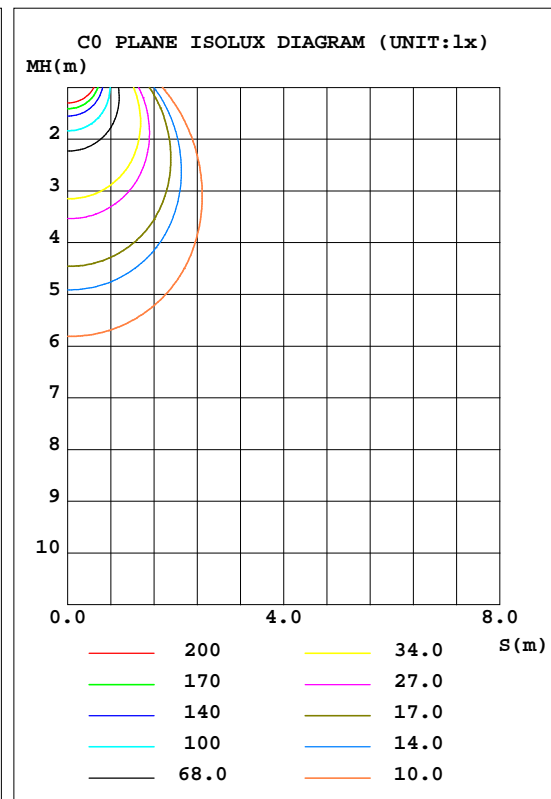
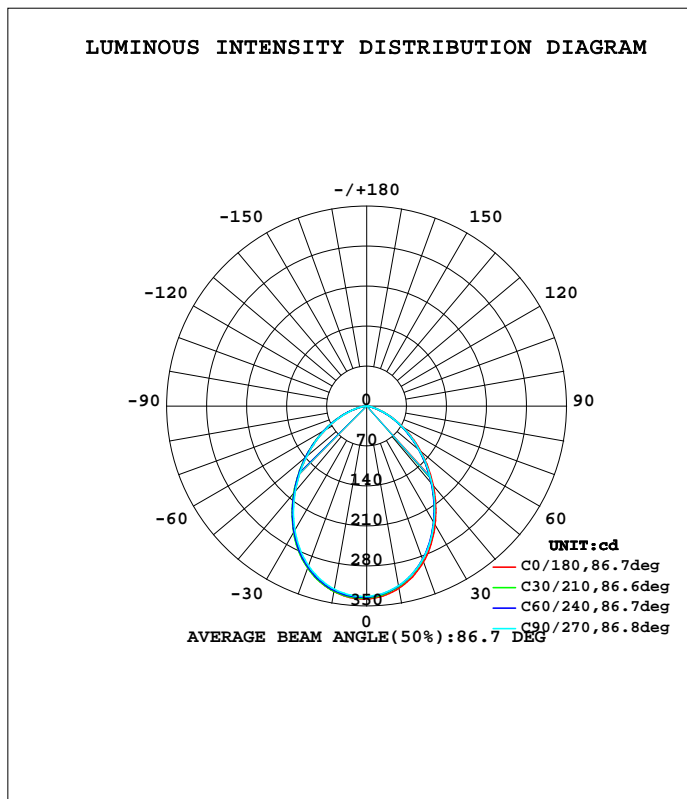


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.5V I:0.0430A P:10.00W PF:0.9610 Lamp Flux:668.783x1 lm		
NAME: LED-DL10W-WW-W	TYPE:10W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.025	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 66.88 lm/W			
MODEL	LED-DL10W-WW-W	I _{max} (cd)	337.8	S/MH(C0/180)	1.14
NOMINAL POWER(W)	10	LOR(%)	100.0	S/MH(C90/270)	1.14
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	668.78	η UP, DN(C0-180)	0.0, 51.8
NOMINAL FLUX(lm)	668.783	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 48.2
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	240.5	η down(%)	100.0	CIBSE SHR MAX	1.15



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-08-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.700m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	\$lum,lamp
10	329.6	328.5	325.5	320.7	324.0	320.5	319.5	321.0	0- 10	31.37	31.37	4.69,4.69
20	301.0	301.2	297.6	290.2	290.6	286.1	286.3	290.7	10- 20	87.28	118.7	17.7,17.7
30	253.7	255.3	251.4	242.1	239.7	234.7	235.7	242.5	20- 30	124.1	242.8	36.3,36.3
40	195.9	198.3	194.9	185.3	181.3	176.5	177.9	185.4	30- 40	134.8	377.5	56.5,56.5
50	137.6	140.3	137.3	128.8	124.2	119.8	121.3	128.5	40- 50	121.6	499.2	74.6,74.6
60	84.32	86.96	84.58	77.50	73.05	69.47	70.76	77.00	50- 60	92.06	591.2	88.4,88.4
70	39.80	41.94	40.25	35.15	31.19	29.20	30.17	34.79	60- 70	54.94	646.2	96.6,96.6
80	8.944	10.11	8.798	6.253	5.384	5.027	5.931	7.774	70- 80	21.02	667.2	99.8,99.8
90	0.1452	0.1357	0.1326	0.1326	0.1515	0.1736	0.1641	0.1420	80- 90	1.596	668.8	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

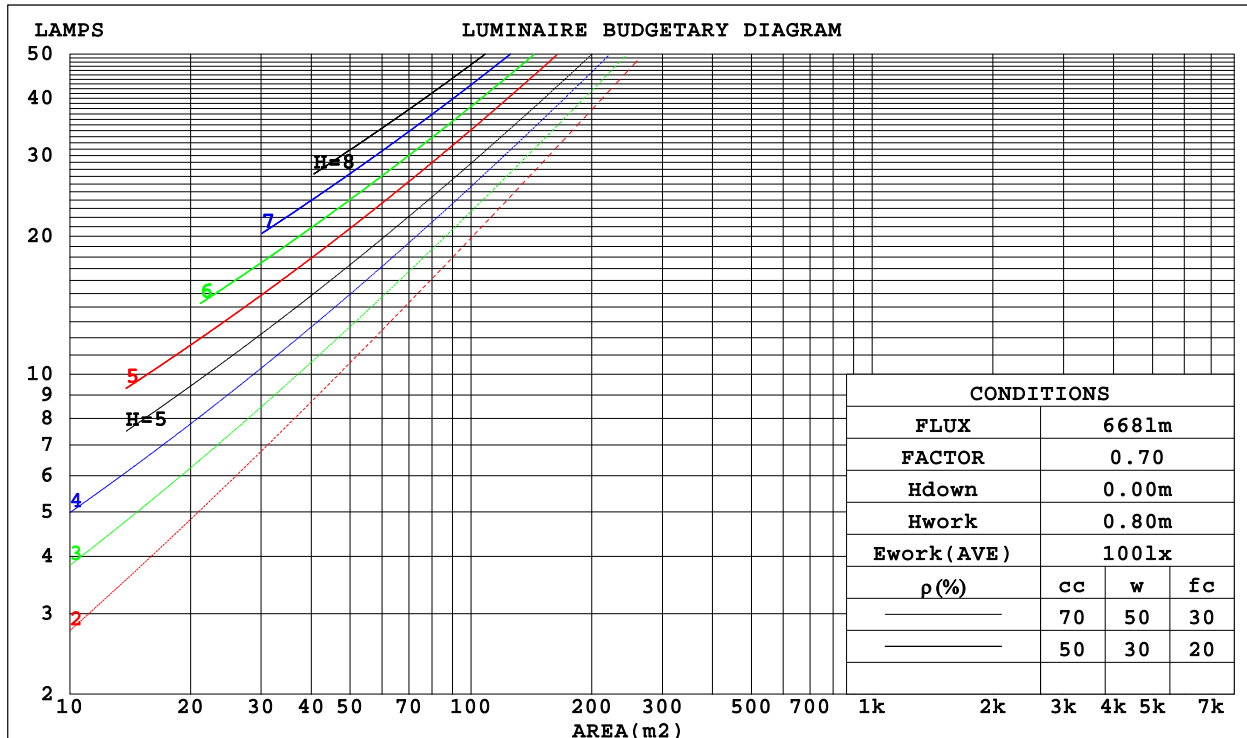
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-08-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.700m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.5V I:0.0430A P:10.00W PF:0.9610 Lamp Flux:668.783x1 lm		
NAME: LED-DL10W-WW-W	TYPE:10W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.025	PROTECTION ANGLE:

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	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.07	1.03	.00	1.04	1.01	.98	1.00	.98	.95	.96	.94	.92	.93	.91	.90	.88
2.0	.95	.89	.84	.93	.88	.83	.90	.85	.81	.86	.83	.79	.84	.80	.78	.76
3.0	.85	.78	.72	.83	.77	.71	.80	.75	.70	.78	.73	.69	.75	.71	.68	.66
4.0	.76	.68	.62	.75	.68	.62	.72	.66	.61	.70	.65	.60	.68	.63	.60	.58
5.0	.69	.61	.55	.68	.60	.54	.66	.59	.54	.64	.58	.53	.62	.57	.53	.51
6.0	.63	.54	.48	.62	.54	.48	.60	.53	.48	.58	.52	.47	.57	.51	.47	.45
7.0	.57	.49	.43	.56	.49	.43	.55	.48	.43	.53	.47	.43	.52	.47	.42	.41
8.0	.52	.45	.39	.52	.44	.39	.51	.44	.39	.49	.43	.39	.48	.43	.38	.37
9.0	.48	.41	.36	.48	.40	.35	.47	.40	.35	.46	.40	.35	.45	.39	.35	.33
10.0	.45	.37	.33	.44	.37	.32	.43	.37	.32	.43	.36	.32	.42	.36	.32	.30



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-08-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.700m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:240.5V I:0.0430A P:10.00W PF:0.9610 Lamp Flux:668.783x1 lm		
NAME: LED-DL10W-WW-W	TYPE:10W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.025	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.255	.145	.046	.248	.142	.045	.235	.135	.043	.224	.129	.041	.213	.123	.040	
2.0	.249	.136	.042	.242	.134	.041	.231	.129	.040	.221	.124	.039	.211	.119	.038	
3.0	.235	.125	.037	.230	.123	.037	.220	.119	.036	.211	.116	.035	.202	.112	.035	
4.0	.221	.115	.034	.216	.113	.033	.207	.110	.033	.199	.107	.032	.192	.104	.032	
5.0	.207	.106	.031	.203	.104	.030	.195	.102	.030	.188	.099	.029	.181	.097	.029	
6.0	.194	.097	.028	.191	.096	.028	.184	.094	.027	.177	.092	.027	.171	.090	.027	
7.0	.182	.090	.026	.179	.089	.025	.173	.087	.025	.167	.086	.025	.162	.084	.025	
8.0	.172	.084	.024	.169	.083	.023	.163	.082	.023	.158	.080	.023	.153	.079	.023	
9.0	.162	.078	.022	.159	.078	.022	.154	.076	.022	.150	.075	.021	.145	.074	.021	
10.0	.153	.073	.020	.151	.073	.020	.146	.072	.020	.142	.071	.020	.138	.069	.020	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.177	.157	.139	.151	.134	.119	.103	.092	.083	.059	.054	.048	.019	.017	.016	
2.0	.166	.132	.103	.143	.114	.089	.098	.079	.062	.056	.046	.036	.018	.015	.012	
3.0	.158	.114	.079	.135	.098	.069	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.150	.100	.063	.129	.087	.054	.088	.060	.038	.051	.035	.023	.016	.012	.007	
5.0	.143	.090	.051	.122	.078	.044	.084	.054	.031	.049	.032	.018	.016	.010	.006	
6.0	.136	.081	.042	.117	.070	.037	.080	.049	.026	.047	.029	.015	.015	.009	.005	
7.0	.129	.074	.035	.111	.064	.031	.077	.045	.022	.045	.027	.013	.014	.009	.004	
8.0	.123	.068	.030	.106	.059	.027	.073	.042	.019	.043	.025	.011	.014	.008	.004	
9.0	.118	.063	.027	.101	.055	.023	.070	.039	.016	.041	.023	.010	.013	.007	.003	
10.0	.112	.059	.024	.097	.051	.021	.067	.036	.015	.039	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-08-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.700m [K=1.0000]
 Remarks:

Uncorrected UGR Table

Test:U:240.5V I:0.0430A P:10.00W PF:0.9610 Lamp Flux:668.783x1 lm										
NAME: LED-DL10W-WW-W					TYPE:10W			WEIGHT:		
DIM.:					SPEC.:3000K			SERIAL No.:1		
MFR.:					SUR.:0.025			PROTECTION ANGLE:		
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	31.0	32.4	31.2	32.5	32.7	31.0	32.3	31.2	32.5	32.7
3H	31.8	33.1	32.1	33.3	33.5	31.8	33.0	32.1	33.3	33.5
4H	32.0	33.2	32.3	33.4	33.7	32.0	33.2	32.3	33.4	33.7
6H	32.1	33.2	32.4	33.4	33.7	32.1	33.2	32.4	33.4	33.7
8H	32.0	33.1	32.4	33.4	33.7	32.0	33.1	32.4	33.4	33.7
12H	32.0	33.0	32.3	33.3	33.6	32.0	33.0	32.3	33.3	33.6
4H 2H	31.4	32.6	31.7	32.8	33.1	31.4	32.6	31.7	32.8	33.0
3H	32.4	33.4	32.7	33.7	34.0	32.3	33.4	32.7	33.7	34.0
4H	32.6	33.6	33.0	33.9	34.2	32.6	33.6	33.0	33.9	34.2
6H	32.7	33.6	33.1	33.9	34.3	32.8	33.6	33.2	33.9	34.3
8H	32.7	33.5	33.1	33.9	34.2	32.7	33.5	33.1	33.9	34.2
12H	32.7	33.4	33.1	33.8	34.2	32.7	33.4	33.1	33.8	34.2
8H 4H	32.7	33.5	33.1	33.8	34.2	32.7	33.5	33.1	33.8	34.2
6H	32.9	33.5	33.3	33.9	34.3	32.9	33.5	33.3	33.9	34.3
8H	32.9	33.4	33.3	33.8	34.3	32.9	33.4	33.3	33.9	34.3
12H	32.8	33.3	33.3	33.8	34.2	32.8	33.3	33.3	33.8	34.2
12H 4H	32.7	33.4	33.1	33.8	34.2	32.7	33.4	33.1	33.8	34.2
6H	32.9	33.4	33.3	33.8	34.3	32.9	33.4	33.3	33.8	34.3
8H	32.9	33.3	33.3	33.8	34.2	32.9	33.3	33.3	33.8	34.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.5					+ 0.4 / - 0.5				
1.5H	+ 0.1 / - 0.3					+ 0.1 / - 0.3				
2.0H	+ 0.6 / - 0.7					+ 0.6 / - 0.7				

CIE Pub.117 Corrected 668.8 lm Total Lamp Luminous Flux.(8log(F/F0) = -1.4)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-08-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.700m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.5V I:0.0430A P:10.00W PF:0.9610 Lamp Flux:668.783x1 lm		
NAME: LED-DL10W-WW-W	TYPE:10W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.025	PROTECTION ANGLE:

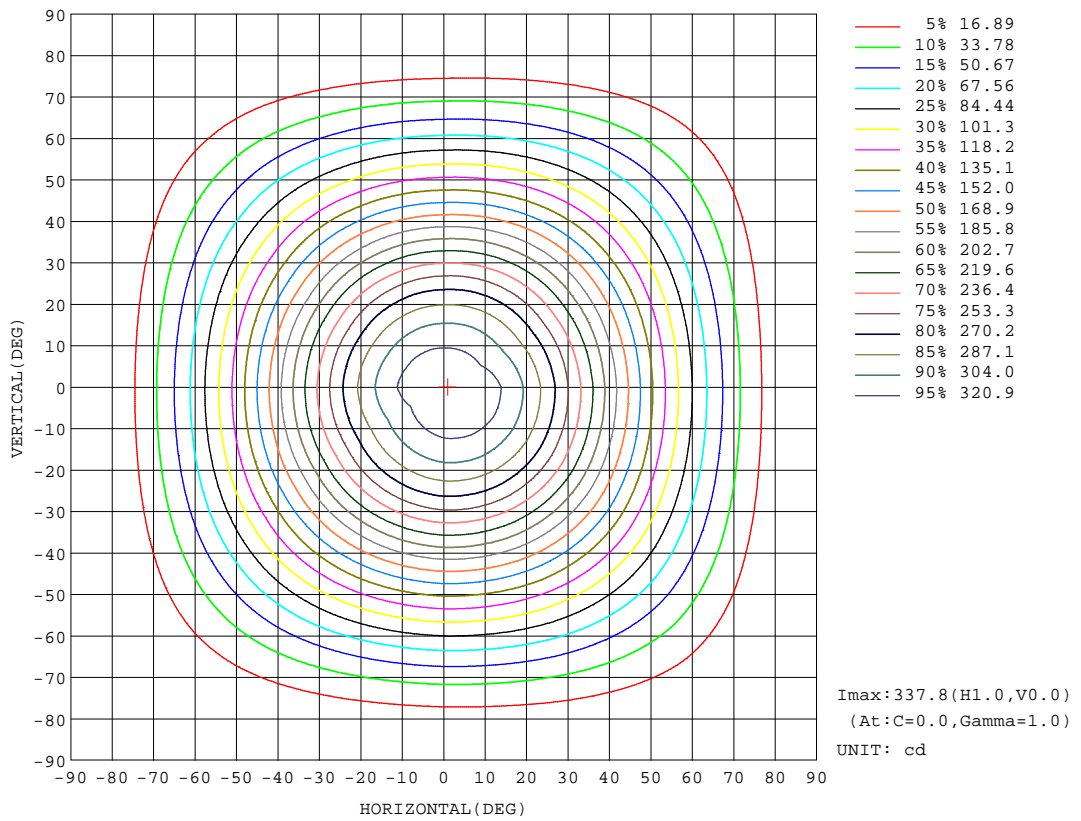
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	64	54	48	64	54	47	62	53	47	41
0.80	74	64	58	73	64	57	72	63	57	51
1.00	82	73	67	81	72	66	79	73	66	59
1.25	89	80	74	88	79	74	85	78	73	67
1.50	94	85	79	92	84	79	89	83	78	71
2.00	100	92	87	98	91	86	95	89	85	78
2.50	103	96	91	101	95	90	97	92	89	81
3.00	106	100	95	104	98	94	100	96	92	84
4.00	109	104	100	107	103	99	103	99	96	88
5.00	111	107	104	109	105	102	104	101	99	90
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:2017-08-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.700m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:240.5V I:0.0430A P:10.00W PF:0.9610 Lamp Flux:668.783x1 lm		
NAME: LED-DL10W-WW-W	TYPE:10W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.025	PROTECTION ANGLE:



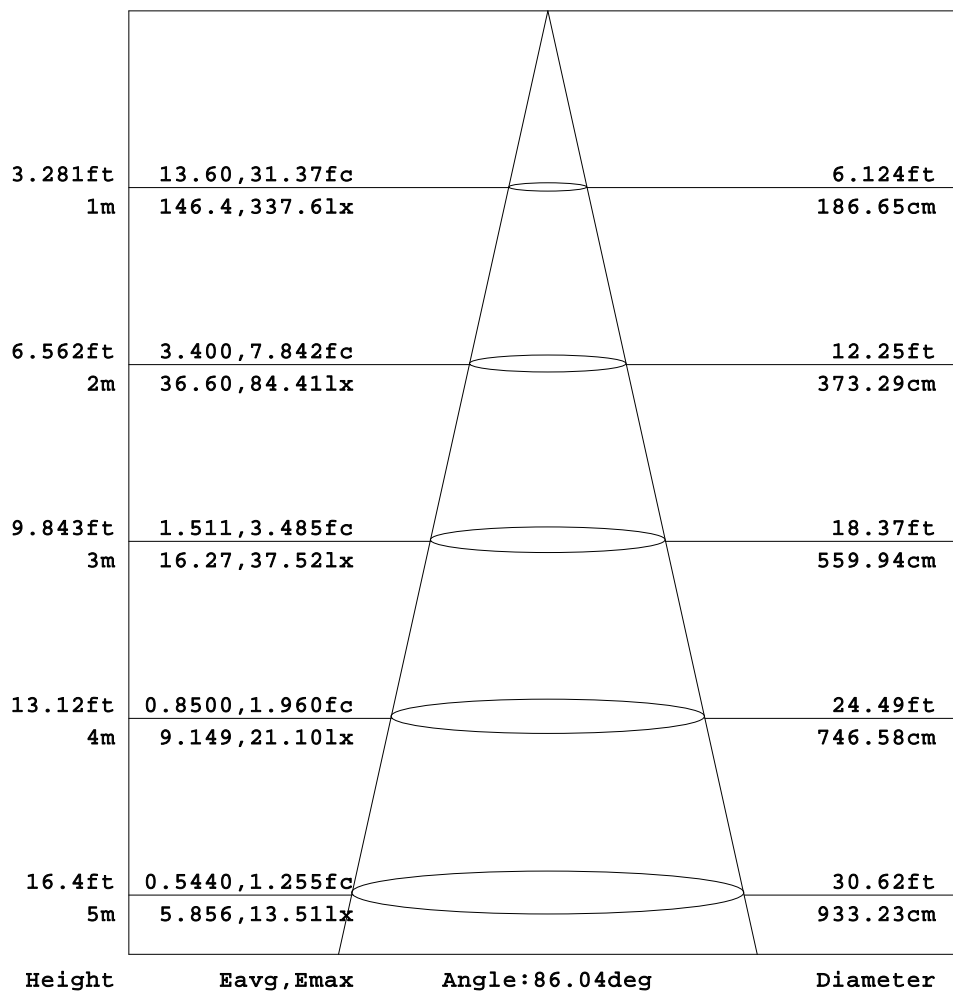
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-08-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.700m [K=1.0000]
 Remarks:

AAI Figure

Test:U:240.5V I:0.0430A P:10.00W PF:0.9610 Lamp Flux:668.783x1 lm		
NAME: LED-DL10W-WW-W	TYPE:10W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.025	PROTECTION ANGLE:

Flux out:428.9 lm



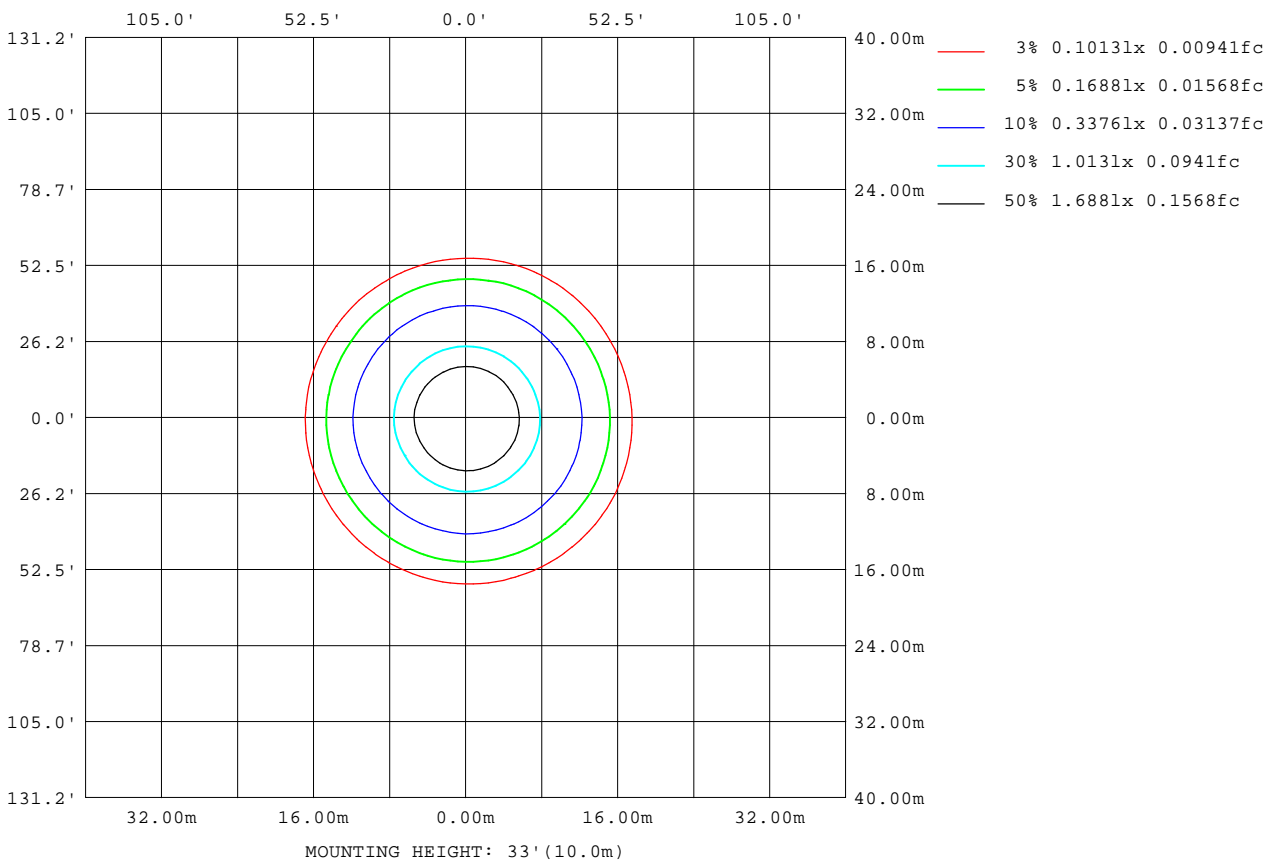
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-08-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.700m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

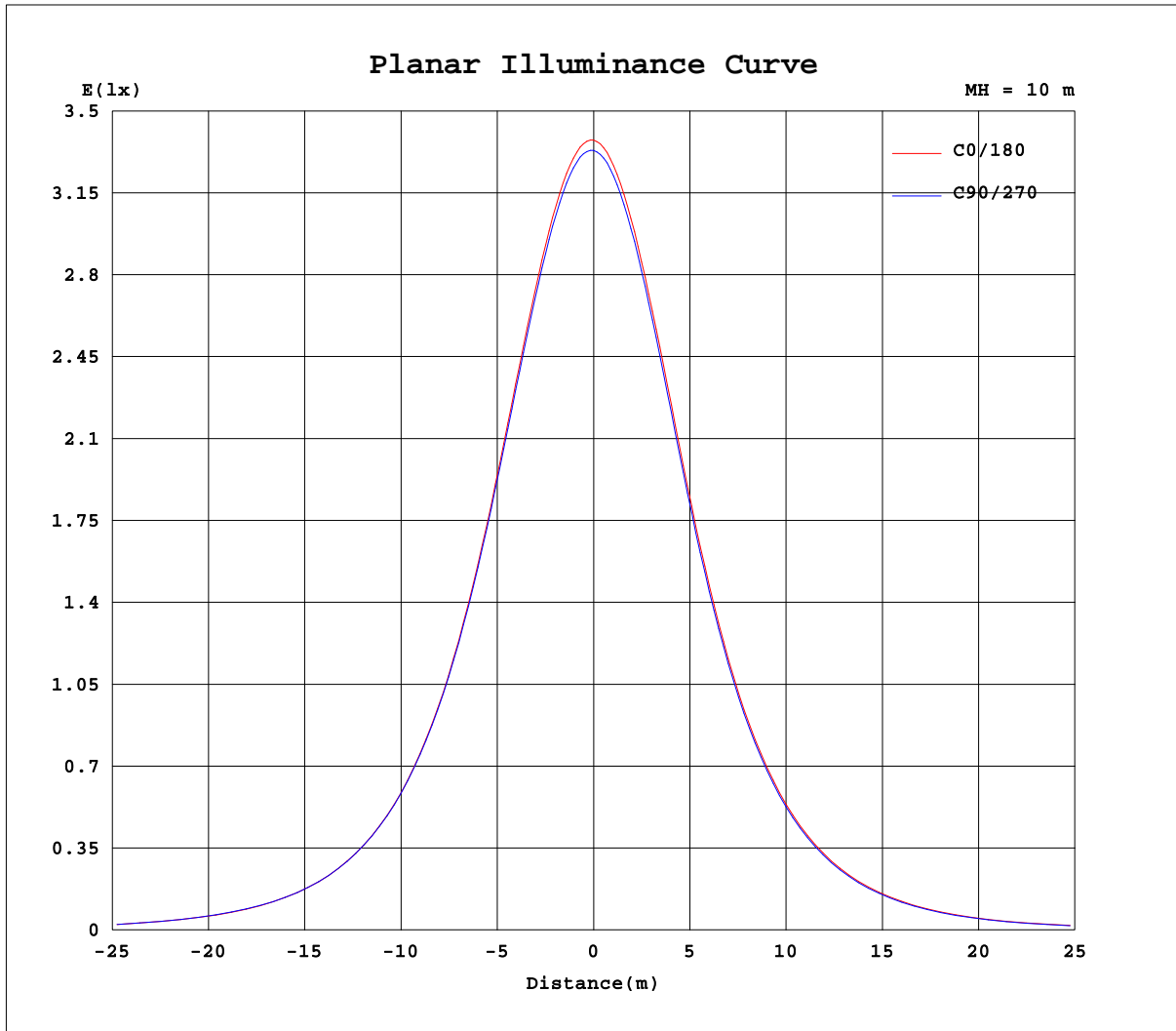
Test:U:240.5V I:0.0430A P:10.00W PF:0.9610 Lamp Flux:668.783x1 lm		
NAME: LED-DL10W-WW-W	TYPE:10W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.025	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-08-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.700m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2017-08-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.700m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:240.5V I:0.0430A P:10.00W PF:0.9610 Lamp Flux:668.783x1 lm		
NAME: LED-DL10W-WW-W	TYPE:10W	WEIGHT:
DIM.:	SPEC.:3000K	SERIAL No.:1
MFR.:	SUR.:0.025	PROTECTION ANGLE:

Table--1 UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	338	336	334	333	332	331	338	336	334	333	332	331						
5	336	335	334	332	330	328	333	331	330	329	329	329						
10	330	329	328	326	322	319	324	321	320	320	321	322						
15	318	318	316	314	310	306	310	306	305	305	307	309						
20	301	302	300	298	293	288	291	287	286	286	289	292						
25	280	281	280	277	271	265	267	262	262	263	267	270						
30	254	256	255	251	245	239	240	235	234	236	240	245						
35	225	228	227	224	217	211	211	206	206	207	212	217						
40	196	199	198	195	188	182	181	177	176	178	183	188						
45	166	169	169	166	160	154	152	148	147	149	154	159						
50	138	141	140	137	132	126	124	120	120	121	126	131						
55	110	113	112	110	105	99.7	97.6	93.8	93.4	95.0	99.6	104						
60	84.3	87.2	86.7	84.6	79.8	75.2	73.0	69.6	69.3	70.8	74.9	79.1						
65	60.7	63.4	62.9	61.1	56.9	52.9	50.7	47.8	47.6	48.9	52.5	56.3						
70	39.8	42.1	41.8	40.3	36.8	33.5	31.2	29.3	29.1	30.2	33.2	36.4						
75	22.0	24.2	24.1	22.9	20.3	17.8	15.6	14.6	14.9	15.5	17.7	19.9						
80	8.94	10.5	9.73	8.80	6.83	5.67	5.38	4.75	5.30	5.93	7.23	8.31						
85	0.16	0.12	0.14	0.13	0.14	1.22	0.49	0.21	1.13	0.20	0.19	0.21						
90	0.15	0.13	0.14	0.13	0.13	0.13	0.15	0.17	0.18	0.16	0.15	0.14						

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2017-08-28

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.700m [K=1.0000]
 Remarks: