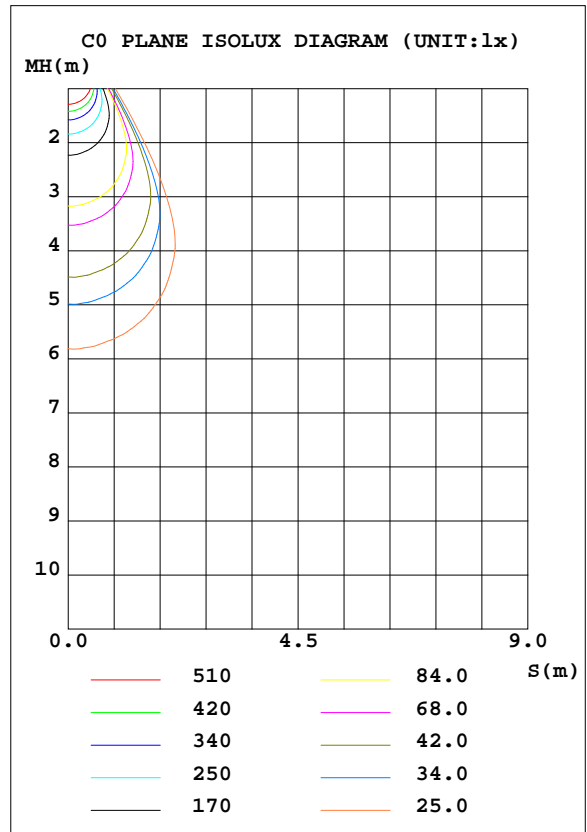
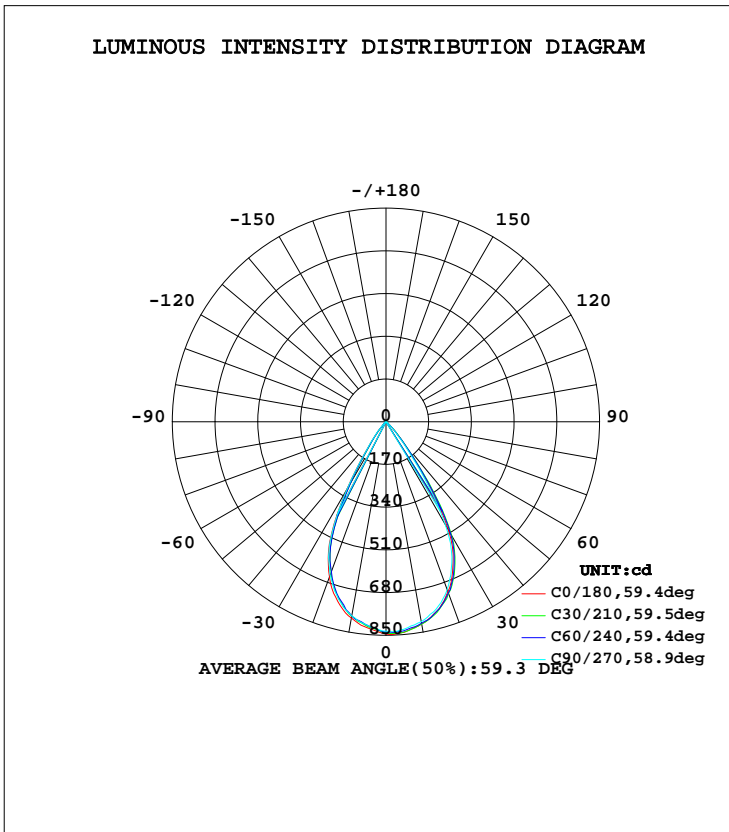


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.5V I:0.0450A P:9.990W PF:0.9580 Lamp Flux:708.283x1 lm		
NAME: DL10WCOB-G-NW	TYPE:10W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.025	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 70.90 lm/W			
MODEL	DL10WCOB-G-NW	I <sub>max</sub> (cd)	847.0	S/MH(C0/180)	0.92
NOMINAL POWER(W)	10	LOR(%)	100.0	S/MH(C90/270)	0.91
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	708.28	η UP, DN(C0-180)	0.0, 54.1
NOMINAL FLUX(lm)	708.283	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 45.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	230.5	η down(%)	100.0	CIBSE SHR MAX	0.90



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2018-01-24

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.600m [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	816.2	815.8	807.7	790.8	793.1	785.4	784.4	792.8	0- 10	77.80	77.80	11,11
20	720.3	726.2	711.5	673.6	657.4	636.9	649.8	683.3	10- 20	210.4	288.2	40.7,40.7
30	497.3	518.7	471.9	380.9	313.7	284.1	314.0	404.7	20- 30	256.9	545.1	77,77
40	103.9	110.3	91.81	63.78	47.77	43.67	52.81	75.32	30- 40	125.1	670.2	94.6,94.6
50	13.26	14.27	12.25	10.57	9.742	9.557	10.16	11.70	40- 50	23.52	693.7	97.9,97.9
60	6.889	7.029	6.563	5.931	5.525	5.414	5.354	6.099	50- 60	7.452	701.2	99,99
70	3.651	3.842	3.301	3.020	2.983	2.972	2.353	3.070	60- 70	4.466	705.6	99.6,99.6
80	1.722	1.855	1.366	0.9123	0.6112	0.5735	0.7259	1.261	70- 80	2.294	707.9	99.9,99.9
90	0.0618	0.0557	0.0371	0.0371	0.0495	0.0464	0.0433	0.0371	80- 90	0.3716	708.3	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		

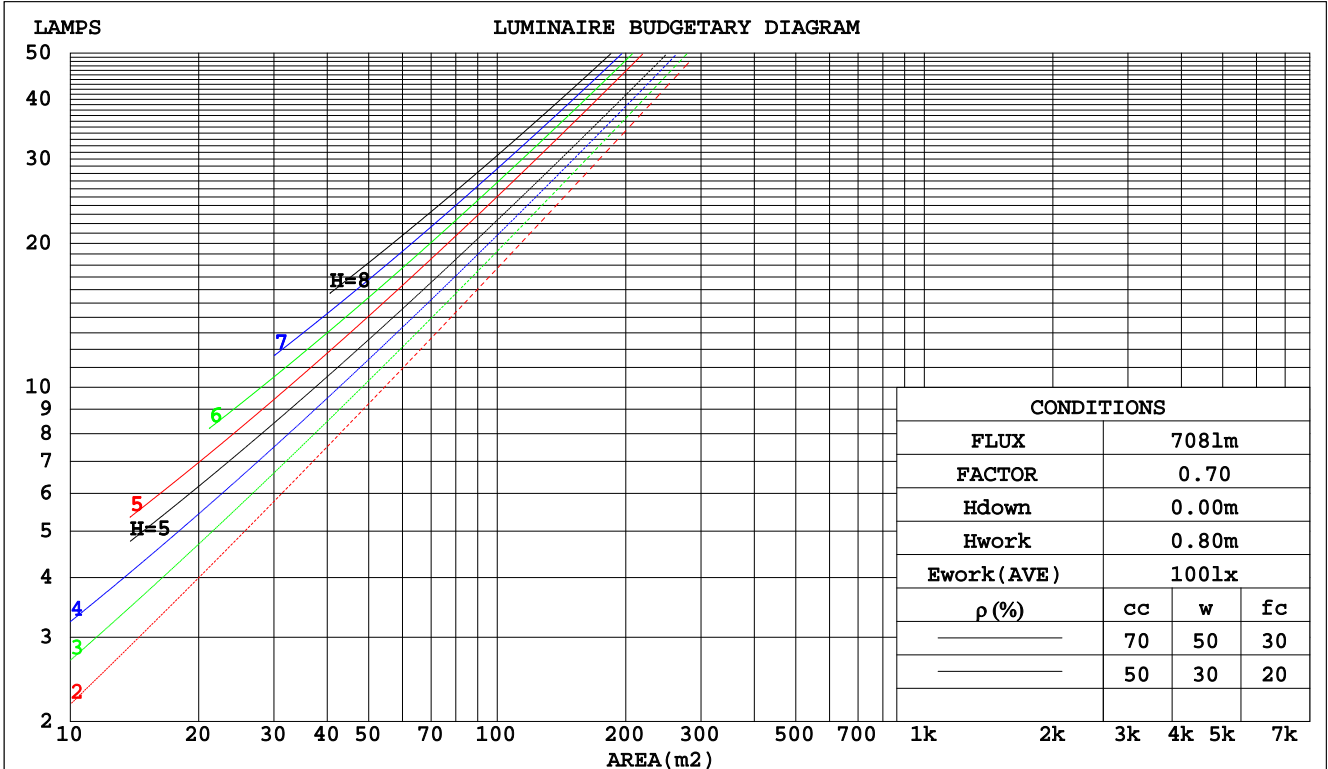
C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2018-01-24

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.600m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.5V I:0.0450A P:9.990W PF:0.9580 Lamp Flux:708.283x1 lm		
NAME: DL10WCOB-G-NW	TYPE:10W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.025	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																
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	1.11	1.08	1.06	1.09	1.07	1.05	1.05	1.03	1.01	1.01	.00	.98	.98	.96	.95	.94
2.0	1.03	.99	.96	1.02	.98	.95	.98	.96	.93	.95	.93	.91	.93	.91	.89	.87
3.0	.97	.92	.88	.95	.91	.87	.93	.89	.86	.90	.87	.84	.88	.85	.83	.82
4.0	.91	.85	.81	.89	.84	.81	.87	.83	.80	.85	.82	.79	.83	.80	.78	.76
5.0	.85	.79	.75	.84	.79	.75	.82	.78	.74	.81	.77	.74	.79	.76	.73	.71
6.0	.80	.74	.70	.79	.74	.70	.78	.73	.69	.76	.72	.69	.75	.71	.68	.67
7.0	.75	.70	.66	.75	.69	.65	.74	.69	.65	.72	.68	.65	.71	.67	.64	.63
8.0	.71	.66	.62	.71	.65	.61	.70	.65	.61	.69	.64	.61	.68	.64	.61	.59
9.0	.68	.62	.58	.67	.62	.58	.66	.61	.58	.65	.61	.57	.64	.60	.57	.56
10.0	.64	.58	.55	.64	.58	.55	.63	.58	.54	.62	.57	.54	.61	.57	.54	.53



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2018-01-24

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.600m [K=1.0000]  
 Remarks:

WEC AND CCEC

Test:U:230.5V I:0.0450A P:9.990W PF:0.9580 Lamp Flux:708.283x1 lm									
NAME: DL10WCOB-G-NW					TYPE:10W			WEIGHT:	
DIM.:					SPEC.:4000K			SERIAL No.:	
MFR.:					SUR.:0.025			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	.176	.100	.032	.169	.096	.031	.156	.090	.029	.145	.083	.027	.134	.078	.025	
2.0	.167	.092	.028	.162	.089	.027	.151	.084	.026	.141	.079	.025	.132	.075	.024	
3.0	.159	.085	.025	.154	.083	.025	.145	.079	.024	.137	.075	.023	.129	.072	.022	
4.0	.151	.079	.023	.147	.077	.023	.140	.074	.022	.132	.071	.021	.126	.068	.021	
5.0	.144	.073	.021	.141	.072	.021	.134	.070	.021	.128	.067	.020	.122	.065	.020	
6.0	.138	.069	.020	.135	.068	.020	.129	.066	.019	.123	.064	.019	.118	.062	.018	
7.0	.132	.065	.018	.129	.064	.018	.124	.062	.018	.119	.061	.018	.114	.059	.017	
8.0	.126	.062	.017	.124	.061	.017	.119	.059	.017	.114	.058	.017	.110	.057	.016	
9.0	.121	.058	.016	.119	.058	.016	.114	.057	.016	.110	.055	.016	.107	.054	.016	
10.0	.116	.056	.015	.114	.055	.015	.110	.054	.015	.107	.053	.015	.103	.052	.015	

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	.171	.157	.145	.146	.135	.125	.100	.093	.086	.058	.054	.050	.018	.017	.016	
2.0	.156	.133	.113	.133	.114	.098	.091	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.143	.114	.090	.123	.098	.078	.084	.068	.055	.049	.040	.032	.016	.013	.011	
4.0	.133	.099	.073	.114	.085	.063	.078	.059	.045	.045	.035	.026	.015	.011	.009	
5.0	.124	.087	.060	.106	.075	.052	.073	.053	.037	.042	.031	.022	.014	.010	.007	
6.0	.117	.078	.050	.100	.067	.044	.069	.047	.031	.040	.028	.018	.013	.009	.006	
7.0	.110	.070	.042	.095	.061	.037	.065	.043	.026	.038	.025	.016	.012	.008	.005	
8.0	.104	.064	.036	.090	.056	.032	.062	.039	.022	.036	.023	.013	.012	.008	.004	
9.0	.099	.059	.031	.086	.051	.027	.059	.036	.019	.035	.021	.012	.011	.007	.004	
10.0	.095	.054	.028	.082	.047	.024	.057	.033	.017	.033	.020	.010	.011	.006	.003	

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2018-01-24

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.600m [K=1.0000]  
 Remarks:

Uncorrected UGR Table

Test:U:230.5V I:0.0450A P:9.990W PF:0.9580 Lamp Flux:708.283x1 lm										
NAME: DL10WCOB-G-NW					TYPE:10W			WEIGHT:		
DIM.:					SPEC.:4000K			SERIAL No.:		
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	24.4	25.4	24.7	25.5	25.7	24.0	24.9	24.2	25.1	25.3
3H	24.3	25.2	24.6	25.4	25.6	23.9	24.7	24.2	24.9	25.1
4H	24.3	25.1	24.6	25.3	25.5	23.8	24.6	24.1	24.9	25.1
6H	24.2	25.0	24.5	25.2	25.5	23.8	24.5	24.1	24.8	25.0
8H	24.2	24.9	24.5	25.2	25.4	23.7	24.5	24.0	24.7	25.0
12H	24.1	24.8	24.5	25.1	25.4	23.7	24.4	24.0	24.7	24.9
4H 2H	24.2	25.0	24.5	25.2	25.5	23.8	24.6	24.1	24.8	25.0
3H	24.1	24.8	24.4	25.1	25.4	23.7	24.4	24.0	24.7	24.9
4H	24.1	24.7	24.4	25.0	25.3	23.7	24.3	24.0	24.6	24.9
6H	24.0	24.6	24.4	24.9	25.3	23.6	24.2	24.0	24.5	24.8
8H	24.0	24.5	24.4	24.9	25.3	23.6	24.1	24.0	24.4	24.8
12H	24.0	24.4	24.4	24.8	25.2	23.5	24.0	23.9	24.4	24.8
8H 4H	24.0	24.5	24.4	24.8	25.2	23.5	24.1	23.9	24.4	24.8
6H	24.0	24.4	24.4	24.8	25.2	23.5	23.9	23.9	24.3	24.8
8H	23.9	24.3	24.4	24.7	25.2	23.5	23.9	24.0	24.3	24.7
12H	23.9	24.2	24.4	24.7	25.1	23.5	23.8	23.9	24.2	24.7
12H 4H	23.9	24.4	24.3	24.8	25.2	23.5	24.0	23.9	24.3	24.7
6H	23.9	24.3	24.4	24.7	25.1	23.5	23.9	23.9	24.3	24.7
8H	23.9	24.2	24.4	24.7	25.1	23.5	23.8	23.9	24.2	24.7
Variations with the observer position at spacings:										
S = 1.0H	+ 3.3 / - 5.9					+ 2.9 / - 5.7				
1.5H	+ 5.6 / - 5.6					+ 5.3 / - 5.4				
2.0H	+ 4.0 / - 1.4					+ 3.1 / - 1.3				

CIE Pub.117 Corrected 708.3 lm Total Lamp Luminous Flux. (8log(F/F0) = -1.2)

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2018-01-24

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.600m [K=1.0000]  
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.5V I:0.0450A P:9.990W PF:0.9580 Lamp Flux:708.283x1 lm		
NAME: DL10WCOB-G-NW	TYPE:10W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.025	PROTECTION ANGLE:

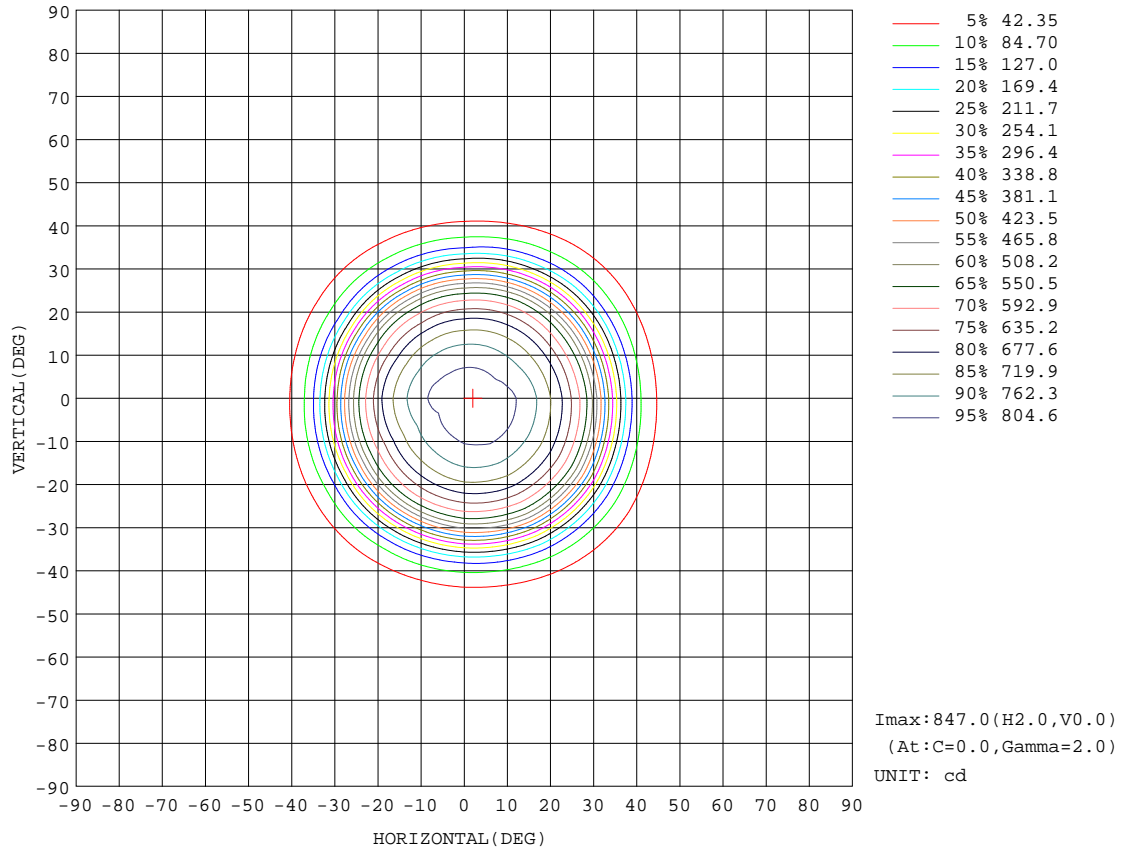
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	88	82	78	88	82	78	87	81	78	75
0.80	96	90	86	95	89	86	94	89	86	82
1.00	100	94	91	99	94	90	97	94	90	86
1.25	104	99	95	103	98	95	101	97	94	90
1.50	106	102	98	105	101	98	103	99	97	92
2.00	109	105	102	107	104	101	105	102	99	94
2.50	110	107	104	109	105	103	106	103	101	95
3.00	112	109	106	110	107	105	107	105	103	96
4.00	114	111	109	112	110	108	108	106	105	98
5.00	115	113	111	113	111	110	109	108	107	99
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:2018-01-24

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.600m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

Test:U:230.5V I:0.0450A P:9.990W PF:0.9580 Lamp Flux:708.283x1 lm		
NAME: DL10WCOB-G-NW	TYPE:10W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.025	PROTECTION ANGLE:

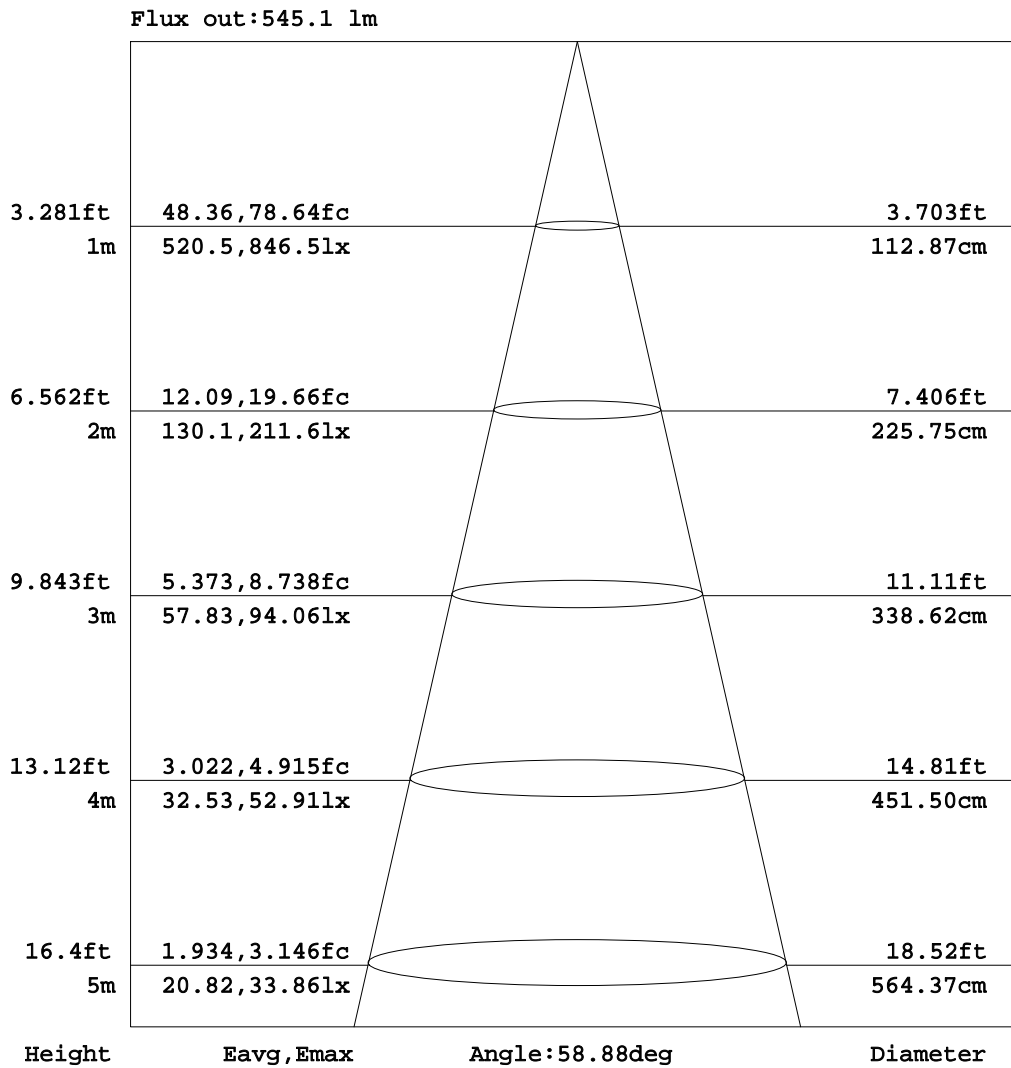


C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2018-01-24

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.600m [K=1.0000]  
 Remarks:

AAI Figure

Test:U:230.5V I:0.0450A P:9.990W PF:0.9580 Lamp Flux:708.283x1 lm		
NAME: DL10WCOB-G-NW	TYPE:10W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.025	PROTECTION ANGLE:



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

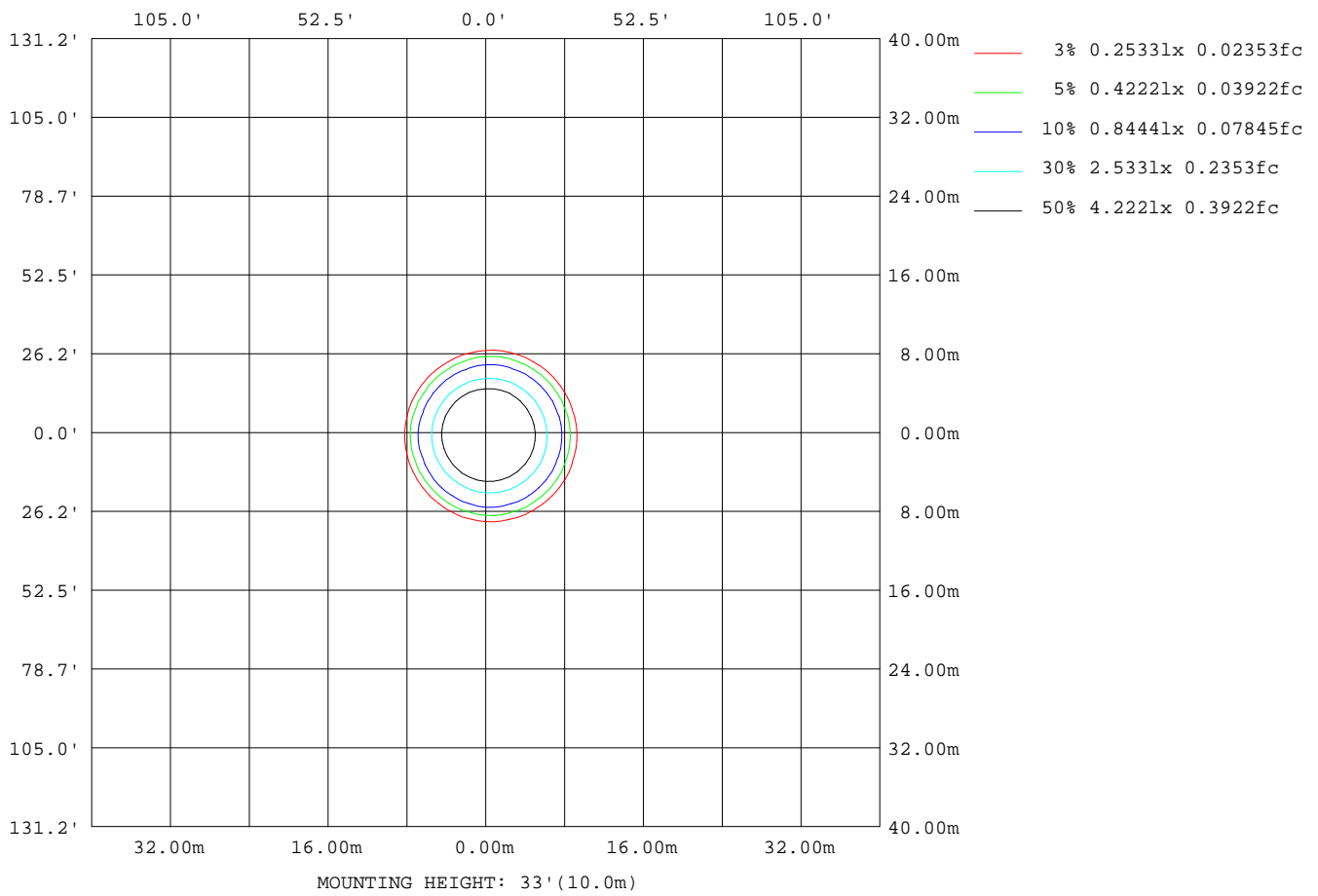
C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2018-01-24

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.600m [K=1.0000]  
 Remarks:



**ISOLUX DIAGRAM**

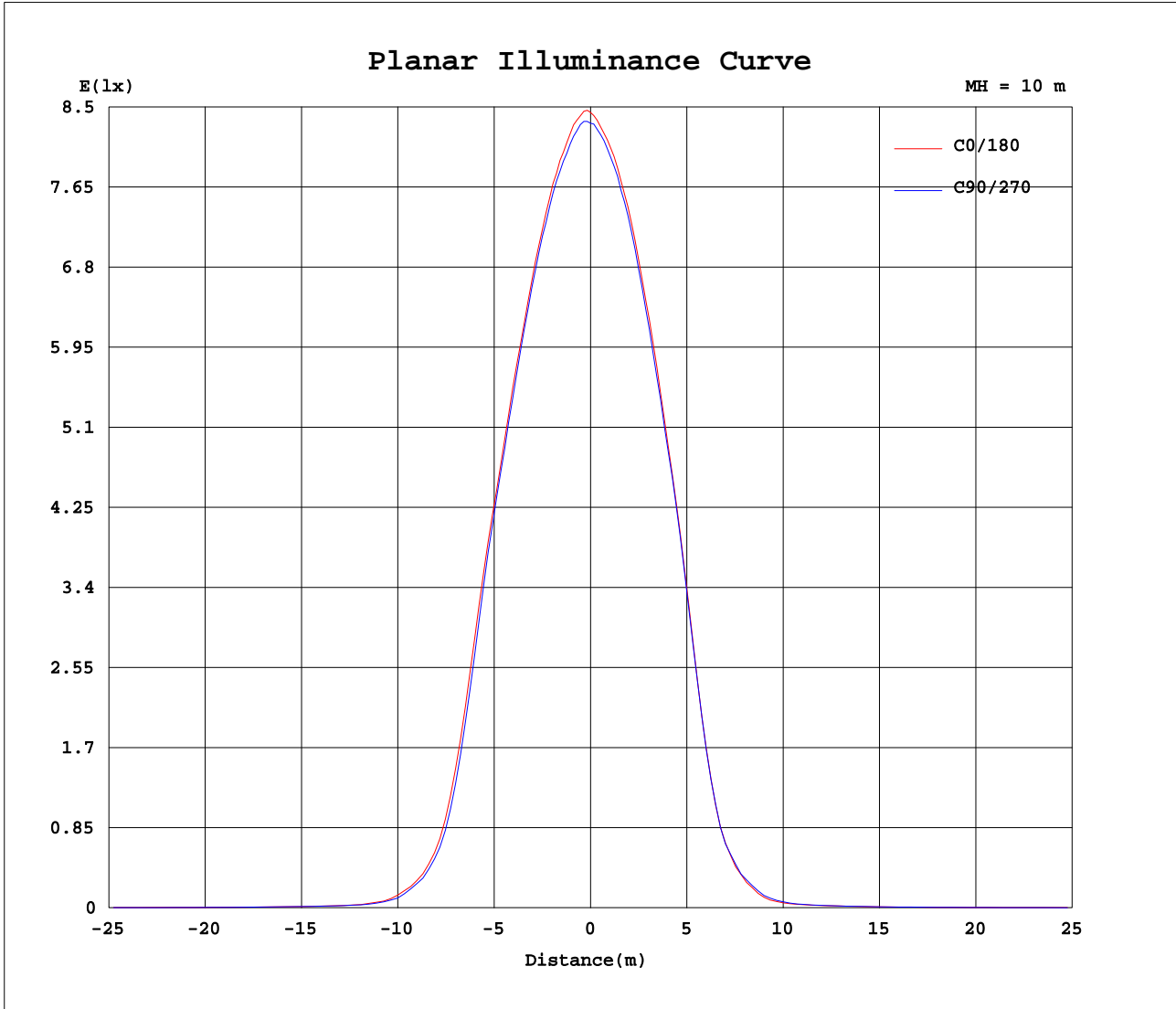
Test:U:230.5V I:0.0450A P:9.990W PF:0.9580 Lamp Flux:708.283x1 lm		
NAME: DL10WCOB-G-NW	TYPE:10W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:
MFR.:	SUR.:0.025	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2018-01-24

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity:65.0%  
 Test Distance:9.600m [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: 2018-01-24

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.276  
 Humidity: 65.0%  
 Test Distance: 9.600m [K=1.0000]  
 Remarks:

