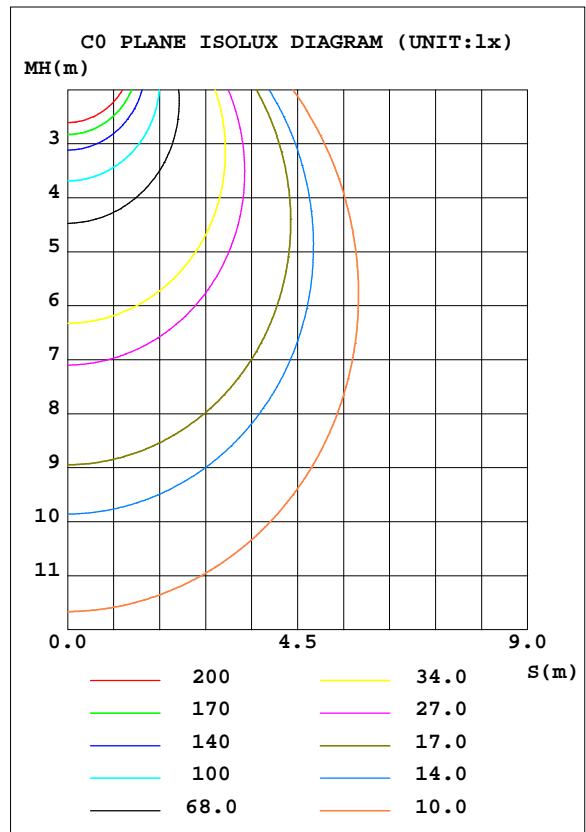
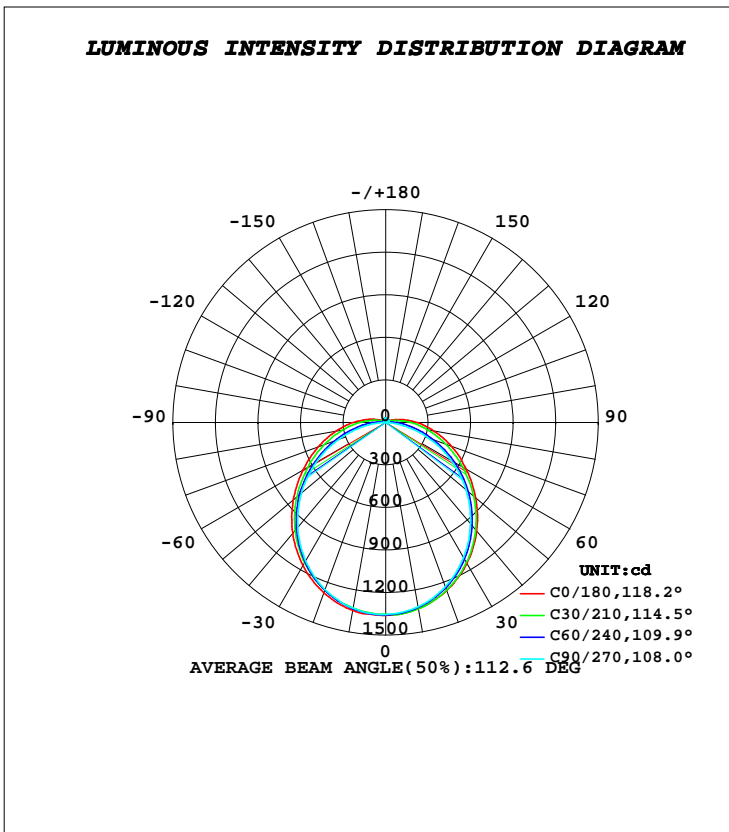


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.0V I:0.2380A P:42.10W PF:0.8040 Lamp Flux:4316.23x1 lm		
NAME: 1.2M-44W-4500K	TYPE:LED	
MFR.:		

DATA OF LAMP		PHOTOMETRIC DATA Eff: 102.52 lm/W			
MODEL	1.2M-44W-4500K	I _{max} (cd)	1361	S/MH(C0/180)	1.25
NOMINAL POWER(W)	45	LOR(%)	100.0	S/MH(C90/270)	1.21
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	4316.2	η UP, DN(C0-180)	2.7,46.2
NOMINAL FLUX(lm)	4316.23	CIE CLASS	DIRECT	η UP, DN(C180-360)	2.9,48.2
LAMPS INSIDE	1	η up(%)	5.6	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	220.0	η down(%)	94.4	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-01-16

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:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	1333	1330	1320	1318	1346	1332	1331	1333	0- 10	128.1	128.1	2.97,2.97
20	1261	1250	1232	1236	1277	1259	1253	1263	10- 20	366.0	494.2	11.4,11.4
30	1147	1126	1100	1111	1166	1141	1128	1148	20- 30	552.1	1046	24.2,24.2
40	999.4	968.3	931.7	952.5	1020	986.4	964.9	996.9	30- 40	662.3	1709	39.6,39.6
50	828.7	785.8	740.9	770.1	852.7	806.9	776.1	820.6	40- 50	686.0	2395	55.5,55.5
60	654.5	593.1	533.7	578.3	674.7	612.0	569.0	627.8	50- 60	627.1	3022	70,70
70	493.7	406.0	318.1	393.7	507.1	425.3	353.9	440.3	60- 70	505.2	3527	81.7,81.7
80	342.9	244.6	113.3	235.8	355.7	259.2	142.6	274.7	70- 80	348.7	3876	89.8,89.8
90	219.1	126.5	8.314	120.5	228.6	135.1	12.00	148.6	80- 90	198.9	4075	94.4,94.4
100	121.6	53.61	10.74	52.03	129.3	59.71	13.12	65.20	90-100	99.99	4175	96.7,96.7
110	54.48	24.39	13.47	23.13	59.62	27.17	15.38	29.71	100-110	45.60	4220	97.8,97.8
120	22.56	17.14	16.28	17.27	25.37	19.15	17.88	19.40	110-120	22.68	4243	98.3,98.3
130	20.66	19.76	19.22	20.21	22.58	21.64	20.44	21.03	120-130	17.49	4260	98.7,98.7
140	23.34	22.53	22.25	22.99	24.77	24.09	23.07	23.38	130-140	17.00	4277	99.1,99.1
150	25.98	25.24	25.16	25.56	26.69	26.39	25.71	25.64	140-150	15.38	4293	99.5,99.5
160	28.57	27.83	27.87	27.97	28.71	28.42	28.10	27.84	150-160	12.45	4305	99.7,99.7
170	30.68	29.92	30.00	29.90	30.41	29.97	29.91	29.54	160-170	8.225	4313	99.9,99.9
180	31.11	30.68	30.78	30.47	31.25	30.67	30.74	30.47	170-180	2.892	4316	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

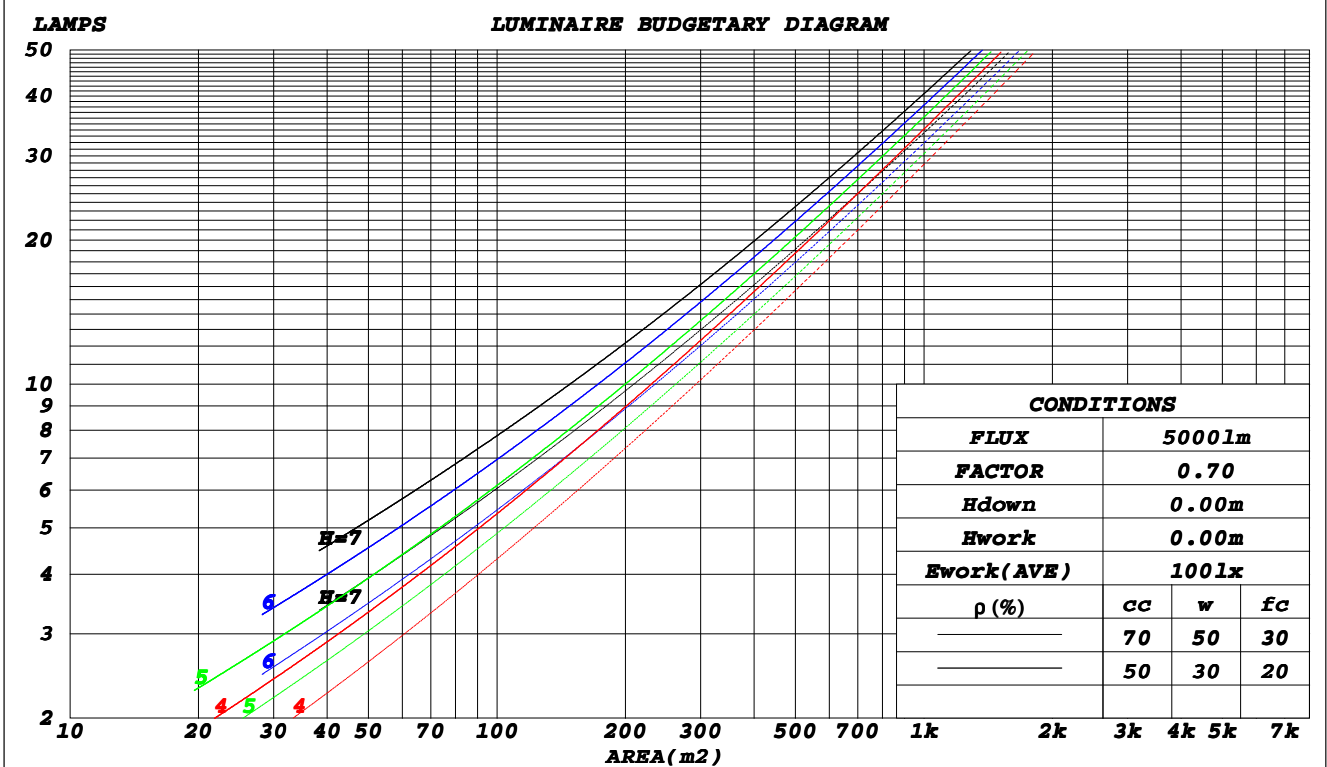
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-01-16

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:220.0V I:0.2380A P:42.10W PF:0.8040 Lamp Flux:4316.23x1 lm		
NAME: 1.2M-44W-4500K	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	1.14	1.14	1.14	1.08	1.08	1.08	1.02	1.02	1.02	.97	.97	.97	.94
1.0	1.01	.96	.92	.98	.94	.90	.93	.89	.86	.88	.85	.82	.83	.81	.79	.76
2.0	.87	.80	.74	.85	.78	.72	.80	.75	.70	.76	.72	.67	.72	.69	.65	.63
3.0	.76	.68	.61	.74	.66	.60	.70	.64	.58	.67	.61	.56	.64	.59	.55	.52
4.0	.67	.58	.51	.66	.57	.51	.62	.55	.49	.59	.53	.48	.57	.51	.47	.44
5.0	.60	.51	.44	.59	.50	.44	.56	.48	.43	.53	.47	.42	.51	.45	.41	.38
6.0	.54	.45	.38	.53	.44	.38	.50	.43	.37	.48	.42	.36	.46	.40	.36	.33
7.0	.49	.40	.34	.48	.39	.34	.46	.38	.33	.44	.37	.32	.42	.36	.32	.30
8.0	.45	.36	.30	.44	.36	.30	.42	.35	.29	.40	.34	.29	.39	.33	.28	.26
9.0	.41	.33	.27	.40	.32	.27	.39	.31	.26	.37	.31	.26	.36	.30	.26	.24
10.0	.38	.30	.25	.37	.29	.24	.36	.29	.24	.34	.28	.24	.33	.27	.23	.21



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2018-01-16

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:220.0V I:0.2380A P:42.10W PF:0.8040 Lamp Flux:4316.23x1 lm		
NAME: 1.2M-44W-4500K	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	.343	.195	.062	.335	.191	.061	.318	.182	.058	.303	.175	.056	.289	.167	.054	
2.0	.310	.170	.052	.302	.166	.051	.287	.160	.050	.273	.153	.048	.261	.147	.046	
3.0	.281	.149	.045	.274	.147	.044	.261	.141	.043	.248	.136	.042	.237	.131	.041	
4.0	.256	.133	.039	.250	.131	.039	.238	.126	.038	.227	.122	.037	.217	.118	.036	
5.0	.235	.120	.035	.229	.118	.034	.219	.114	.034	.209	.110	.033	.200	.107	.032	
6.0	.217	.109	.031	.212	.107	.031	.202	.104	.030	.193	.100	.030	.185	.097	.029	
7.0	.201	.099	.028	.197	.098	.028	.188	.095	.027	.180	.092	.027	.172	.089	.026	
8.0	.187	.091	.026	.183	.090	.025	.175	.088	.025	.168	.085	.025	.161	.083	.024	
9.0	.175	.085	.024	.171	.084	.023	.164	.081	.023	.158	.079	.023	.151	.077	.022	
10.0	.164	.079	.022	.161	.078	.022	.154	.076	.021	.148	.074	.021	.143	.072	.021	

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	.233	.233	.233	.199	.199	.199	.136	.136	.136	.078	.078	.078	.025	.025	.025	
1.0	.226	.199	.175	.193	.171	.150	.132	.117	.104	.076	.068	.060	.024	.022	.020	
2.0	.218	.175	.139	.187	.151	.120	.128	.104	.084	.074	.061	.049	.024	.020	.016	
3.0	.210	.158	.116	.180	.136	.101	.124	.095	.071	.071	.055	.042	.023	.018	.014	
4.0	.202	.145	.101	.174	.125	.088	.119	.087	.062	.069	.051	.037	.022	.017	.012	
5.0	.195	.135	.090	.167	.117	.079	.115	.081	.056	.067	.048	.033	.021	.016	.011	
6.0	.187	.126	.083	.161	.109	.072	.111	.077	.051	.064	.045	.030	.021	.015	.010	
7.0	.180	.120	.077	.155	.104	.067	.107	.073	.048	.062	.043	.028	.020	.014	.009	
8.0	.174	.114	.073	.150	.099	.063	.104	.069	.045	.060	.041	.027	.019	.013	.009	
9.0	.168	.109	.069	.144	.095	.061	.100	.066	.043	.058	.039	.026	.019	.013	.008	
10.0	.162	.105	.067	.140	.091	.058	.097	.064	.041	.056	.038	.025	.018	.012	.008	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-01-16

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:220.0V I:0.2380A P:42.10W PF:0.8040 Lamp Flux:4316.23x1 lm										
NAME: 1.2M-44W-4500K					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	21.4	22.9	21.8	23.2	23.5	20.6	22.1	21.0	22.4	22.7
3H	23.4	24.8	23.8	25.1	25.5	22.0	23.4	22.4	23.7	24.1
4H	24.5	25.8	24.9	26.1	26.5	22.5	23.9	22.9	24.2	24.6
6H	25.6	26.8	26.0	27.2	27.6	22.9	24.1	23.3	24.5	24.9
8H	26.2	27.4	26.6	27.8	28.2	23.0	24.1	23.4	24.5	24.9
12H	26.8	28.0	27.3	28.4	28.8	23.0	24.1	23.4	24.5	24.9
4H 2H	22.0	23.3	22.4	23.6	24.0	21.3	22.6	21.7	23.0	23.4
3H	24.2	25.4	24.7	25.8	26.2	22.9	24.1	23.4	24.5	24.9
4H	25.4	26.5	25.9	26.9	27.4	23.6	24.7	24.1	25.1	25.5
6H	26.7	27.7	27.2	28.1	28.6	24.1	25.0	24.6	25.5	26.0
8H	27.4	28.3	27.9	28.8	29.3	24.3	25.1	24.7	25.6	26.1
12H	28.2	29.0	28.8	29.5	30.1	24.3	25.1	24.8	25.6	26.1
8H 4H	25.7	26.6	26.2	27.1	27.6	24.2	25.0	24.7	25.5	26.0
6H	27.3	28.0	27.8	28.5	29.1	24.9	25.6	25.4	26.1	26.7
8H	28.2	28.8	28.7	29.3	29.9	25.1	25.8	25.7	26.3	26.9
12H	29.2	29.8	29.8	30.3	30.9	25.3	25.9	25.9	26.5	27.0
12H 4H	25.7	26.5	26.2	27.0	27.5	24.3	25.1	24.8	25.6	26.1
6H	27.4	28.0	27.9	28.5	29.1	25.1	25.8	25.7	26.3	26.9
8H	28.3	28.9	28.9	29.5	30.1	25.5	26.1	26.1	26.6	27.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117 Corrected 4316 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:2018-01-16

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:220.0V I:0.2380A P:42.10W PF:0.8040 Lamp Flux:4316.23x1 lm		
NAME: 1.2M-44W-4500K	TYPE:LED	
MFR.:		

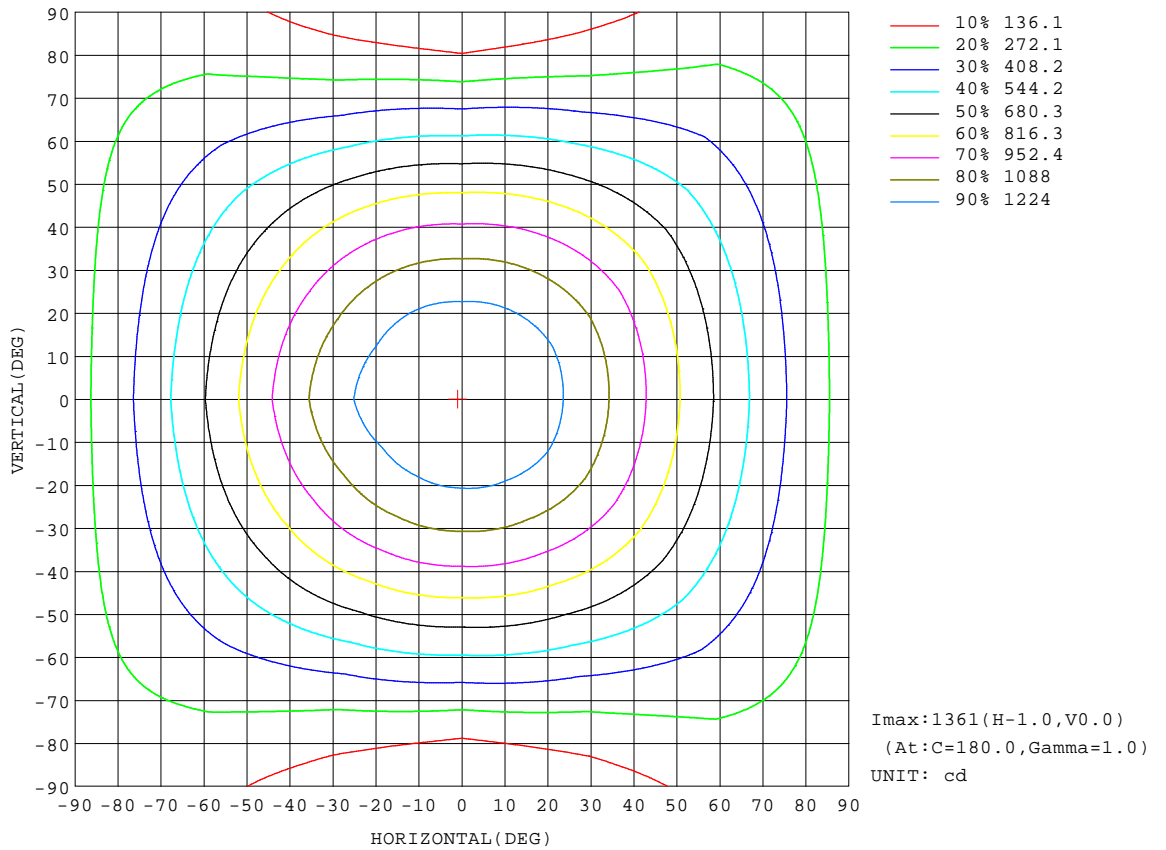
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	55	43	36	54	42	35	52	42	35	29
0.80	64	52	44	63	52	44	61	51	44	36
1.00	72	61	53	71	60	52	68	61	52	44
1.25	79	68	60	77	67	60	74	65	59	51
1.50	84	73	66	82	72	65	79	70	64	55
2.00	91	82	74	89	80	73	85	77	72	63
2.50	95	86	80	93	85	79	88	82	76	67
3.00	99	91	85	96	89	83	91	85	80	70
4.00	103	96	91	100	94	89	95	90	86	75
5.00	105	100	95	103	97	93	97	93	89	78
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:2018-01-16

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:

ISOCANDELA DIAGRAM

Test:U:220.0V I:0.2380A P:42.10W PF:0.8040 Lamp Flux:4316.23x1 lm		
NAME: 1.2M-44W-4500K	TYPE:LED	
MFR.:		



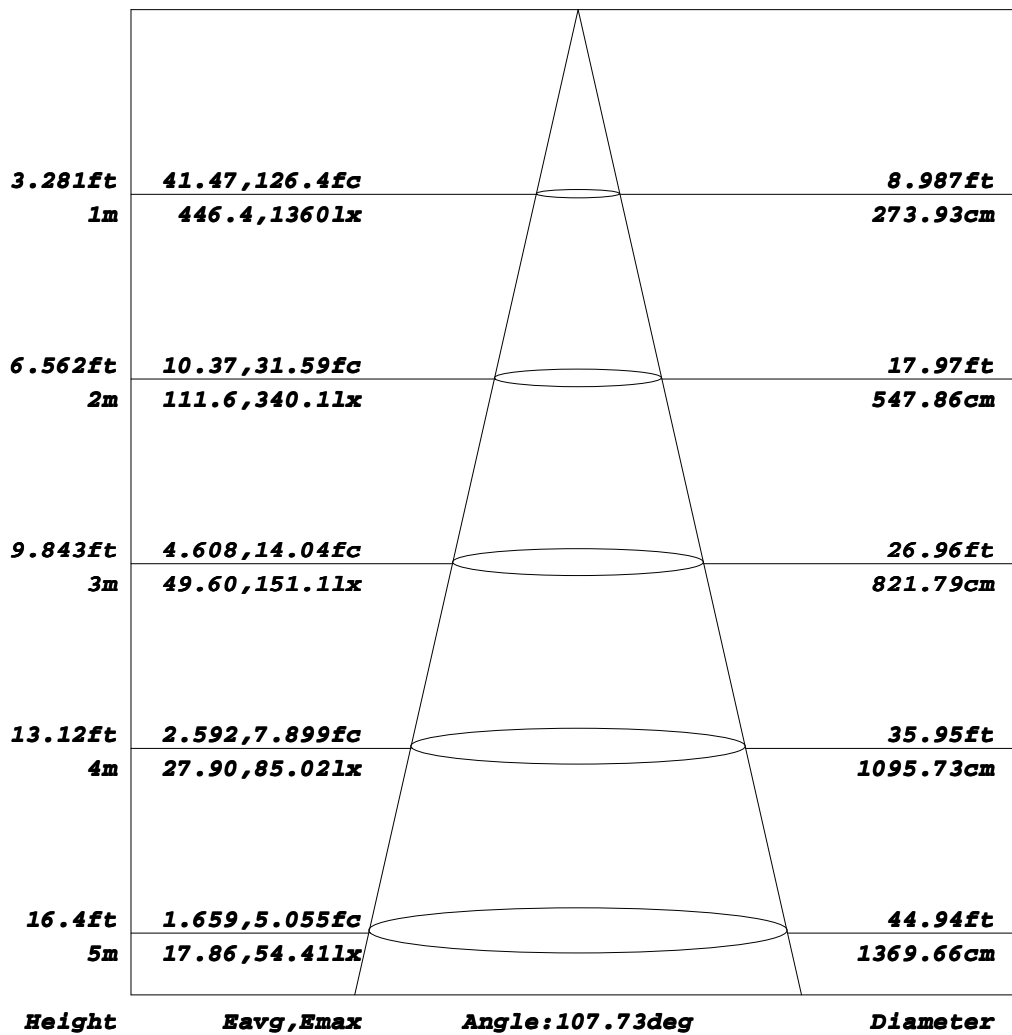
C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-01-16

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:

AAI Figure

Test:U:220.0V I:0.2380A P:42.10W PF:0.8040 Lamp Flux:4316.23x1 lm		
NAME: 1.2M-44W-4500K	TYPE:LED	
MFR.:		

Flux out:2657 lm



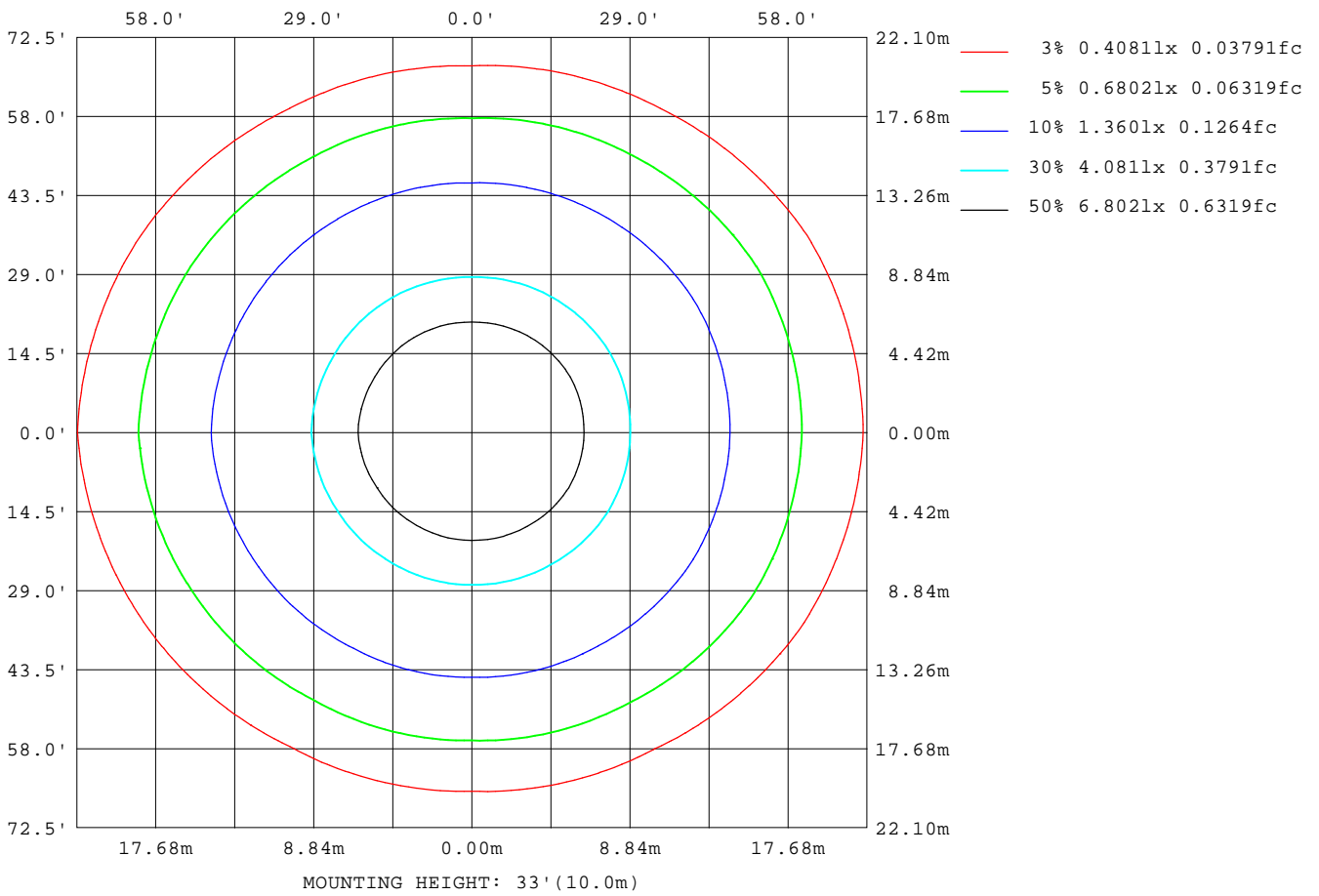
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2018-01-16

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:

ISOLUX DIAGRAM

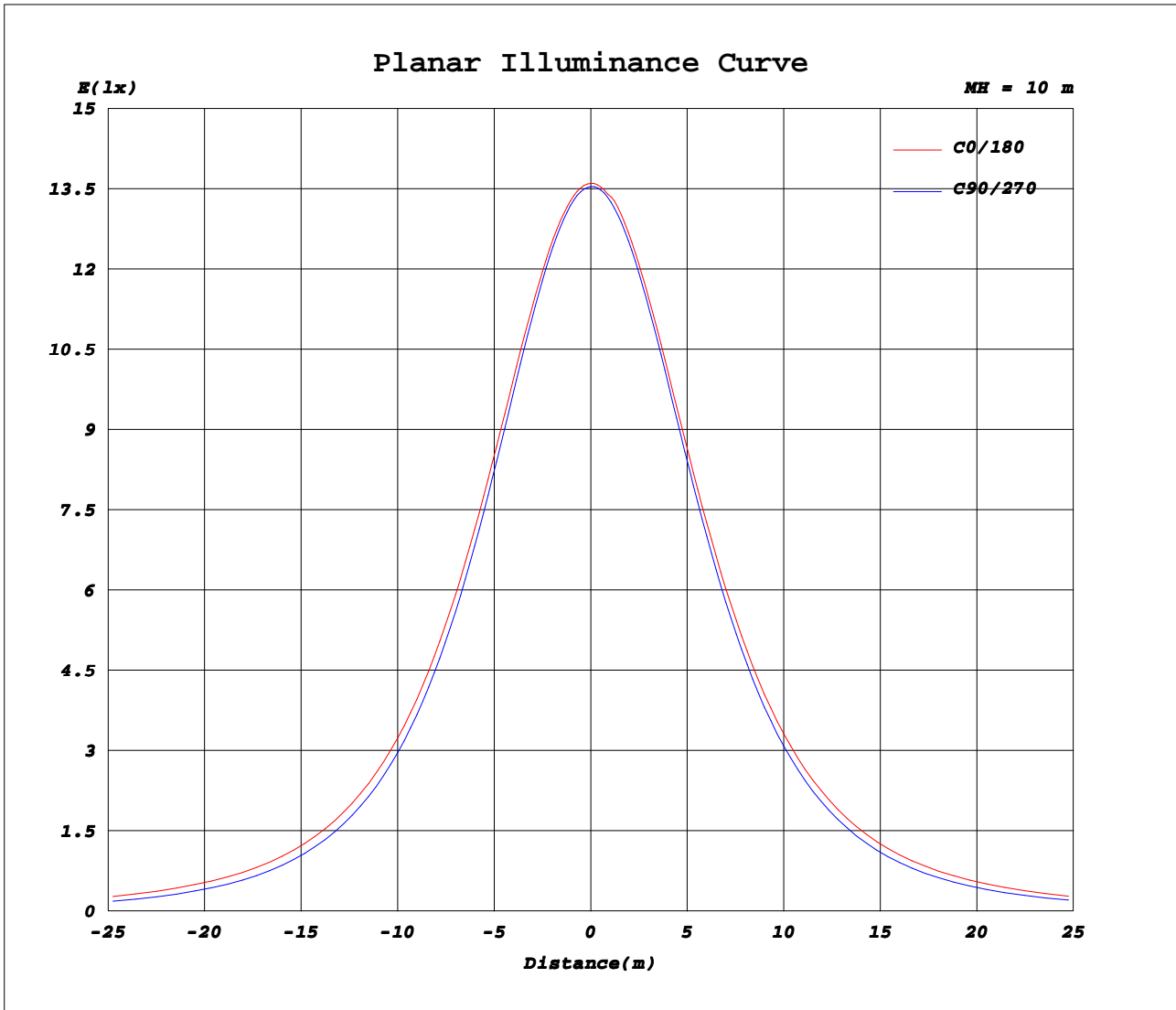
Test:U:220.0V I:0.2380A P:42.10W PF:0.8040 Lamp Flux:4316.23x1 lm		
NAME: 1.2M-44W-4500K	TYPE:LED	
MFR.:		



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-01-16

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:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2018-01-16

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:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.0V I:0.2380A P:42.10W PF:0.8040 Lamp Flux:4316.23x1 lm		
NAME: 1.2M-44W-4500K	TYPE:LED	
MFR.:		

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	1360	1353	1357	1354	1352	1351	1360	1353	1357	1354	1352	1351							
5	1353	1355	1348	1344	1341	1341	1356	1347	1353	1350	1349	1348							
10	1333	1335	1325	1320	1317	1319	1346	1328	1335	1331	1333	1333							
15	1302	1303	1289	1282	1280	1286	1317	1299	1303	1298	1303	1305							
20	1261	1259	1241	1232	1232	1241	1277	1258	1259	1253	1261	1266							
25	1209	1204	1182	1170	1171	1185	1226	1206	1204	1197	1206	1216							
30	1147	1140	1112	1100	1101	1121	1166	1144	1137	1128	1141	1156							
35	1077	1068	1034	1019	1023	1048	1097	1073	1062	1051	1067	1086							
40	999	988	949	932	938	967	1020	993	979	965	985	1009							
45	916	901	857	839	846	881	939	908	890	873	897	925							
50	829	811	761	741	749	791	853	819	795	776	805	837							
55	741	718	662	638	650	699	762	726	693	674	704	745							
60	655	626	560	534	549	608	675	634	591	569	603	653							
65	575	537	459	426	448	520	589	550	487	463	500	566							
70	494	452	360	318	351	437	507	464	386	354	400	480							
75	416	374	269	213	262	359	429	383	293	245	307	400							
80	343	301	189	113	183	288	356	309	209	143	224	325							
85	278	235	124	35.6	121	223	288	241	140	57.3	154	257							
90	219	177	75.6	8.31	73.4	168	229	183	86.9	12.0	99.1	198							
95	167	129	41.1	9.46	40.6	121	175	134	48.0	12.1	57.0	147							
100	122	84.7	22.5	10.7	22.0	82.0	129	91.9	27.5	13.1	33.0	97.4							
105	83.7	55.6	14.4	12.1	14.1	52.5	89.8	60.2	17.4	14.2	20.0	66.9							
110	54.5	34.8	14.0	13.5	14.0	32.3	59.6	38.3	16.0	15.4	16.1	43.3							
115	34.2	22.3	15.3	14.9	15.4	20.8	38.1	24.9	17.2	16.6	17.1	28.0							
120	22.6	17.6	16.6	16.3	16.8	17.7	25.4	19.8	18.5	17.9	18.2	20.5							
125	19.3	18.8	18.0	17.7	18.3	19.2	21.4	21.0	19.7	19.2	19.4	20.3							
130	20.7	20.2	19.4	19.2	19.8	20.6	22.6	22.2	21.0	20.4	20.6	21.5							
135	22.0	21.5	20.8	20.7	21.3	22.0	23.7	23.4	22.3	21.8	21.7	22.7							
140	23.3	22.9	22.2	22.3	22.7	23.3	24.8	24.6	23.6	23.1	23.0	23.8							
145	24.7	24.2	23.6	23.7	24.0	24.6	25.7	25.7	24.9	24.4	24.2	24.8							
150	26.0	25.5	25.0	25.2	25.4	25.8	26.7	26.7	26.1	25.7	25.4	25.9							
155	27.3	26.8	26.4	26.6	26.7	26.9	27.7	27.6	27.3	26.9	26.6	26.9							
160	28.6	28.0	27.7	27.9	27.9	28.0	28.7	28.5	28.3	28.1	27.8	27.9							
165	29.7	29.1	28.8	29.0	29.0	29.0	29.7	29.3	29.3	29.1	28.8	28.9							
170	30.7	30.0	29.8	30.0	29.9	29.9	30.4	29.9	30.0	29.9	29.6	29.5							
175	31.0	30.5	30.4	30.6	30.4	30.4	30.8	30.3	30.5	30.4	30.2	29.9							
180	31.1	30.7	30.7	30.8	30.6	30.4	31.2	30.6	30.8	30.7	30.6	30.4							

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2018-01-16

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: