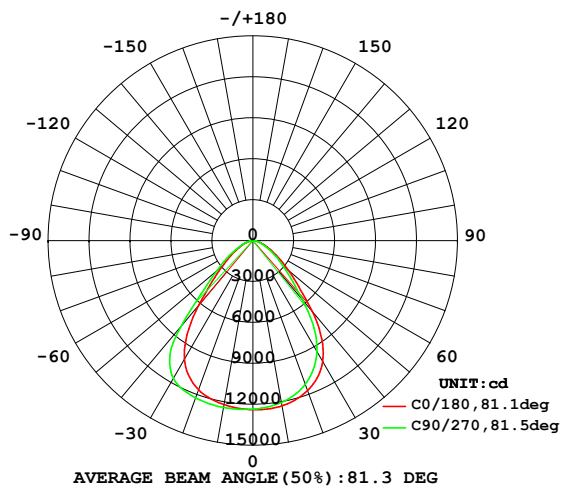


LUMINAIRE PHOTOMETRIC TEST REPORT

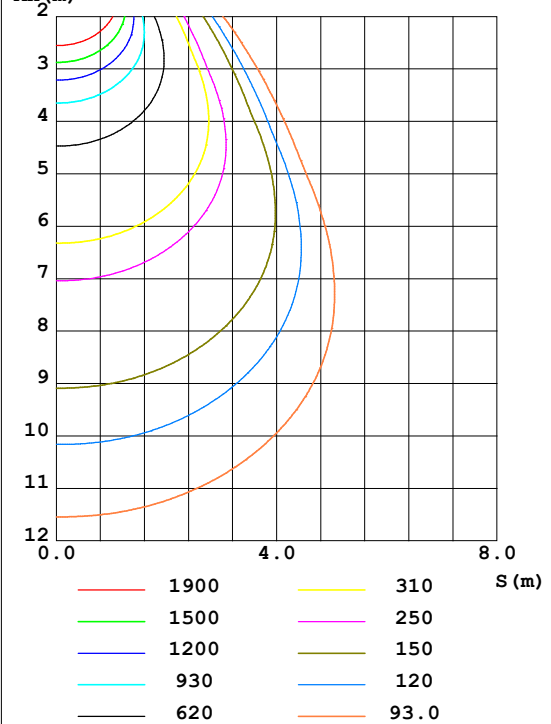
Test:U:277.1V I:0.5707A P:150.0W PF:0.9489 Lamp Flux:22509.6x1 lm		
NAME: LM-150W	TYPE:90°Lens	WEIGHT:4.503kg
SPEC.:5000k R80 360L	DIM.: D280mm*167mm	SERIAL No.:
MFR.:	SUR.:0.12m*0.12m*3.14	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 150.04 lm/W			
MODEL	SMD3030 (757G P20D41)	I _{max} (cd)	12415	S/MH (C0/180)	1.15
NOMINAL POWER (W)	150	LOR (%)	100.0	S/MH (C90/270)	1.24
RATED VOLTAGE (V)	277	TOTAL FLUX (lm)	22510	η UP,DN (C0-180)	0.2, 47.5
NOMINAL FLUX (lm)	22509.6	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.2, 52.1
LAMPS INSIDE	1	η up (%)	0.4	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	277	η down (%)	99.6	CIBSE SHR MAX	1.15

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



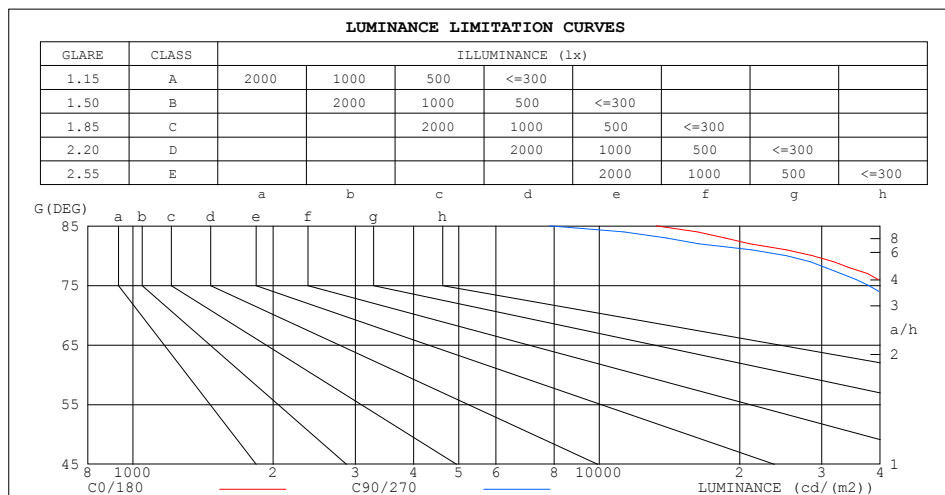
C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2017-12-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.390m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1229	1212	1205	1206	1221	1231	1241	1239	0- 10	1174	1174	5.21,5.21
20	1171	1128	1122	1140	1164	1195	1227	1218	10- 20	3398	4572	20.3,20.3
30	1023	942.5	938.9	973.4	1003	1072	1166	1137	20- 30	5126	9698	43.1,43.1
40	675.8	595.4	565.9	582.6	616.3	702.9	823.7	800.4	30- 40	5469	15168	67.4,67.4
50	341.3	310.6	288.9	270.0	292.5	329.3	345.6	358.9	40- 50	3565	18733	83.2,83.2
60	173.8	163.1	148.8	134.5	142.7	156.4	166.8	173.9	50- 60	2047	20780	92.3,92.3
70	82.39	82.74	73.43	64.49	66.80	69.91	70.66	75.27	60- 70	1093	21873	97.2,97.2
80	22.45	21.57	19.72	18.36	19.72	21.12	20.01	20.80	70- 80	473.7	22347	99.3,99.3
90	0.1442	0.0995	0.1415	0.1435	0.1148	0.1222	0.1225	0.1121	80- 90	69.93	22417	99.6,99.6
100	0.2665	0.2819	0.2906	0.2982	0.2226	0.2190	0.1991	0.1851	90-100	1.903	22419	99.6,99.6
110	0.5403	0.5834	0.6151	0.6212	0.4627	0.4465	0.4027	0.3793	100-110	3.824	22423	99.6,99.6
120	1.058	1.157	1.264	1.246	0.8882	0.8278	0.7629	0.7469	110-120	7.187	22430	99.6,99.6
130	1.830	1.999	2.168	2.128	1.572	1.446	1.357	1.373	120-130	12.01	22442	99.7,99.7
140	2.750	2.955	3.183	3.098	2.349	2.150	2.070	2.092	130-140	16.64	22458	99.8,99.8
150	3.488	3.684	3.859	3.816	3.031	2.863	2.762	2.800	140-150	18.47	22477	99.9,99.9
160	4.120	4.285	4.413	4.363	3.704	3.531	3.448	3.480	150-160	16.58	22493	99.9,99.9
170	4.607	4.693	4.725	4.684	4.305	4.177	4.108	4.123	160-170	11.79	22505	100,100
180	4.759	4.782	4.743	4.707	4.766	4.773	4.742	4.702	170-180	4.357	22510	100,100
DEG	LUMINOUS INTENSITY:×10cd MAX (Ii - Iavg)/Iavg (0-135) = 215.8 %									UNIT:lm		



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	13241	7833
80	28592	25118
75	42265	37765
70	53279	47483
65	62921	55253
60	76894	65835
55	95215	81716
50	117445	99385
45	148406	124909

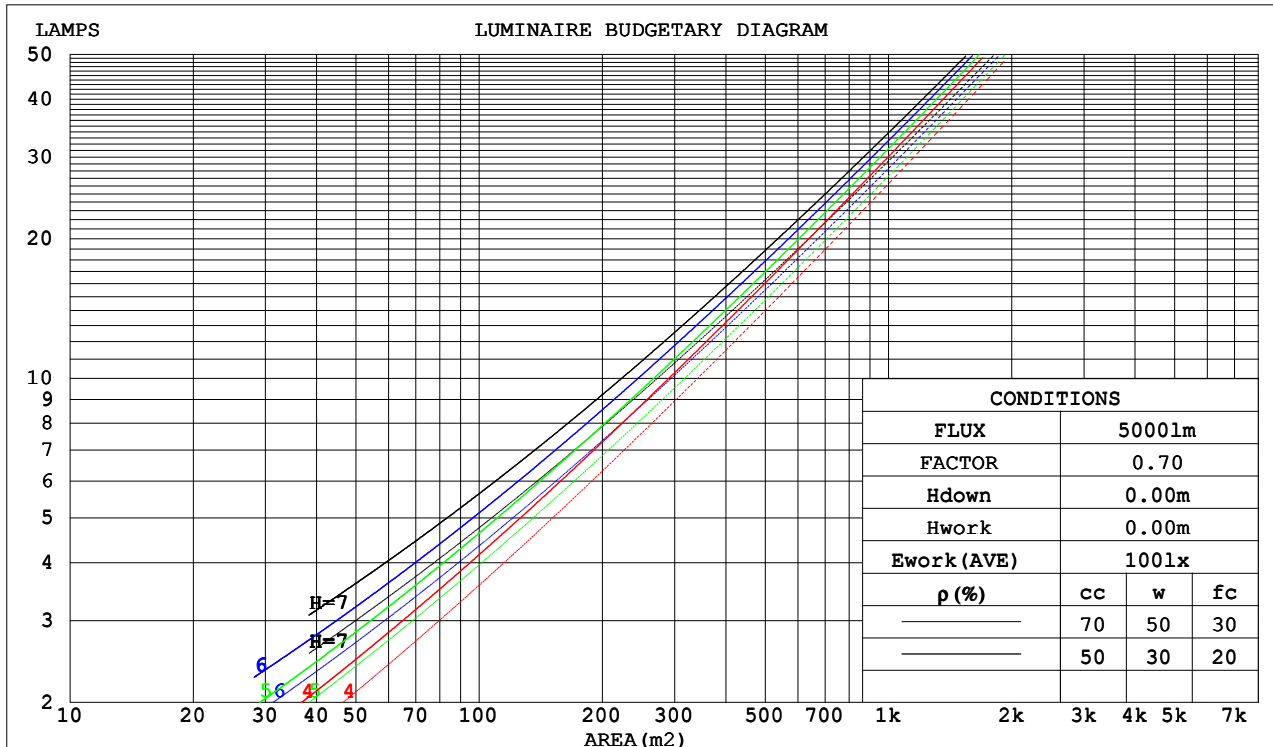
C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2017-12-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.390m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:277.1V I:0.5707A P:150.0W PF:0.9489 Lamp Flux:22509.6x1 lm		
NAME: LM-150W	TYPE:90° Lens	WEIGHT:4.503kg
SPEC.:5000k R80 360L	DIM.: D280mm*167mm	SERIAL No.:
MFR.:	SUR.:0.12m*0.12m*3.14	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 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	1.08	1.04	1.02	1.05	1.03	.00	1.01	.99	.97	.97	.95	.94	.94	.92	.91	.89
2.0	.97	.92	.87	.95	.90	.86	.92	.88	.84	.89	.85	.82	.86	.83	.81	.79
3.0	.88	.81	.76	.86	.80	.75	.83	.78	.74	.81	.76	.73	.78	.75	.72	.70
4.0	.80	.73	.67	.78	.72	.67	.76	.70	.66	.74	.69	.65	.72	.68	.64	.62
5.0	.73	.65	.60	.72	.65	.59	.70	.63	.59	.68	.62	.58	.66	.61	.58	.56
6.0	.67	.59	.54	.66	.59	.53	.64	.58	.53	.62	.57	.52	.61	.56	.52	.50
7.0	.61	.54	.48	.60	.53	.48	.59	.53	.48	.58	.52	.48	.56	.51	.47	.45
8.0	.57	.49	.44	.56	.49	.44	.55	.48	.44	.53	.48	.43	.52	.47	.43	.41
9.0	.52	.45	.40	.52	.45	.40	.51	.44	.40	.50	.44	.40	.49	.43	.40	.38
10.0	.49	.42	.37	.48	.41	.37	.47	.41	.37	.46	.41	.37	.46	.40	.36	.35



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2017-12-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.390m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:277.1V I:0.5707A P:150.0W PF:0.9489 Lamp Flux:22509.6x1 lm														
NAME: LM-150W					TYPE:90°Lens					WEIGHT:4.503kg				
SPEC.:5000k R80 360L					DIM.: D280mm*167mm					SERIAL No.:				
MFR.:					SUR.:0.12m*0.12m*3.14					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	.234	.133	.042	.227	.129	.041	.214	.123	.039	.202	.116	.037	.190	.110	.036			
2.0	.226	.124	.038	.220	.121	.037	.209	.116	.036	.199	.111	.035	.189	.107	.034			
3.0	.215	.114	.034	.210	.112	.034	.200	.108	.033	.191	.104	.032	.182	.101	.031			
4.0	.203	.105	.031	.198	.104	.031	.190	.101	.030	.182	.098	.029	.174	.095	.029			
5.0	.191	.098	.028	.187	.096	.028	.180	.094	.028	.173	.091	.027	.166	.089	.027			
6.0	.181	.091	.026	.177	.089	.026	.170	.087	.025	.164	.085	.025	.158	.083	.025			
7.0	.171	.084	.024	.168	.083	.024	.161	.082	.023	.156	.080	.023	.150	.078	.023			
8.0	.162	.079	.022	.159	.078	.022	.153	.077	.022	.148	.075	.022	.143	.074	.021			
9.0	.153	.074	.021	.151	.073	.021	.146	.072	.020	.141	.071	.020	.137	.069	.020			
10.0	.146	.070	.019	.143	.069	.019	.139	.068	.019	.134	.067	.019	.130	.066	.019			

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	.194	.194	.194	.165	.165	.165	.113	.113	.113	.065	.065	.065	.021	.021	.021	
1.0	.178	.160	.144	.152	.137	.124	.104	.094	.085	.060	.055	.050	.019	.018	.016	
2.0	.167	.135	.109	.143	.117	.094	.098	.081	.066	.056	.047	.039	.018	.015	.013	
3.0	.157	.117	.085	.135	.101	.074	.092	.070	.052	.053	.041	.031	.017	.013	.010	
4.0	.149	.103	.068	.128	.089	.059	.088	.062	.042	.051	.036	.025	.016	.012	.008	
5.0	.141	.092	.056	.121	.080	.049	.084	.056	.035	.048	.033	.020	.016	.011	.007	
6.0	.134	.084	.047	.115	.072	.041	.080	.051	.029	.046	.030	.017	.015	.010	.006	
7.0	.128	.076	.040	.110	.066	.035	.076	.046	.025	.044	.027	.015	.014	.009	.005	
8.0	.122	.071	.035	.105	.061	.031	.073	.043	.022	.042	.025	.013	.014	.008	.004	
9.0	.117	.066	.031	.101	.057	.027	.070	.040	.019	.041	.024	.011	.013	.008	.004	
10.0	.112	.061	.028	.096	.053	.024	.067	.037	.017	.039	.022	.010	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: DEG
Operators:
Test Date: 2017-12-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity: 65.0%
Test Distance: 9.390m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:277.1V I:0.5707A P:150.0W PF:0.9489 Lamp Flux:22509.6x1 lm										
NAME: LM-150W					TYPE:90°Lens			WEIGHT:4.503kg		
SPEC.:5000k R80 360L					DIM.: D280mm*167mm			SERIAL No.:		
MFR.:					SUR.:0.12m*0.12m*3.14			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	27.6	28.8	27.8	29.0	29.2	27.0	28.2	27.2	28.4	28.6
3H	28.1	29.3	28.4	29.5	29.7	27.5	28.7	27.8	28.9	29.1
4H	28.3	29.4	28.6	29.6	29.9	27.7	28.8	28.0	29.0	29.3
6H	28.3	29.4	28.7	29.6	29.9	27.7	28.8	28.1	29.0	29.3
8H	28.3	29.3	28.7	29.6	29.9	27.7	28.7	28.0	29.0	29.3
12H	28.3	29.2	28.6	29.5	29.8	27.7	28.6	28.0	28.9	29.2
4H 2H	27.7	28.8	28.0	29.1	29.3	27.2	28.3	27.5	28.6	28.8
3H	28.4	29.4	28.8	29.7	30.0	27.9	28.9	28.3	29.2	29.5
4H	28.7	29.6	29.1	29.9	30.2	28.2	29.0	28.6	29.4	29.7
6H	28.8	29.6	29.2	29.9	30.3	28.3	29.0	28.7	29.4	29.8
8H	28.8	29.5	29.2	29.9	30.3	28.3	29.0	28.7	29.3	29.7
12H	28.8	29.4	29.2	29.8	30.2	28.3	28.9	28.7	29.3	29.7
8H 4H	28.7	29.4	29.1	29.8	30.2	28.3	28.9	28.7	29.3	29.7
6H	28.9	29.5	29.3	29.9	30.3	28.4	29.0	28.9	29.4	29.8
8H	28.9	29.4	29.4	29.8	30.3	28.4	28.9	28.9	29.3	29.8
12H	28.9	29.3	29.4	29.8	30.3	28.4	28.8	28.9	29.3	29.8
12H 4H	28.7	29.3	29.1	29.7	30.1	28.2	28.9	28.6	29.2	29.6
6H	28.9	29.4	29.3	29.8	30.3	28.4	28.9	28.9	29.3	29.8
8H	28.9	29.3	29.4	29.8	30.3	28.4	28.8	28.9	29.3	29.8
Variations with the observer position at spacings:										
S = 1.0H	+ 0.7 / - 1.0					+ 0.7 / - 1.0				
1.5H	+ 1.0 / - 0.6					+ 0.8 / - 0.7				
2.0H	+ 1.6 / - 1.2					+ 1.4 / - 1.1				

CIE Pub.117 Corrected 22510 lm Total Lamp Luminous Flux. (8log(F/F0) = 10.8)

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: DEG
Operators:
Test Date: 2017-12-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity: 65.0%
Test Distance: 9.390m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:277.1V I:0.5707A P:150.0W PF:0.9489 Lamp Flux:22509.6x1 lm		
NAME: LM-150W	TYPE:90°Lens	WEIGHT:4.503kg
SPEC.:5000k R80 360L	DIM.: D280mm*167mm	SERIAL No.:
MFR.:	SUR.:0.12m*0.12m*3.14	PROTECTION ANGLE:

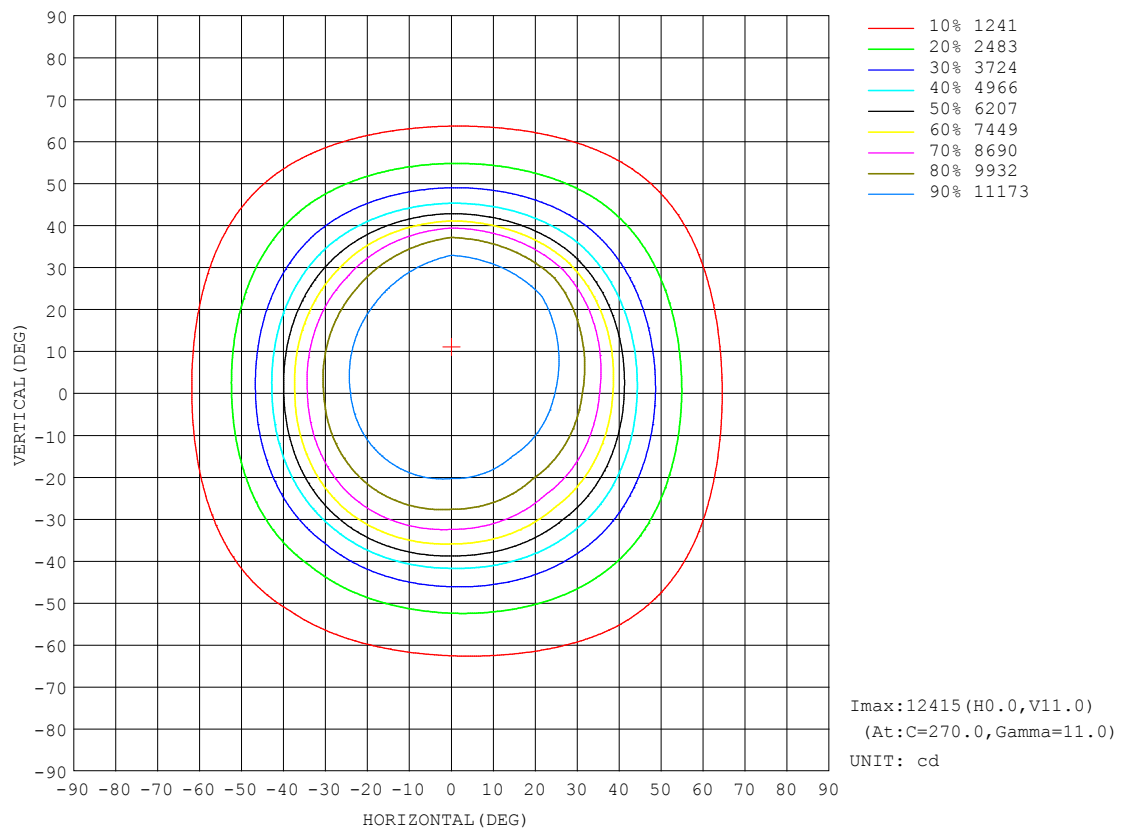
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	71	62	56	70	62	56	69	61	56	51
0.80	80	72	66	80	71	66	78	70	65	60
1.00	88	79	74	87	79	74	85	79	73	67
1.25	93	86	81	92	85	80	90	84	79	74
1.50	97	90	85	96	89	85	93	88	84	78
2.00	102	96	92	101	95	91	98	93	89	83
2.50	105	99	95	103	98	94	100	96	92	85
3.00	107	103	99	105	101	97	102	98	95	88
4.00	110	106	103	108	104	101	104	101	99	91
5.00	112	109	106	110	107	104	105	103	101	92
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: DEG
Operators:
Test Date: 2017-12-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity: 65.0%
Test Distance: 9.390m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:277.1V I:0.5707A P:150.0W PF:0.9489 Lamp Flux:22509.6x1 lm		
NAME: LM-150W	TYPE:90°Lens	WEIGHT:4.503kg
SPEC.:5000k R80 360L	DIM.: D280mm*167mm	SERIAL No.:
MFR.:	SUR.:0.12m*0.12m*3.14	PROTECTION ANGLE:

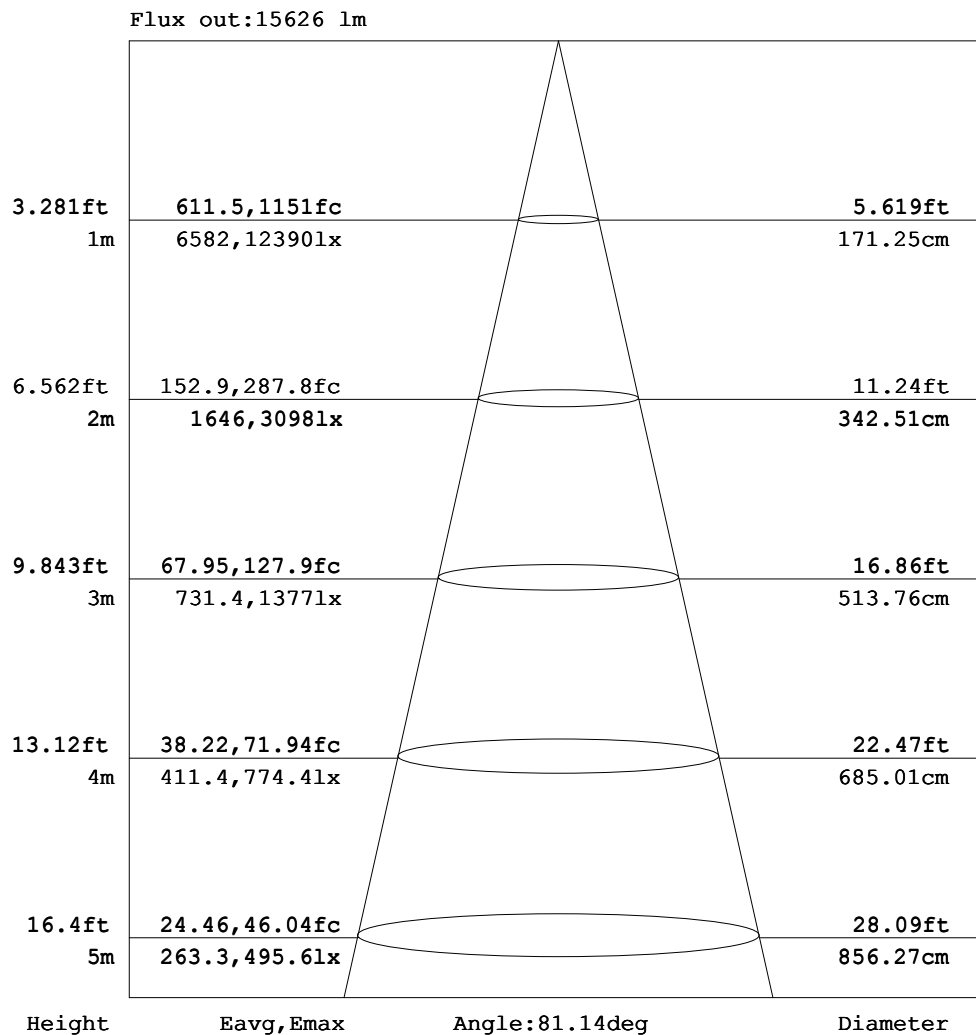


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:DEG
Operators:
Test Date:2017-12-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:9.390m [K=1.0000]
Remarks:

AAI Figure

Test:U:277.1V I:0.5707A P:150.0W PF:0.9489 Lamp Flux:22509.6x1 lm		
NAME: LM-150W	TYPE:90°Lens	WEIGHT:4.503kg
SPEC.:5000k R80 360L	DIM.: D280mm*167mm	SERIAL No.:
MFR.:	SUR.:0.12m*0.12m*3.14	PROTECTION ANGLE:



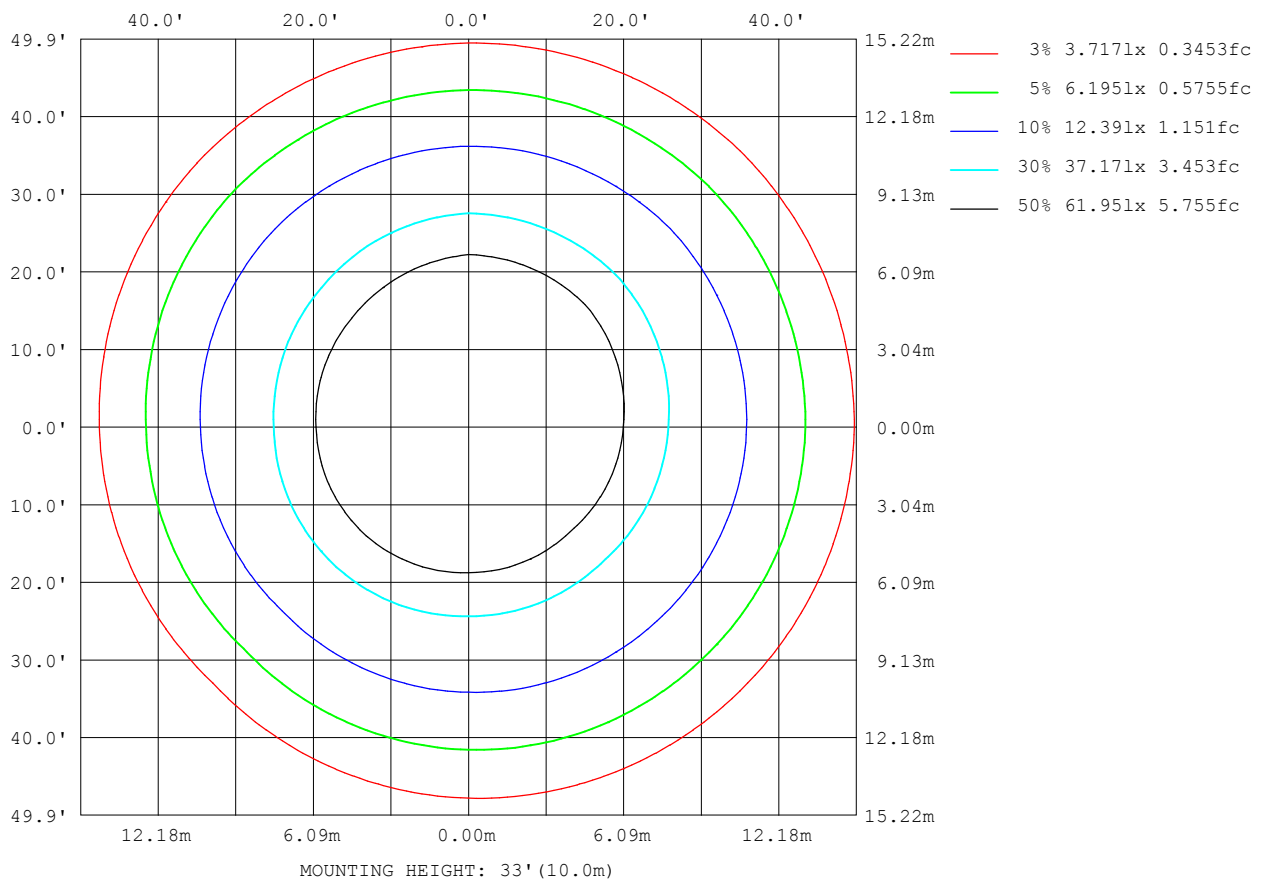
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:DEG
Operators:
Test Date:2017-12-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:9.390m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

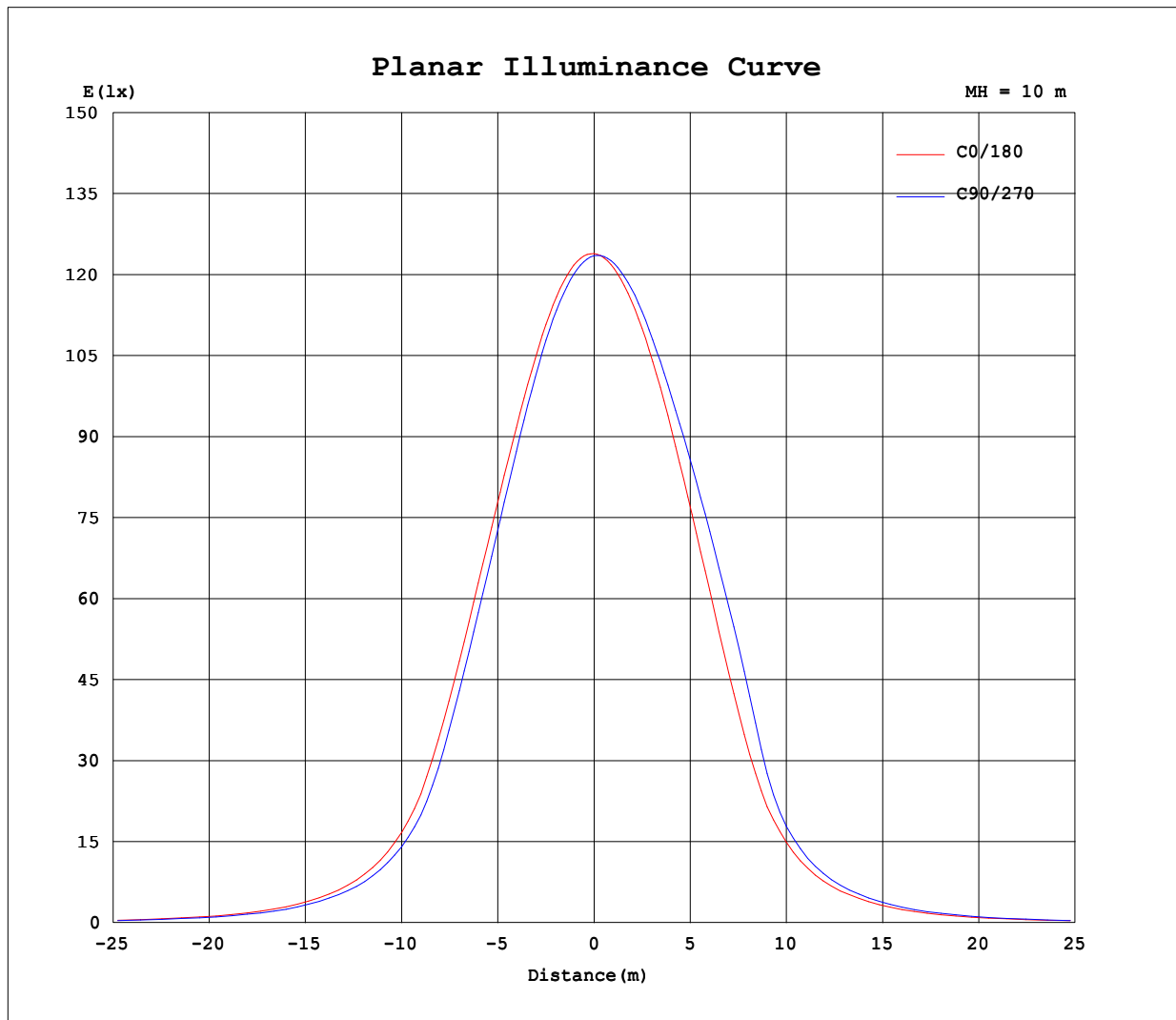
Test:U:277.1V I:0.5707A P:150.0W PF:0.9489 Lamp Flux:22509.6x1 lm		
NAME: LM-150W	TYPE:90°Lens	WEIGHT:4.503kg
SPEC.:5000k R80 360L	DIM.: D280mm*167mm	SERIAL No.:
MFR.:	SUR.:0.12m*0.12m*3.14	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:DEG
Operators:
Test Date:2017-12-29

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity:65.0%
Test Distance:9.390m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: DEG
Operators:
Test Date: 2017-12-29

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity: 65.0%
Test Distance: 9.390m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:277.1V I:0.5707A P:150.0W PF:0.9489 Lamp Flux:22509.6x1 lm		
NAME: LM-150W	TYPE:90°Lens	WEIGHT:4.503kg
SPEC.:5000k R80 360L	DIM.: D280mm*167mm	SERIAL No.:
MFR.:	SUR.:0.12m*0.12m*3.14	PROTECTION ANGLE:

Table--1

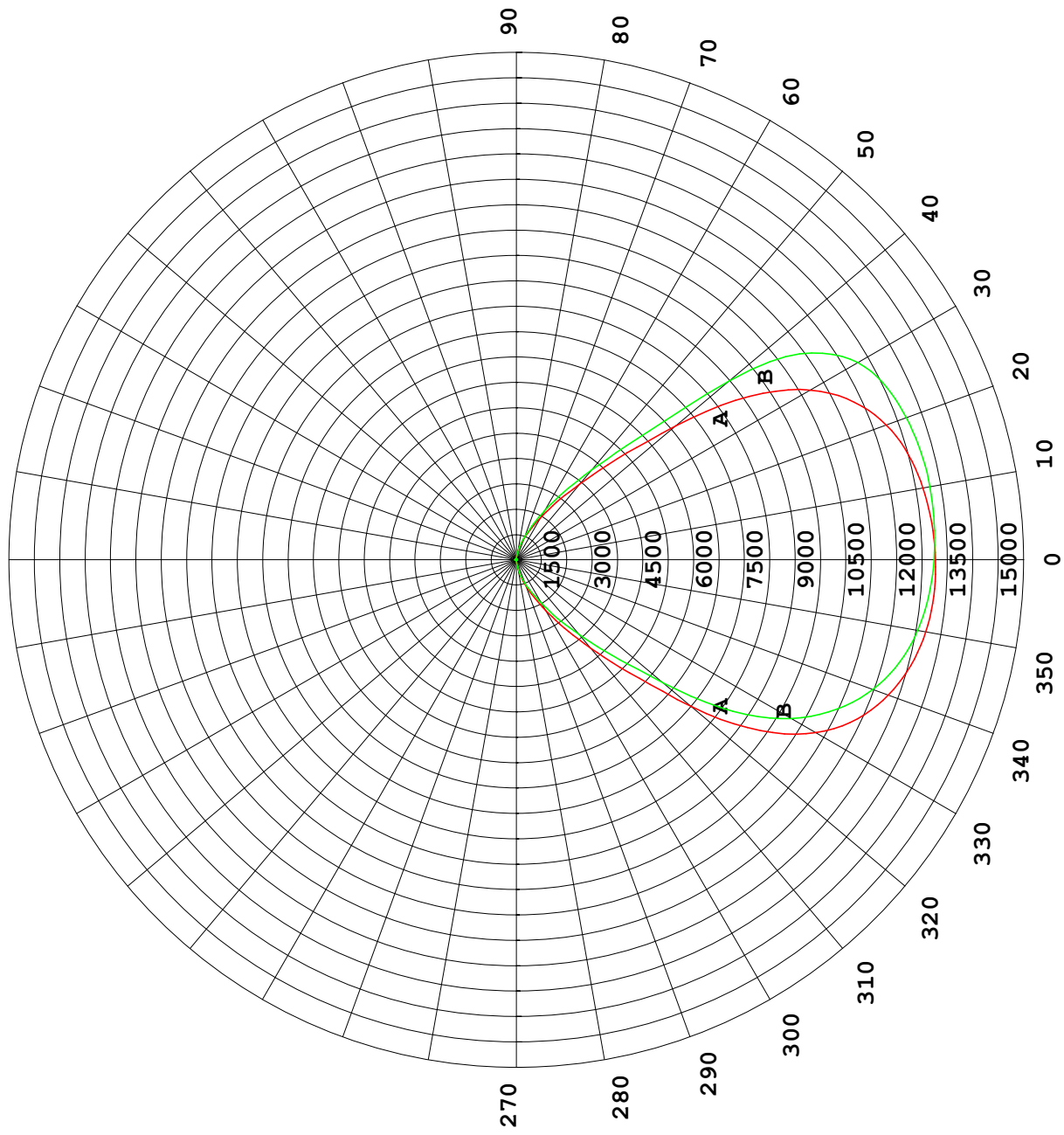
UNIT: ×10cd

C (DEG) γ (DEG)	0	45	90	135	180	225	270	315										
0	1239	1237	1235	1234	1239	1237	1235	1234										
5	1239	1230	1224	1223	1233	1237	1240	1239										
10	1229	1212	1205	1206	1221	1231	1241	1239										
15	1208	1179	1173	1181	1200	1219	1238	1233										
20	1171	1128	1122	1140	1164	1195	1227	1218										
25	1113	1052	1046	1074	1102	1151	1208	1191										
30	1023	942	939	973	1003	1072	1166	1137										
35	881	786	781	819	842	930	1066	1032										
40	676	595	566	583	616	703	824	800										
45	474	431	399	384	422	476	506	515										
50	341	311	289	270	292	329	346	359										
55	247	228	212	192	208	232	244	253										
60	174	163	149	134	143	156	167	174										
65	120	117	106	93.6	98.2	105	111	116										
70	82.4	82.7	73.4	64.5	66.8	69.9	70.7	75.3										
75	49.5	49.1	44.2	39.2	41.2	43.0	42.3	45.0										
80	22.4	21.6	19.7	18.4	19.7	21.1	20.0	20.8										
85	5.22	4.32	3.09	3.78	4.33	5.40	6.20	5.22										
90	0.14	0.10	0.14	0.14	0.11	0.12	0.12	0.11										
95	0.19	0.19	0.20	0.20	0.15	0.15	0.14	0.13										
100	0.27	0.28	0.29	0.30	0.22	0.22	0.20	0.19										
105	0.38	0.41	0.42	0.43	0.33	0.32	0.29	0.27										
110	0.54	0.58	0.62	0.62	0.46	0.45	0.40	0.38										
115	0.76	0.83	0.90	0.89	0.64	0.61	0.56	0.53										
120	1.06	1.16	1.26	1.25	0.89	0.83	0.76	0.75										
125	1.42	1.56	1.69	1.67	1.20	1.11	1.03	1.03										
130	1.83	2.00	2.17	2.13	1.57	1.45	1.36	1.37										
135	2.29	2.48	2.69	2.62	1.97	1.81	1.72	1.75										
140	2.75	2.95	3.18	3.10	2.35	2.15	2.07	2.09										
145	3.16	3.37	3.57	3.50	2.73	2.52	2.44	2.48										
150	3.49	3.68	3.86	3.82	3.03	2.86	2.76	2.80										
155	3.81	3.99	4.13	4.09	3.36	3.17	3.10	3.13										
160	4.12	4.29	4.41	4.36	3.70	3.53	3.45	3.48										
165	4.42	4.54	4.63	4.58	4.00	3.83	3.77	3.78										
170	4.61	4.69	4.72	4.68	4.30	4.18	4.11	4.12										
175	4.69	4.73	4.72	4.69	4.67	4.60	4.54	4.53										
180	4.76	4.78	4.74	4.71	4.77	4.77	4.74	4.70										

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: DEG
Operators:
Test Date: 2017-12-29

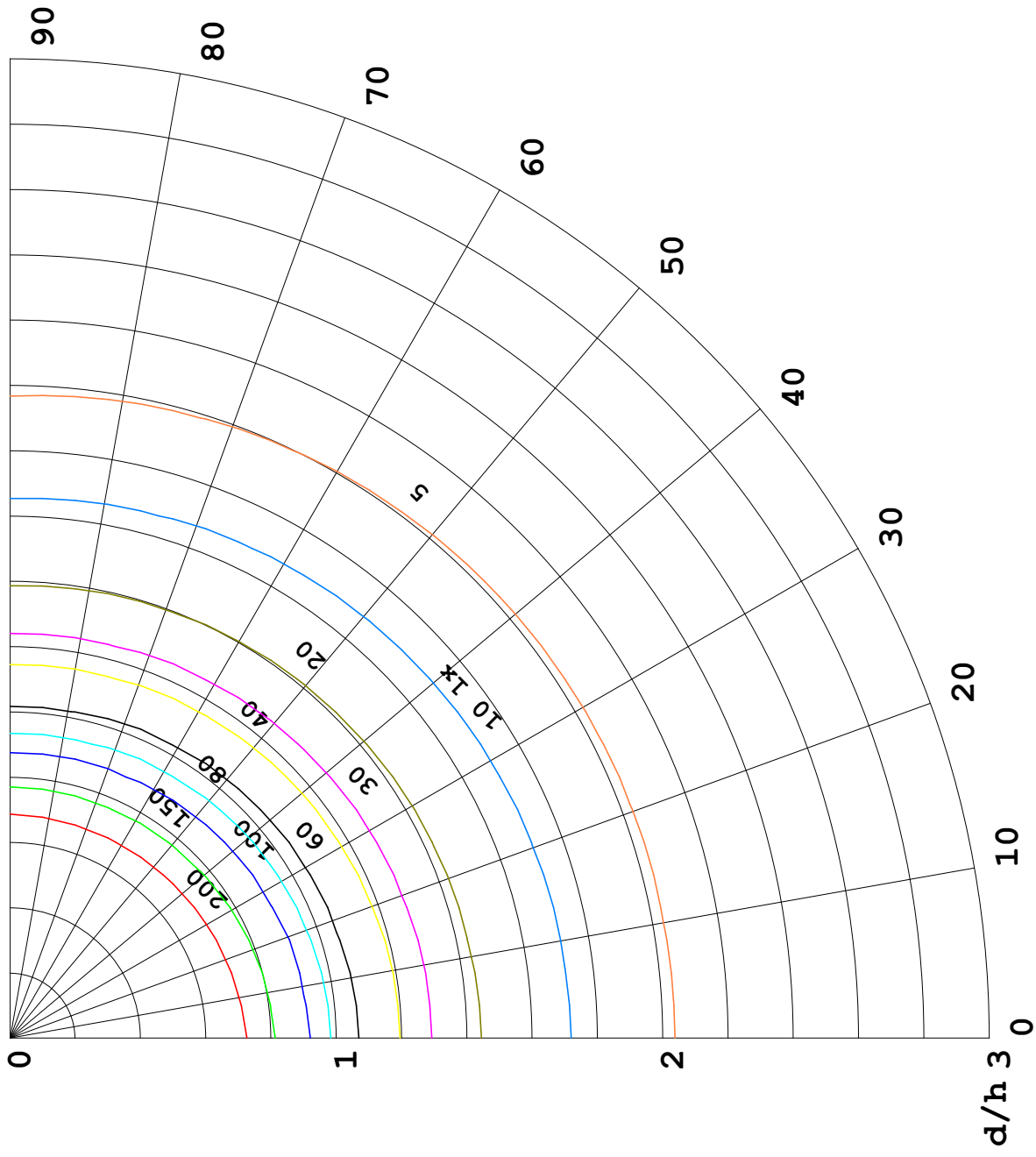
γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000B_V1 SYSTEM V2.0.284
Humidity: 65.0%
Test Distance: 9.390m [K=1.0000]
Remarks:

I (cd)



$\kappa = 1$

1000 lm



F = 5000 lm
K = 0.7
Hcc = 0.0 m
Hfc = 0.0 m
Eave = 100 lx

	Pcc	Pw	Pfc
————	70	50	30
————	50	30	20

