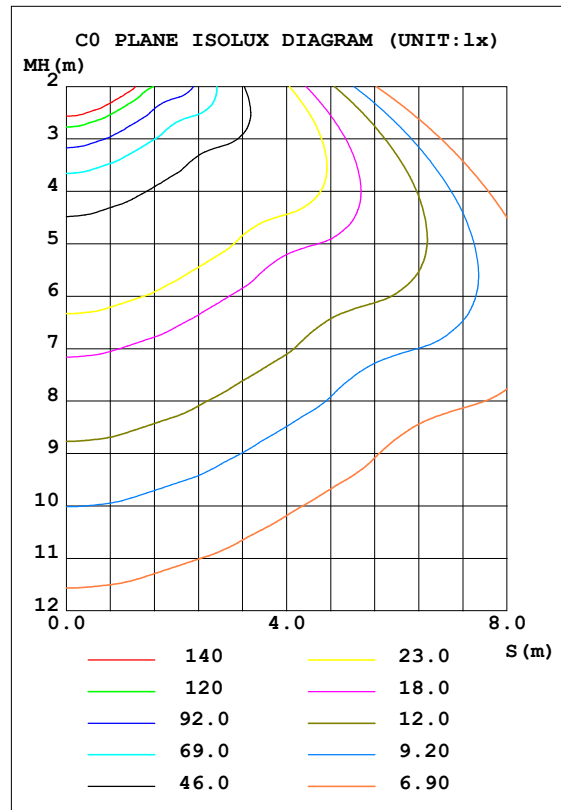
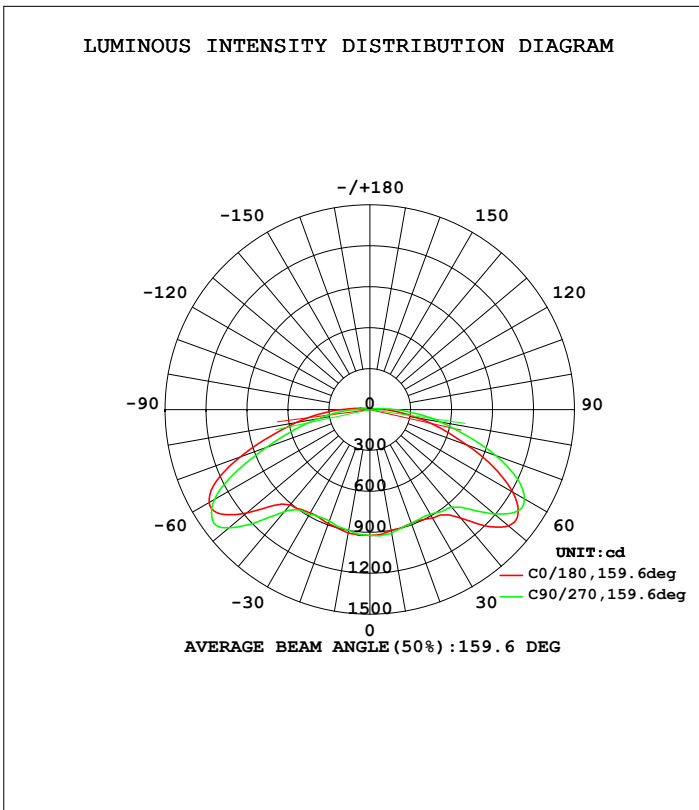


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:279.0V I:0.1555A P:41.86W PF:0.9647 Lamp Flux:5640.38x1 lm		
NAME: 4431-40-5K	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:5000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 134.75 lm/W			
MODEL	SMD3030 (757G)	Imax (cd)	1414	S/MH (C0/180)	1.51
NOMINAL POWER (W)	40	LOR (%)	100.0	S/MH (C90/270)	1.55
RATED VOLTAGE (V)	277	TOTAL FLUX (lm)	5640.4	η UP, DN (C0-180)	1.2, 48.2
NOMINAL FLUX (lm)	5640.38	CIE CLASS	DIRECT	η UP, DN (C180-360)	1.4, 49.2
LAMPS INSIDE	1	η up (%)	2.7	CIBSE SHR NOM	2.00
TEST VOLTAGE (V)	277	η down (%)	97.3	CIBSE SHR MAX	0.00



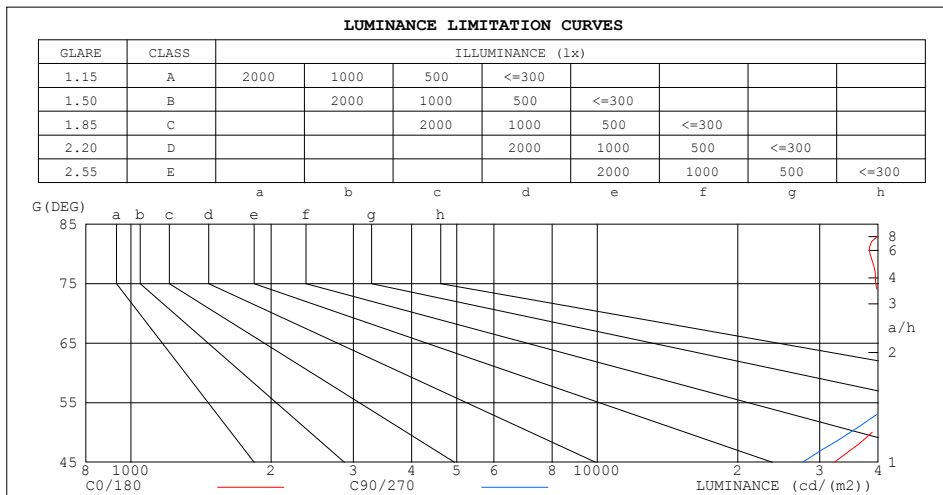
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2018-05-08

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.100m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum, lamp
10	900.5	919.3	917.2	899.2					0- 10	87.48	87.48	1.55,1.55
20	888.3	890.5	890.3	870.1					10- 20	253.6	341.0	6.05,6.05
30	918.7	887.4	874.8	885.6					20- 30	408.5	749.5	13.3,13.3
40	1039	935.6	913.0	976.7					30- 40	577.3	1327	23.5,23.5
50	1325	1190	1179	1349					40- 50	858.4	2185	38.7,38.7
60	1208	1307	1361	1313					50- 60	1186	3371	59.8,59.8
70	755.2	981.1	1008	804.0					60- 70	1105	4477	79.4,79.4
80	354.1	528.2	547.5	384.5					70- 80	693.5	5170	91.7,91.7
90	112.3	187.6	211.3	127.1					80- 90	319.1	5489	97.3,97.3
100	40.55	45.76	68.06	31.30					90-100	100.8	5590	99.1,99.1
110	14.51	4.662	24.16	4.648					100-110	25.36	5615	99.6,99.6
120	5.292	5.317	7.684	5.163					110-120	8.237	5624	99.7,99.7
130	5.304	5.543	5.292	5.372					120-130	4.852	5628	99.8,99.8
140	5.359	5.617	5.482	5.445					130-140	4.211	5633	99.9,99.9
150	5.194	5.457	5.451	5.286					140-150	3.422	5636	99.9,99.9
160	4.998	5.133	5.206	5.059					150-160	2.413	5638	100,100
170	5.065	5.127	5.194	5.053					160-170	1.444	5640	100,100
180	5.170	5.163	5.188	5.151					170-180	0.4896	5640	100,100
DEG	LUMINOUS INTENSITY:cd MAX (Ii - Iavg)/Iavg (0-135) = 132.2 %									UNIT:lm		



G (DEG)	C0/180	C90/270
85	44379	72732
80	38427	57321
75	39544	53067
70	41610	54055
65	44681	52971
60	45533	49253
55	43566	42892
50	38842	34898
45	32169	27539

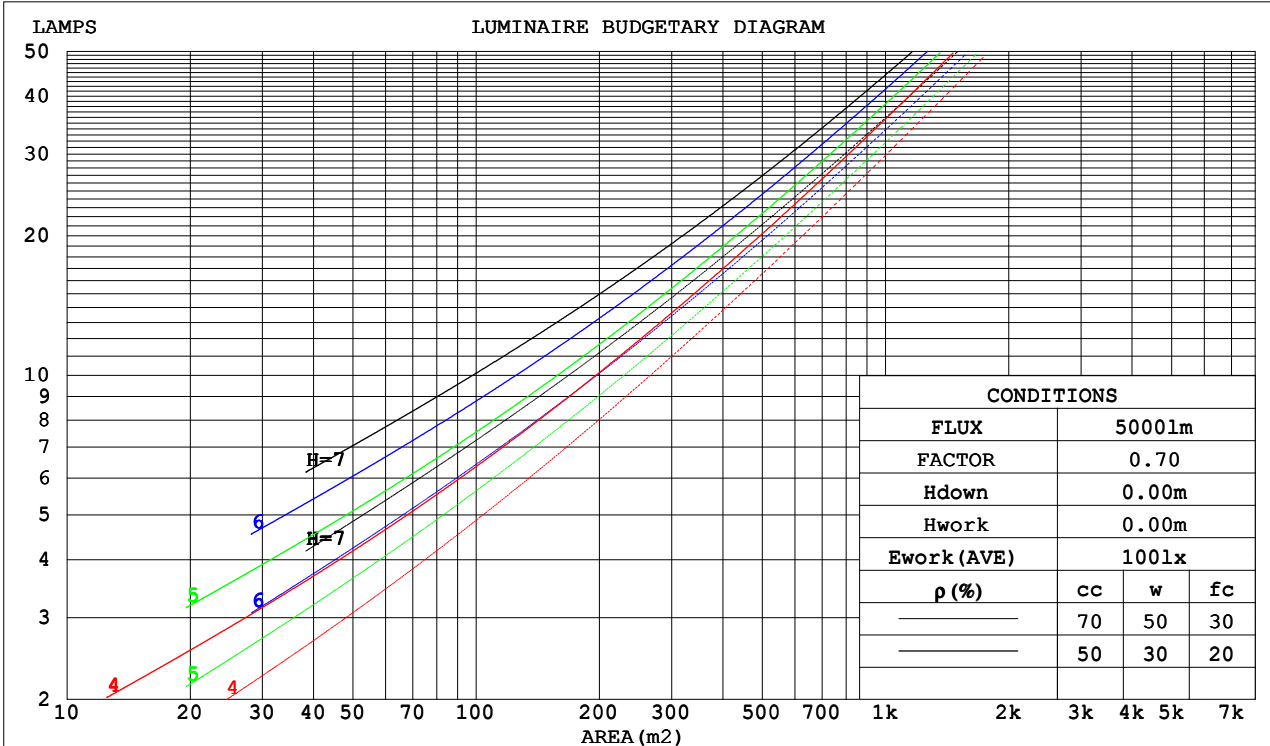
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2018-05-08

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.100m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:279.0V I:0.1555A P:41.86W PF:0.9647 Lamp Flux:5640.38x1 lm		
NAME: 4431-40-5K	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:5000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	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
pf	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization (CU)									
0.0	1.18	1.18	1.18	1.15	1.15	1.15	1.10	1.10	1.10	1.04	1.04	1.04	.00	.00	.00	.97
1.0	.98	.93	.87	.96	.90	.86	.91	.86	.82	.86	.83	.79	.82	.79	.77	.74
2.0	.82	.74	.66	.80	.72	.65	.76	.69	.63	.72	.66	.61	.68	.64	.60	.57
3.0	.70	.60	.52	.68	.59	.51	.64	.56	.50	.61	.54	.48	.58	.52	.47	.45
4.0	.60	.50	.42	.58	.49	.41	.55	.47	.40	.53	.45	.39	.50	.44	.38	.36
5.0	.52	.42	.34	.51	.41	.34	.48	.40	.33	.46	.38	.32	.44	.37	.32	.29
6.0	.46	.36	.28	.45	.35	.28	.43	.34	.28	.41	.33	.27	.39	.32	.27	.24
7.0	.41	.31	.24	.40	.31	.24	.38	.30	.24	.37	.29	.23	.35	.28	.23	.21
8.0	.37	.28	.21	.36	.27	.21	.35	.26	.20	.33	.26	.20	.32	.25	.20	.18
9.0	.34	.25	.18	.33	.24	.18	.32	.24	.18	.30	.23	.18	.29	.22	.17	.15
10.0	.31	.22	.16	.30	.22	.16	.29	.21	.16	.28	.21	.16	.27	.20	.15	.14



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2018-05-08

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.100m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:279.0V I:0.1555A P:41.86W PF:0.9647 Lamp Flux:5640.38x1 lm		
NAME: 4431-40-5K	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:5000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	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	.406	.231	.073	.398	.227	.072	.383	.219	.070	.369	.213	.068	.356	.206	.066	
2.0	.365	.200	.061	.357	.197	.061	.344	.191	.059	.331	.186	.058	.319	.180	.057	
3.0	.328	.174	.052	.321	.172	.052	.309	.167	.051	.297	.163	.050	.287	.159	.049	
4.0	.295	.154	.045	.290	.152	.045	.278	.148	.044	.268	.144	.043	.259	.141	.043	
5.0	.268	.137	.040	.263	.135	.039	.253	.132	.039	.244	.129	.038	.235	.126	.038	
6.0	.245	.123	.035	.240	.121	.035	.231	.118	.034	.223	.116	.034	.215	.113	.034	
7.0	.225	.111	.031	.220	.110	.031	.212	.107	.031	.205	.105	.031	.198	.103	.030	
8.0	.207	.101	.028	.204	.100	.028	.196	.098	.028	.190	.096	.028	.183	.094	.027	
9.0	.192	.093	.026	.189	.092	.026	.183	.090	.026	.176	.088	.025	.171	.087	.025	
10.0	.179	.086	.024	.176	.085	.024	.170	.083	.024	.165	.082	.023	.160	.080	.023	

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	.211	.211	.211	.180	.180	.180	.123	.123	.123	.071	.071	.071	.023	.023	.023	
1.0	.208	.176	.147	.178	.151	.127	.121	.104	.088	.070	.060	.051	.022	.019	.016	
2.0	.203	.152	.110	.174	.131	.095	.119	.091	.066	.069	.053	.039	.022	.017	.013	
3.0	.196	.136	.087	.168	.117	.075	.116	.081	.053	.067	.047	.031	.021	.015	.010	
4.0	.189	.123	.072	.162	.106	.063	.112	.074	.044	.065	.043	.026	.021	.014	.009	
5.0	.182	.113	.063	.156	.098	.054	.107	.068	.038	.062	.040	.023	.020	.013	.008	
6.0	.174	.105	.056	.149	.091	.049	.103	.064	.034	.060	.037	.020	.019	.012	.007	
7.0	.166	.098	.051	.143	.085	.044	.099	.060	.031	.057	.035	.019	.019	.012	.006	
8.0	.159	.093	.047	.137	.080	.041	.095	.056	.029	.055	.033	.017	.018	.011	.006	
9.0	.152	.088	.044	.131	.076	.039	.091	.054	.027	.053	.032	.016	.017	.010	.005	
10.0	.146	.083	.042	.126	.072	.037	.087	.051	.026	.051	.030	.016	.016	.010	.005	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2018-05-08

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.100m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:279.0V I:0.1555A P:41.86W PF:0.9647 Lamp Flux:5640.38x1 lm										
NAME: 4431-40-5K					TYPE:Frosted pc			WEIGHT:2.68KG		
SPEC.:5000K-RA80-84L					DIM.: D290*H110mm			SERIAL No.:		
MFR.:					SUR.:260*260mm			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	26.6	28.4	27.0	28.6	28.9	26.8	28.6	27.2	28.8	29.1
3H	28.5	30.2	28.9	30.5	30.8	29.2	30.8	29.6	31.2	31.5
4H	29.2	30.8	29.6	31.1	31.4	30.2	31.7	30.5	32.0	32.4
6H	29.8	31.3	30.2	31.6	32.0	31.0	32.4	31.3	32.8	33.1
8H	30.0	31.4	30.4	31.8	32.1	31.3	32.8	31.7	33.1	33.5
12H	30.2	31.6	30.6	31.9	32.3	31.7	33.1	32.1	33.4	33.8
4H 2H	27.5	29.1	27.9	29.4	29.7	27.7	29.2	28.0	29.5	29.9
3H	29.5	30.9	29.9	31.3	31.7	30.1	31.5	30.5	31.9	32.2
4H	30.4	31.6	30.8	32.0	32.4	31.2	32.4	31.6	32.8	33.2
6H	31.1	32.2	31.5	32.6	33.1	32.1	33.3	32.6	33.7	34.1
8H	31.3	32.4	31.8	32.8	33.3	32.6	33.6	33.0	34.1	34.5
12H	31.6	32.6	32.1	33.0	33.5	33.0	34.0	33.5	34.4	34.9
8H 4H	30.8	31.9	31.3	32.3	32.7	31.5	32.5	31.9	33.0	33.4
6H	31.7	32.6	32.2	33.1	33.5	32.6	33.5	33.1	34.0	34.5
8H	32.1	32.9	32.6	33.4	33.9	33.2	34.0	33.7	34.5	35.0
12H	32.5	33.2	33.0	33.7	34.2	33.8	34.5	34.4	35.0	35.6
12H 4H	30.9	31.8	31.3	32.3	32.8	31.5	32.5	32.0	32.9	33.4
6H	31.8	32.6	32.4	33.1	33.6	32.7	33.5	33.2	34.0	34.5
8H	32.3	33.0	32.9	33.5	34.1	33.4	34.1	33.9	34.6	35.1
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.3 / - 0.3					+ 0.2 / - 0.2				
2.0H	+ 0.3 / - 0.7					+ 0.3 / - 0.6				

CIE Pub.117 Corrected 5640 lm Total Lamp Luminous Flux. (8log(F/F0) = 6.0)

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2018-05-08

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.100m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:279.0V I:0.1555A P:41.86W PF:0.9647 Lamp Flux:5640.38x1 lm		
NAME: 4431-40-5K	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:5000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	PROTECTION ANGLE:

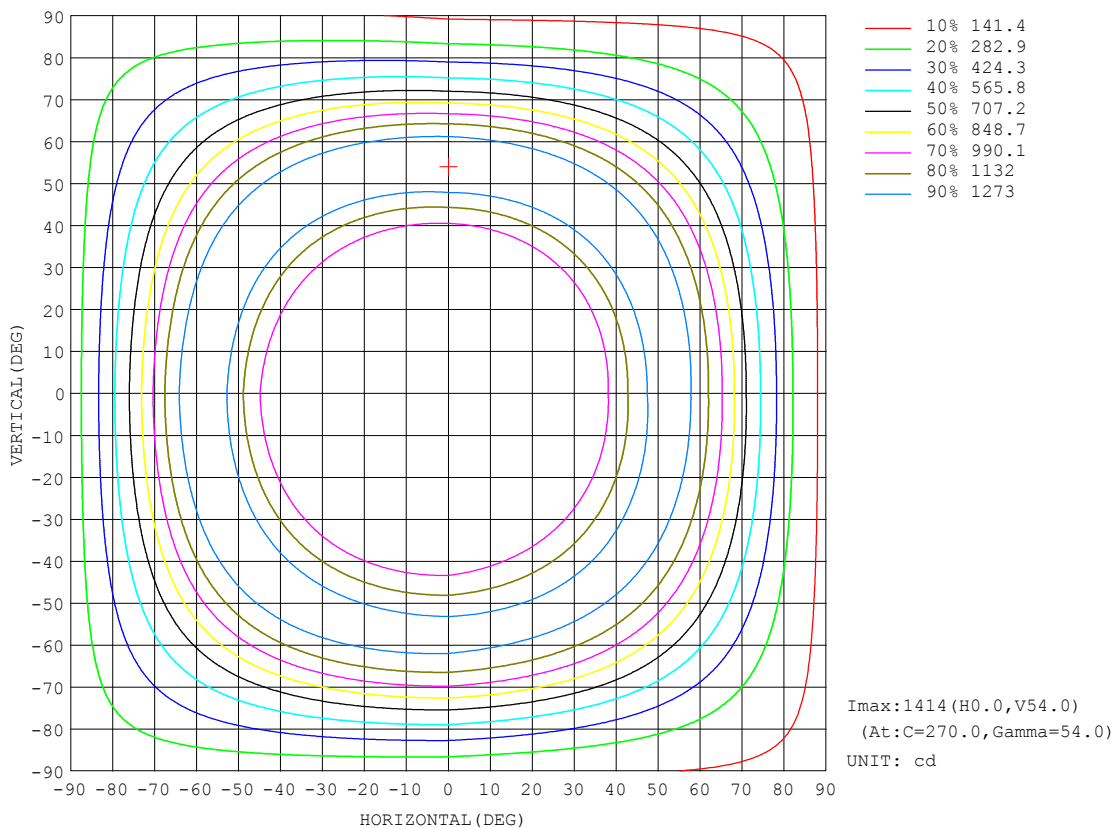
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	45	32	23	44	31	23	43	31	23	16
0.80	55	41	32	54	41	32	52	40	31	23
1.00	64	50	41	63	49	41	60	51	40	31
1.25	72	58	49	70	57	49	67	56	48	39
1.50	77	65	56	75	64	55	72	62	54	44
2.00	86	75	66	84	73	65	80	71	64	54
2.50	91	81	73	89	79	72	84	76	70	60
3.00	95	86	79	93	84	77	88	81	75	65
4.00	101	93	86	98	91	85	93	87	82	71
5.00	104	97	92	101	95	90	96	91	87	76
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2018-05-08

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.100m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:279.0V I:0.1555A P:41.86W PF:0.9647 Lamp Flux:5640.38x1 lm		
NAME: 4431-40-5K	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:5000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	PROTECTION ANGLE:

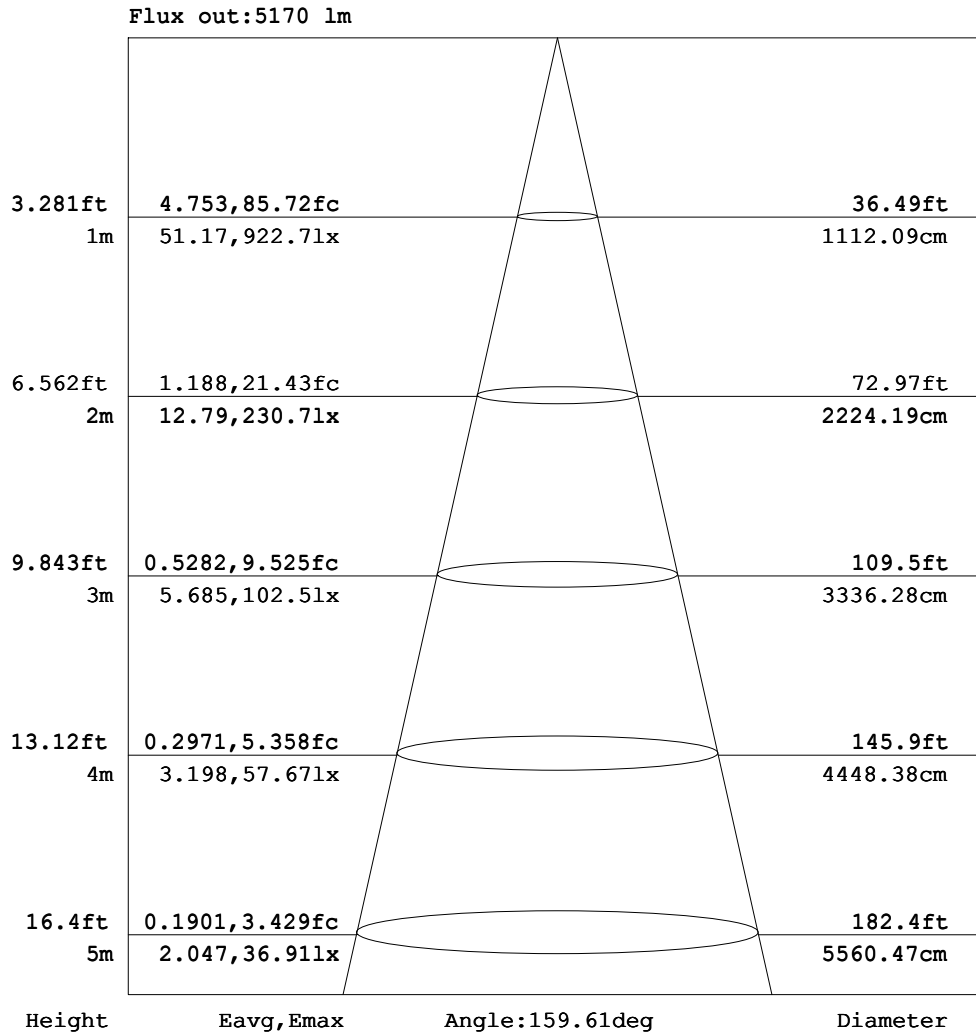


C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2018-05-08

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.100m [K=1.0000]
 Remarks:

AAI Figure

Test:U:279.0V I:0.1555A P:41.86W PF:0.9647 Lamp Flux:5640.38x1 lm		
NAME: 4431-40-5K	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:5000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	PROTECTION ANGLE:



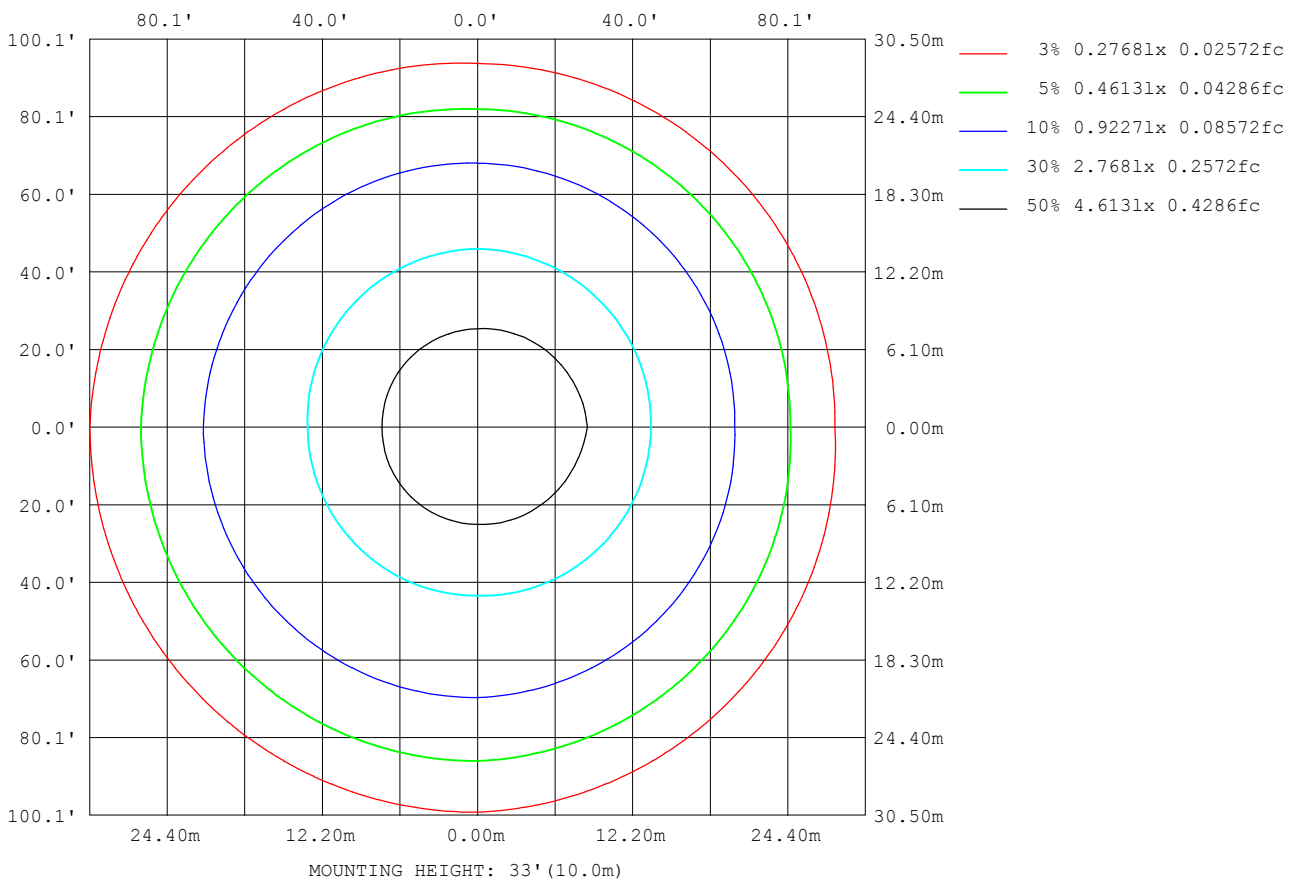
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2018-05-08

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.100m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

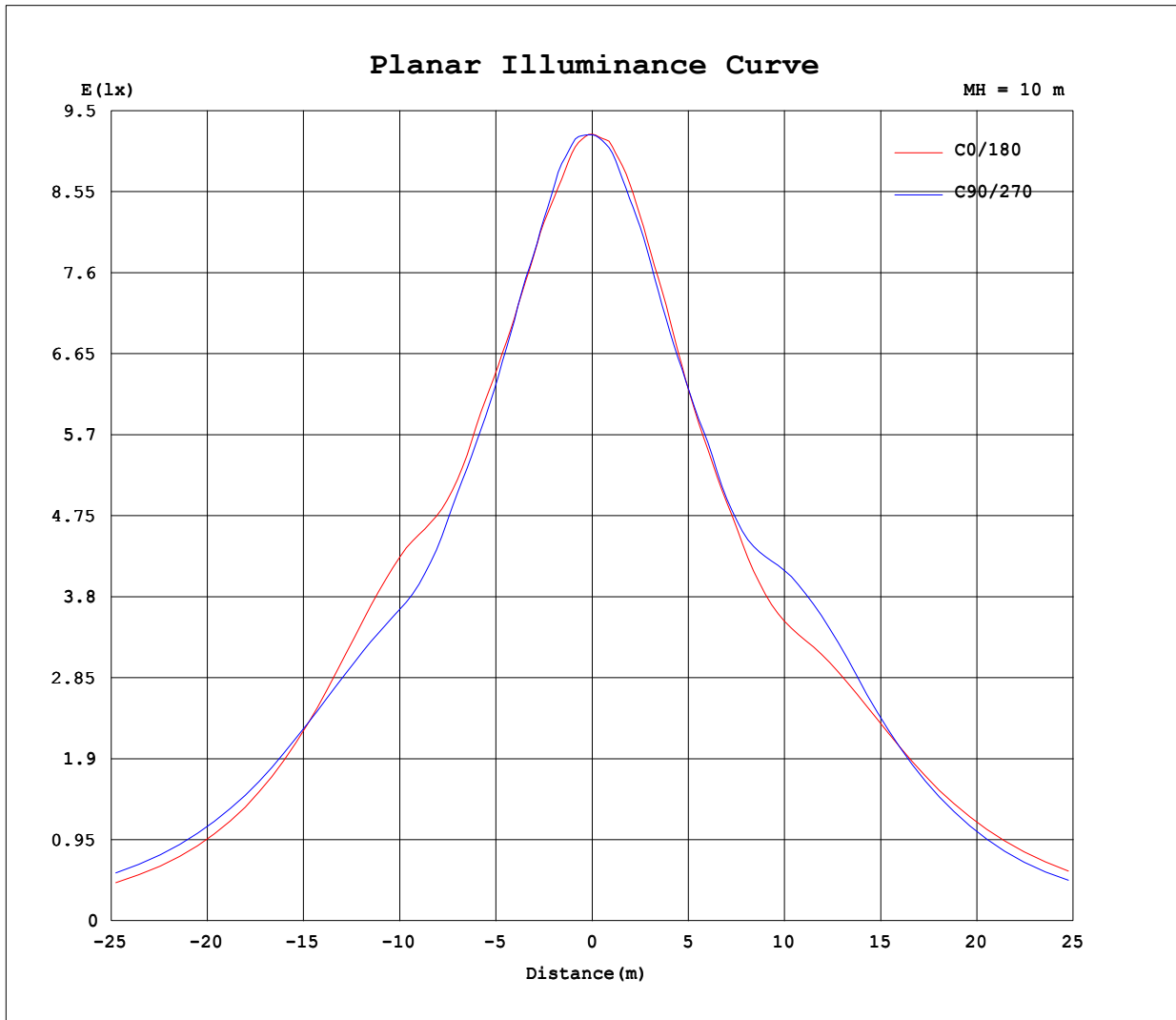
Test:U:279.0V I:0.1555A P:41.86W PF:0.9647 Lamp Flux:5640.38x1 lm		
NAME: 4431-40-5K	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:5000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2018-05-08

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.100m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2018-05-08

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.100m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:279.0V I:0.1555A P:41.86W PF:0.9647 Lamp Flux:5640.38x1 lm		
NAME: 4431-40-5K	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:5000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	PROTECTION ANGLE:

Table--1

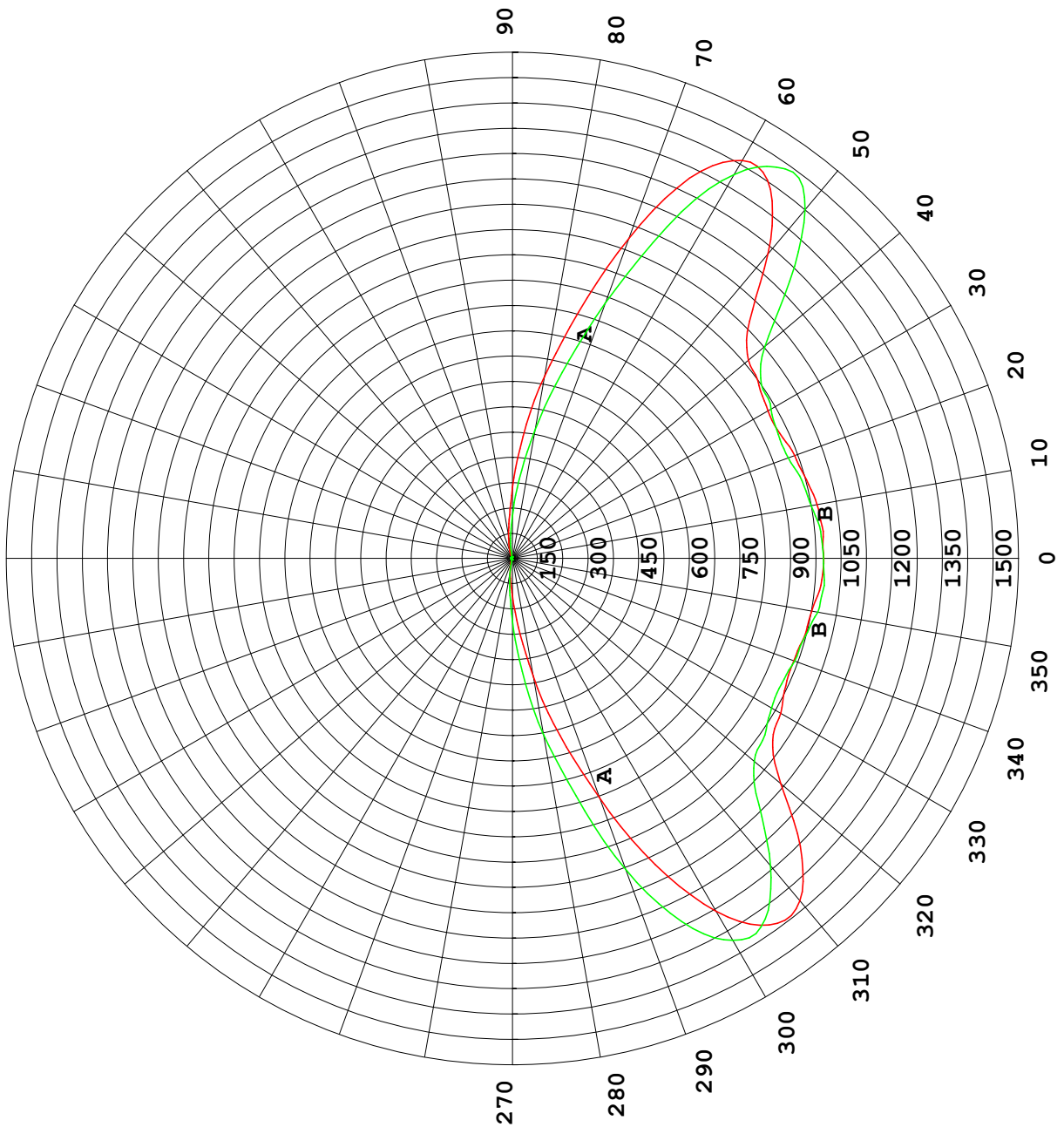
UNIT: cd

C (DEG) \ γ (DEG)	0	90	180	270															
0	923	922	923	922															
5	918	928	925	917															
10	901	919	917	899															
15	896	898	902	888															
20	888	891	890	870															
25	894	881	875	870															
30	919	887	875	886															
35	942	913	893	901															
40	1039	936	913	977															
45	1207	1033	994	1163															
50	1325	1190	1179	1349															
55	1326	1306	1334	1409															
60	1208	1307	1361	1313															
65	1002	1188	1243	1084															
70	755	981	1008	804															
75	543	729	754	570															
80	354	528	548	384															
85	205	336	363	235															
90	112	188	211	127															
95	66.9	97.0	116	68.7															
100	40.5	45.8	68.1	31.3															
105	24.7	10.7	40.4	6.82															
110	14.5	4.66	24.2	4.65															
115	7.34	5.08	14.2	4.95															
120	5.29	5.32	7.68	5.16															
125	5.29	5.46	5.19	5.29															
130	5.30	5.54	5.29	5.37															
135	5.35	5.62	5.38	5.45															
140	5.36	5.62	5.48	5.45															
145	5.34	5.62	5.49	5.43															
150	5.19	5.46	5.45	5.29															
155	5.05	5.26	5.33	5.14															
160	5.00	5.13	5.21	5.06															
165	5.03	5.13	5.17	5.03															
170	5.07	5.13	5.19	5.05															
175	5.12	5.13	5.19	5.12															
180	5.17	5.16	5.19	5.15															

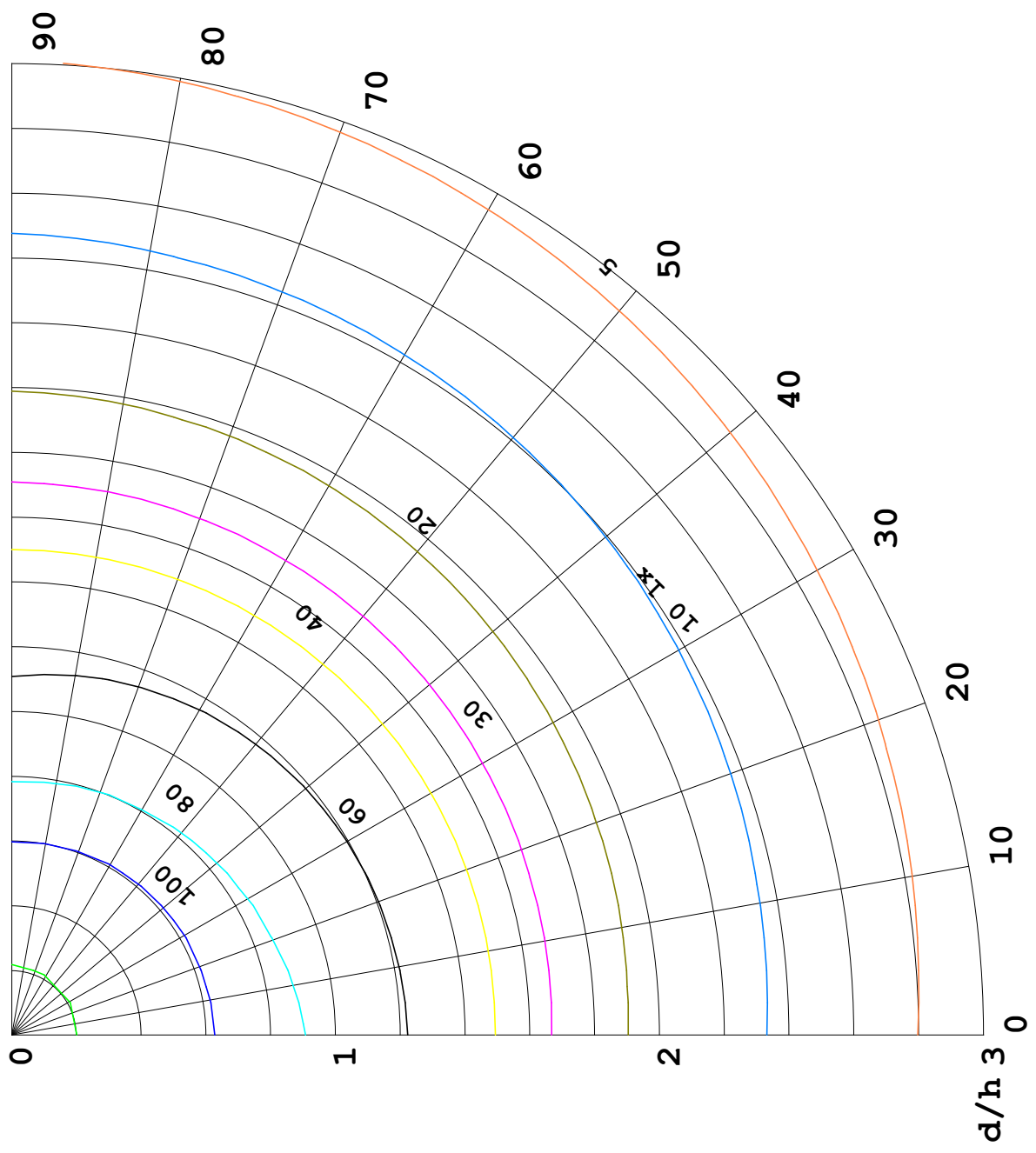
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: DEG
 Operators:
 Test Date: 2018-05-08

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: GO-2000B_V1 SYSTEM V2.0.284
 Humidity: 65.0%
 Test Distance: 9.100m [K=1.0000]
 Remarks:

I (cd)



1000 lm $K = 1$



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

