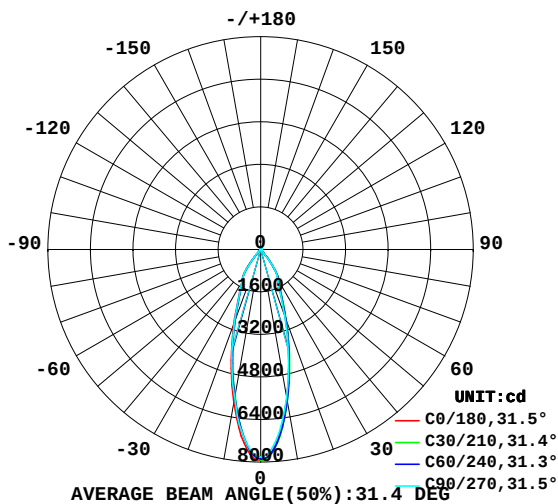


LUMINAIRE PHOTOMETRIC TEST REPORT

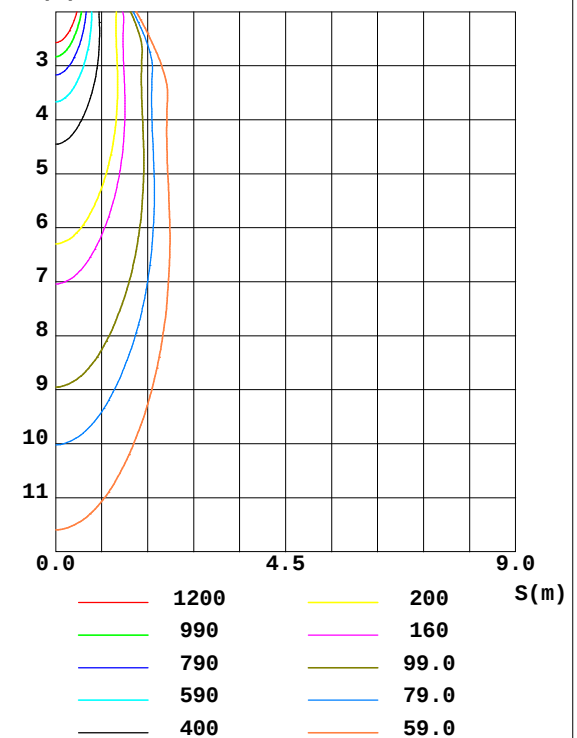
Test:U:220.2V I:0.1540A P:33.00W PF:0.9730 Lamp Flux:3405.1x1 lm		
NAME: PS-TL-35W30KD4090RA	TYPE:LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 103.18 lm/W			
MODEL	PS-TL-35W30KD4090RA	I _{max} (cd)	7932	S/MH(C0/180)	0.51
NOMINAL POWER(W)	35	LOR(%)	100.0	S/MH(C90/270)	0.51
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	3405.1	η UP, DN(C0-180)	1.5, 45.6
NOMINAL FLUX(lm)	3405.1	CIE CLASS	DIRECT	η UP, DN(C180-360)	1.7, 51.1
LAMPS INSIDE	1	η up(%)	3.3	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	220.3	η down(%)	96.7	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: 2018-06-01

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	5686	5779	5641	5362	5835	5608	5676	6071	0- 10	637.3	637.3	18.7,18.7
20	2685	2785	2644	2498	2958	2835	2895	3101	10- 20	1144	1781	52.3,52.3
30	1295	1347	1282	1257	1438	1408	1417	1445	20- 30	869.6	2651	77.9,77.9
40	260.4	255.3	252.0	141.8	371.4	365.8	339.3	513.4	30- 40	564.2	3215	94.4,94.4
50	9.834	13.09	9.174	9.603	20.73	19.96	19.43	19.24	40- 50	57.21	3272	96.1,96.1
60	4.009	4.663	3.803	3.745	8.473	8.286	8.085	8.114	50- 60	8.700	3281	96.4,96.4
70	1.580	1.696	1.550	1.498	4.836	4.817	4.664	4.683	60- 70	4.276	3285	96.5,96.5
80	1.206	1.214	1.181	1.182	5.865	5.881	5.708	5.597	70- 80	3.407	3289	96.6,96.6
90	1.531	1.520	1.547	1.597	7.249	7.218	7.068	6.984	80- 90	4.229	3293	96.7,96.7
100	2.941	2.904	2.959	3.084	8.359	8.315	8.154	8.115	90-100	5.386	3298	96.9,96.9
110	5.867	5.764	5.848	6.119	10.52	10.51	10.29	10.08	100-110	7.083	3306	97.1,97.1
120	11.11	10.89	11.01	11.52	14.30	14.35	14.01	13.71	110-120	10.09	3316	97.4,97.4
130	19.10	18.75	18.79	19.57	19.84	19.90	19.40	19.05	120-130	14.10	3330	97.8,97.8
140	28.69	28.24	28.13	29.06	27.89	27.82	26.98	26.61	130-140	18.08	3348	98.3,98.3
150	38.23	37.63	37.33	38.21	37.42	37.20	36.14	35.86	140-150	20.37	3368	98.9,98.9
160	46.21	45.43	44.84	45.63	45.18	44.35	43.06	43.37	150-160	18.97	3387	99.5,99.5
170	50.97	49.95	49.11	49.07	49.23	47.70	46.40	47.06	160-170	13.30	3400	99.9,99.9
180	51.41	49.88	48.64	48.96	51.54	49.92	48.46	48.98	170-180	4.667	3405	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT: lm		

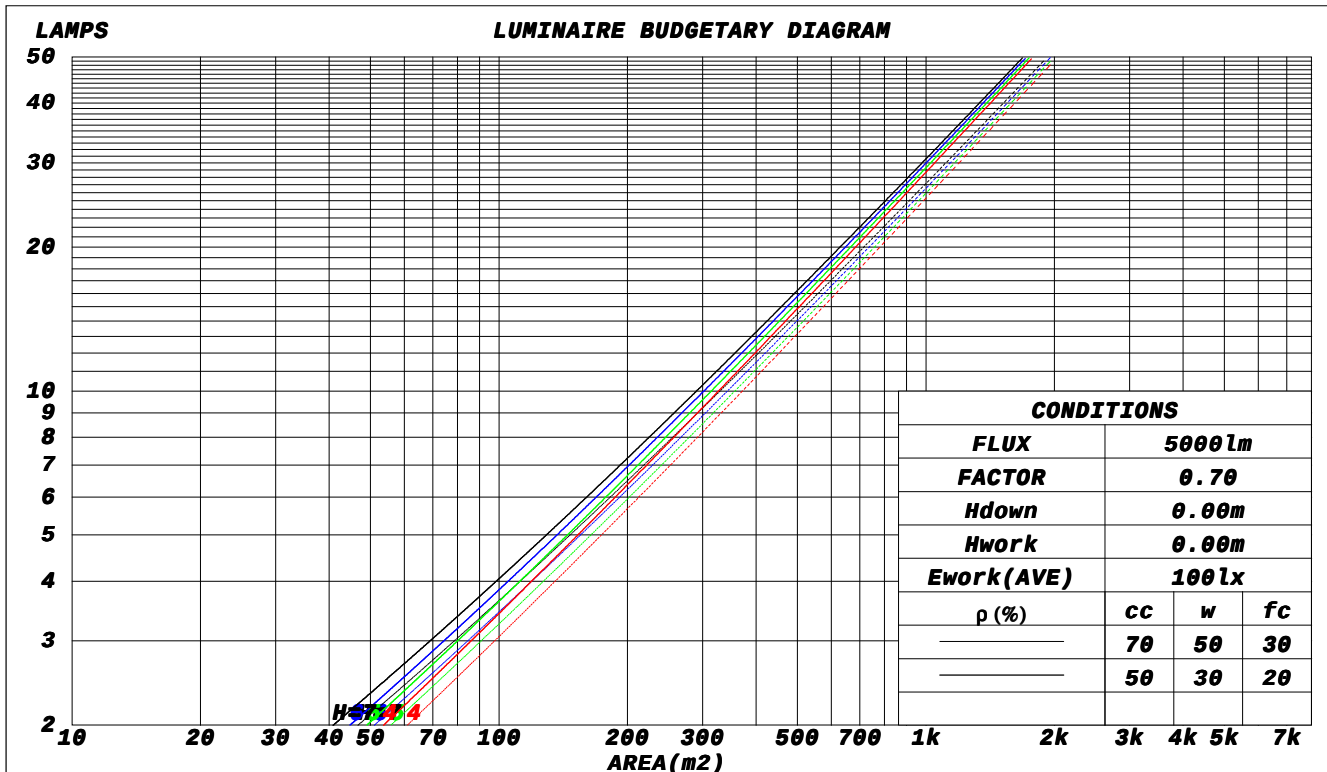
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-06-01

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:220.2V I:0.1540A P:33.00W PF:0.9730 Lamp Flux:3405.1x1 lm		
NAME: PS-TL-35W30KD4090RA	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	1.00	.99	.98	.97	.95	.94	.94	.92
2.0	1.04	1.00	.97	1.02	.99	.96	.98	.95	.93	.95	.93	.91	.92	.90	.88	.87
3.0	.98	.93	.90	.96	.92	.89	.93	.90	.87	.90	.88	.85	.88	.85	.84	.82
4.0	.92	.87	.84	.91	.86	.83	.88	.85	.82	.86	.83	.80	.84	.81	.79	.78
5.0	.87	.82	.78	.86	.81	.78	.84	.80	.77	.82	.79	.76	.80	.77	.75	.74
6.0	.83	.78	.74	.82	.77	.73	.80	.76	.73	.79	.75	.72	.77	.74	.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	.65	.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: 2018-06-01

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:220.2V I:0.1540A P:33.00W PF:0.9730 Lamp Flux:3405.1x1 lm											
NAME: PS-TL-35W30KD4090RA						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	.165	.094	.030	.157	.090	.029	.143	.082	.026	.130	.075	.024	.118	.068	.022	
2.0	.156	.085	.026	.149	.082	.025	.137	.076	.024	.126	.071	.022	.115	.065	.021	
3.0	.147	.078	.023	.141	.076	.023	.131	.071	.022	.121	.066	.020	.112	.062	.019	
4.0	.139	.072	.021	.134	.070	.021	.125	.066	.020	.117	.063	.019	.109	.059	.018	
5.0	.132	.067	.020	.128	.066	.019	.120	.063	.018	.113	.059	.018	.106	.056	.017	
6.0	.126	.063	.018	.122	.062	.018	.115	.059	.017	.109	.056	.017	.102	.054	.016	
7.0	.120	.059	.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	.098	.049	.014	.093	.047	.014	
10.0	.106	.051	.014	.103	.050	.014	.099	.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	.216	.216	.216	.184	.184	.184	.126	.126	.126	.072	.072	.072	.023	.023	.023	
1.0	.196	.183	.171	.167	.157	.147	.114	.108	.102	.066	.062	.059	.021	.020	.019	
2.0	.180	.158	.140	.154	.136	.121	.105	.094	.084	.061	.055	.049	.019	.018	.016	
3.0	.166	.139	.117	.143	.120	.102	.098	.083	.071	.057	.049	.042	.018	.016	.014	
4.0	.155	.124	.100	.133	.107	.087	.092	.075	.061	.053	.044	.036	.017	.014	.012	
5.0	.146	.112	.088	.126	.097	.076	.087	.068	.054	.050	.040	.032	.016	.013	.011	
6.0	.138	.103	.078	.119	.089	.068	.082	.062	.048	.048	.037	.028	.015	.012	.009	
7.0	.132	.095	.070	.113	.083	.061	.078	.058	.043	.045	.034	.026	.015	.011	.008	
8.0	.126	.089	.064	.108	.077	.056	.075	.054	.039	.044	.032	.023	.014	.010	.008	
9.0	.121	.084	.059	.104	.073	.051	.072	.051	.036	.042	.030	.022	.014	.010	.007	
10.0	.116	.079	.055	.100	.069	.048	.069	.048	.034	.040	.029	.020	.013	.009	.007	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-06-01

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:220.2V I:0.1540A P:33.00W PF:0.9730 Lamp Flux:3405.1x1 lm												
NAME: PS-TL-35W30KD4090RA					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	2H	20.6	21.5	20.9	21.7	21.9	20.6	21.4	20.9	21.6	21.8	
	3H	20.5	21.2	20.8	21.5	21.7	20.4	21.2	20.7	21.4	21.7	
	4H	20.4	21.1	20.7	21.4	21.6	20.3	21.0	20.6	21.3	21.6	
	6H	20.3	21.0	20.6	21.2	21.6	20.2	20.9	20.6	21.2	21.5	
	8H	20.2	20.9	20.6	21.2	21.5	20.2	20.8	20.5	21.1	21.5	
	12H	20.2	20.8	20.6	21.1	21.5	20.1	20.8	20.5	21.1	21.4	
	4H	2H	20.4	21.1	20.7	21.4	21.6	20.3	21.0	20.6	21.3	21.6
		3H	20.2	20.8	20.6	21.1	21.5	20.1	20.7	20.5	21.1	21.4
		4H	20.1	20.6	20.5	21.0	21.4	20.0	20.6	20.4	20.9	21.3
		6H	20.0	20.5	20.4	20.9	21.3	19.9	20.4	20.4	20.8	21.2
		8H	19.9	20.4	20.4	20.8	21.2	19.9	20.3	20.3	20.7	21.2
		12H	19.9	20.3	20.3	20.7	21.2	19.8	20.2	20.3	20.7	21.1
8H	4H	19.9	20.4	20.4	20.8	21.2	19.9	20.3	20.3	20.7	21.2	
	6H	19.8	20.2	20.3	20.6	21.1	19.8	20.1	20.2	20.6	21.1	
	8H	19.8	20.1	20.3	20.6	21.1	19.7	20.0	20.2	20.5	21.0	
	12H	19.7	20.0	20.2	20.5	21.0	19.6	19.9	20.2	20.4	21.0	
12H	4H	19.9	20.3	20.3	20.7	21.2	19.8	20.2	20.3	20.7	21.1	
	6H	19.8	20.1	20.3	20.6	21.1	19.7	20.0	20.2	20.5	21.0	
	8H	19.7	20.0	20.2	20.5	21.0	19.6	19.9	20.2	20.4	21.0	
Variations with the observer position at spacings:												
S = 1.0H	+ 4.5 / -16.3					+ 4.5 / -16.6						
1.5H	+ 7.3 / -15.4					+ 7.3 / -15.7						
2.0H	+ 3.7 / - 1.9					+ 4.1 / - 1.8						

CIE Pub.117 Corrected 3405 lm Total Lamp Luminous Flux. (8log(F/F0) = 4.3)

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-06-01

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:220.2V I:0.1540A P:33.00W PF:0.9730 Lamp Flux:3405.1x1 lm		
NAME: PS-TL-35W30KD4090RA	TYPE:LED	
MFR.:		

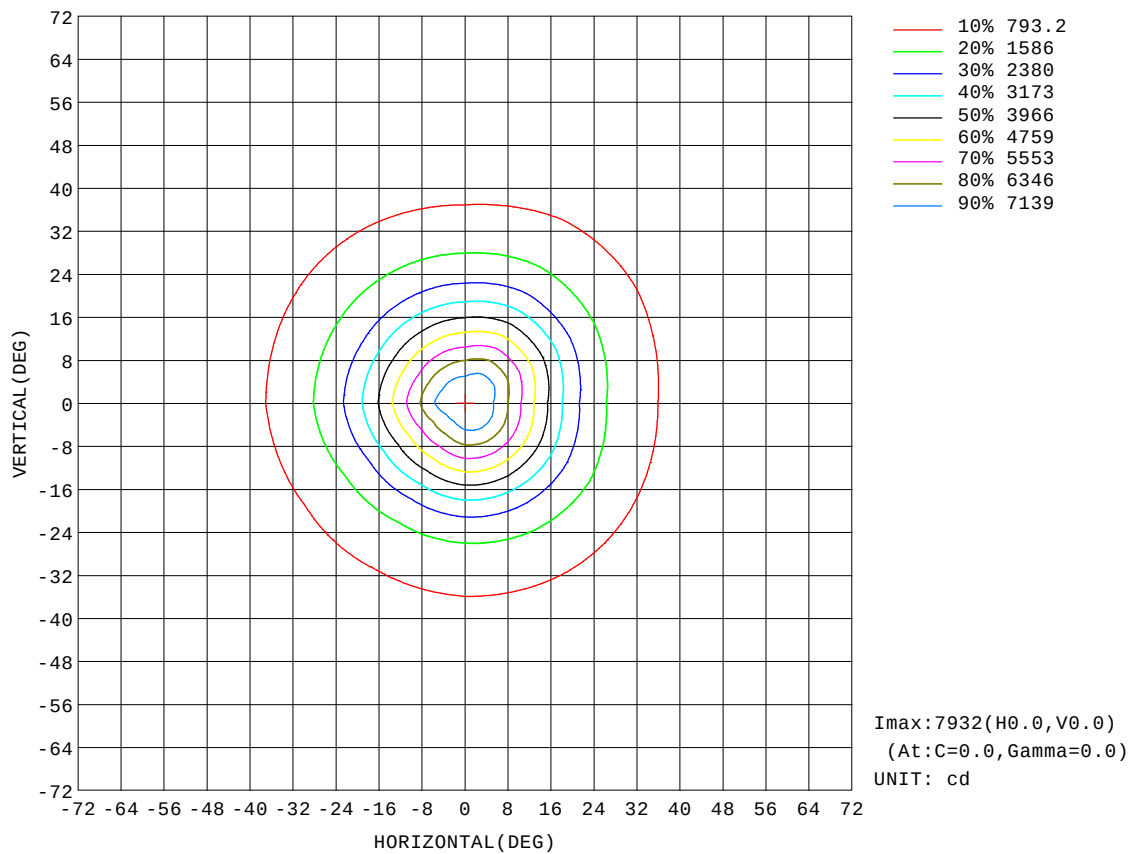
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	88	82	79	88	82	78	87	81	78	75
0.80	95	90	86	94	89	86	93	88	85	82
1.00	99	94	90	98	93	90	96	93	89	85
1.25	103	98	95	102	97	94	100	96	93	89
1.50	106	101	98	104	100	97	102	98	96	91
2.00	108	104	101	106	103	100	103	100	98	92
2.50	110	106	103	108	104	102	104	102	100	93
3.00	111	108	105	109	106	104	105	103	101	94
4.00	113	110	108	111	109	107	107	105	103	95
5.00	114	112	110	112	110	109	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:2018-06-01

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:220.2V I:0.1540A P:33.00W PF:0.9730 Lamp Flux:3405.1x1 lm		
NAME: PS-TL-35W30KD4090RA	TYPE: LED	
MFR.:		



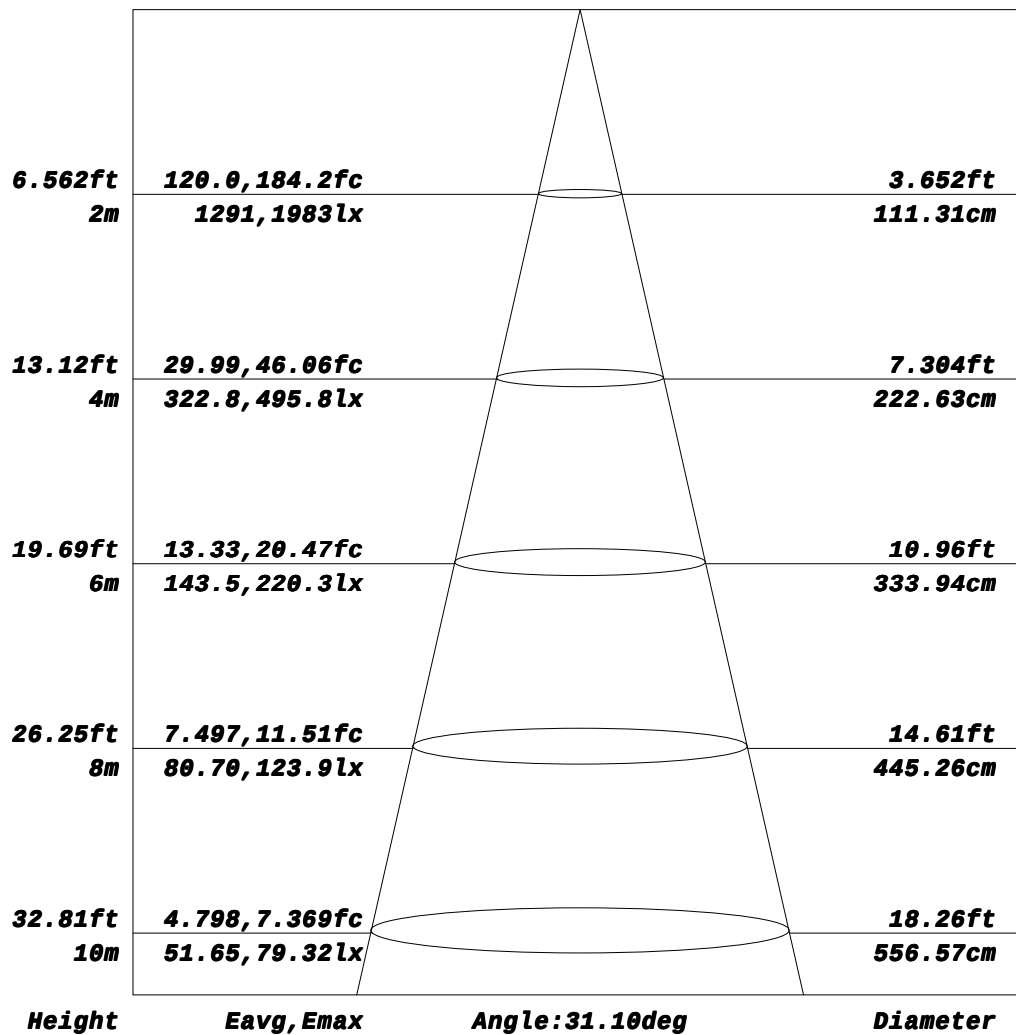
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-06-01

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:220.2V I:0.1540A P:33.00W PF:0.9730 Lamp Flux:3405.1x1 lm		
NAME: PS-TL-35W30KD4090RA	TYPE: LED	
MFR.:		

Flux out:1334 lm



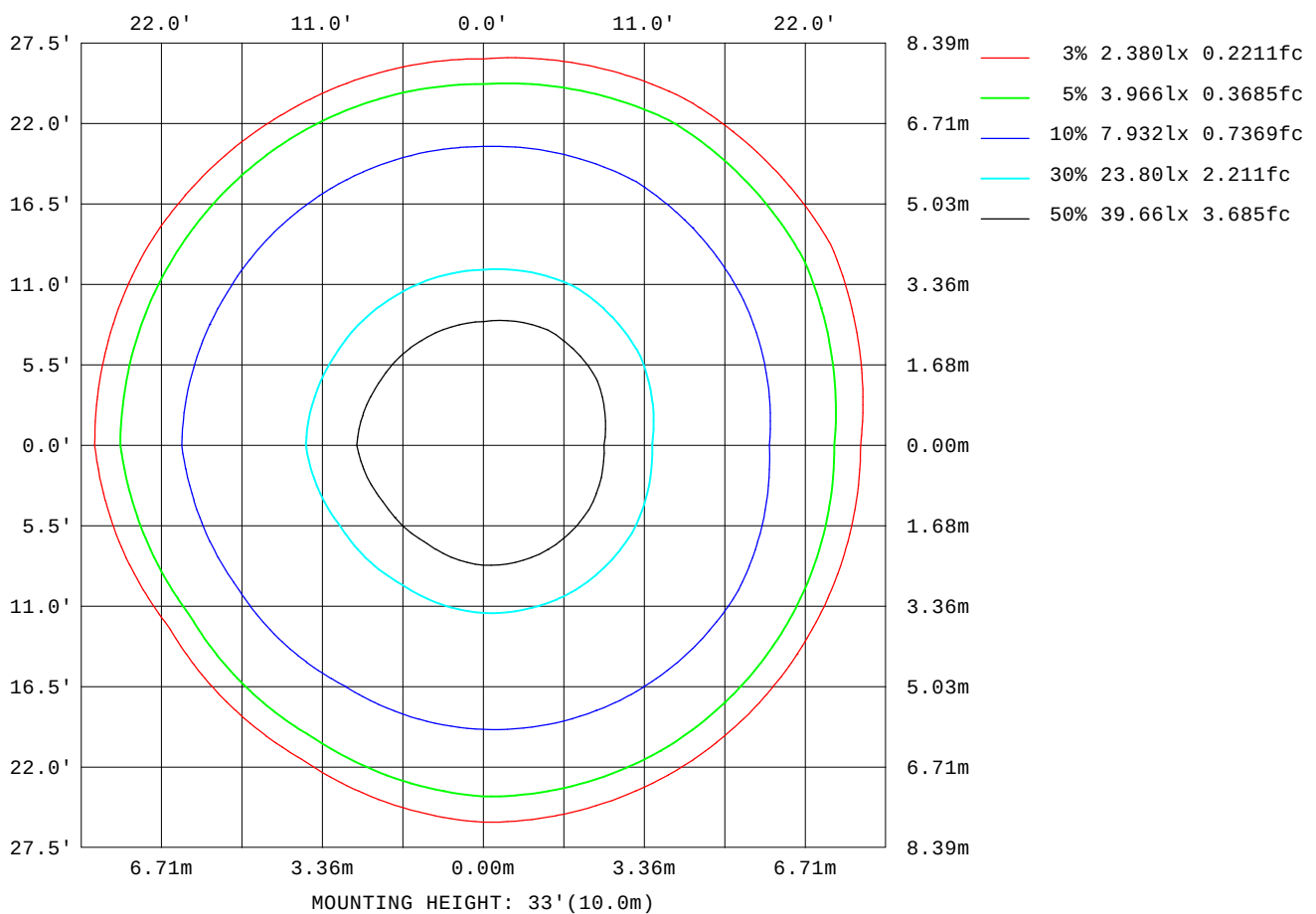
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-06-01

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

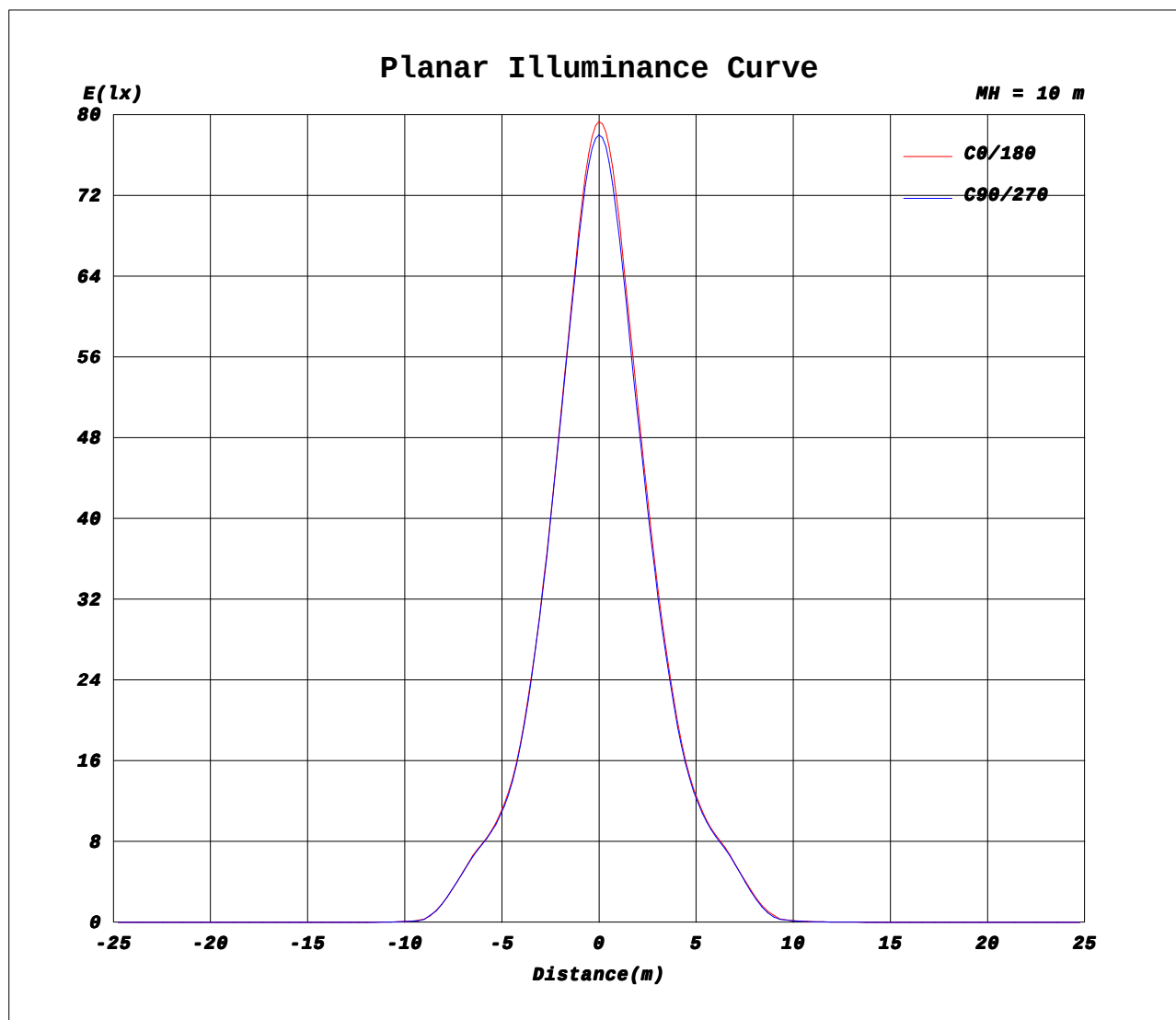
Test:U:220.2V I:0.1540A P:33.00W PF:0.9730 Lamp Flux:3405.1x1 lm		
NAME: PS-TL-35W30KD4090RA	TYPE: LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-06-01

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: 2018-06-01

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:220.2V I:0.1540A P:33.00W PF:0.9730 Lamp Flux:3405.1x1 lm		
NAME: PS-TL-35W30KD4090RA	TYPE:LED	
MFR.:		

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	7932	7919	7886	7801	7772	7806	7932	7919	7886	7801	7772	7806						
5	7213	7307	7276	7121	6869	6890	7305	7114	7131	7136	7423	7433						
10	5686	5796	5762	5641	5345	5379	5835	5592	5624	5676	6089	6053						
15	4073	4192	4162	4036	3776	3849	4322	4136	4134	4211	4556	4508						
20	2685	2802	2768	2644	2456	2540	2958	2841	2830	2895	3134	3068						
25	1735	1825	1788	1698	1610	1676	1956	1896	1886	1921	2051	1973						
30	1295	1365	1330	1282	1229	1285	1438	1410	1407	1417	1473	1416						
35	914	942	953	907	757	770	1062	1039	1051	1051	1164	1096						
40	260	255	255	252	129	155	371	390	341	339	509	518						
45	25.7	34.4	30.9	25.9	17.8	21.6	53.1	51.7	48.9	48.1	61.3	70.6						
50	9.83	14.2	11.9	9.17	8.74	10.5	20.7	20.2	19.7	19.4	21.3	17.2						
55	6.18	8.26	7.08	5.82	5.61	6.24	12.5	12.4	12.0	11.9	12.7	11.0						
60	4.01	4.92	4.40	3.80	3.59	3.90	8.47	8.42	8.15	8.09	8.45	7.78						
65	2.41	2.75	2.62	2.35	2.15	2.30	5.77	5.81	5.65	5.51	5.97	5.77						
70	1.58	1.69	1.70	1.55	1.46	1.54	4.84	4.87	4.77	4.66	4.72	4.65						
75	1.30	1.34	1.33	1.25	1.23	1.26	5.19	5.24	5.17	5.04	4.90	4.91						
80	1.21	1.21	1.21	1.18	1.17	1.19	5.86	5.90	5.86	5.71	5.57	5.62						
85	1.27	1.27	1.25	1.27	1.29	1.29	6.57	6.58	6.54	6.39	6.24	6.31						
90	1.53	1.53	1.51	1.55	1.61	1.58	7.25	7.25	7.19	7.07	6.94	7.02						
95	2.10	2.07	2.07	2.11	2.23	2.16	7.84	7.85	7.78	7.65	7.57	7.66						
100	2.94	2.90	2.90	2.96	3.12	3.04	8.36	8.35	8.28	8.15	8.07	8.16						
105	4.17	4.10	4.10	4.18	4.41	4.31	9.20	9.21	9.14	8.99	8.81	8.91						
110	5.87	5.77	5.75	5.85	6.17	6.07	10.5	10.5	10.5	10.3	10.0	10.1						
115	8.14	8.03	7.96	8.12	8.54	8.43	12.2	12.3	12.2	12.0	11.6	11.8						
120	11.1	10.9	10.9	11.0	11.6	11.4	14.3	14.4	14.3	14.0	13.6	13.8						
125	14.7	14.5	14.5	14.6	15.3	15.1	16.8	17.0	16.8	16.5	16.0	16.3						
130	19.1	18.7	18.8	18.8	19.7	19.4	19.8	20.0	19.8	19.4	18.9	19.2						
135	23.8	23.4	23.3	23.3	24.3	24.1	23.4	23.7	23.3	22.9	22.3	22.7						
140	28.7	28.4	28.1	28.1	29.1	29.1	27.9	28.0	27.6	27.0	26.3	26.9						
145	33.6	33.2	32.8	32.9	33.8	33.8	32.7	32.7	32.2	31.6	30.8	31.4						
150	38.2	37.8	37.4	37.3	38.1	38.3	37.4	37.4	37.0	36.1	35.6	36.1						
155	42.4	42.1	41.5	41.3	42.0	42.3	41.7	41.5	41.0	40.0	39.8	40.4						
160	46.2	45.8	45.1	44.8	45.4	45.9	45.2	44.7	44.0	43.1	43.0	43.7						
165	49.4	48.9	48.0	47.8	48.0	48.4	47.8	47.0	46.3	45.3	45.5	46.1						
170	51.0	50.4	49.5	49.1	48.9	49.2	49.2	48.1	47.3	46.4	46.8	47.4						
175	51.5	50.9	49.8	49.2	48.8	49.2	49.9	48.6	47.7	46.8	47.2	47.9						
180	51.4	50.5	49.3	48.6	48.6	49.3	51.5	50.4	49.4	48.5	48.7	49.3						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-06-01

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: