

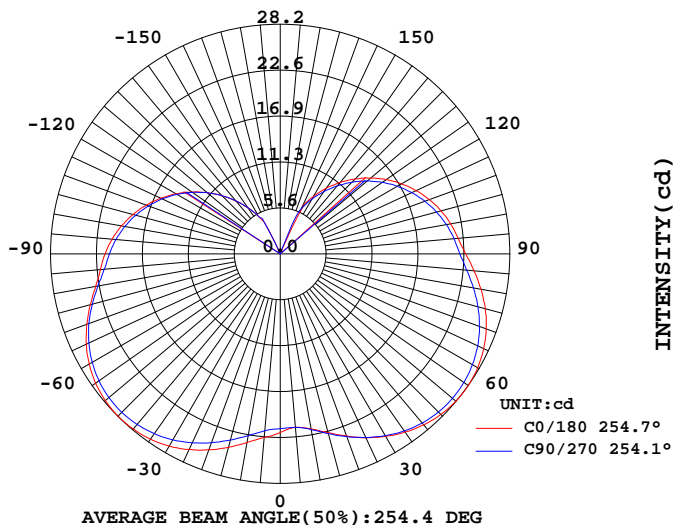
LUMINAIRE PHOTOMETRIC TEST REPORT

Report number:

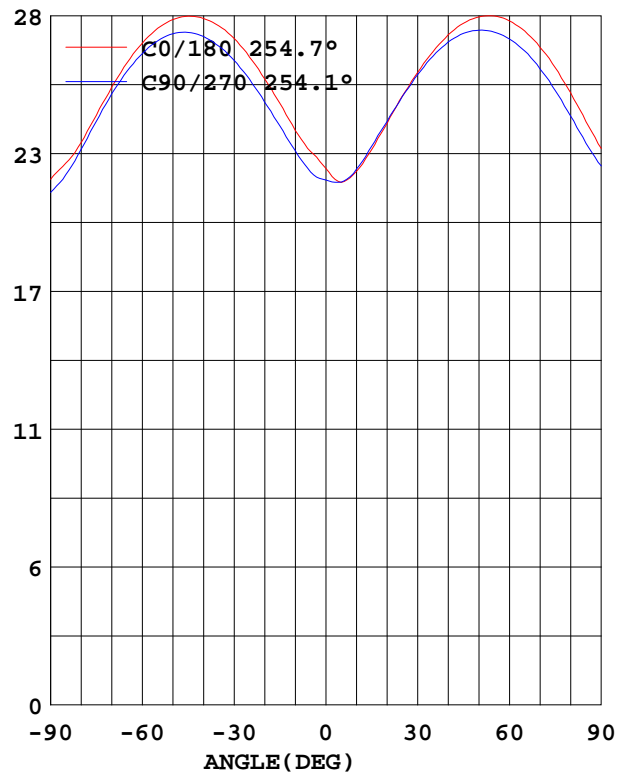
MANUFACTURER:			
Address:			
NAME:		TYPE:	WEIGHT:
SPECIFICATION:	CCT(K): 0	DIMENSION:	SERIAL No.:

DATA OF LAMP		Imax(cd)	28.18	S/MH(C0/180)	1.87
MODEL		EFFICIENCY(%)	100.0	S/MH(C90/270)	1.87
NOMINAL POWER(W)	2	TOTAL FLUX(lm)	250.4	Voltage(V)	12.03
RATED VOLTAGE(V)	12	EFFICIENCY(lm/W)	109.8	Current(A)	0.233
NOMINAL FLUX(lm)	250.4	η up(%)	35.7	Power(W)	2.280
LAMPS QUANTITY	1	η down(%)	64.3	Power Factor(PF)	0.810
TEST VOLTAGE(V)	12.0	Effective Flux(lm)	47.8	EEI	0.271

LUMINOUS INTENSITY DISTRIBUTION



LUMINOUS INTENSITY DISTRIBUTION



Test System:HOPPO HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

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.:

