

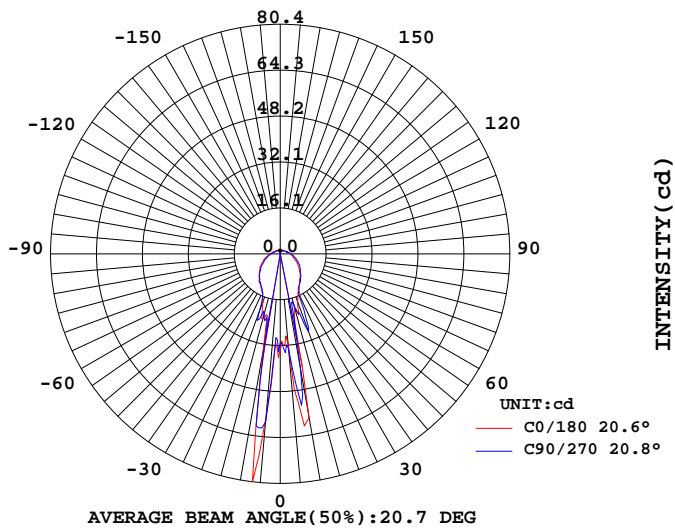
LUMINAIRE PHOTOMETRIC TEST REPORT

Report number:

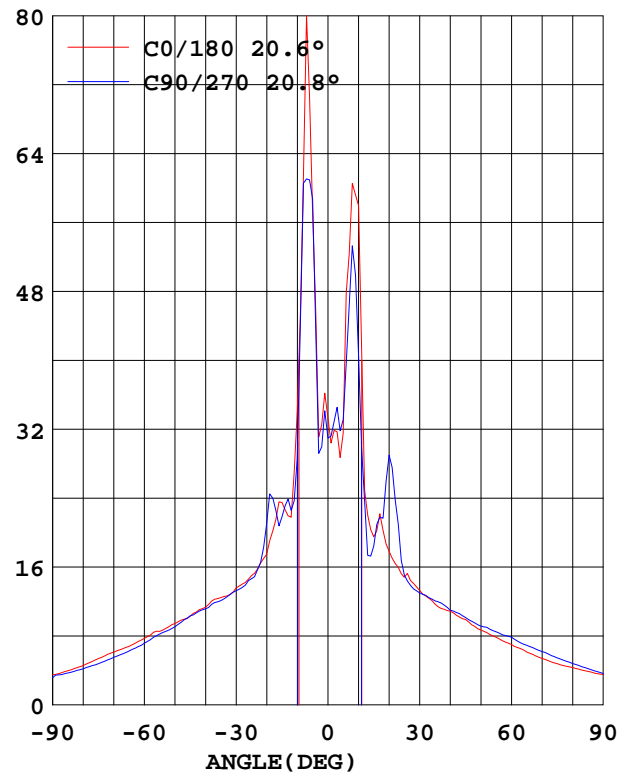
MANUFACTURER:			
Address:			
NAME:		TYPE:	WEIGHT:
SPECIFICATION:	CCT(K): 0	DIMENSION:	SERIAL No.:

DATA OF LAMP		Imax(cd)	80.36	S/MH(C0/180)	0.68
MODEL		EFFICIENCY(%)	100.0	S/MH(C90/270)	0.76
NOMINAL POWER(W)	3	TOTAL FLUX(lm)	70.3	Voltage(V)	12.00
RATED VOLTAGE(V)	12	EFFICIENCY(lm/W)	21.5	Current(A)	0.362
NOMINAL FLUX(lm)	70.3	η up(%)	17.9	Power(W)	3.270
LAMPS QUANTITY	1	η down(%)	82.1	Power Factor(PF)	0.752
TEST VOLTAGE(V)	12.0	Effective Flux(lm)	39.3	EEI	0.439

LUMINOUS INTENSITY DISTRIBUTION



LUMINOUS INTENSITY DISTRIBUTION



Test System:HOPPO HP880D
Temperature:25.3DEG
Operators:
Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

Color Temperature Data List

Report number:

MANUFACTURER:			
Address:			
NAME:		TYPE:	WEIGHT:
SPECIFICATION:	CCT(K): 0	DIMENSION:	SERIAL No.:

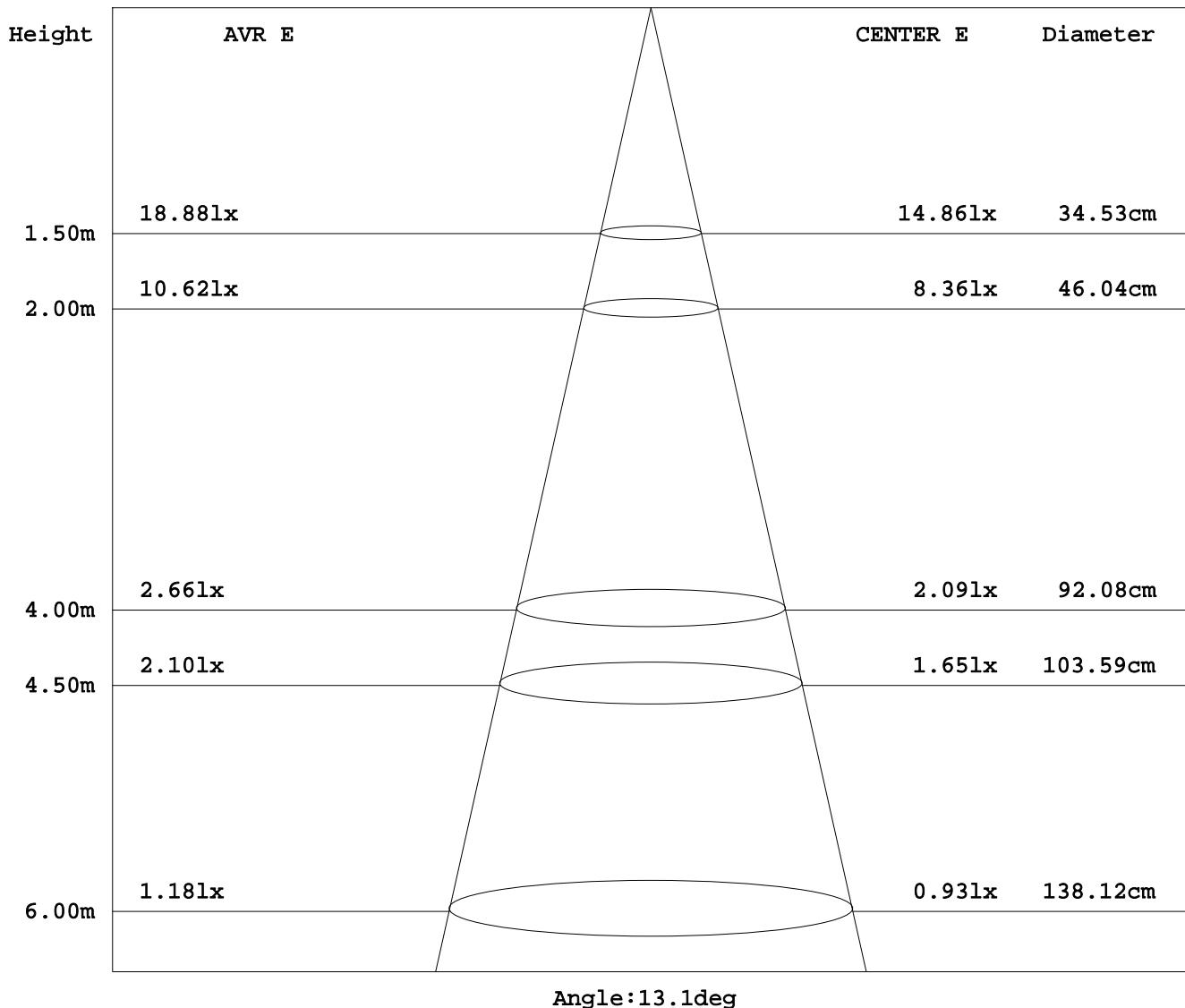
Test System:HOPOO HP880D
Temperature:25.3DEG
Operators:
Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

AVERAGE AND CENTER E Figure

Report number:

MANUFACTURER:			
Address:			
NAME:		TYPE:	WEIGHT:
SPECIFICATION:	CCT(K): 0	DIMENSION:	SERIAL No.:



Test System:HOPPO HP880D
Temperature:25.3DEG
Operators:
Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

HONGPU GONIOPHOTOMETERS SYSTEM TEST REPORT

ZONAL FLUX DIAGRAM

Report number:

MANUFACTURER:			
Address:			
NAME:		TYPE:	WEIGHT:
SPECIFICATION:	CCT(K): 0	DIMENSION:	SERIAL No.:

γ	C0	C90	C180	C270					γ	zone	total
5.0	57.36	59.00	31.67	33.26					0- 5	0.868	0.868
10.0	34.19	28.74	58.22	40.75					5- 10	3.803	4.671
15.0	23.60	21.95	19.60	18.53					10- 15	2.948	7.620
20.0	17.56	21.15	17.89	29.13					15- 20	3.581	11.20
25.0	15.06	14.72	14.88	15.15					20- 25	3.727	14.92
30.0	13.63	13.31	13.34	13.05					25- 30	3.563	18.49
35.0	12.50	12.16	11.77	12.14					30- 35	3.737	22.23
40.0	11.40	11.21	10.92	11.04					35- 40	3.900	26.13
45.0	10.36	10.38	9.958	10.18					40- 45	3.963	30.09
50.0	9.486	9.111	8.750	9.199					45- 50	3.897	33.99
55.0	8.577	8.261	7.891	8.513					50- 55	3.793	37.78
60.0	7.752	7.193	7.053	7.908					55- 60	3.651	41.43
65.0	6.820	6.280	6.175	6.944					60- 65	3.399	44.83
70.0	6.165	5.547	5.423	6.221					65- 70	3.136	47.97
75.0	5.410	4.810	4.810	5.483					70- 75	2.864	50.83
80.0	4.583	4.216	4.349	4.829					75- 80	2.573	53.41
85.0	3.988	3.722	3.912	4.235					80- 85	2.295	55.70
90.0	3.513	3.164	3.545	3.673					85- 90	2.039	57.74
95.0	3.233	2.841	3.103	3.412					90- 95	1.814	59.55
100.0	2.893	2.580	2.861	3.061					95-100	1.632	61.19
105.0	2.486	2.346	2.640	2.339					100-105	1.399	62.59
110.0	2.394	2.091	2.441	2.415					105-110	1.263	63.85
115.0	2.168	1.930	2.214	2.177					110-115	1.130	64.98
120.0	1.976	1.809	1.911	2.000					115-120	0.982	65.96
125.0	1.841	1.712	1.687	1.848					120-125	0.853	66.81
130.0	1.739	1.634	1.540	1.754					125-130	0.748	67.56
135.0	1.663	1.586	1.449	1.674					130-135	0.658	68.22
140.0	1.615	1.527	1.329	1.580					135-140	0.575	68.80
145.0	1.597	1.464	1.178	1.501					140-145	0.491	69.29
150.0	1.499	1.266	1.022	1.435					145-150	0.406	69.69
155.0	1.243	0.940	0.842	1.274					150-155	0.305	70.00
160.0	0.850	0.551	0.604	0.943					155-160	0.193	70.19
165.0	0.226	0.131	0.200	0.576					160-165	0.084	70.28
170.0	0.119	0.073	0.128	0.198					165-170	0.023	70.30
175.0	0.063	0.035	0.070	0.111					170-175	0.007	70.31
180.0	0.041	0.033	0.035	0.047					175-180	0.001	70.31
DEG	LUMINOUS INTENSITY:cd									UNIT:lm	

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

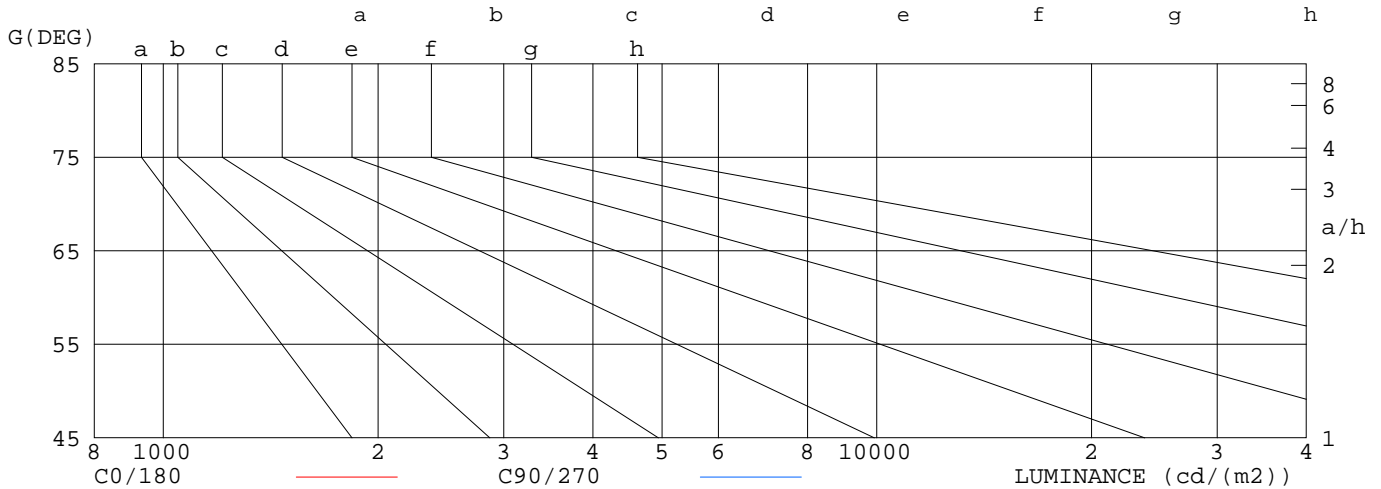
LUMINANCE LIMITATION CURVES

Report number:

MANUFACTURER:			
Address:			
NAME:		TYPE:	WEIGHT:
SPECIFICATION:	CCT(K): 0	DIMENSION:	SERIAL No.:

LUMINANCE LIMITATION CURVES

GLARE	CLASS	ILLUMINANCE (lx)							
1.15	A	2000	1000	500	<=300				
1.50	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.20	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300



LUMINANCE cd/m^2		
G(DEG)	C0/180	C90/270
85	458	427
80	264	243
75	209	186
70	180	162
65	161	149
60	155	144
55	150	144
50	148	142
45	147	147

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:11-02-2023

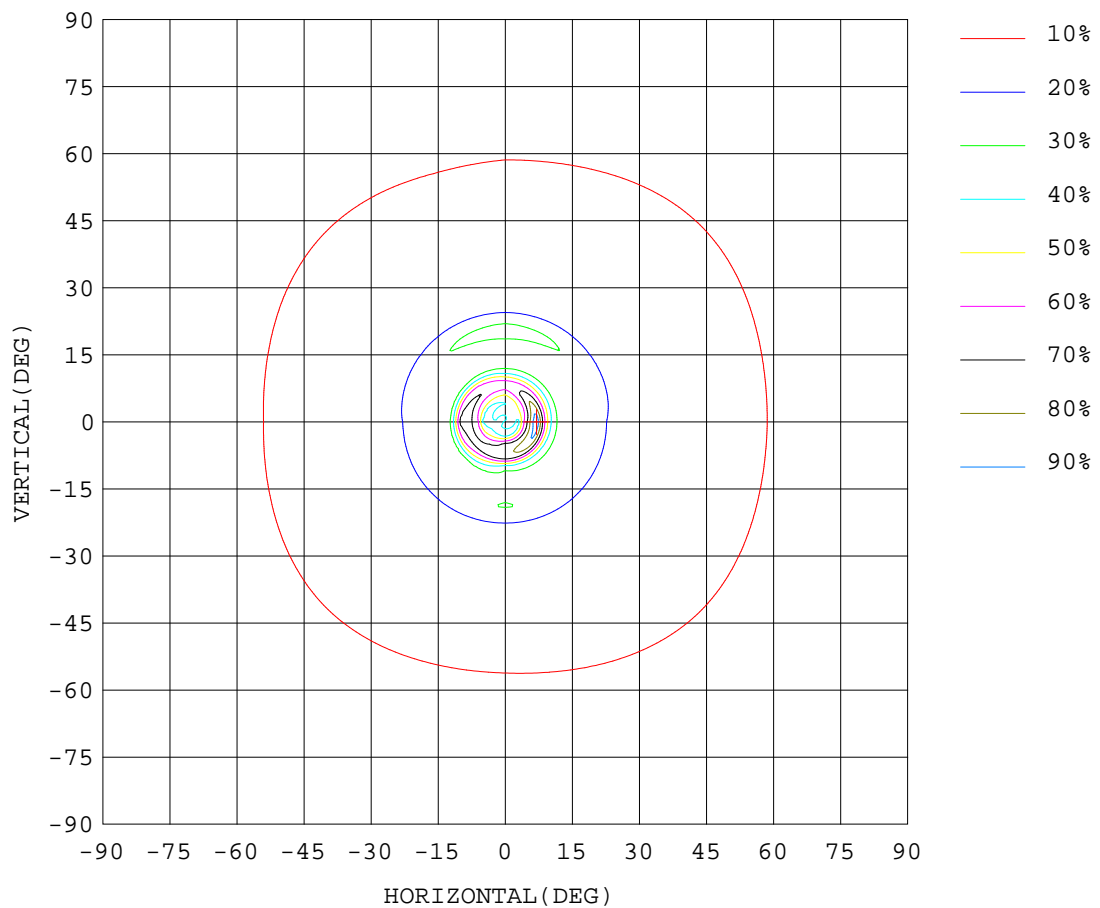
Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:			
Address:			
NAME:		TYPE:	WEIGHT:
SPECIFICATION:	CCT(K): 0	DIMENSION:	SERIAL No.:

UNIT: cd



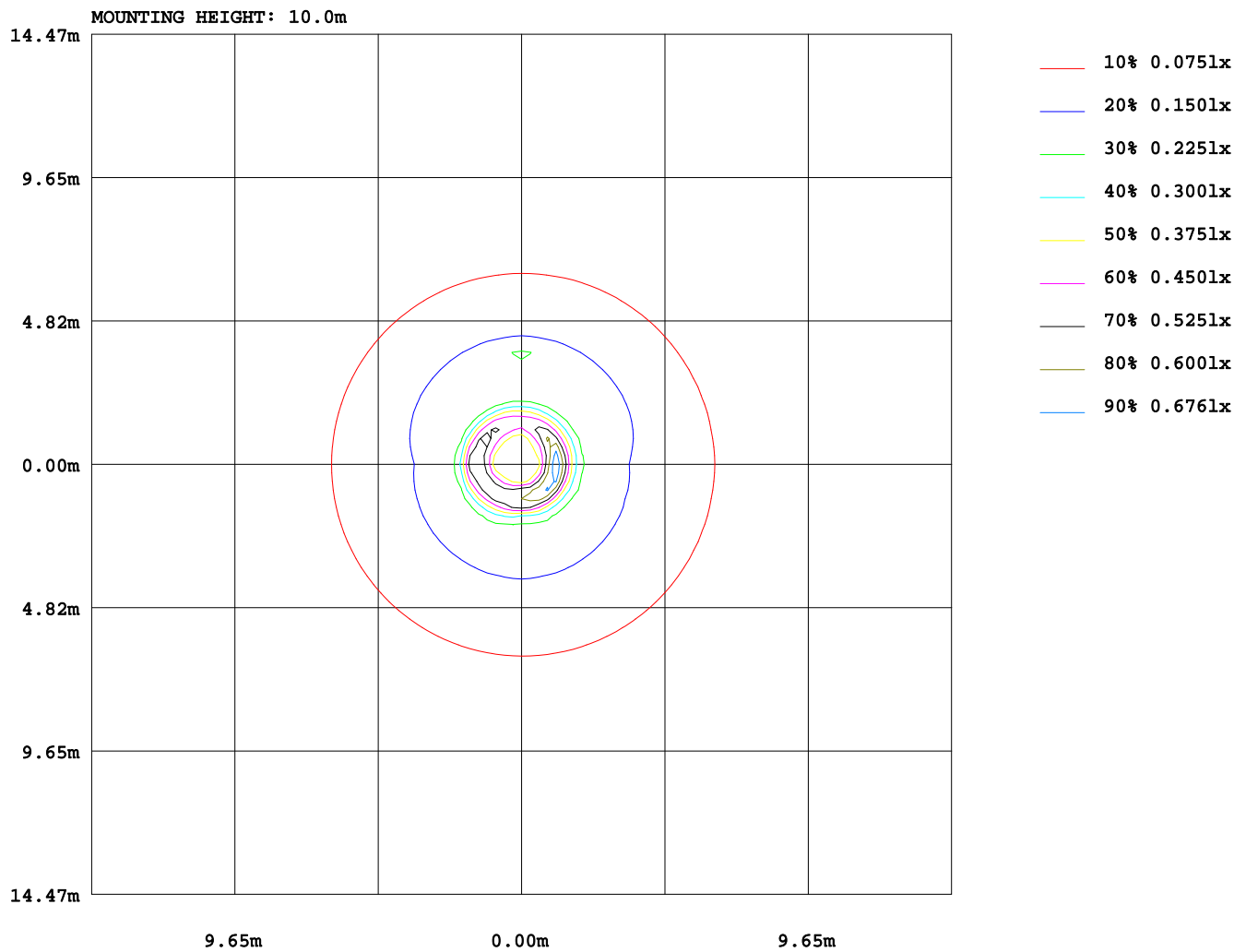
Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

ISOLUX DIAGRAM

Report number:

MANUFACTURER:			
Address:			
NAME:		TYPE:	WEIGHT:
SPECIFICATION:	CCT(K): 0	DIMENSION:	SERIAL No.:



Test System:HOP00 HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

HONGPU GONIOPHOTOMETERS SYSTEM TEST REPORT

AREA LUMINOUS FLUX

Report number:

MANUFACTURER:																			
Address:																			
NAME:										TYPE:					WEIGHT:				
SPECIFICATION:					CCT(K): 0					DIMENSION:					SERIAL No.:				

VERTICAL (DEG)	AREA FLUX DIAGRAM																		UNIT:lm		Φ t	Φ a
	0.01	0.03	0.05	0.07	0.08	0.10	0.11	0.12	0.13	0.13	0.12	0.11	0.10	0.08	0.07	0.05	0.03	0.01				
90																			1.40	0.00		
80																			1.72	0.00		
70																			2.09	0.00		
60																			2.50	0.94		
50																			2.90	2.10		
40																			3.34	2.78		
30																			3.95	3.51		
																			4.83	4.44		
																			6.39	6.02		
																			6.51	6.14		
																			4.72	4.33		
-30																			3.83	3.37		
-40																			3.34	2.76		
-50																			2.88	2.03		
-60																			2.40	0.66		
-70																			1.95	0.00		
-80																			1.58	0.00		
-90																			1.29	0.00		
	-90	-80	-70	-60	-50	-40	-30	-20	HORIZONTAL (DEG)					20	30	40	50	60	70	80	90	
Φ t	0.18	0.62	1.18	1.89	2.72	3.62	4.58	5.84	7.82	7.90	5.87	4.66	3.77	2.87	2.03	1.28	0.66	0.19	70			
Φ a	0.00	0.00	0.00	0.24	1.41	2.41	3.43	4.71	6.72	6.81	4.79	3.57	2.66	1.70	0.64	0.00	0.00	0.00		39		

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:11-02-2023

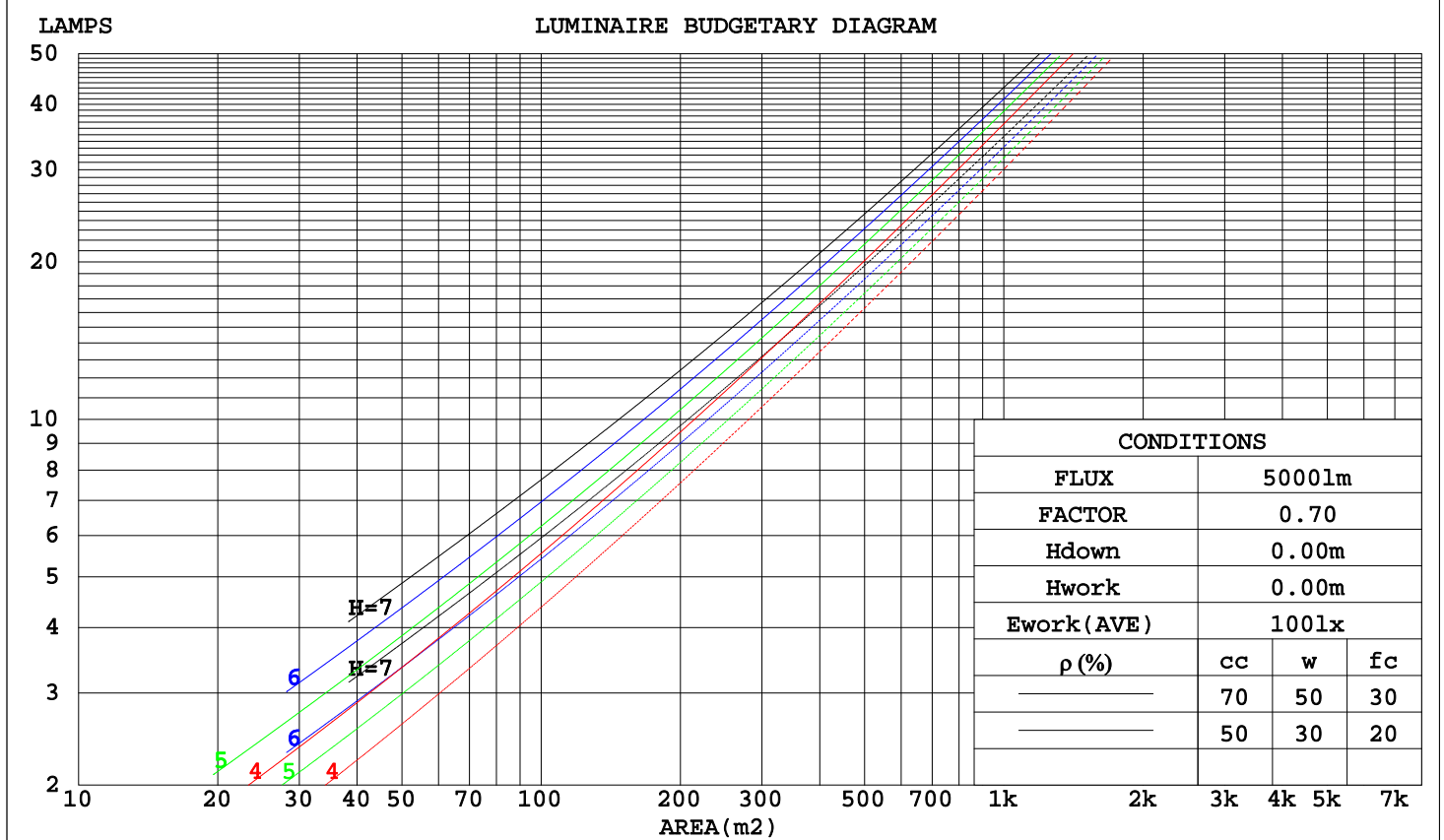
Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number:

MANUFACTURER:															
Address:															
NAME:								TYPE:				WEIGHT:			
SPECIFICATION:				CCT(K): 0				DIMENSION:				SERIAL No.:			

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															



Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

HONGPU GONIOPHOTOMETERS SYSTEM TEST REPORT

WEC AND CCEC

Report number:

MANUFACTURER:															
Address:															
NAME:								TYPE:				WEIGHT:			
SPECIFICATION:				CCT(K): 0				DIMENSION:				SERIAL No.:			

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	.347	.197	.062	.334	.191	.061	.311	.178	.057	.289	.167	.053	.269	.156	.050															
2.0	.302	.166	.051	.291	.160	.049	.270	.150	.047	.250	.140	.044	.232	.131	.041															
3.0	.270	.144	.043	.260	.139	.042	.241	.130	.040	.223	.122	.037	.207	.114	.035															
4.0	.244	.127	.037	.235	.123	.036	.218	.115	.034	.202	.108	.033	.187	.101	.031															
5.0	.223	.113	.033	.214	.110	.032	.199	.103	.030	.184	.097	.029	.170	.091	.027															
6.0	.205	.103	.029	.197	.100	.029	.183	.094	.027	.170	.088	.026	.157	.083	.025															
7.0	.189	.094	.027	.182	.091	.026	.169	.086	.025	.157	.081	.023	.146	.076	.022															
8.0	.176	.086	.024	.170	.084	.024	.158	.079	.023	.147	.074	.021	.136	.070	.020															
9.0	.164	.080	.022	.159	.077	.022	.148	.073	.021	.137	.069	.020	.127	.065	.019															
10.0	.154	.074	.021	.149	.072	.020	.139	.068	.019	.129	.064	.018	.120	.060	.017															

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	.327	.327	.327	.279	.279	.279	.191	.191	.191	.109	.109	.109	.035	.035	.035	
1.0	.320	.293	.269	.274	.252	.231	.187	.173	.160	.108	.100	.093	.035	.032	.030	
2.0	.312	.270	.235	.267	.232	.203	.183	.161	.142	.106	.094	.083	.034	.030	.027	
3.0	.303	.253	.213	.260	.218	.185	.179	.152	.130	.103	.089	.076	.033	.029	.025	
4.0	.295	.240	.199	.253	.208	.173	.174	.145	.122	.101	.085	.072	.032	.028	.024	
5.0	.287	.230	.188	.247	.199	.164	.170	.139	.116	.098	.082	.069	.032	.027	.023	
6.0	.280	.222	.181	.240	.192	.158	.166	.135	.111	.096	.079	.066	.031	.026	.022	
7.0	.273	.215	.175	.235	.187	.153	.162	.131	.108	.094	.077	.064	.030	.025	.021	
8.0	.266	.210	.171	.229	.182	.149	.158	.128	.106	.092	.075	.063	.030	.025	.021	
9.0	.260	.205	.168	.224	.178	.146	.155	.125	.104	.090	.074	.062	.029	.024	.021	
10.0	.254	.201	.165	.219	.174	.144	.152	.123	.102	.089	.072	.061	.029	.024	.020	

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

HONGPU GONIOPHOTOMETERS SYSTEM TEST REPORT

UGR Table

Report number:

MANUFACTURER:										
Address:										
NAME:					TYPE:			WEIGHT:		
SPECIFICATION:			CCT(K): 0		DIMENSION:			SERIAL No.:		
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	4.7	6.0	5.2	6.4	7.0	4.5	5.7	5.0	6.2	6.7
3H	6.9	8.0	7.4	8.5	9.1	6.5	7.6	7.0	8.2	8.8
4H	8.1	9.2	8.6	9.7	10.3	7.6	8.7	8.1	9.2	9.8
6H	9.3	10.3	9.9	10.9	11.5	8.8	9.8	9.4	10.4	11.0
8H	10.0	11.0	10.6	11.6	12.2	9.5	10.5	10.1	11.1	11.7
12H	10.8	11.8	11.4	12.3	13.0	10.3	11.3	10.9	11.9	12.5
4H 2H	5.4	6.5	5.9	7.0	7.6	5.2	6.3	5.7	6.8	7.4
3H	7.8	8.7	8.4	9.3	10.0	7.5	8.4	8.0	9.0	9.7
4H	9.1	10.0	9.7	10.6	11.3	8.7	9.6	9.3	10.2	10.9
6H	10.6	11.3	11.2	12.0	12.7	10.1	10.9	10.8	11.6	12.3
8H	11.4	12.1	12.0	12.8	13.5	10.9	11.7	11.6	12.3	13.1
12H	12.3	13.0	13.0	13.6	14.4	11.9	12.5	12.5	13.2	14.0
8H 4H	9.6	10.3	10.2	11.0	11.7	9.3	10.0	9.9	10.7	11.4
6H	11.3	11.9	12.0	12.6	13.4	10.9	11.6	11.6	12.3	13.0
8H	12.3	12.9	13.0	13.6	14.4	11.9	12.5	12.6	13.2	14.0
12H	13.4	13.9	14.2	14.7	15.5	13.1	13.6	13.8	14.3	15.1
12H 4H	9.7	10.4	10.3	11.0	11.8	9.4	10.1	10.1	10.7	11.5
6H	11.5	12.1	12.2	12.8	13.6	11.2	11.7	11.9	12.4	13.3
8H	12.6	13.1	13.3	13.8	14.6	12.3	12.8	13.0	13.5	14.3
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	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117 Corrected 70.31 lm Total Lamp Luminous Flux.(8log(F/F0) = -9.2)

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

UTILIZATION FACTORS TABLE

Report number:

MANUFACTURER:										
Address:										
NAME:					TYPE:			WEIGHT:		
SPECIFICATION:			CCT(K): 0		DIMENSION:			SERIAL No.:		

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) x RCR = 5									
k = 0.60	53	41	35	52	41	34	50	40	34	28
0.80	62	50	43	60	49	42	58	48	41	34
1.00	69	57	50	67	56	49	64	56	48	40
1.25	76	64	56	73	63	55	69	60	54	45
1.50	80	69	61	78	68	60	73	65	58	48
2.00	87	77	69	84	75	68	78	71	65	54
2.50	91	82	75	88	79	73	82	75	69	57
3.00	94	86	79	91	83	77	84	78	73	60
4.00	99	92	86	95	89	83	88	83	78	64
5.00	102	95	90	98	92	87	90	86	82	67
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNOM = 1.25										

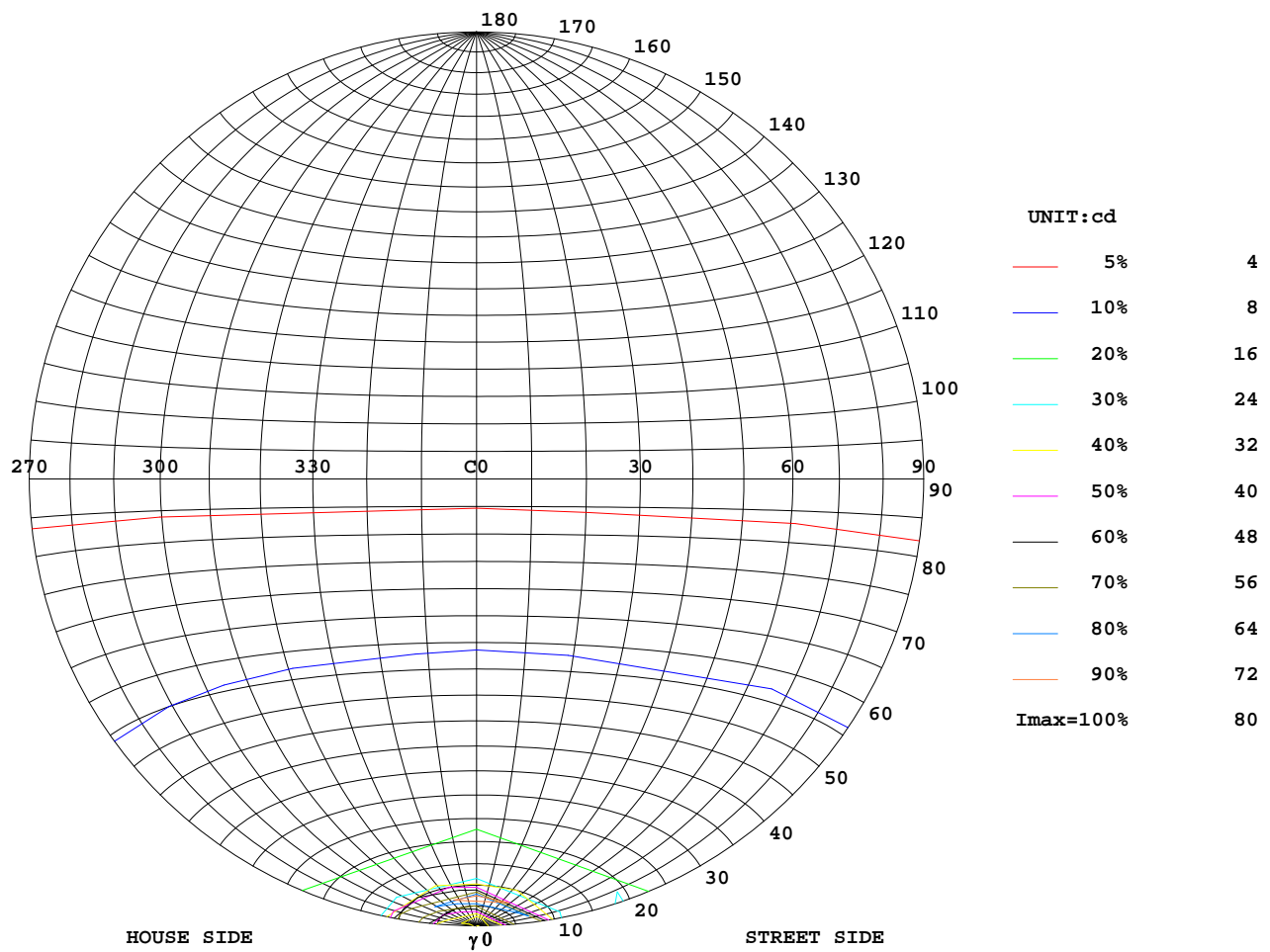
Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:			
Address:			
NAME:		TYPE:	WEIGHT:
SPECIFICATION:	CCT(K): 0	DIMENSION:	SERIAL No.:



Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:11-02-2023

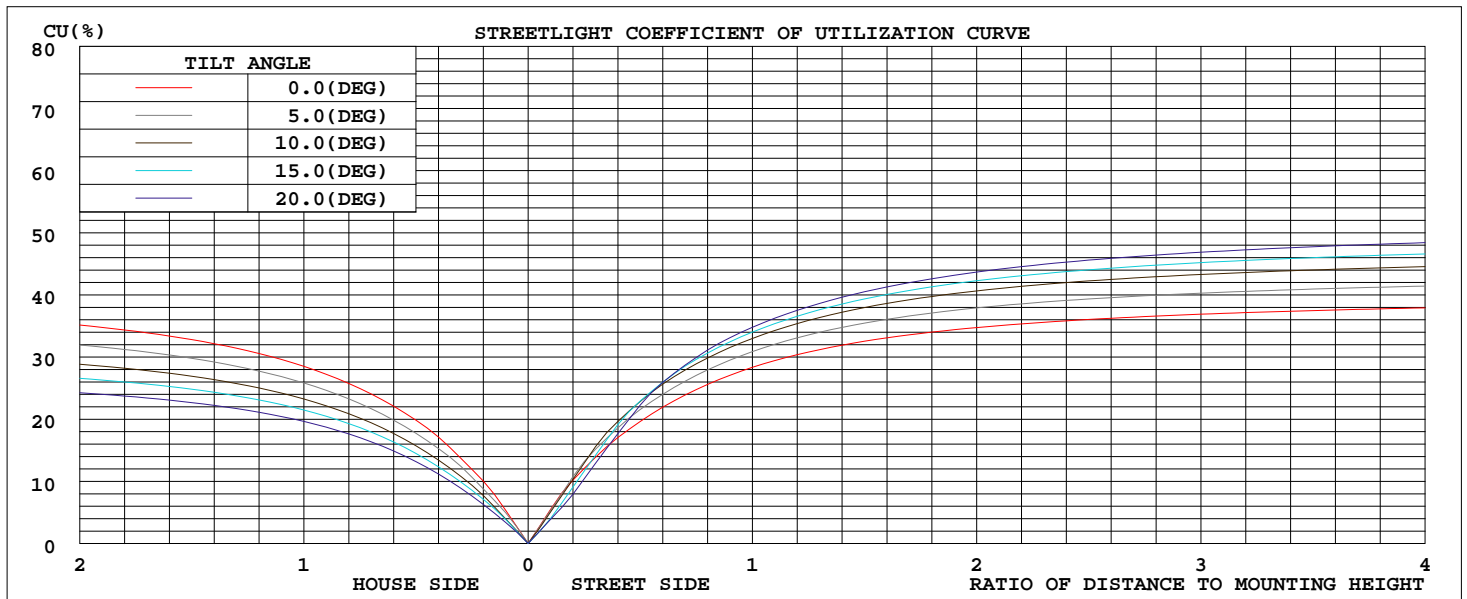
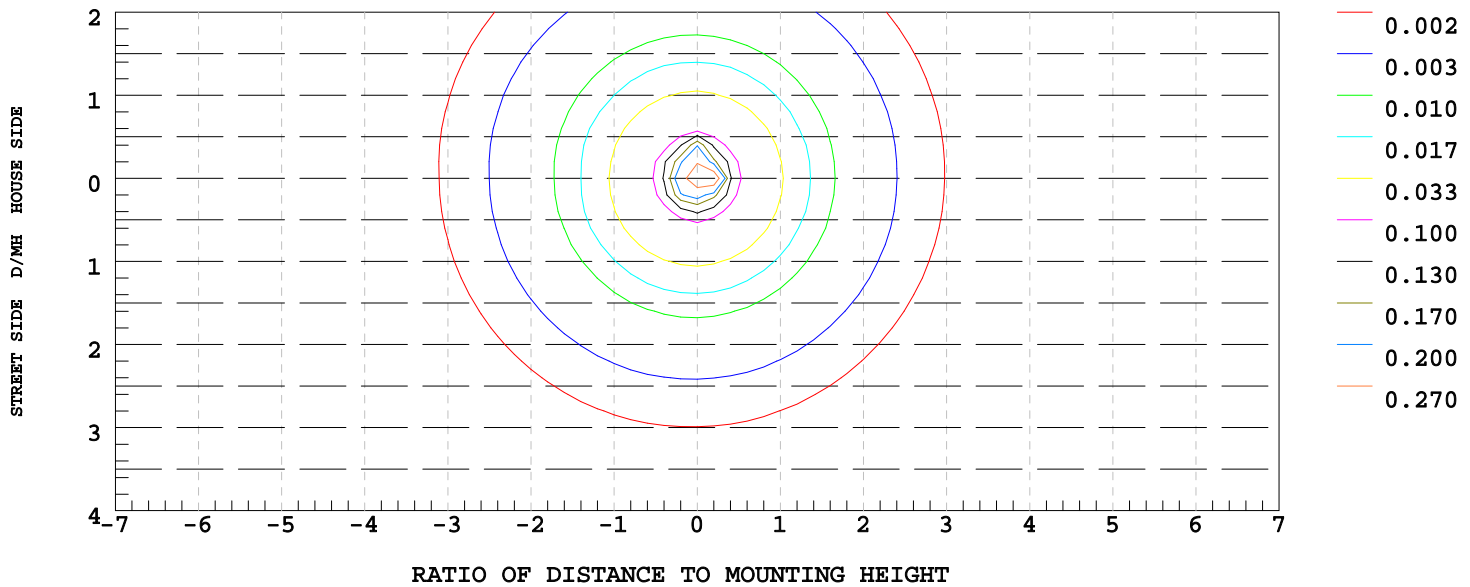
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

ISOLUX DIAGRAM

Report number:

MANUFACTURER:			
Address:			
NAME:		TYPE:	WEIGHT:
SPECIFICATION:	CCT(K): 0	DIMENSION:	SERIAL No.:

ILLUMINANCE AT MH=10 m, Enadir = 0.33 lx



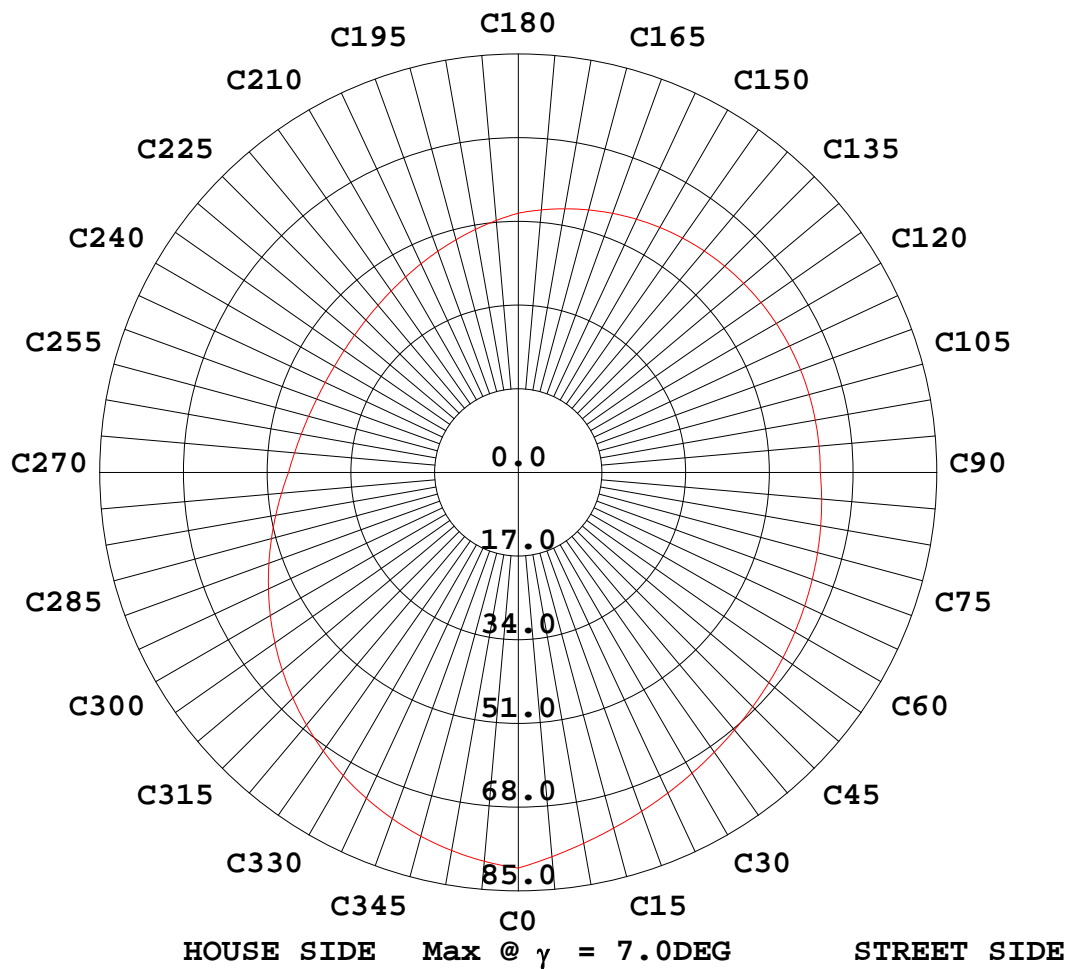
Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:			
Address:			
NAME:		TYPE:	WEIGHT:
SPECIFICATION:	CCT(K): 0	DIMENSION:	SERIAL No.:



Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Report number:

MANUFACTURER:			
Address:			
NAME:		TYPE:	WEIGHT:
SPECIFICATION:	CCT(K): 0	DIMENSION:	SERIAL No.:

UNIT: cd

C (DEG) γ (DEG)	0	90	180	270
0.0	33.4	31.1	33.4	31.1
5.0	57.3	59.0	31.6	33.2
10.0	34.1	28.7	58.2	40.7
15.0	23.6	21.9	19.6	18.5
20.0	17.5	21.1	17.8	29.1
25.0	15.0	14.7	14.8	15.1
30.0	13.6	13.3	13.3	13.0
35.0	12.5	12.1	11.7	12.1
40.0	11.4	11.2	10.9	11.0
45.0	10.3	10.3	9.95	10.1
50.0	9.48	9.11	8.75	9.19
55.0	8.57	8.26	7.89	8.51
60.0	7.75	7.19	7.05	7.90
65.0	6.82	6.28	6.17	6.94
70.0	6.16	5.54	5.42	6.22
75.0	5.41	4.81	4.81	5.48
80.0	4.58	4.21	4.34	4.82
85.0	3.98	3.72	3.91	4.23
90.0	3.51	3.16	3.54	3.67
95.0	3.23	2.84	3.10	3.41
100.0	2.89	2.58	2.86	3.06
105.0	2.48	2.34	2.64	2.33
110.0	2.39	2.09	2.44	2.41
115.0	2.16	1.93	2.21	2.17
120.0	1.97	1.80	1.91	2.00
125.0	1.84	1.71	1.68	1.84
130.0	1.73	1.63	1.54	1.75
135.0	1.66	1.58	1.44	1.67
140.0	1.61	1.52	1.32	1.58
145.0	1.59	1.46	1.17	1.50
150.0	1.49	1.26	1.02	1.43
155.0	1.24	0.94	0.84	1.27
160.0	0.85	0.55	0.60	0.94
165.0	0.23	0.13	0.20	0.58
170.0	0.12	0.07	0.13	0.20
175.0	0.06	0.04	0.07	0.11
180.0	0.04	0.03	0.04	0.05

Test System:HOPPO HP880D
Temperature:25.3DEG
Operators:
Test Date:11-02-2023

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks: