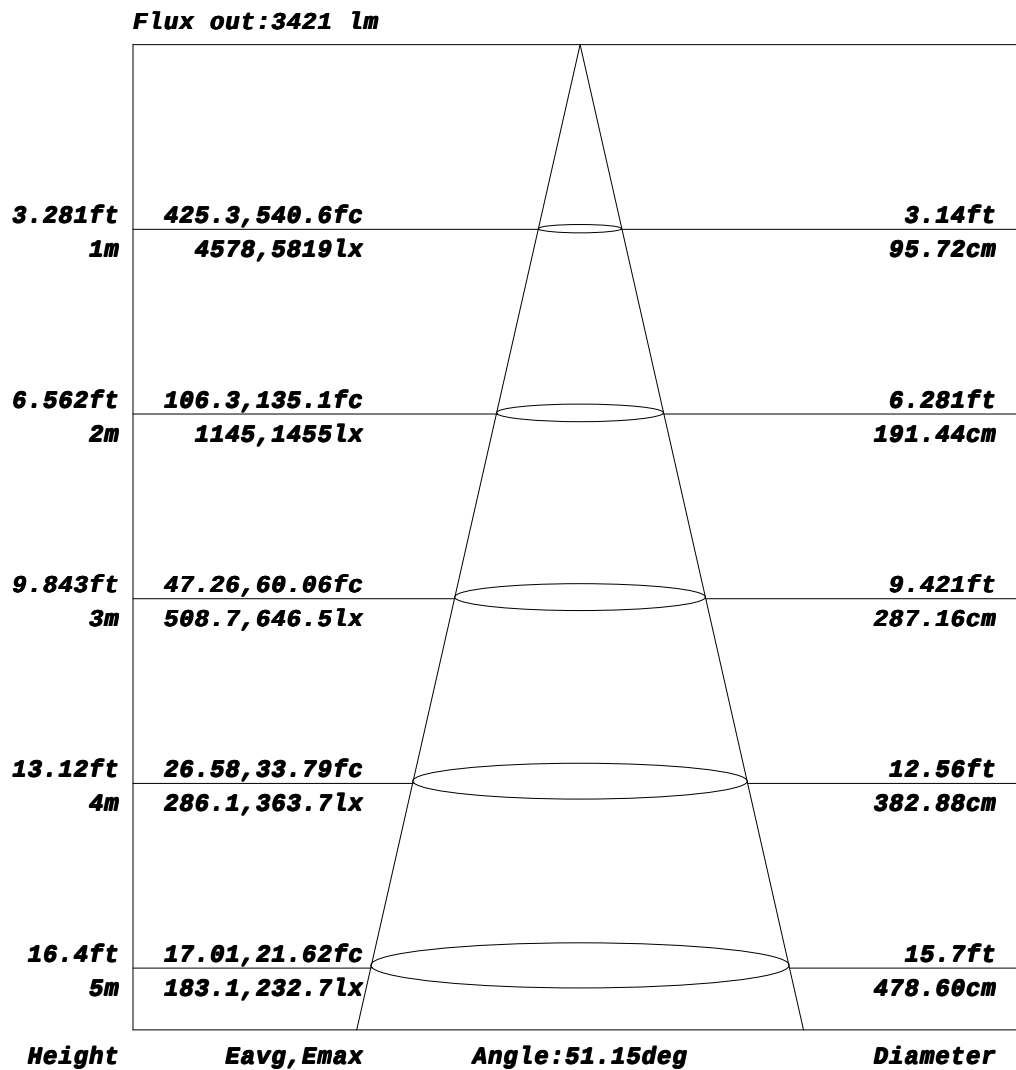


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-01-17

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:220.1V I:0.2180A P:47.50W PF:0.9860 Lamp Flux:5760.97x1 lm		
NAME: PS-TL-50W30KD60RA80	TYPE: LED	
MFR.:		



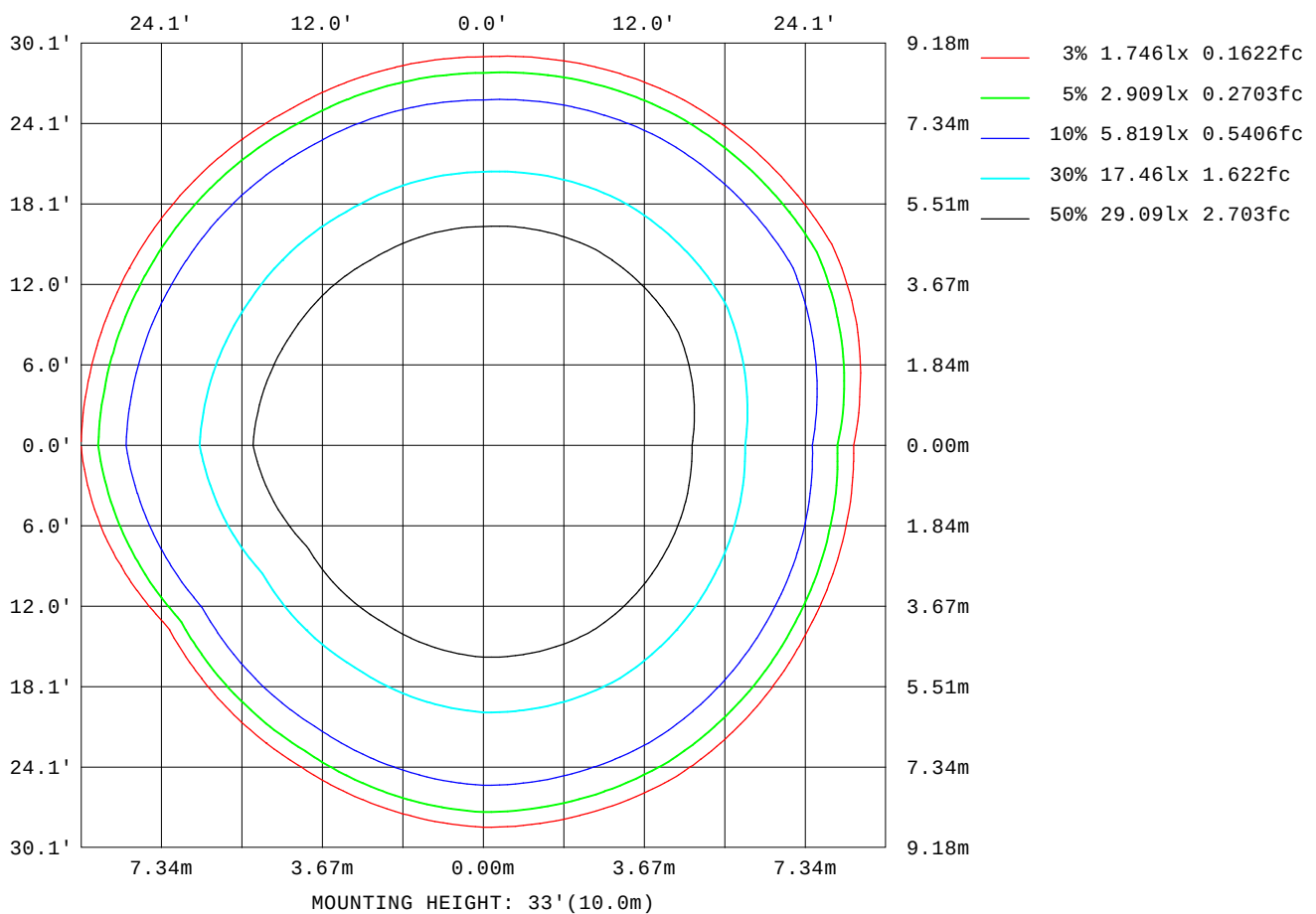
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-01-17

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

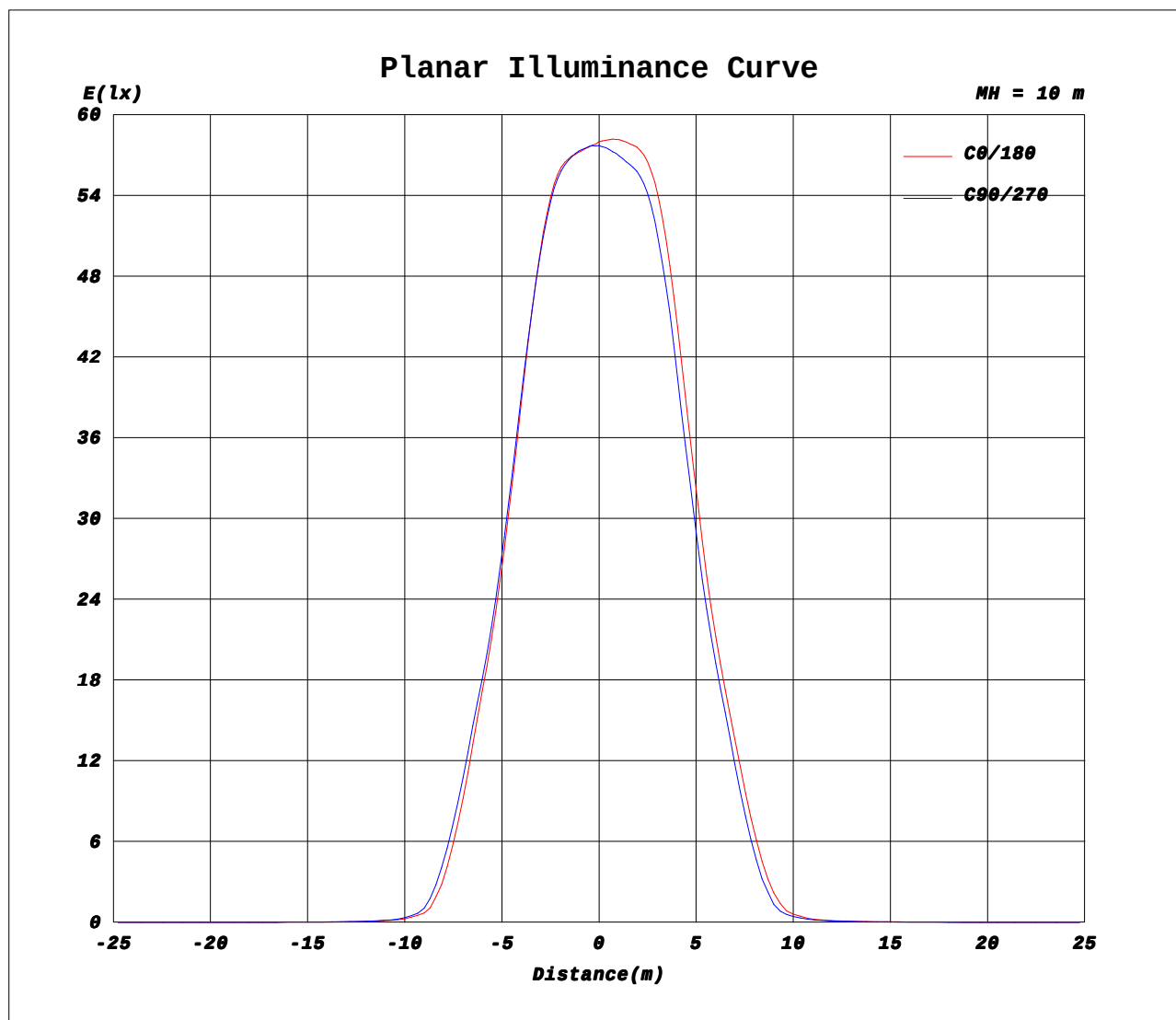
Test:U:220.1V I:0.2180A P:47.50W PF:0.9860 Lamp Flux:5760.97x1 lm		
NAME: PS-TL-50W30KD60RA80	TYPE: LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-01-17

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: 2018-01-17

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:220.1V I:0.2180A P:47.50W PF:0.9860 Lamp Flux:5760.97x1 lm		
NAME: PS-TL-50W30KD60RA80	TYPE: LED	
MFR.:		

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	5799	5777	5777	5770	5752	5723	5799	5777	5777	5770	5752	5723						
5	5800	5768	5773	5809	5847	5844	5883	5856	5823	5780	5719	5679						
10	5913	5857	5841	5892	5987	6022	6044	5997	5941	5871	5792	5748						
15	5843	5837	5833	5808	5842	5918	6198	6079	5967	5915	5885	5846						
20	5201	5253	5323	5219	5073	5115	5882	5658	5445	5462	5575	5554						
25	4067	4149	4300	4173	3880	3866	4879	4575	4355	4432	4653	4644						
30	2932	3020	3164	3071	2781	2748	3609	3334	3178	3273	3476	3489						
35	1678	1819	2013	1958	1606	1537	2470	2234	2068	2132	2377	2424						
40	425	472	622	625	418	327	1014	849	710	724	931	1015						
45	79.9	85.9	109	105	63.2	58.5	175	138	124	130	160	165						
50	33.0	34.0	39.2	38.7	27.3	27.2	56.5	45.4	45.2	48.0	52.9	53.0						
55	19.6	20.4	22.0	21.6	17.4	17.3	31.8	27.5	27.1	28.4	30.0	30.2						
60	13.6	14.5	14.9	14.9	12.7	12.7	22.5	20.3	19.8	20.3	21.5	21.5						
65	9.63	10.7	10.8	10.7	9.58	9.33	17.2	15.8	15.1	15.4	16.4	16.5						
70	7.83	8.42	8.45	8.35	7.87	7.76	13.6	13.1	12.8	12.7	13.1	13.1						
75	6.68	7.23	7.38	7.20	6.86	6.85	12.9	12.6	12.4	12.3	12.4	12.5						
80	5.48	5.96	6.24	6.10	5.72	5.67	12.8	12.4	12.1	12.0	12.2	12.2						
85	5.11	5.16	5.29	5.39	5.31	4.92	12.5	12.4	12.4	12.0	11.8	12.0						
90	2.62	2.49	2.37	2.40	2.56	2.59	12.0	11.6	11.2	11.3	11.7	11.8						
95	3.93	3.71	3.46	3.57	3.83	3.86	12.0	12.3	12.4	12.2	11.8	11.7						
100	5.88	5.54	5.18	5.36	5.75	5.79	13.7	13.9	14.1	13.8	13.4	13.4						
105	8.62	8.12	7.65	7.87	8.46	8.44	15.7	15.9	16.1	15.8	15.3	15.3						
110	12.1	11.5	10.9	11.3	11.9	11.8	18.0	18.3	18.5	18.1	17.6	17.6						
115	16.3	15.6	14.8	15.1	15.9	16.0	20.7	21.1	21.3	20.9	20.3	20.3						
120	21.3	20.5	19.6	19.9	20.8	20.9	24.0	24.4	24.8	24.3	23.6	23.5						
125	27.2	26.2	25.1	25.5	26.5	26.6	28.3	28.8	29.3	28.7	27.7	27.6						
130	34.2	33.0	31.7	31.9	33.3	33.3	33.6	34.2	34.6	33.9	32.7	32.8						
135	41.9	40.7	39.0	39.0	40.5	41.0	39.8	40.5	40.8	39.7	38.7	38.9						
140	50.2	48.8	46.5	46.5	48.1	49.0	46.8	47.4	47.5	46.0	45.3	45.6						
145	58.2	56.5	54.2	54.2	55.6	56.5	54.1	54.3	54.0	52.5	51.7	52.4						
150	64.7	63.4	61.0	61.2	61.9	62.9	60.7	60.7	60.0	58.8	57.9	58.6						
155	69.2	68.4	66.1	66.4	66.4	67.1	65.9	65.4	64.7	63.5	62.7	63.5						
160	71.9	71.5	69.5	69.6	69.1	69.3	69.5	68.2	67.6	66.5	65.8	66.5						
165	74.0	73.8	72.1	72.0	71.5	71.2	72.1	70.2	69.7	68.6	68.0	68.5						
170	76.5	76.0	74.3	74.1	73.7	73.5	74.5	72.7	72.1	71.0	70.5	70.7						
175	80.0	79.0	77.1	76.3	75.9	76.5	78.2	76.4	75.3	74.0	73.7	74.1						
180	81.2	80.0	77.9	77.1	76.6	77.7	81.5	79.7	78.3	76.8	76.8	77.6						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-01-17

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: