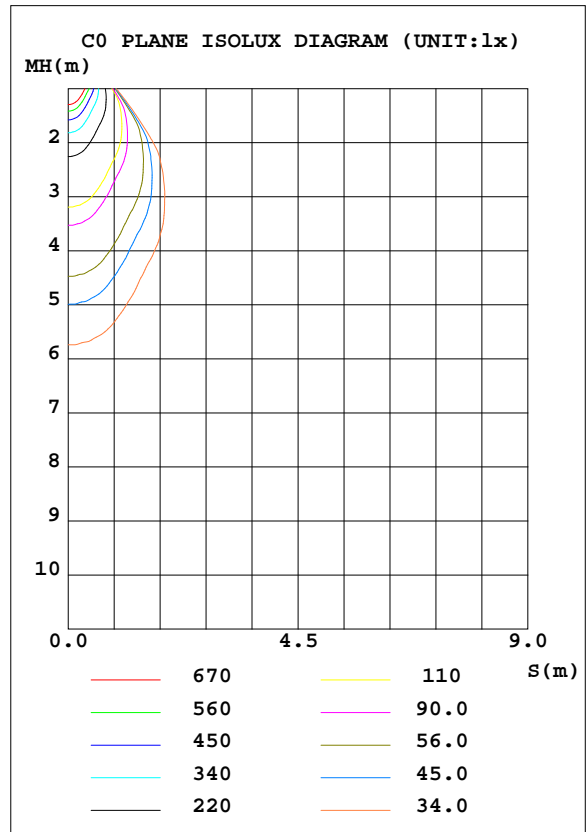
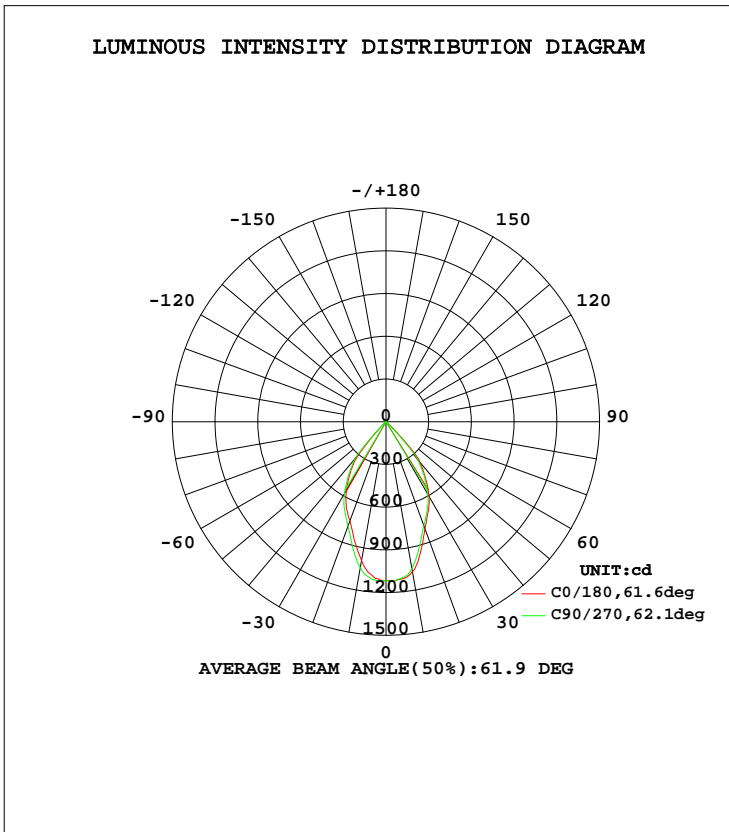


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.9V I:0.0520A P:12.40W PF:0.9790 Lamp Flux:1056.49x1 lm		
NAME: LED-DL13WCOB-CW-B	TYPE:13W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.040	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 85.20 lm/W			
MODEL	LED-DL13WCOB-CW-B	I <sub>max</sub> (cd)	1125	S/MH(C0/180)	0.82
NOMINAL POWER(W)	13	LOR(%)	100.0	S/MH(C90/270)	0.86
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1056.5	η UP, DN(C0-180)	0.0, 49.1
NOMINAL FLUX(lm)	1056.49	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 50.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	240.9	η down(%)	100.0	CIBSE SHR MAX	1.05



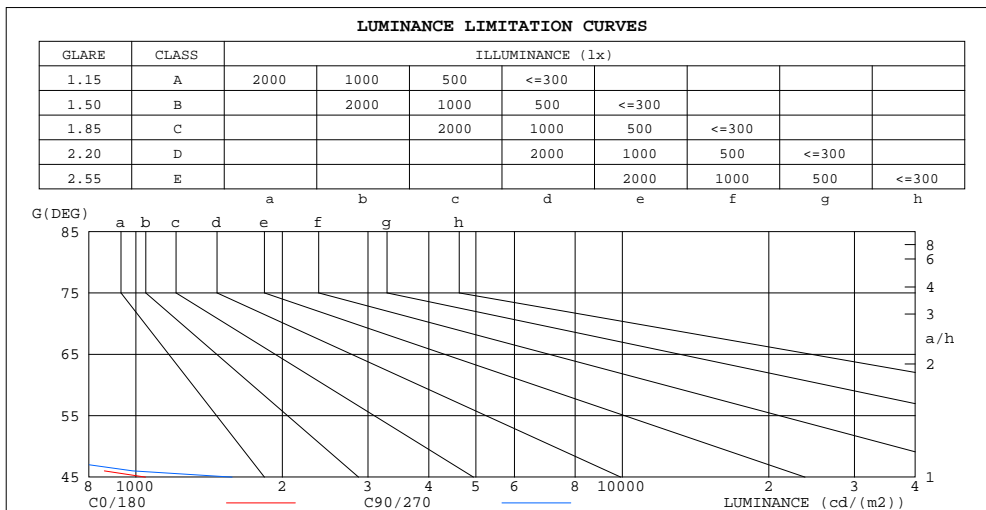
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2020-07-19

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

ZONAL FLUX DIAGRAM  
AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum,lamp
10	990.2	1012	1042	1058	1070	1057	1044	1021	0- 10	103.6	103.6	9.8,9.8
20	740.7	755.0	781.3	794.2	799.2	781.5	777.7	751.1	10- 20	252.3	355.8	33.7,33.7
30	555.1	571.6	584.2	600.6	605.7	589.1	586.6	570.1	20- 30	312.2	668.0	63.2,63.2
40	287.4	318.6	339.5	360.8	369.6	360.8	350.8	319.0	30- 40	287.0	955.0	90.4,90.4
50	10.72	11.14	10.81	12.30	16.30	12.66	10.95	10.88	40- 50	84.02	1039	98.3,98.3
60	7.497	7.277	7.190	6.518	6.763	6.987	6.965	7.190	50- 60	7.527	1047	99.1,99.1
70	4.630	4.840	5.095	6.062	6.832	6.255	5.667	5.038	60- 70	6.968	1054	99.7,99.7
80	0.1227	0.0842	0.2619	0.6031	0.8540	0.6655	0.5420	0.1997	70- 80	2.904	1056	100,100
90	0.0070	0.0070	0.0141	0	0.0070	0.0141	0.0211	0.0211	80- 90	0.0565	1056	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		



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	8	6
80	18	38
75	190	228
70	339	372
65	449	432
60	376	359
55	353	355
50	418	420
45	1047	1577

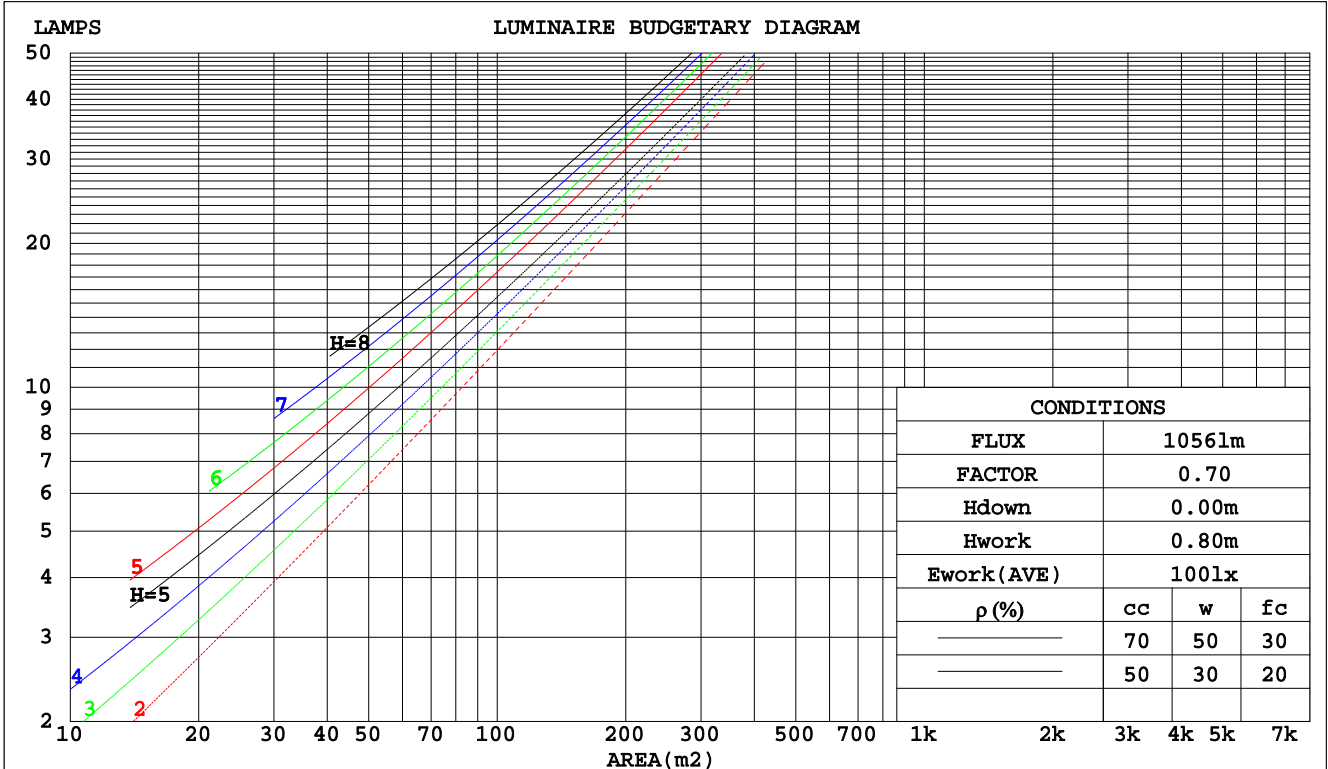
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2020-07-19

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
Humidity:65.0%  
Test Distance:10.237m [K=1.0000]  
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.9V I:0.0520A P:12.40W PF:0.9790 Lamp Flux:1056.49x1 lm		
NAME: LED-DL13WCOB-CW-B	TYPE:13W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.040	PROTECTION ANGLE:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																0
pfc	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	.00
1.0	1.10	1.08	1.06	1.08	1.06	1.04	1.04	1.02	1.01	1.00	.99	.98	.97	.96	.95	.93
2.0	1.02	.98	.95	1.01	.97	.94	.97	.94	.91	.94	.92	.89	.92	.89	.88	.86
3.0	.95	.90	.86	.94	.89	.85	.91	.87	.84	.88	.85	.82	.86	.83	.81	.79
4.0	.88	.83	.78	.87	.82	.78	.85	.80	.77	.83	.79	.76	.81	.78	.75	.73
5.0	.82	.76	.72	.81	.76	.71	.80	.75	.71	.78	.73	.70	.76	.72	.69	.68
6.0	.77	.71	.66	.76	.70	.66	.75	.69	.65	.73	.68	.65	.72	.68	.65	.63
7.0	.72	.66	.61	.71	.65	.61	.70	.65	.61	.69	.64	.60	.68	.63	.60	.59
8.0	.67	.61	.57	.67	.61	.57	.66	.60	.57	.65	.60	.56	.64	.59	.56	.55
9.0	.63	.57	.53	.63	.57	.53	.62	.57	.53	.61	.56	.53	.60	.56	.52	.51
10.0	.60	.54	.50	.59	.54	.50	.58	.53	.49	.58	.53	.49	.57	.52	.49	.48



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2020-07-19

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 10.237m [K=1.0000]  
 Remarks:

WEC AND CCEC

Test:U:240.9V I:0.0520A P:12.40W PF:0.9790 Lamp Flux:1056.49x1 lm		
NAME: LED-DL13WCOB-CW-B	TYPE:13W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.040	PROTECTION ANGLE:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.185	.105	.033	.178	.102	.032	.165	.095	.030	.154	.089	.028	.143	.083	.027	
2.0	.178	.098	.030	.172	.095	.029	.162	.090	.028	.152	.085	.027	.143	.081	.025	
3.0	.170	.091	.027	.165	.089	.027	.156	.085	.026	.148	.081	.025	.140	.077	.024	
4.0	.162	.084	.025	.158	.083	.024	.150	.080	.024	.143	.077	.023	.136	.074	.023	
5.0	.155	.079	.023	.151	.078	.023	.144	.075	.022	.138	.073	.022	.132	.070	.021	
6.0	.148	.074	.021	.145	.073	.021	.139	.071	.021	.133	.069	.020	.128	.067	.020	
7.0	.141	.070	.020	.139	.069	.020	.133	.067	.019	.128	.066	.019	.123	.064	.019	
8.0	.135	.066	.019	.133	.065	.018	.128	.064	.018	.123	.063	.018	.119	.061	.018	
9.0	.130	.063	.018	.127	.062	.017	.123	.061	.017	.119	.060	.017	.115	.058	.017	
10.0	.124	.060	.017	.122	.059	.016	.118	.058	.016	.115	.057	.016	.111	.056	.016	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	.172	.157	.144	.147	.135	.124	.100	.093	.086	.058	.054	.050	.019	.017	.016	
2.0	.157	.132	.112	.135	.114	.097	.092	.079	.067	.053	.046	.040	.017	.015	.013	
3.0	.145	.114	.088	.125	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010	
4.0	.135	.099	.071	.116	.086	.062	.080	.060	.044	.046	.035	.026	.015	.011	.008	
5.0	.127	.088	.058	.109	.076	.051	.075	.053	.036	.044	.031	.021	.014	.010	.007	
6.0	.120	.078	.049	.103	.068	.042	.071	.048	.030	.041	.028	.018	.013	.009	.006	
7.0	.114	.071	.041	.098	.062	.036	.068	.043	.025	.039	.025	.015	.013	.008	.005	
8.0	.108	.065	.035	.093	.056	.031	.064	.040	.022	.037	.023	.013	.012	.008	.004	
9.0	.103	.060	.030	.089	.052	.027	.062	.036	.019	.036	.022	.011	.012	.007	.004	
10.0	.099	.055	.027	.085	.048	.023	.059	.034	.017	.034	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2020-07-19

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

Uncorrected UGR Table

Test:U:240.9V I:0.0520A P:12.40W PF:0.9790 Lamp Flux:1056.49x1 lm										
NAME: LED-DL13WCOB-CW-B					TYPE:13W			WEIGHT:		
DIM.:					SPEC.:5700K			SERIAL No.:		
MFR.: EVERFINE					SUR.:0.040			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	13.2	14.2	13.4	14.4	14.6	13.6	14.6	13.9	14.8	15.0
3H	13.1	14.0	13.3	14.2	14.4	13.5	14.4	13.8	14.6	14.8
4H	13.0	13.9	13.3	14.1	14.3	13.4	14.3	13.7	14.5	14.7
6H	12.9	13.7	13.2	14.0	14.2	13.3	14.2	13.6	14.4	14.6
8H	12.9	13.6	13.2	13.9	14.2	13.3	14.1	13.6	14.3	14.6
12H	12.8	13.6	13.1	13.8	14.1	13.3	14.0	13.6	14.3	14.5
4H 2H	13.0	13.8	13.2	14.1	14.3	13.4	14.3	13.7	14.5	14.7
3H	12.8	13.6	13.2	13.9	14.1	13.3	14.0	13.6	14.3	14.6
4H	12.8	13.4	13.1	13.7	14.1	13.2	13.9	13.5	14.2	14.5
6H	12.7	13.3	13.1	13.6	14.0	13.1	13.7	13.5	14.0	14.4
8H	12.6	13.2	13.0	13.5	13.9	13.1	13.6	13.5	14.0	14.3
12H	12.6	13.1	13.0	13.5	13.8	13.0	13.5	13.4	13.9	14.3
8H 4H	12.6	13.2	13.0	13.5	13.9	13.1	13.6	13.5	14.0	14.3
6H	12.5	13.0	13.0	13.4	13.8	13.0	13.4	13.4	13.8	14.2
8H	12.5	12.9	12.9	13.3	13.7	12.9	13.3	13.4	13.7	14.2
12H	12.4	12.8	12.9	13.2	13.7	12.9	13.2	13.3	13.6	14.1
12H 4H	12.6	13.1	13.0	13.5	13.8	13.0	13.5	13.4	13.9	14.3
6H	12.5	12.9	12.9	13.3	13.7	12.9	13.3	13.4	13.7	14.2
8H	12.4	12.8	12.9	13.2	13.7	12.9	13.2	13.3	13.6	14.1
Variations with the observer position at spacings:										
S = 1.0H	+ 3.0 / -12.3					+ 2.9 / -12.1				
1.5H	+ 5.7 / -11.9					+ 5.6 / -11.9				
2.0H	+ 3.5 / - 1.5					+ 5.6 / - 1.8				

CIE Pub.117 Corrected 1056 lm Total Lamp Luminous Flux.(8log(F/F0) = 0.2)

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2020-07-19

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.9V I:0.0520A P:12.40W PF:0.9790 Lamp Flux:1056.49x1 lm		
NAME: LED-DL13WCOB-CW-B	TYPE:13W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.040	PROTECTION ANGLE:

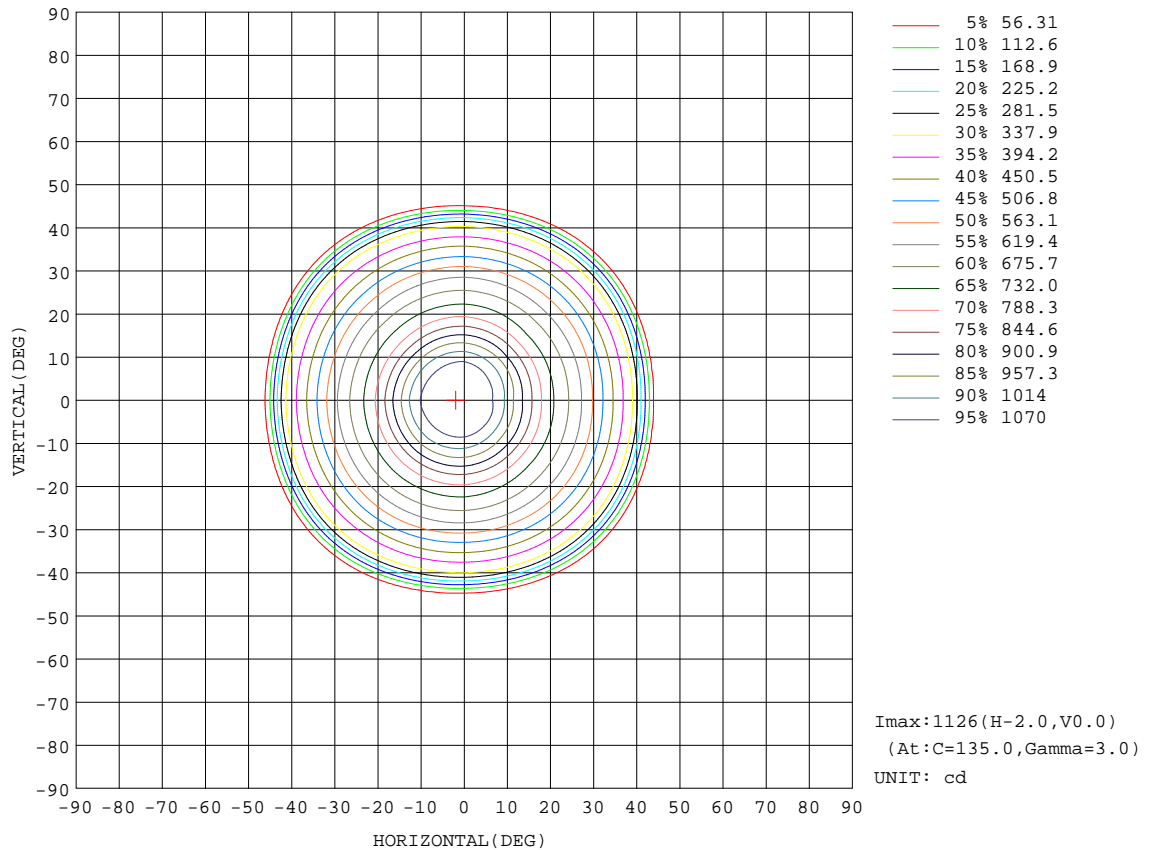
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	86	79	75	85	79	75	84	78	75	71
0.80	93	87	83	93	87	83	91	86	83	79
1.00	98	92	89	97	92	88	96	92	88	84
1.25	102	97	93	101	96	93	99	95	92	88
1.50	105	100	97	104	100	96	102	98	95	91
2.00	108	104	101	107	103	100	104	101	98	93
2.50	110	106	103	108	105	102	105	102	100	94
3.00	111	108	105	110	107	104	106	104	102	95
4.00	114	111	108	111	109	107	108	106	104	97
5.00	115	112	111	113	111	109	109	107	106	98
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2020-07-19

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

**ISOCANDELA DIAGRAM**

Test:U:240.9V I:0.0520A P:12.40W PF:0.9790 Lamp Flux:1056.49x1 lm		
NAME: LED-DL13WCOB-CW-B	TYPE:13W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.040	PROTECTION ANGLE:

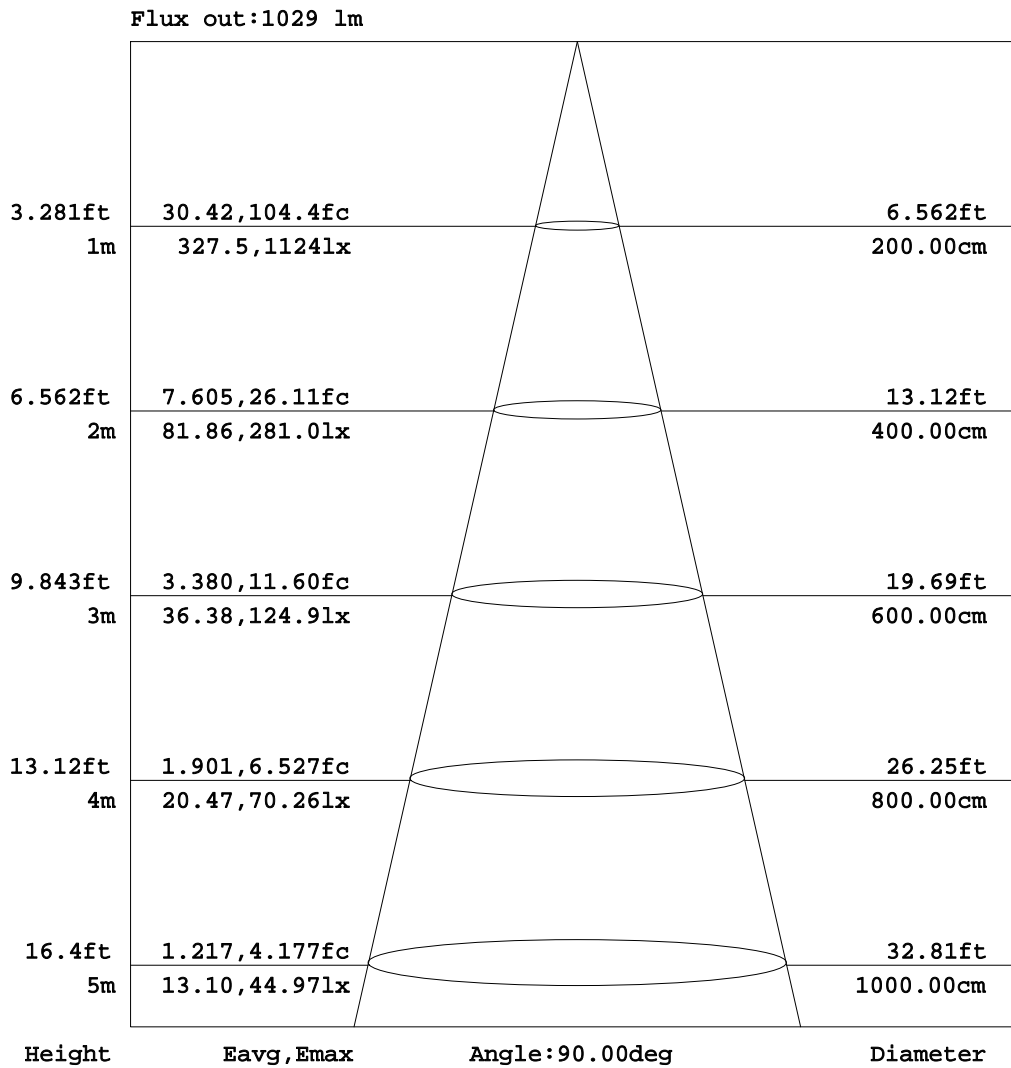


C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2020-07-19

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

AAI Figure

Test:U:240.9V I:0.0520A P:12.40W PF:0.9790 Lamp Flux:1056.49x1 lm		
NAME: LED-DL13WCOB-CW-B	TYPE:13W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.040	PROTECTION ANGLE:



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

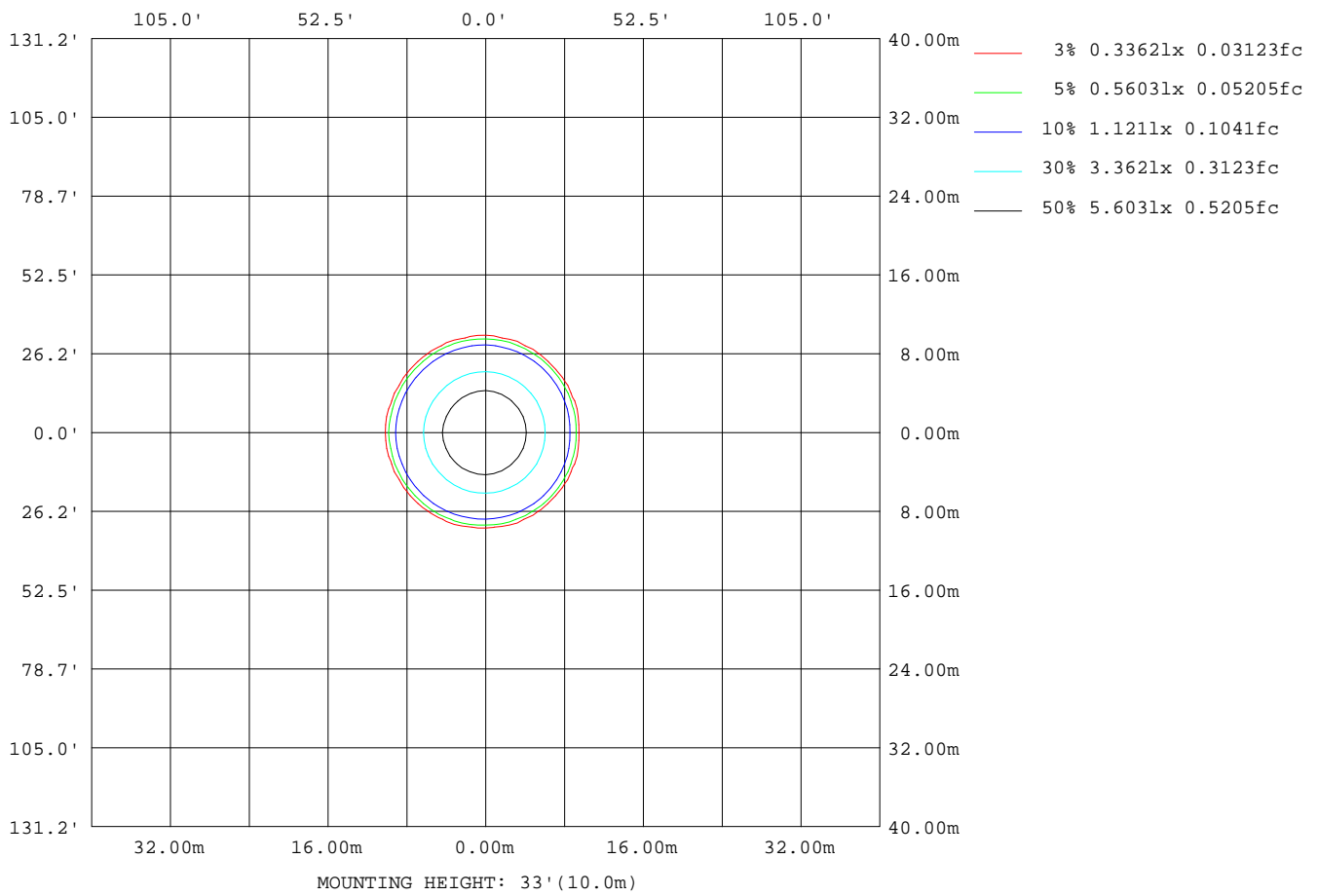
C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2020-07-19

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:



**ISOLUX DIAGRAM**

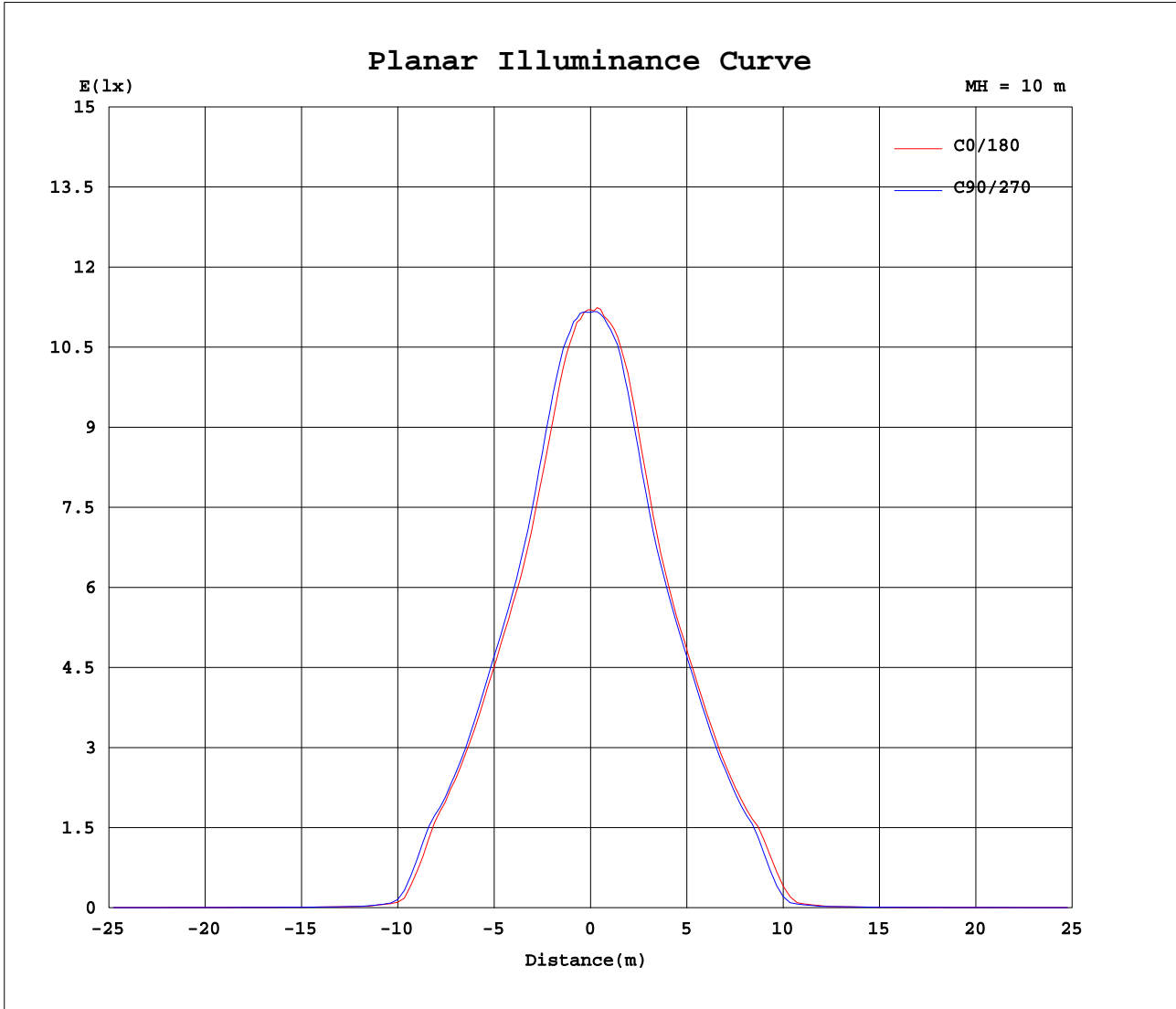
Test:U:240.9V I:0.0520A P:12.40W PF:0.9790 Lamp Flux:1056.49x1 lm		
NAME: LED-DL13WCOB-CW-B	TYPE:13W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.040	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2020-07-19

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: DAMIN  
 Test Date: 2020-07-19

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 10.237m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:240.9V I:0.0520A P:12.40W PF:0.9790 Lamp Flux:1056.49x1 lm		
NAME: LED-DL13WCOB-CW-B	TYPE:13W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:
MFR.: EVERFINE	SUR.:0.040	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG)\ γ (DEG)	0	45	90	135	180	225	270	315										
0	1117	1117	1117	1117	1117	1117	1117	1117										
5	1086	1101	1112	1113	1111	1112	1107	1101										
10	990	1012	1042	1058	1070	1057	1044	1021										
15	861	879	911	937	943	921	907	881										
20	741	755	781	794	799	781	778	751										
25	660	669	686	696	700	687	685	666										
30	555	572	584	601	606	589	587	570										
35	437	450	459	478	486	473	470	446										
40	287	319	340	361	370	361	351	319										
45	29.5	36.3	44.7	78.4	115	81.4	59.0	35.1										
50	10.7	11.1	10.8	12.3	16.3	12.7	10.9	10.9										
55	8.08	8.38	8.16	7.77	7.86	8.05	8.03	8.18										
60	7.50	7.28	7.19	6.52	6.76	6.99	6.97	7.19										
65	7.57	7.36	7.32	7.15	7.23	7.42	7.65	7.58										
70	4.63	4.84	5.10	6.06	6.83	6.26	5.67	5.04										
75	1.97	2.12	2.36	2.98	3.41	3.19	2.91	2.34										
80	0.12	0.08	0.26	0.60	0.85	0.67	0.54	0.20										
85	0.03	0.01	0.02	0.00	0.01	0.04	0.01	0.04										
90	0.01	0.01	0.01	0.00	0.01	0.01	0.02	0.02										

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2020-07-19

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:10.237m [K=1.0000]  
 Remarks: