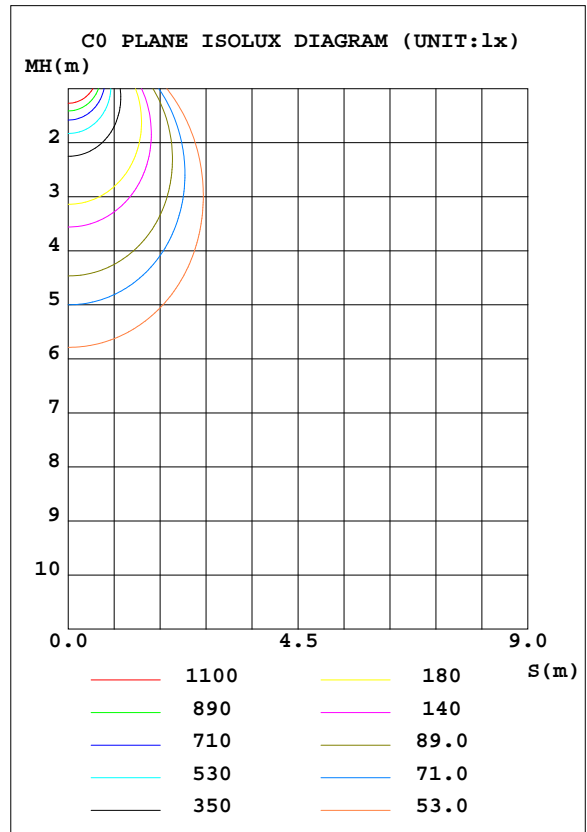
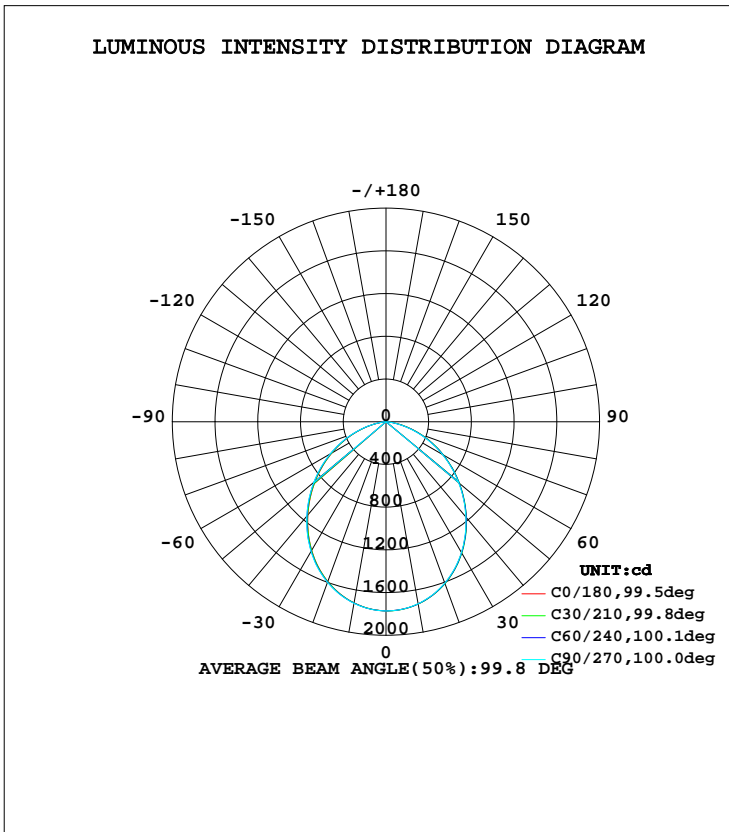


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:240.3V I:0.2050A P:43.90W PF:0.8900 Lamp Flux:4302.56x1 lm		
NAME: -LED-DL45W-CC-W-DIM-IP54	TYPE:45W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.107	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 98.01 lm/W			
MODIFIED-DL45W-CC-W-DIM-IP54		Imax(cd)	1771	S/MH(C0/180)	1.20
NOMINAL POWER(W)	45	LOR(%)	100.0	S/MH(C90/270)	1.19
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	4302.6	η UP, DN(C0-180)	0.0, 50.3
NOMINAL FLUX(lm)	4302.56	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 49.7
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	240.3	η down(%)	100.0	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	Φ lum, lamp
10	1733	1733	1730	1726	1723	1724	1726	1730	0- 10	167.0	167.0	3.88,3.88
20	1611	1612	1608	1598	1593	1596	1601	1606	10- 20	472.1	639.1	14.9,14.9
30	1416	1419	1412	1398	1391	1396	1403	1409	20- 30	696.1	1335	31,31
40	1166	1170	1163	1146	1139	1146	1154	1160	30- 40	803.1	2138	49.7,49.7
50	892.7	896.7	888.2	872.1	864.7	872.9	881.9	886.6	40- 50	786.7	2925	68,68
60	615.5	617.3	607.4	594.5	587.5	593.7	603.6	609.1	50- 60	663.8	3589	83.4,83.4
70	345.9	343.8	331.4	323.9	317.9	319.6	330.2	338.8	60- 70	461.3	4050	94.1,94.1
80	108.6	103.1	92.04	90.59	86.53	83.33	90.69	100.8	70- 80	218.5	4269	99.2,99.2
90	2.586	2.892	2.813	2.501	3.112	3.295	3.214	3.669	80- 90	34.05	4303	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		

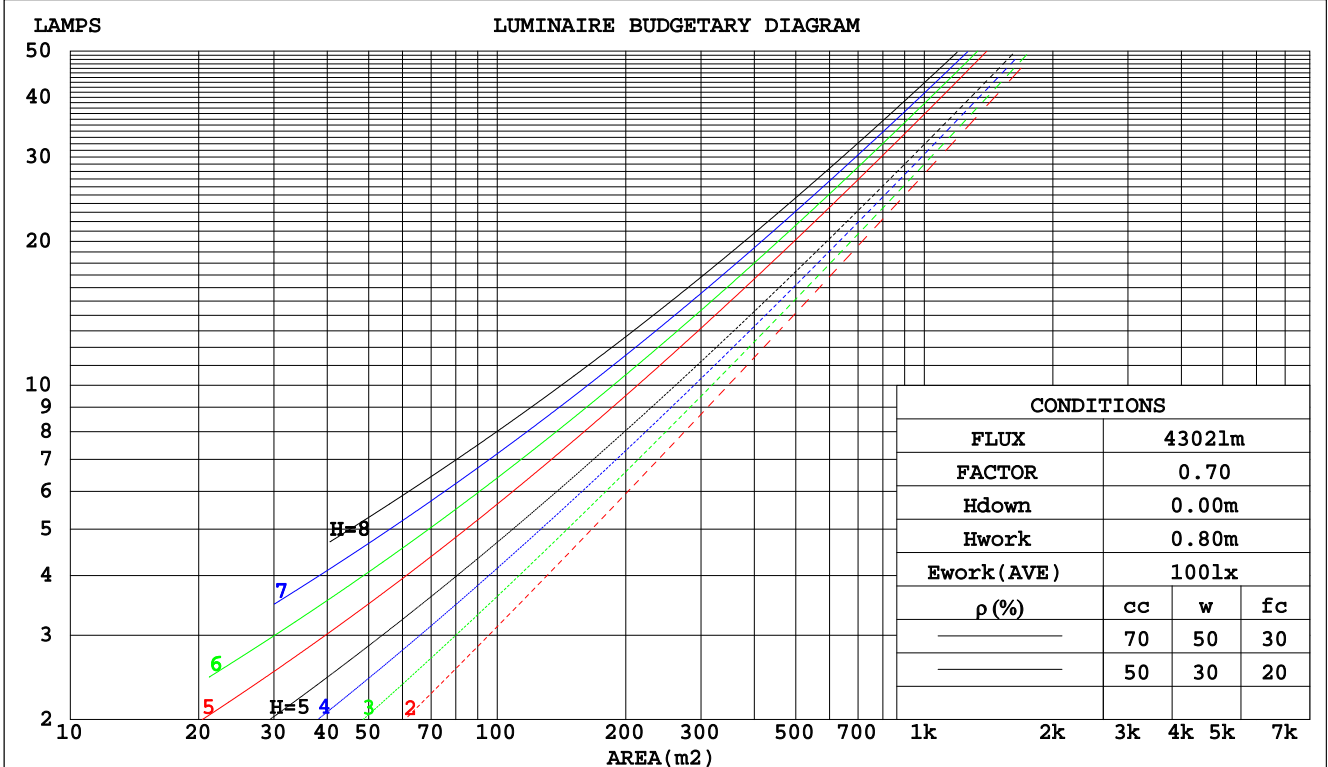
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.3V I:0.2050A P:43.90W PF:0.8900 Lamp Flux:4302.56x1 lm		
NAME: -LED-DL45W-CC-W-DIM-IP54	TYPE:45W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.107	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	1.00
1.0	1.05	1.01	.98	1.03	.90	.96	.99	.96	.93	.95	.93	.90	.91	.90	.88	.86
2.0	.93	.86	.81	.91	.85	.80	.87	.82	.78	.84	.80	.76	.81	.78	.75	.73
3.0	.82	.74	.68	.80	.73	.67	.77	.71	.66	.75	.69	.65	.72	.68	.64	.62
4.0	.73	.65	.58	.72	.64	.58	.69	.62	.57	.67	.61	.56	.65	.60	.55	.53
5.0	.65	.57	.50	.64	.56	.50	.62	.55	.50	.60	.54	.49	.58	.53	.49	.46
6.0	.59	.50	.44	.58	.50	.44	.56	.49	.44	.55	.48	.43	.53	.47	.43	.41
7.0	.54	.45	.39	.53	.45	.39	.51	.44	.39	.50	.43	.39	.49	.43	.38	.36
8.0	.49	.41	.35	.48	.41	.35	.47	.40	.35	.46	.39	.35	.45	.39	.34	.33
9.0	.45	.37	.32	.45	.37	.32	.44	.36	.32	.42	.36	.31	.41	.36	.31	.29
10.0	.42	.34	.29	.41	.34	.29	.40	.33	.29	.39	.33	.29	.39	.33	.29	.27



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:240.3V I:0.2050A P:43.90W PF:0.8900 Lamp Flux:4302.56x1 lm		
NAME: -LED-DL45W-CC-W-DIM-IP54	TYPE:45W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.107	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	.282	.160	.051	.275	.157	.050	.262	.150	.048	.250	.144	.046	.239	.138	.045	
2.0	.271	.148	.046	.265	.146	.045	.253	.141	.044	.243	.136	.043	.233	.132	.042	
3.0	.254	.135	.040	.248	.133	.040	.238	.129	.039	.229	.125	.038	.220	.122	.038	
4.0	.236	.123	.036	.232	.121	.036	.223	.118	.035	.214	.115	.035	.206	.112	.034	
5.0	.220	.112	.032	.216	.111	.032	.208	.108	.032	.200	.106	.031	.193	.103	.031	
6.0	.205	.103	.029	.201	.102	.029	.194	.100	.029	.188	.097	.029	.181	.095	.028	
7.0	.192	.095	.027	.188	.094	.027	.182	.092	.027	.176	.090	.026	.170	.089	.026	
8.0	.180	.088	.025	.177	.087	.025	.171	.085	.024	.166	.084	.024	.161	.082	.024	
9.0	.169	.082	.023	.166	.081	.023	.161	.080	.023	.156	.078	.022	.152	.077	.022	
10.0	.159	.076	.021	.157	.076	.021	.152	.075	.021	.148	.073	.021	.144	.072	.021	

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	.178	.156	.137	.153	.134	.118	.104	.092	.081	.060	.053	.047	.019	.017	.015	
2.0	.169	.132	.101	.145	.114	.087	.099	.079	.061	.057	.046	.036	.018	.015	.012	
3.0	.161	.114	.077	.138	.099	.066	.095	.068	.047	.055	.040	.027	.018	.013	.009	
4.0	.154	.101	.060	.132	.087	.052	.091	.061	.037	.052	.036	.022	.017	.012	.007	
5.0	.146	.090	.049	.126	.078	.042	.087	.055	.030	.050	.032	.018	.016	.010	.006	
6.0	.139	.082	.040	.120	.071	.035	.083	.050	.025	.048	.029	.015	.015	.010	.005	
7.0	.133	.075	.034	.114	.065	.030	.079	.045	.021	.046	.027	.013	.015	.009	.004	
8.0	.126	.069	.029	.109	.060	.026	.075	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.121	.064	.026	.104	.056	.023	.072	.039	.016	.042	.023	.010	.014	.008	.003	
10.0	.115	.060	.023	.099	.052	.020	.069	.036	.014	.040	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

Uncorrected UGR Table

Test:U:240.3V I:0.2050A P:43.90W PF:0.8900 Lamp Flux:4302.56x1 lm										
NAME: -LED-DL45W-CC-W-DIM-IP54					TYPE:45W			WEIGHT:		
DIM.:					SPEC.:5700K			SERIAL No.:1		
MFR.:					SUR.:0.107			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	25.4	26.9	25.7	27.0	27.3	25.3	26.8	25.6	27.0	27.2
3H	26.6	28.0	26.9	28.2	28.4	26.5	27.8	26.8	28.1	28.3
4H	27.0	28.3	27.3	28.6	28.8	26.9	28.1	27.2	28.4	28.6
6H	27.2	28.4	27.6	28.7	29.0	27.0	28.2	27.4	28.5	28.8
8H	27.3	28.4	27.6	28.7	29.0	27.0	28.2	27.4	28.5	28.8
12H	27.3	28.4	27.6	28.7	29.0	27.0	28.1	27.3	28.4	28.7
4H 2H	25.9	27.2	26.2	27.4	27.7	25.9	27.1	26.2	27.4	27.6
3H	27.3	28.4	27.7	28.7	29.0	27.2	28.3	27.6	28.6	28.9
4H	27.8	28.8	28.2	29.2	29.5	27.7	28.7	28.0	29.0	29.3
6H	28.1	29.0	28.5	29.4	29.7	27.9	28.8	28.3	29.1	29.5
8H	28.2	29.0	28.6	29.4	29.8	27.9	28.8	28.3	29.1	29.5
12H	28.2	28.9	28.6	29.3	29.7	27.9	28.7	28.3	29.0	29.4
8H 4H	28.0	28.8	28.4	29.2	29.6	27.8	28.7	28.2	29.0	29.4
6H	28.4	29.0	28.8	29.5	29.9	28.1	28.8	28.6	29.2	29.7
8H	28.5	29.1	28.9	29.5	29.9	28.2	28.8	28.7	29.2	29.7
12H	28.5	29.0	29.0	29.5	29.9	28.2	28.7	28.7	29.2	29.6
12H 4H	28.0	28.7	28.4	29.1	29.5	27.8	28.6	28.2	29.0	29.4
6H	28.4	29.0	28.8	29.4	29.8	28.2	28.8	28.6	29.2	29.6
8H	28.5	29.0	29.0	29.4	29.9	28.2	28.7	28.7	29.2	29.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				
2.0H	+ 0.3 / - 0.4					+ 0.4 / - 0.4				

CIE Pub.117 Corrected 4303 lm Total Lamp Luminous Flux.(8log(F/F0) = 5.1)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.3V I:0.2050A P:43.90W PF:0.8900 Lamp Flux:4302.56x1 lm		
NAME: -LED-DL45W-CC-W-DIM-IP54	TYPE:45W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.107	PROTECTION ANGLE:

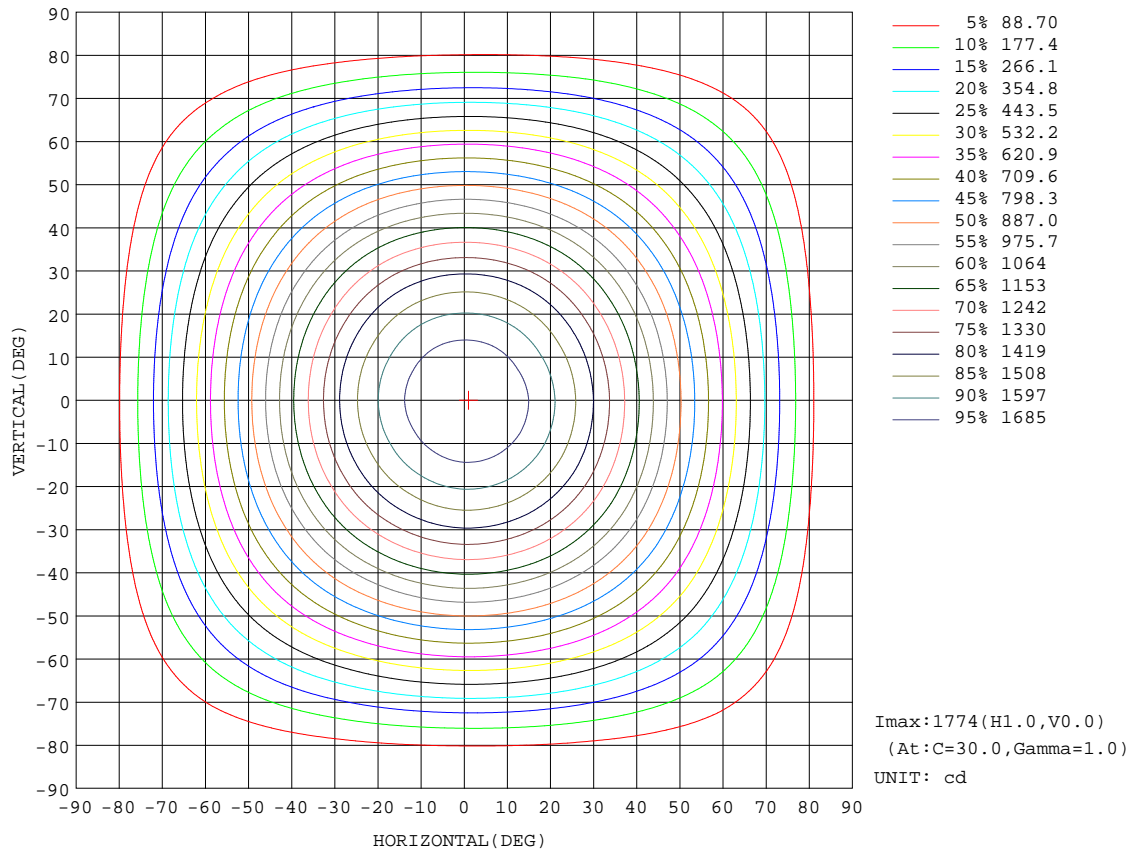
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	60	49	43	60	49	42	58	49	42	36
0.80	70	59	52	69	59	52	68	58	52	45
1.00	79	68	62	78	68	61	75	69	61	54
1.25	86	76	69	84	75	69	82	74	68	61
1.50	91	81	75	89	81	74	86	79	73	66
2.00	97	89	83	95	88	83	92	86	81	74
2.50	101	94	88	99	92	87	95	90	85	77
3.00	104	98	93	102	96	91	98	93	89	81
4.00	108	102	98	105	101	97	101	97	94	86
5.00	110	105	102	107	103	100	103	100	97	88
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:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:240.3V I:0.2050A P:43.90W PF:0.8900 Lamp Flux:4302.56x1 lm		
NAME: -LED-DL45W-CC-W-DIM-IP54	TYPE:45W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.107	PROTECTION ANGLE:

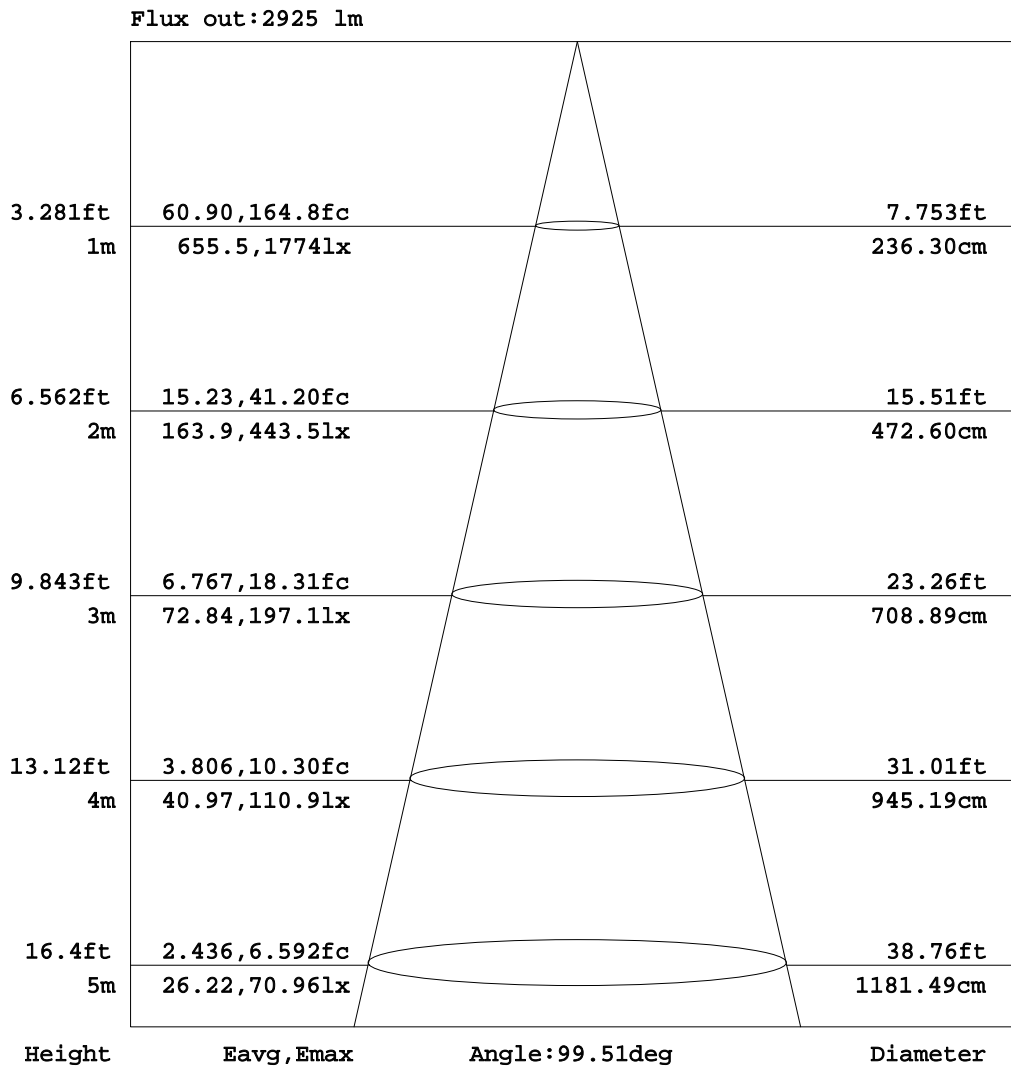


C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

AAI Figure

Test:U:240.3V I:0.2050A P:43.90W PF:0.8900 Lamp Flux:4302.56x1 lm		
NAME: -LED-DL45W-CC-W-DIM-IP54	TYPE:45W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.107	PROTECTION ANGLE:



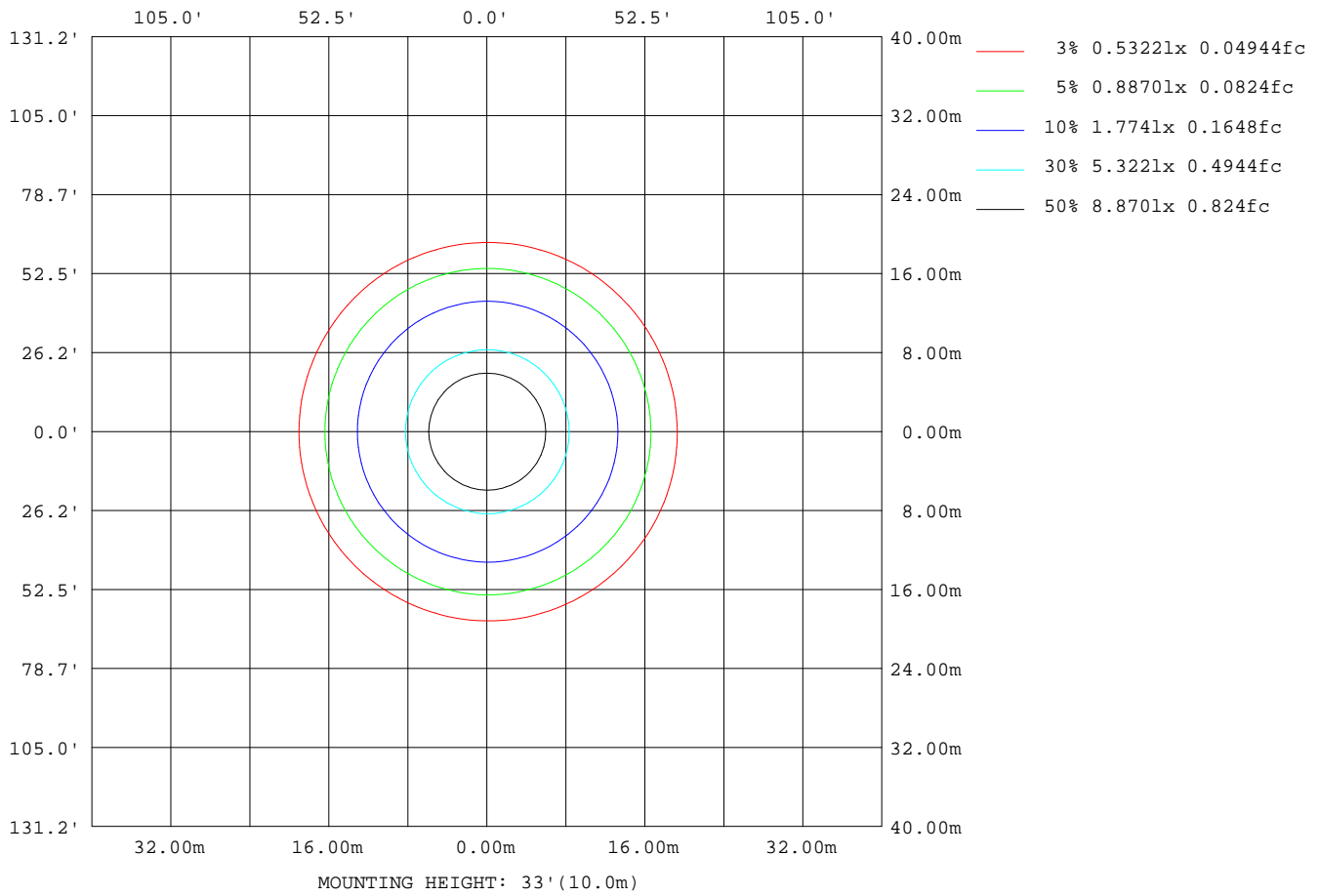
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

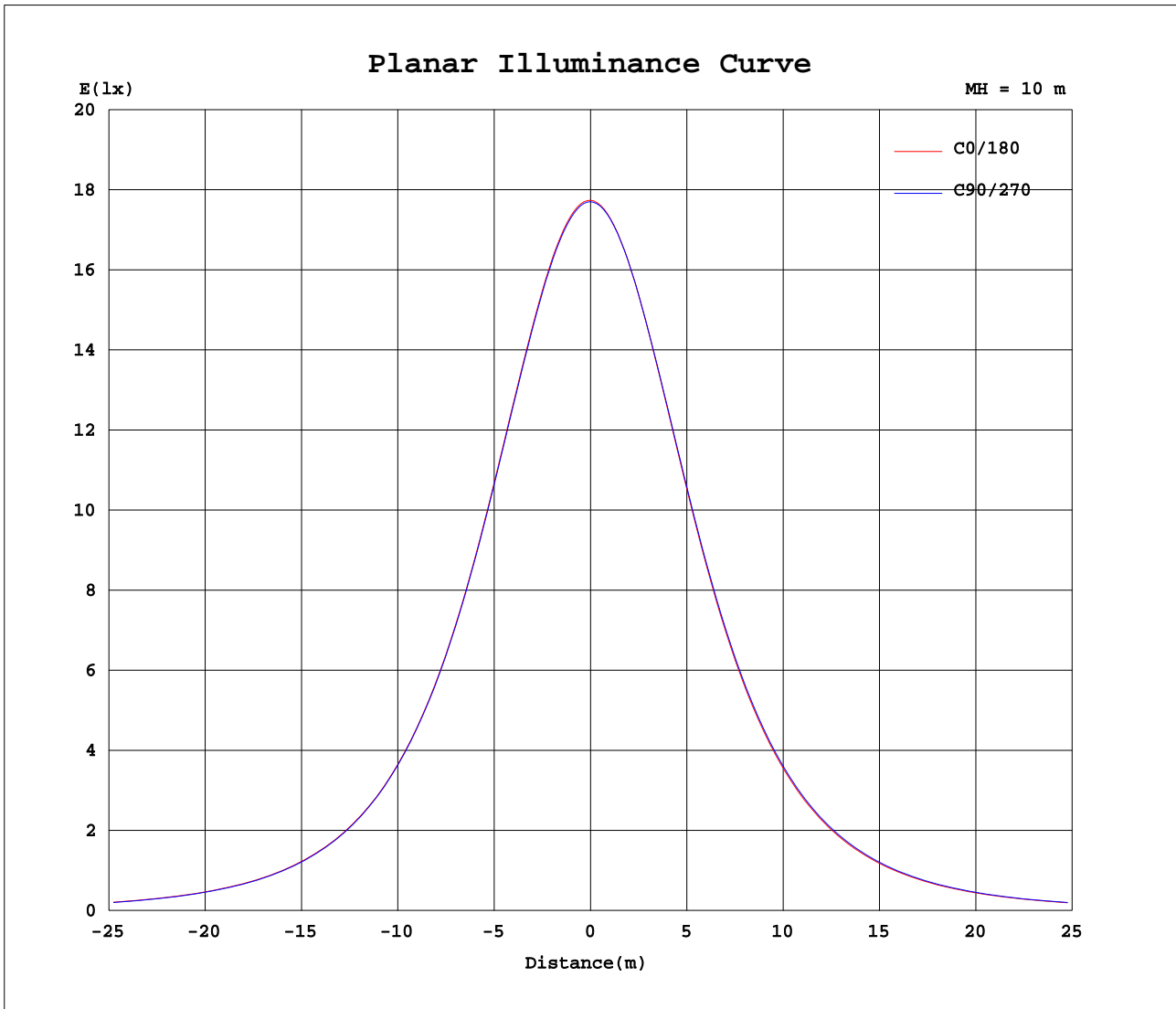
Test:U:240.3V I:0.2050A P:43.90W PF:0.8900 Lamp Flux:4302.56x1 lm		
NAME: -LED-DL45W-CC-W-DIM-IP54	TYPE:45W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.107	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [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: 2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.443m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:240.3V I:0.2050A P:43.90W PF:0.8900 Lamp Flux:4302.56x1 lm		
NAME: -LED-DL45W-CC-W-DIM-IP54	TYPE:45W	WEIGHT:
DIM.:	SPEC.:5700K	SERIAL No.:1
MFR.:	SUR.:0.107	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771						
5	1762	1763	1762	1761	1759	1759	1758	1758	1759	1759	1760	1761						
10	1733	1734	1732	1730	1727	1725	1723	1723	1725	1726	1729	1731						
15	1682	1684	1681	1679	1673	1670	1668	1668	1671	1673	1677	1679						
20	1611	1614	1611	1608	1600	1596	1593	1593	1598	1601	1605	1607						
25	1522	1526	1523	1519	1509	1504	1500	1502	1507	1511	1515	1517						
30	1416	1421	1417	1412	1401	1395	1391	1393	1400	1403	1408	1410						
35	1296	1301	1298	1292	1280	1273	1269	1271	1280	1283	1288	1290						
40	1166	1172	1169	1163	1150	1143	1139	1142	1151	1154	1159	1161						
45	1031	1037	1033	1028	1014	1007	1003	1006	1016	1019	1024	1025						
50	893	899	895	888	875	869	865	867	878	882	886	887						
55	754	759	754	748	736	730	726	728	738	743	747	748						
60	615	621	614	607	596	593	588	589	599	604	609	610						
65	479	483	475	468	459	457	451	451	460	465	472	473						
70	346	349	339	331	324	323	318	316	323	330	337	340						
75	220	221	211	203	198	199	193	189	195	202	211	214						
80	109	109	97.6	92.0	89.5	91.7	86.5	81.4	85.3	90.7	98.9	103						
85	29.7	28.6	21.9	17.9	18.6	19.7	18.1	15.5	16.2	19.1	22.6	25.5						
90	2.59	3.05	2.73	2.81	2.56	2.44	3.11	3.42	3.17	3.21	3.61	3.73						

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-12-24

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks: