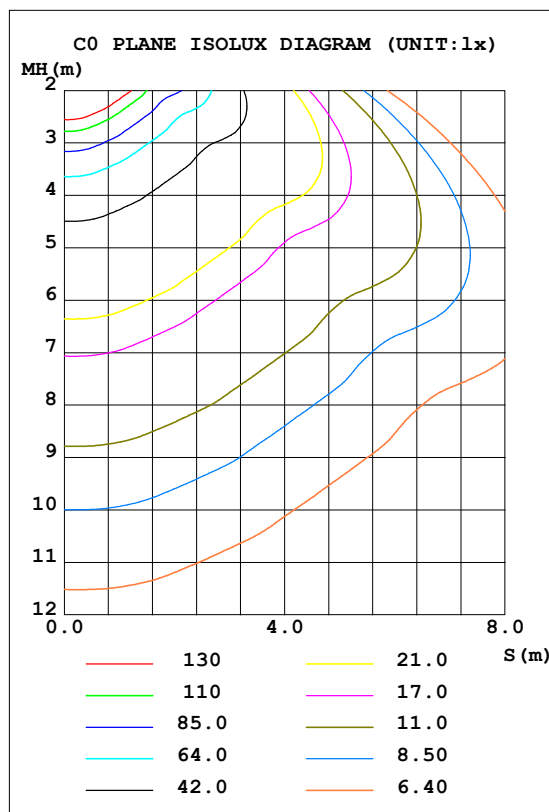
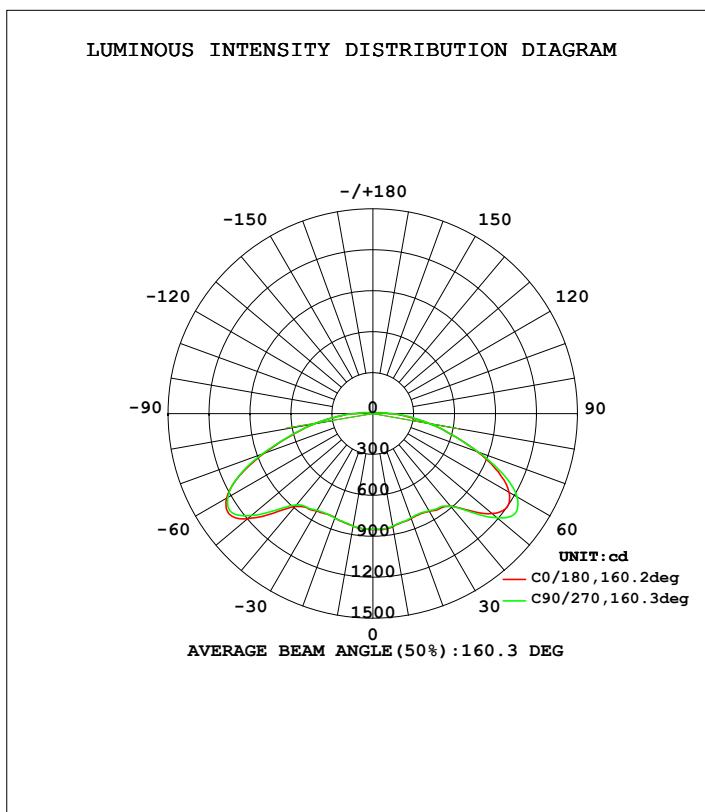


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:277.0V I:0.1520A P:40.54W PF:0.9625 Lamp Flux:5245.65x1 lm		
NAME: 4431-40-4K	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:4000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	SMD3030 (757G)	Imax (cd)	1308	S/MH (C0/180)	1.56
NOMINAL POWER (W)	40	LOR (%)	100.0	S/MH (C90/270)	1.53
RATED VOLTAGE (V)	277	TOTAL FLUX (lm)	5245.6	η UP, DN (C0-180)	1.3, 48.5
NOMINAL FLUX (lm)	5245.65	CIE CLASS	DIRECT	η UP, DN (C180-360)	1.4, 48.8
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 - 360 DEG  
 C Interval: 45.0 DEG  
 Test Speed: HIGH  
 Temperature: DEG  
 Operators:  
 Test Date: 2018-05-04

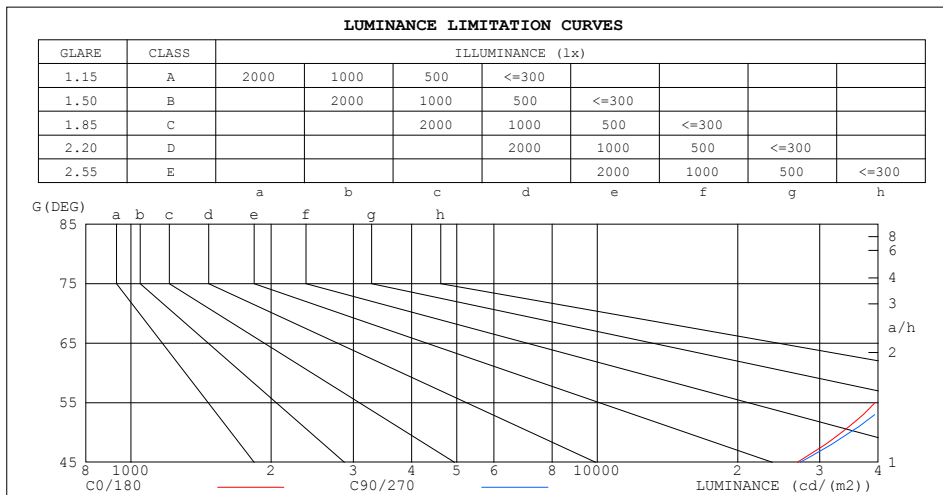
γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG

Test System: GO-2000B\_V1 SYSTEM V2.0.  
 Humidity: 65.0%  
 Test Distance: 9.100m [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	841.1	836.7	836.7	837.8	837.4	837.0	838.2	835.2	0- 10	80.63	80.63	1.54,1.54
20	819.8	813.5	813.1	816.6	813.3	810.9	816.3	818.0	10- 20	233.7	314.3	5.99,5.99
30	827.4	824.5	821.9	825.6	824.9	812.0	819.9	831.4	20- 30	376.7	691.0	13.2,13.2
40	886.7	884.0	885.5	886.5	889.4	865.7	874.0	899.9	30- 40	532.6	1224	23.3,23.3
50	1140	1152	1187	1189	1198	1178	1162	1163	40- 50	792.5	2016	38.4,38.4
60	1152	1203	1220	1233	1238	1266	1228	1142	50- 60	1106	3122	59.5,59.5
70	815.5	819.9	820.3	863.0	847.6	870.2	858.8	780.0	60- 70	1036	4159	79.3,79.3
80	420.1	408.6	422.0	454.9	437.2	435.4	437.8	400.7	70- 80	651.2	4810	91.7,91.7
90	136.9	135.1	140.6	155.0	148.4	154.0	144.8	133.0	80- 90	293.6	5103	97.3,97.3
100	45.58	43.25	31.34	50.14	49.40	47.47	39.52	44.95	90-100	91.37	5195	99,99
110	16.73	15.45	4.440	16.83	19.15	17.80	4.313	15.12	100-110	26.91	5222	99.5,99.5
120	5.077	5.107	4.906	4.996	5.483	5.391	4.864	4.962	110-120	8.545	5230	99.7,99.7
130	4.986	5.090	5.139	4.870	4.845	4.839	5.109	5.010	120-130	4.422	5235	99.8,99.8
140	5.084	5.133	5.176	4.955	4.980	5.016	5.200	5.157	130-140	3.911	5238	99.9,99.9
150	4.974	4.930	5.011	4.869	4.888	4.949	5.016	5.054	140-150	3.177	5242	99.9,99.9
160	4.710	4.649	4.717	4.661	4.729	4.704	4.698	4.747	150-160	2.233	5244	100,100
170	4.680	4.723	4.673	4.722	4.759	4.673	4.723	4.698	160-170	1.330	5245	100,100
180	4.778	4.753	4.735	4.759	4.784	4.741	4.759	4.741	170-180	0.4512	5246	100,100
DEG	LUMINOUS INTENSITY:cd MAX (Ii - Iavg)/Iavg (0-135) = 131.5 %									UNIT:lm		



LUMINANCE cd/(m2)		
G( DEG)	C0/180	C90/270
85	53924	57519
80	45594	45796
75	43539	43651
70	44934	45194
65	45217	47074
60	43434	45985
55	39393	41854
50	33415	34809
45	26846	27246

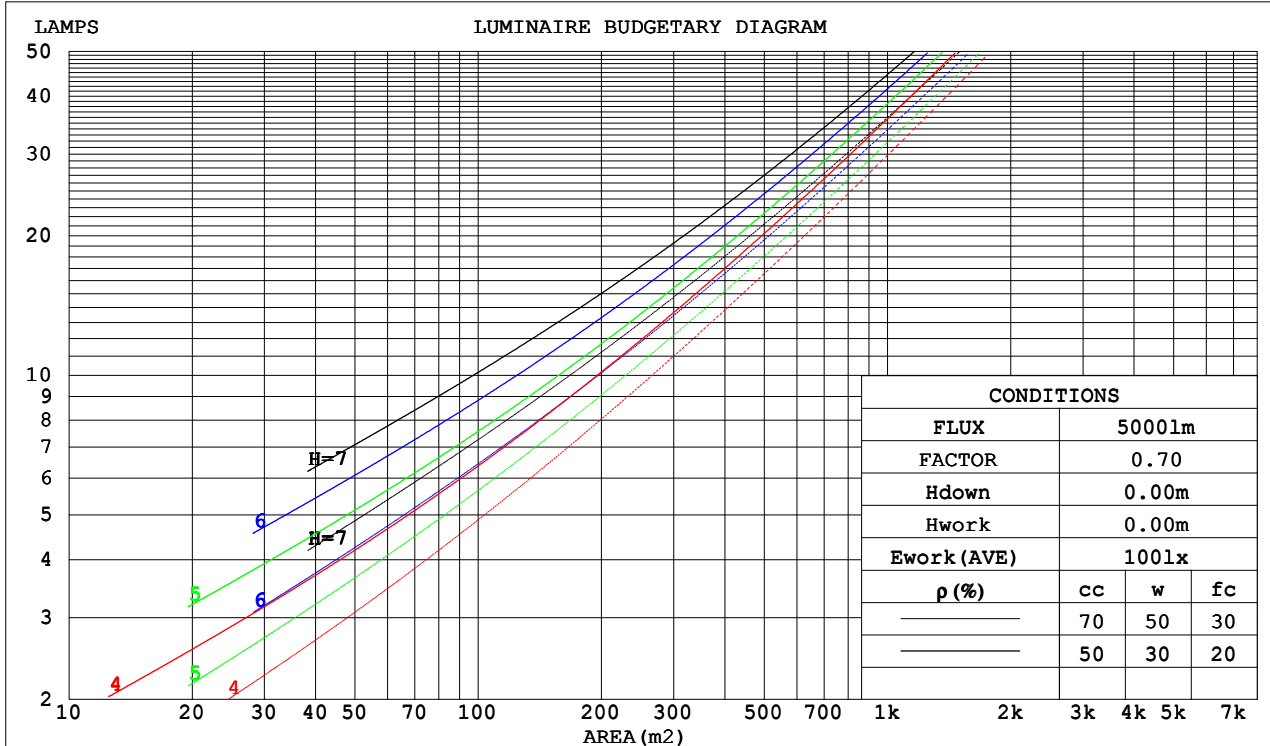
C Range: 0 - 360 DEG  
 C Interval: 45.0 DEG  
 Test Speed: HIGH  
 Temperature: DEG  
 Operators:  
 Test Date: 2018-05-04

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: GO-2000B\_V1 SYSTEM V2.0.  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:

**CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM**

Test:U:277.0V I:0.1520A P:40.54W PF:0.9625 Lamp Flux:5245.65x1 lm		
NAME: VT-40W	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:4000K-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	.76	.74
2.0	.82	.74	.66	.80	.72	.65	.76	.69	.63	.72	.66	.61	.68	.64	.59	.57
3.0	.70	.60	.52	.68	.58	.51	.64	.56	.50	.61	.54	.48	.58	.52	.47	.44
4.0	.60	.49	.41	.58	.48	.41	.55	.47	.40	.52	.45	.39	.50	.43	.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	.36	.29	.23	.35	.28	.23	.20
8.0	.37	.27	.21	.36	.27	.21	.34	.26	.20	.33	.25	.20	.31	.25	.20	.18
9.0	.34	.24	.18	.33	.24	.18	.31	.23	.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	.13



C Range: 0 - 360 DEG  
 C Interval: 45.0 DEG  
 Test Speed: HIGH  
 Temperature: DEG  
 Operators:  
 Test Date: 2018-05-04

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: GO-2000B\_V1 SYSTEM V2.0.  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:

WEC AND CCEC

Test:U:277.0V I:0.1520A P:40.54W PF:0.9625 Lamp Flux:5245.65x1 lm		
NAME: VT-40W	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:4000K-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
pfc	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	.220	.070	.369	.213	.068	.356	.206	.067	
2.0	.365	.200	.061	.358	.197	.061	.344	.191	.059	.331	.186	.058	.320	.181	.057	
3.0	.328	.175	.052	.322	.172	.052	.309	.168	.051	.298	.163	.050	.287	.159	.049	
4.0	.296	.154	.045	.290	.152	.045	.279	.148	.044	.269	.144	.044	.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	.119	.034	.223	.116	.034	.215	.113	.034	
7.0	.225	.111	.032	.221	.110	.031	.213	.108	.031	.205	.105	.031	.198	.103	.030	
8.0	.208	.101	.029	.204	.100	.028	.197	.098	.028	.190	.096	.028	.184	.094	.027	
9.0	.193	.093	.026	.189	.092	.026	.183	.090	.026	.177	.089	.025	.171	.087	.025	
10.0	.179	.086	.024	.176	.085	.024	.171	.084	.024	.165	.082	.023	.160	.080	.023	

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	.211	.211	.211	.180	.180	.180	.123	.123	.123	.071	.071	.071	.023	.023	.023	
1.0	.208	.176	.148	.178	.151	.127	.122	.104	.088	.070	.060	.051	.022	.019	.017	
2.0	.203	.153	.110	.174	.131	.095	.119	.091	.066	.069	.053	.039	.022	.017	.013	
3.0	.197	.136	.087	.169	.117	.076	.116	.081	.053	.067	.048	.031	.021	.015	.010	
4.0	.190	.123	.073	.163	.106	.063	.112	.074	.044	.065	.043	.026	.021	.014	.009	
5.0	.182	.113	.063	.156	.098	.055	.108	.069	.039	.062	.040	.023	.020	.013	.008	
6.0	.174	.105	.056	.150	.091	.049	.103	.064	.034	.060	.038	.020	.019	.012	.007	
7.0	.167	.099	.051	.143	.086	.044	.099	.060	.032	.058	.035	.019	.019	.012	.006	
8.0	.159	.093	.047	.137	.081	.041	.095	.057	.029	.055	.033	.017	.018	.011	.006	
9.0	.153	.088	.044	.131	.076	.039	.091	.054	.028	.053	.032	.016	.017	.010	.005	
10.0	.146	.084	.042	.126	.073	.037	.087	.051	.026	.051	.030	.016	.017	.010	.005	

C Range: 0 - 360 DEG  
 C Interval: 45.0 DEG  
 Test Speed: HIGH  
 Temperature: DEG  
 Operators:  
 Test Date: 2018-05-04

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: GO-2000B\_V1 SYSTEM V2.0.  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:

**UGR(Unified Glare Rating) Table**

Test:U:277.0V I:0.1520A P:40.54W PF:0.9625 Lamp Flux:5245.65x1 lm										
NAME: VT-40W					TYPE:Frosted pc			WEIGHT:2.68KG		
SPEC.:4000K-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	26.5	28.2	26.8	28.5	28.8	26.7	28.4	27.0	28.7	29.0
3H	28.7	30.3	29.0	30.6	30.9	28.8	30.4	29.2	30.7	31.1
4H	29.5	31.0	29.9	31.4	31.7	29.6	31.2	30.0	31.5	31.8
6H	30.2	31.7	30.6	32.0	32.4	30.3	31.8	30.7	32.1	32.5
8H	30.5	31.9	30.9	32.3	32.6	30.6	32.0	31.0	32.4	32.7
12H	30.7	32.1	31.1	32.5	32.9	30.9	32.2	31.3	32.6	33.0
4H 2H	27.4	28.9	27.8	29.3	29.6	27.5	29.1	27.9	29.4	29.7
3H	29.6	31.0	30.0	31.4	31.8	29.7	31.1	30.2	31.5	31.9
4H	30.6	31.8	31.0	32.2	32.6	30.7	31.9	31.1	32.3	32.7
6H	31.4	32.6	31.9	33.0	33.4	31.5	32.6	31.9	33.0	33.5
8H	31.8	32.8	32.2	33.3	33.7	31.8	32.9	32.3	33.3	33.8
12H	32.1	33.1	32.6	33.5	34.0	32.2	33.2	32.7	33.6	34.1
8H 4H	30.9	32.0	31.4	32.4	32.9	31.0	32.1	31.5	32.5	32.9
6H	32.0	32.9	32.5	33.3	33.8	32.0	32.9	32.5	33.4	33.9
8H	32.5	33.3	33.0	33.7	34.3	32.5	33.3	33.0	33.8	34.3
12H	32.9	33.6	33.5	34.1	34.7	33.0	33.7	33.6	34.2	34.8
12H 4H	31.0	32.0	31.4	32.4	32.9	31.0	32.0	31.5	32.5	32.9
6H	32.1	32.9	32.6	33.4	33.9	32.1	32.9	32.6	33.4	33.9
8H	32.6	33.3	33.2	33.8	34.4	32.7	33.4	33.2	33.9	34.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.6					+ 0.3 / - 0.7				

CIE Pub.117 Corrected 5246 lm Total Lamp Luminous Flux. (8log(F/F0) = 5.8)

C Range: 0 - 360 DEG  
 C Interval: 45.0 DEG  
 Test Speed: HIGH  
 Temperature: DEG  
 Operators:  
 Test Date: 2018-05-04

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: GO-2000B\_V1 SYSTEM V2.0.  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:

**UTILIZATION FACTORS TABLE**

Test:U:277.0V I:0.1520A P:40.54W PF:0.9625 Lamp Flux:5245.65x1 lm		
NAME: VT-40W	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:4000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	PROTECTION ANGLE:

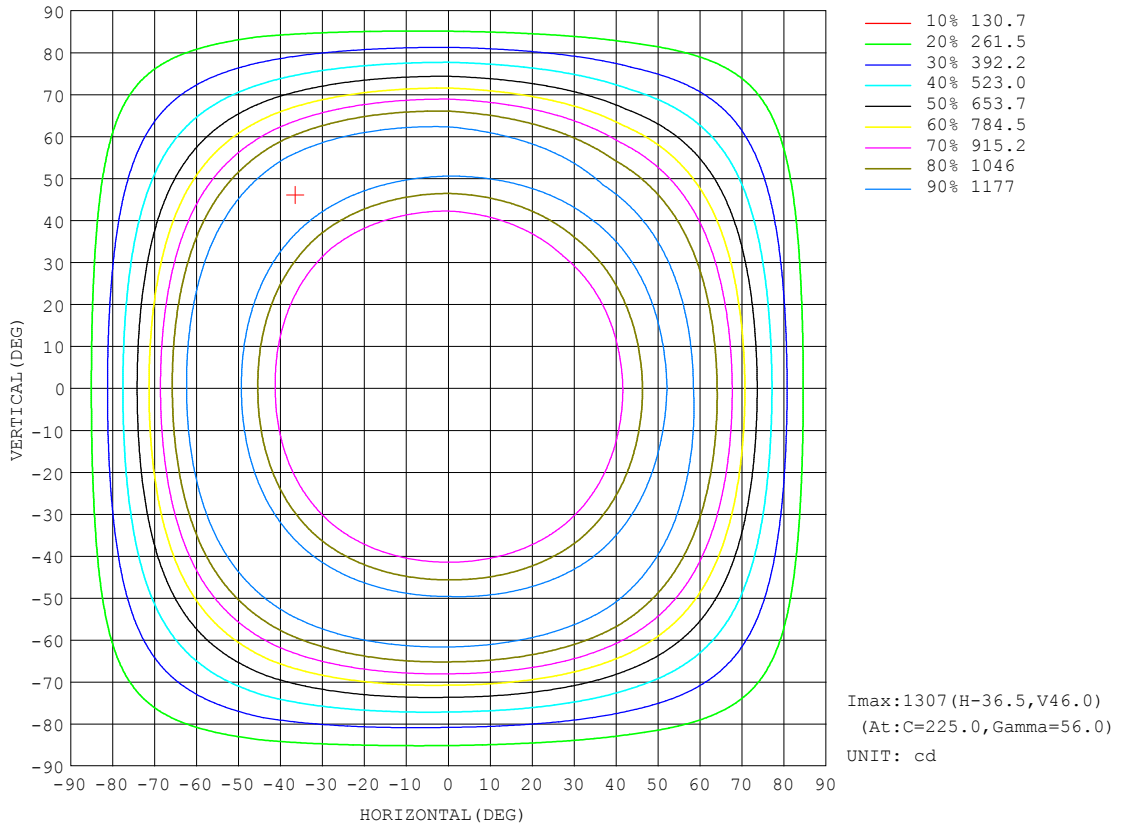
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	45	32	23	44	31	23	43	31	23	16
0.80	55	41	32	54	40	32	52	39	31	23
1.00	64	50	41	62	49	40	60	51	40	31
1.25	72	58	49	70	57	49	67	56	48	39
1.50	77	65	55	75	63	55	72	61	54	44
2.00	86	74	66	84	73	65	79	71	63	54
2.50	91	81	73	89	79	72	84	76	70	59
3.00	95	86	79	93	84	77	88	81	75	65
4.00	100	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 - 360 DEG  
 C Interval: 45.0 DEG  
 Test Speed: HIGH  
 Temperature: DEG  
 Operators:  
 Test Date: 2018-05-04

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: GO-2000B\_V1 SYSTEM V2.0.  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:

**ISOCANDELA DIAGRAM**

Test:U:277.0V I:0.1520A P:40.54W PF:0.9625 Lamp Flux:5245.65x1 lm		
NAME: VT-40W	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:4000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	PROTECTION ANGLE:

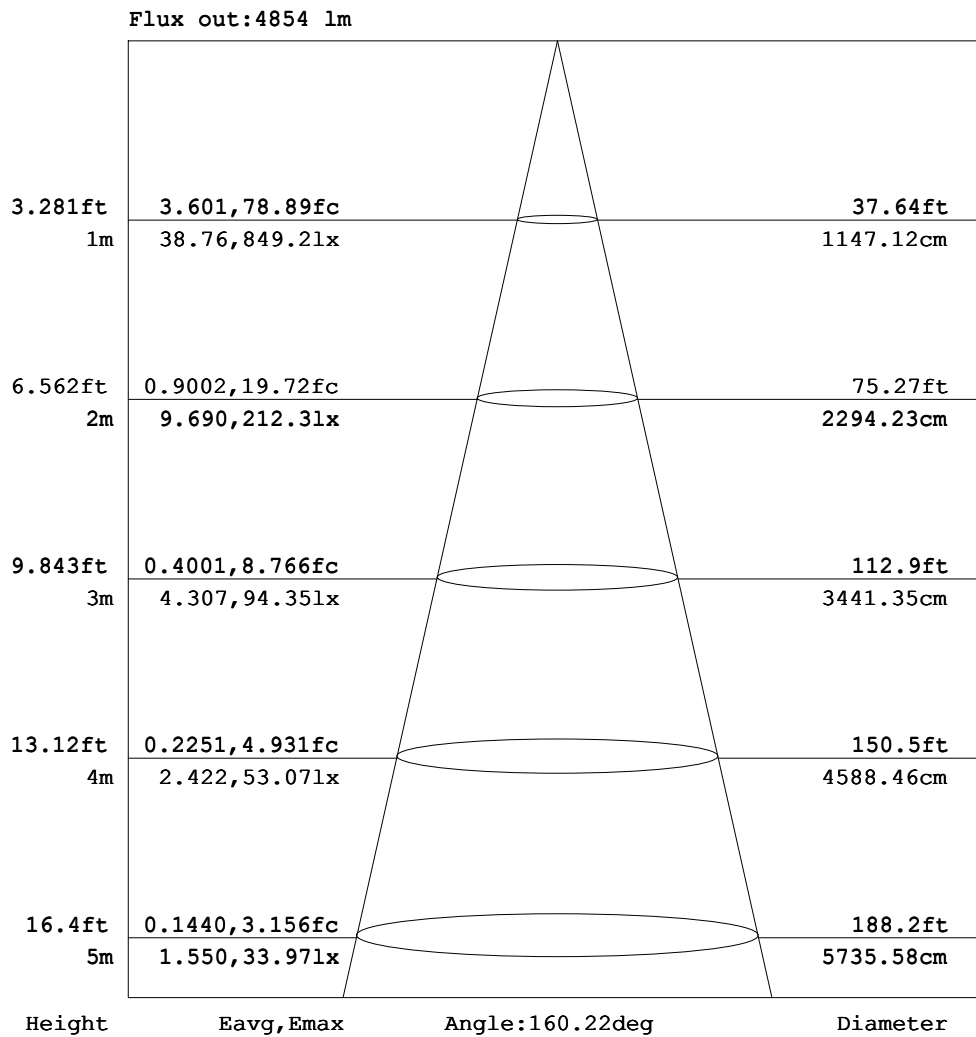


C Range: 0 - 360 DEG  
 C Interval: 45.0 DEG  
 Test Speed: HIGH  
 Temperature: DEG  
 Operators:  
 Test Date: 2018-05-04

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: GO-2000B\_V1 SYSTEM V2.0.  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:

**AAI Figure**

Test:U:277.0V I:0.1520A P:40.54W PF:0.9625 Lamp Flux:5245.65x1 lm		
NAME: VT-40W	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:4000K-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.

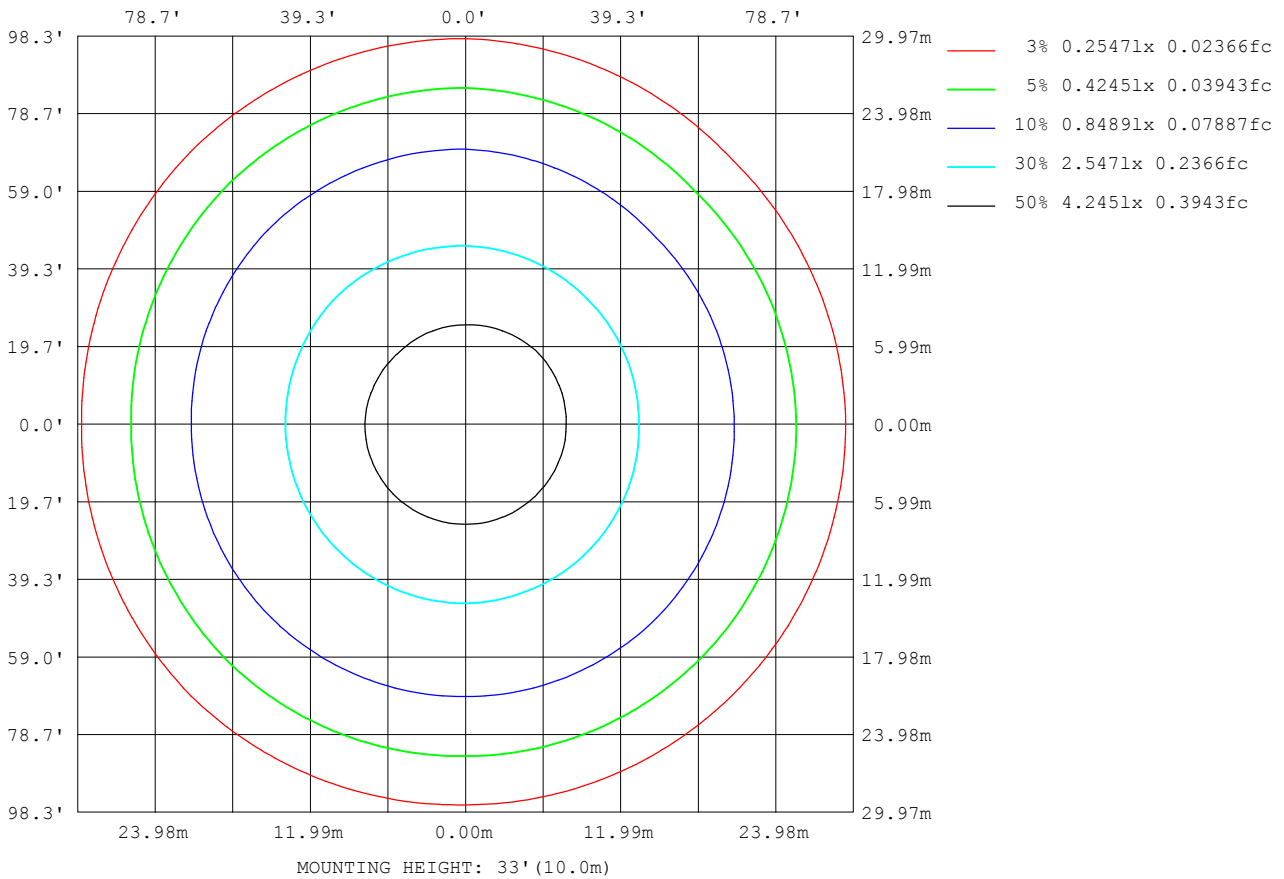
C Range: 0 - 360 DEG  
 C Interval: 45.0 DEG  
 Test Speed: HIGH  
 Temperature: DEG  
 Operators:  
 Test Date: 2018-05-04

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: GO-2000B\_V1 SYSTEM V2.0.  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:



**ISOLUX DIAGRAM**

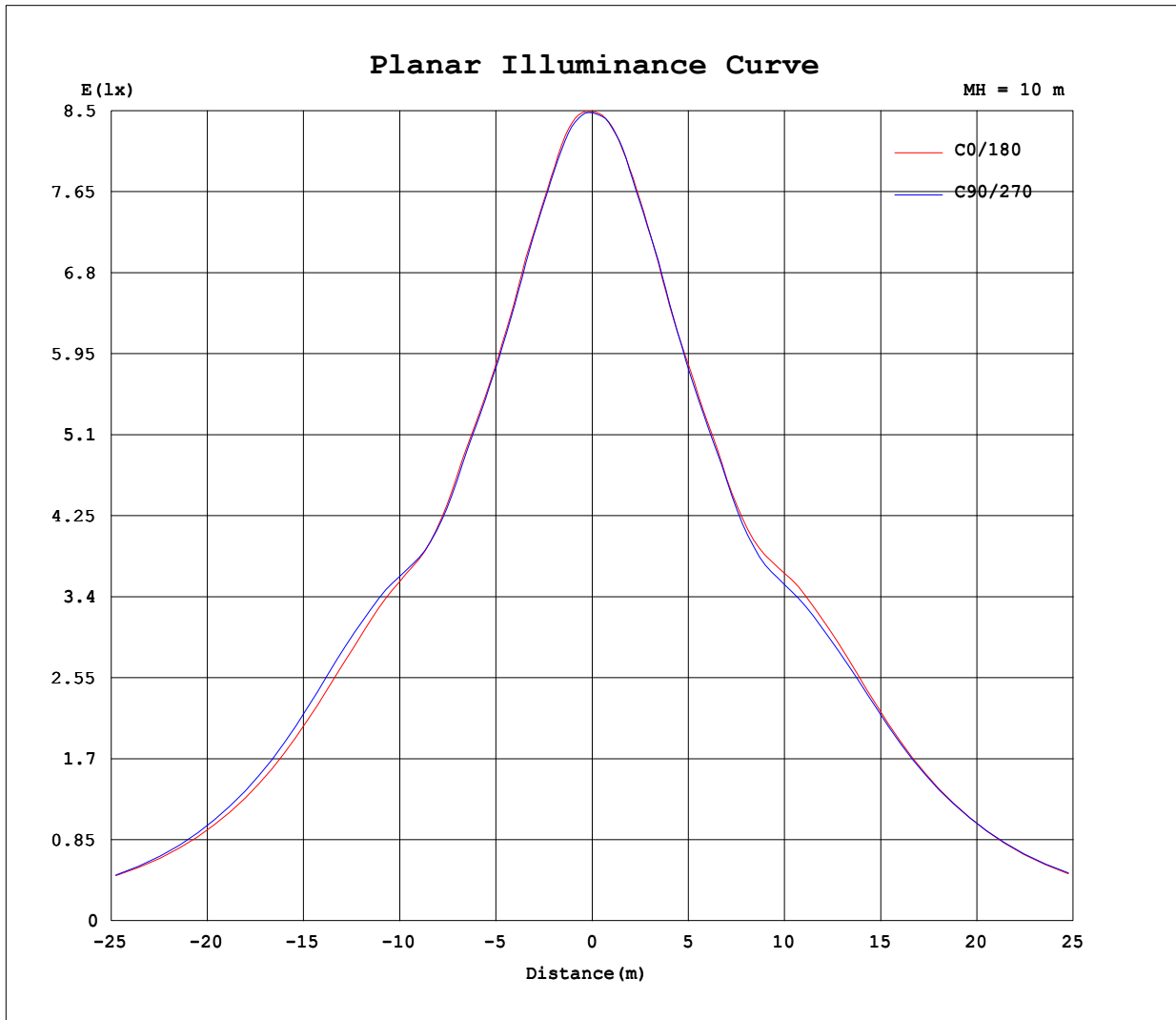
Test:U:277.0V I:0.1520A P:40.54W PF:0.9625 Lamp Flux:5245.65x1 lm		
NAME: VT-40W	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:4000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	PROTECTION ANGLE:



C Range: 0 - 360 DEG  
 C Interval: 45.0 DEG  
 Test Speed: HIGH  
 Temperature: DEG  
 Operators:  
 Test Date: 2018-05-04

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: GO-2000B\_V1 SYSTEM V2.0.  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:

**Planar Illuminance Curve**



C Range: 0 - 360 DEG  
 C Interval: 45.0 DEG  
 Test Speed: HIGH  
 Temperature: DEG  
 Operators:  
 Test Date: 2018-05-04

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: GO-2000B\_V1 SYSTEM V2.0.  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:277.0V I:0.1520A P:40.54W PF:0.9625 Lamp Flux:5245.65x1 lm		
NAME: VT-40W	TYPE:Frosted pc	WEIGHT:2.68KG
SPEC.:4000K-RA80-84L	DIM.: D290*H110mm	SERIAL No.:
MFR.:	SUR.:260*260mm	PROTECTION ANGLE:

Table--1

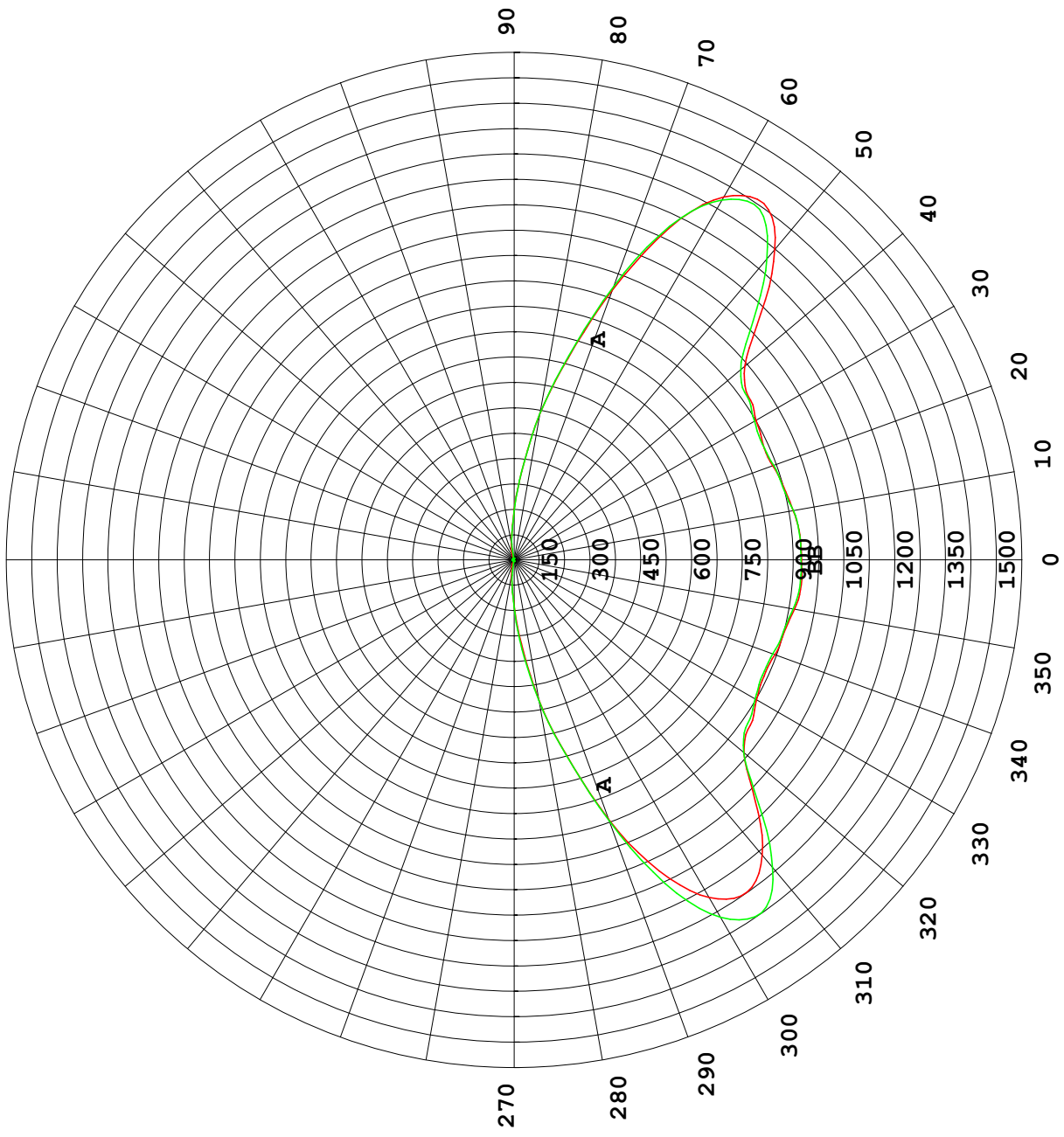
UNIT: cd

C (DEG) \ γ (DEG)	0	45	90	135	180	225	270	315										
0	849	848	848	847	849	848	848	847										
5	852	850	848	846	847	847	847	847										
10	841	837	837	838	837	837	838	835										
15	826	822	823	825	826	824	823	822										
20	820	813	813	817	813	811	816	818										
25	814	810	809	811	811	802	809	816										
30	827	825	822	826	825	812	820	831										
35	852	846	843	846	844	831	841	851										
40	887	884	886	886	889	866	874	900										
45	1007	1008	1022	1015	1032	1000	999	1030										
50	1140	1152	1187	1189	1198	1178	1162	1163										
55	1199	1242	1274	1276	1286	1304	1264	1207										
60	1152	1203	1220	1233	1238	1266	1228	1142										
65	1014	1055	1056	1083	1081	1118	1087	985										
70	816	820	820	863	848	870	859	780										
75	598	588	600	634	618	631	624	571										
80	420	409	422	455	437	435	438	401										
85	249	249	266	279	263	276	263	246										
90	137	135	141	155	148	154	145	133										
95	77.0	74.0	75.1	85.3	82.4	81.6	79.2	75.8										
100	45.6	43.2	31.3	50.1	49.4	47.5	39.5	44.9										
105	27.5	25.9	6.03	29.7	30.8	29.1	11.5	26.6										
110	16.7	15.4	4.44	16.8	19.1	17.8	4.31	15.1										
115	9.23	8.47	4.69	8.92	10.9	10.2	4.61	7.81										
120	5.08	5.11	4.91	5.00	5.48	5.39	4.86	4.96										
125	4.94	5.00	5.05	4.80	4.75	4.73	5.02	4.92										
130	4.99	5.09	5.14	4.87	4.85	4.84	5.11	5.01										
135	5.03	5.13	5.18	4.94	4.95	4.94	5.19	5.10										
140	5.08	5.13	5.18	4.96	4.98	5.02	5.20	5.16										
145	5.09	5.08	5.16	4.94	4.97	5.03	5.15	5.16										
150	4.97	4.93	5.01	4.87	4.89	4.95	5.02	5.05										
155	4.82	4.75	4.85	4.74	4.78	4.81	4.83	4.87										
160	4.71	4.65	4.72	4.66	4.73	4.70	4.70	4.75										
165	4.67	4.67	4.67	4.68	4.73	4.67	4.70	4.70										
170	4.68	4.72	4.67	4.72	4.76	4.67	4.72	4.70										
175	4.72	4.74	4.69	4.74	4.78	4.73	4.75	4.73										
180	4.78	4.75	4.73	4.76	4.78	4.74	4.76	4.74										

C Range: 0 - 360 DEG  
 C Interval: 45.0 DEG  
 Test Speed: HIGH  
 Temperature: DEG  
 Operators:  
 Test Date: 2018-05-04

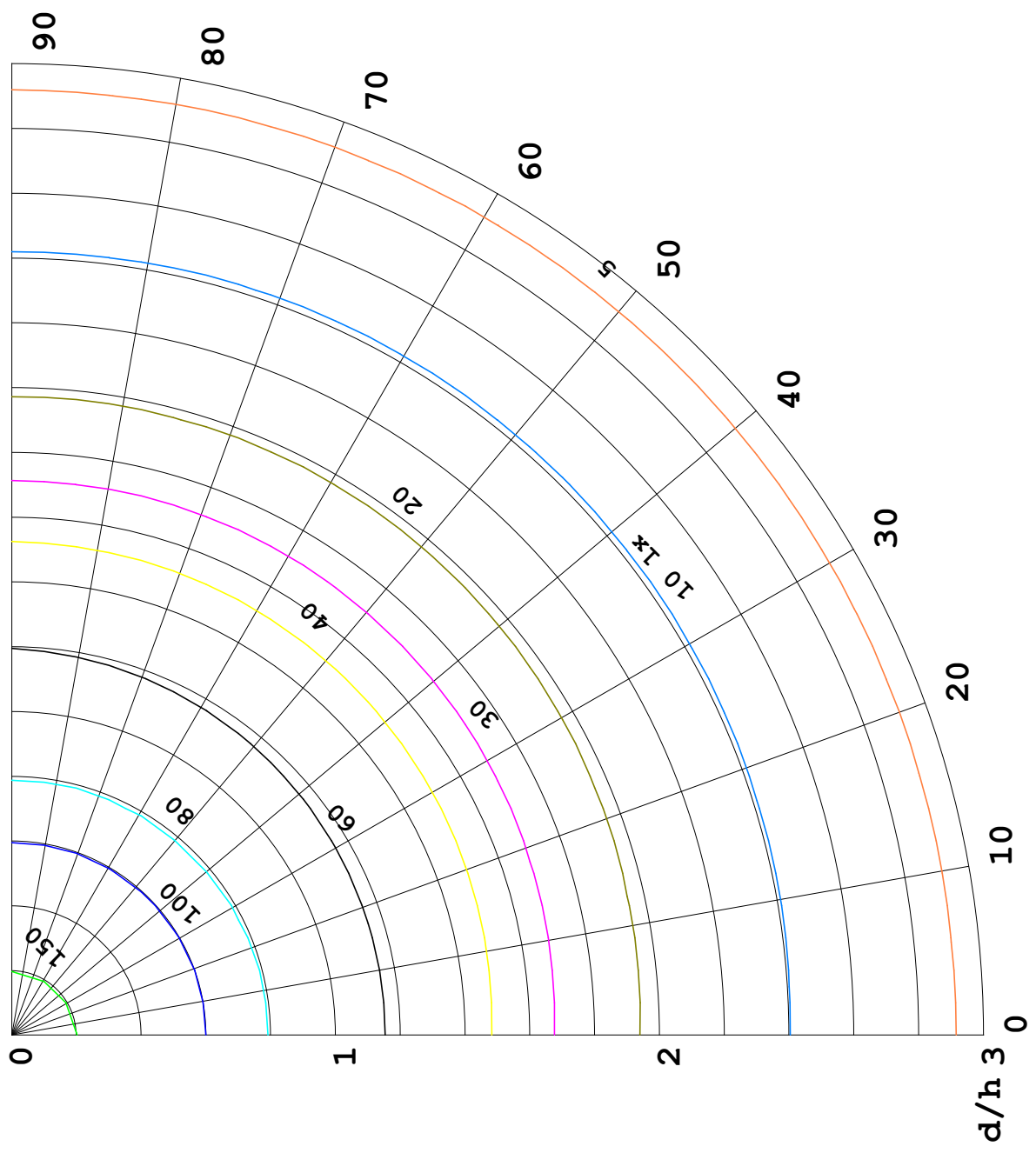
γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: GO-2000B\_V1 SYSTEM V2.0.  
 Humidity: 65.0%  
 Test Distance: 9.100m [K=1.0000]  
 Remarks:

I (cd)



$K = 1$

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