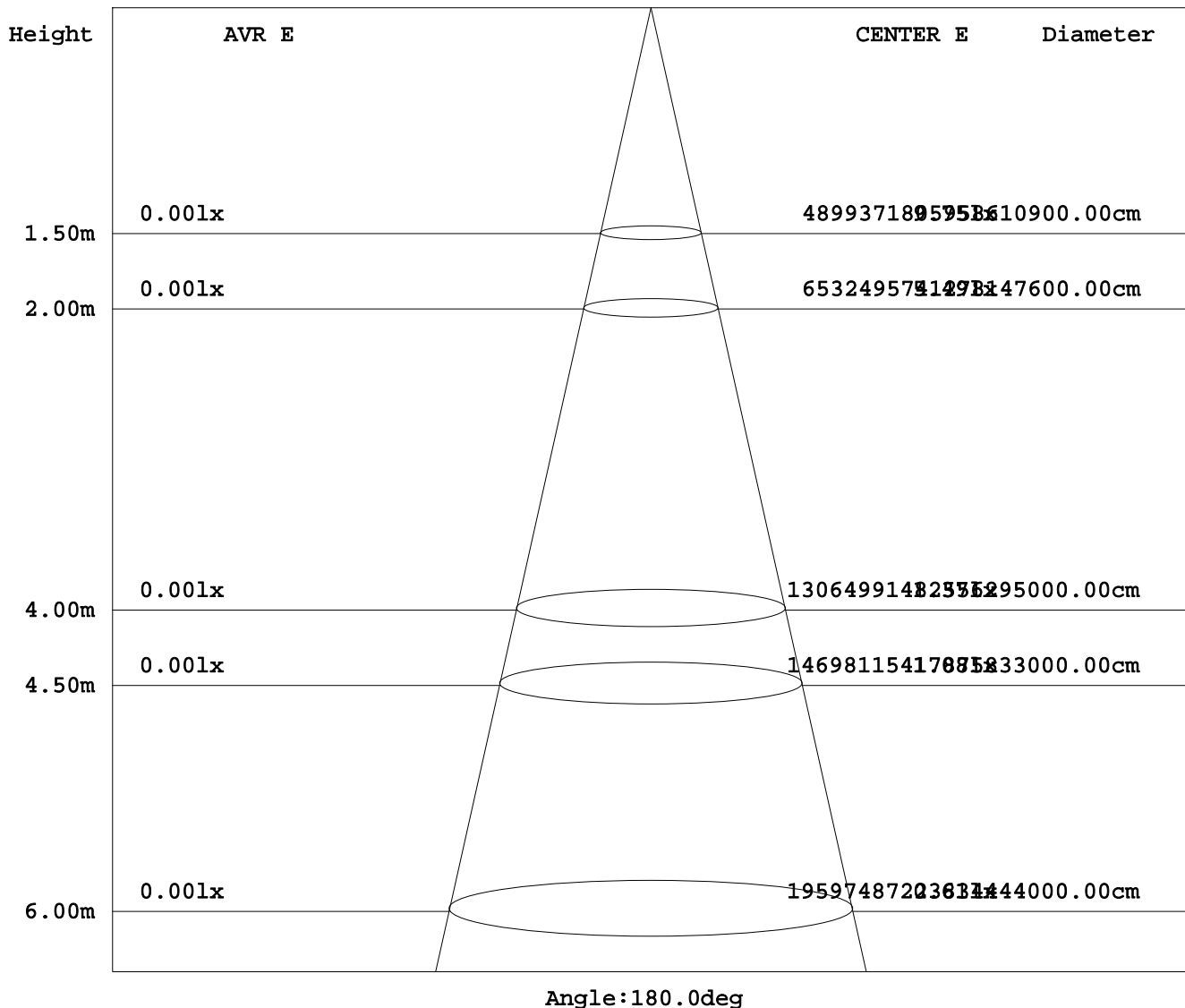
Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

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:06-30-2023

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	22.63	21.79	21.37	21.38					0- 5	0.520	0.520
10.0	23.50	22.67	21.82	21.91					5- 10	1.583	2.103
15.0	24.59	23.67	22.71	22.85					10- 15	2.727	4.830
20.0	25.60	24.64	23.78	23.86					15- 20	3.955	8.786
25.0	26.50	25.60	24.90	24.88					20- 25	5.245	14.03
30.0	27.26	26.36	25.87	25.78					25- 30	6.560	20.59
35.0	27.77	26.94	26.71	26.52					30- 35	7.857	28.44
40.0	28.07	27.34	27.41	27.11					35- 40	9.095	37.54
45.0	28.17	27.50	27.88	27.46					40- 45	10.23	47.78
50.0	28.03	27.45	28.14	27.59					45- 50	11.23	59.01
55.0	27.67	27.15	28.17	27.51					50- 55	12.06	71.07
60.0	27.06	26.64	27.97	27.23					55- 60	12.68	83.76
65.0	26.26	25.92	27.56	26.74					60- 65	13.09	96.86
70.0	25.28	25.00	26.89	26.01					65- 70	13.27	110.1
75.0	24.12	23.87	26.05	25.12					70- 75	13.23	123.3
80.0	23.01	22.73	25.04	24.09					75- 80	12.98	136.3
85.0	22.16	21.69	23.86	22.97					80- 85	12.59	148.9
90.0	21.50	20.96	22.75	22.04					85- 90	12.17	161.1
95.0	20.73	20.25	21.93	21.42					90- 95	11.74	172.8
100.0	19.80	19.39	21.23	20.72					95-100	11.24	184.1
105.0	18.69	18.34	20.43	19.85					100-105	10.60	194.7
110.0	17.50	17.22	19.50	18.89					105-110	9.840	204.5
115.0	16.20	15.99	18.38	17.83					110-115	8.964	213.5
120.0	14.73	14.60	17.20	16.60					115-120	8.002	221.5
125.0	13.25	13.18	15.91	15.32					120-125	6.990	228.5
130.0	11.71	11.70	14.46	13.94					125-130	5.957	234.4
135.0	10.06	10.09	13.00	12.42					130-135	4.928	239.4
140.0	8.473	8.530	11.46	10.91					135-140	3.940	243.3
145.0	6.888	6.958	9.870	9.366					140-145	3.024	246.3
150.0	5.283	5.349	8.137	7.724					145-150	2.197	248.5
155.0	1.969	1.511	5.227	6.148					150-155	1.442	250.0
160.0	0.231	0.122	0.268	0.889					155-160	0.343	250.3
165.0	0.147	0.076	0.157	0.243					160-165	0.042	250.4
170.0	0.106	0.059	0.086	0.154					165-170	0.015	250.4
175.0	0.089	0.053	0.066	0.111					170-175	0.006	250.4
180.0	0.072	0.053	0.066	0.077					175-180	0.002	250.4
DEG	LUMINOUS INTENSITY:cd									UNIT:lm	

Test System:HOPPO HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

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

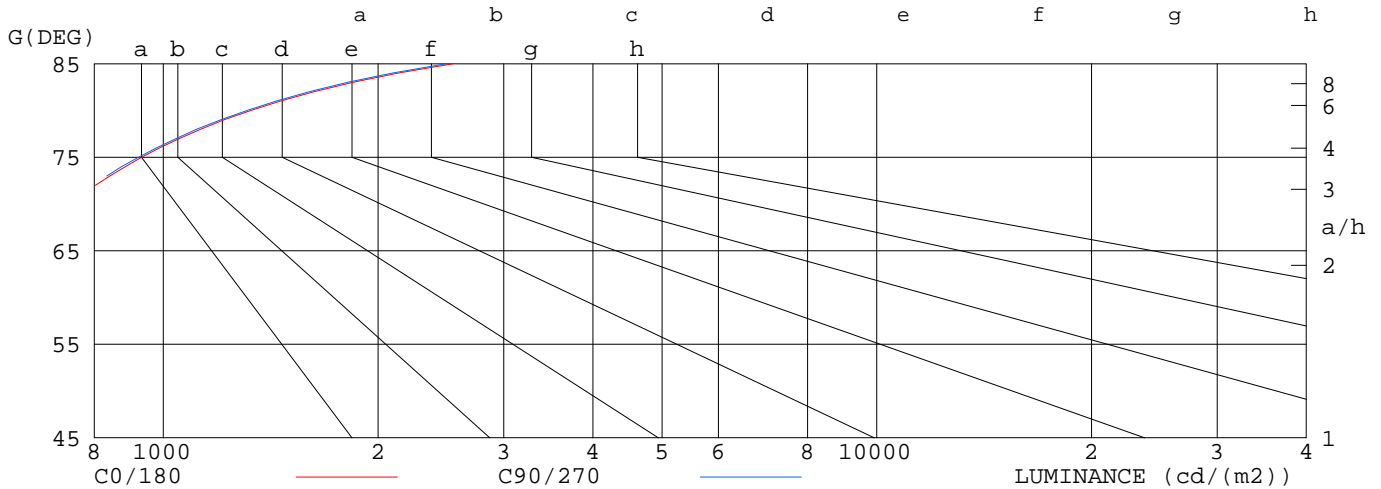
LUMINANCE LIMITATION CURVES

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	2543	2489
80	1325	1309
75	932	923
70	739	731
65	621	613
60	541	533
55	483	473
50	436	427
45	398	389

Test System:HOP00 HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

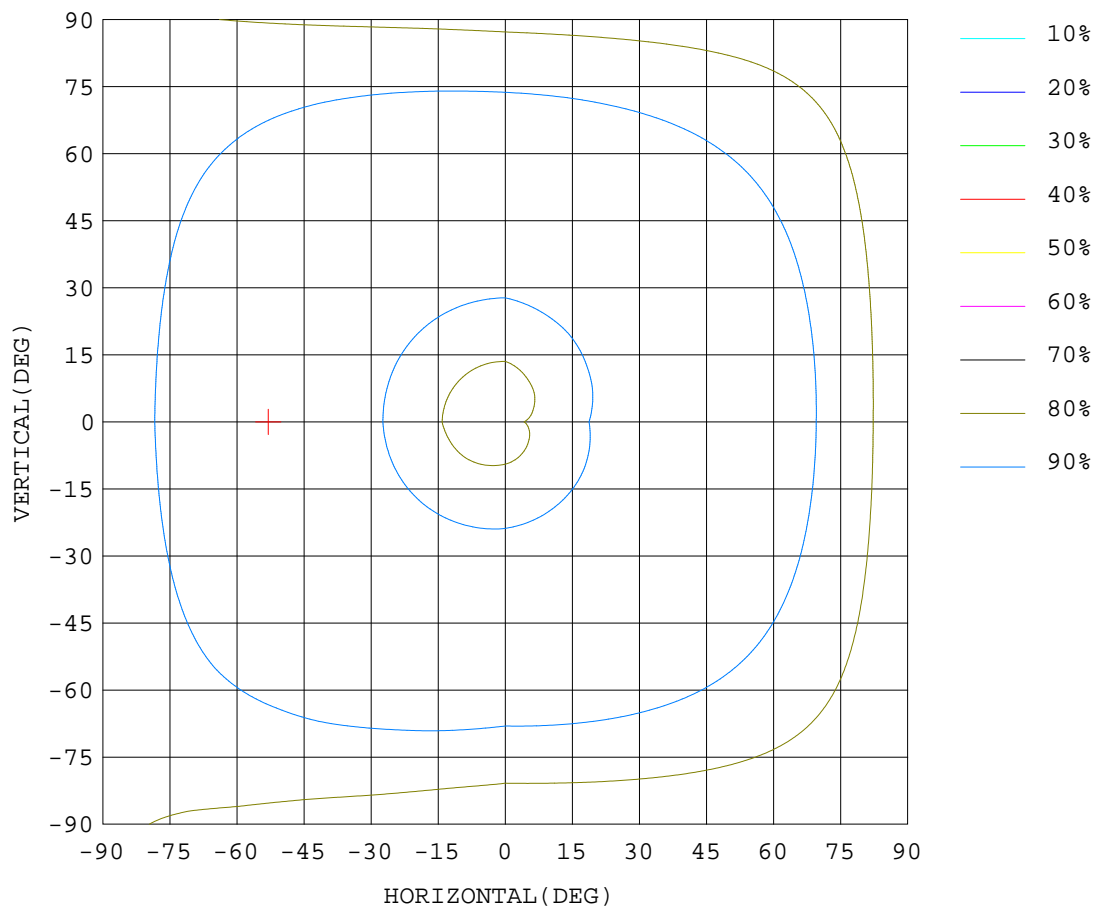
Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

ISOCANDELA DIAGRAM

Report number:

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

UNIT: cd



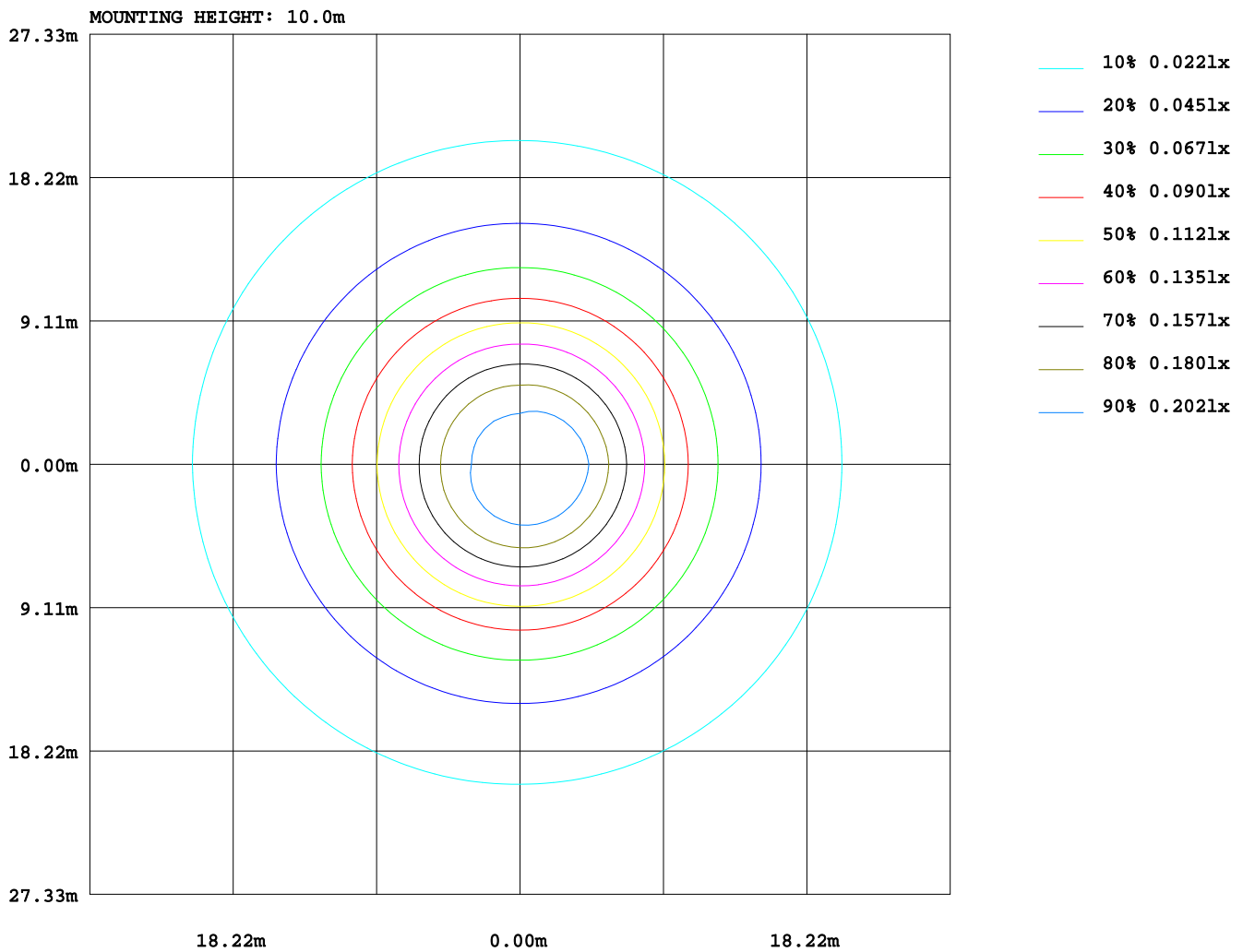
Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

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:06-30-2023

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
	90	80	70	60	50	40	30	20	10	0	10	20	30	40	50	60	70	80	90			
90 80 70 60 50 40 30 <																						

Test System:HOP00 HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

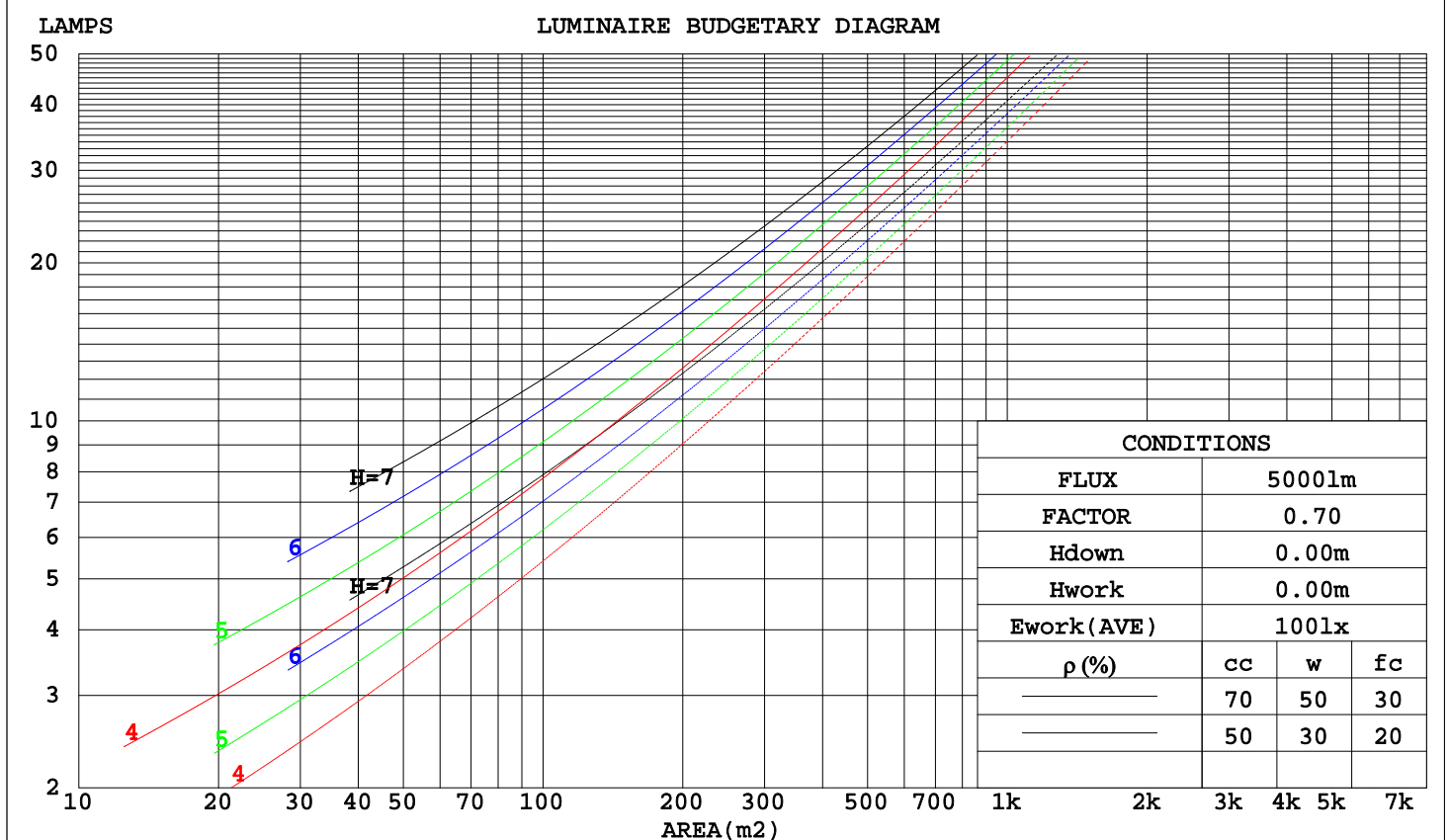
Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

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:06-30-2023

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.:			

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	.421	.240	.076	.403	.230	.073	.369	.212	.068	.338	.195	.063	.309	.179	.058	
2.0	.353	.194	.059	.337	.186	.057	.306	.170	.053	.277	.156	.049	.251	.142	.045	
3.0	.309	.164	.049	.294	.157	.047	.265	.144	.044	.239	.131	.040	.215	.119	.037	
4.0	.275	.143	.042	.261	.137	.040	.235	.125	.037	.211	.113	.034	.189	.103	.031	
5.0	.248	.126	.037	.235	.121	.035	.212	.110	.032	.190	.100	.030	.169	.090	.027	
6.0	.226	.113	.032	.214	.108	.031	.192	.099	.029	.172	.089	.026	.153	.081	.024	
7.0	.207	.102	.029	.197	.098	.028	.176	.089	.026	.158	.081	.024	.140	.073	.021	
8.0	.191	.094	.026	.182	.089	.025	.163	.081	.023	.146	.074	.021	.129	.066	.019	
9.0	.178	.086	.024	.169	.082	.023	.151	.075	.021	.135	.068	.019	.120	.061	.018	
10.0	.166	.080	.022	.158	.076	.021	.141	.069	.020	.126	.063	.018	.112	.056	.016	

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	.462	.462	.462	.395	.395	.395	.270	.270	.270	.155	.155	.155	.050	.050	.050	
1.0	.462	.429	.399	.395	.368	.344	.270	.253	.238	.156	.147	.138	.050	.047	.045	
2.0	.456	.407	.366	.391	.351	.317	.268	.243	.221	.154	.141	.129	.050	.046	.042	
3.0	.449	.392	.346	.385	.338	.300	.264	.235	.210	.153	.137	.124	.049	.045	.041	
4.0	.442	.380	.333	.379	.328	.289	.261	.229	.204	.151	.134	.121	.049	.044	.040	
5.0	.434	.371	.324	.373	.321	.282	.257	.224	.199	.149	.132	.118	.048	.043	.039	
6.0	.427	.363	.318	.367	.315	.277	.253	.220	.196	.147	.130	.116	.047	.042	.038	
7.0	.420	.357	.313	.361	.309	.273	.249	.217	.193	.145	.128	.115	.047	.042	.038	
8.0	.413	.352	.309	.355	.305	.270	.246	.214	.191	.143	.126	.114	.046	.041	.038	
9.0	.407	.347	.307	.350	.301	.268	.243	.212	.190	.141	.125	.113	.046	.041	.038	
10.0	.401	.343	.305	.345	.298	.266	.240	.210	.189	.140	.124	.113	.045	.041	.037	

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

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	8.3	9.5	9.0	10.3	11.2	8.2	9.4	8.9	10.2	11.1
	3H	11.2	12.3	11.9	13.1	14.0	11.1	12.3	11.9	13.0	14.0
	4H	12.8	13.9	13.5	14.6	15.6	12.7	13.8	13.5	14.6	15.6
	6H	14.6	15.6	15.3	16.4	17.4	14.5	15.5	15.3	16.3	17.3
	8H	15.5	16.5	16.3	17.3	18.3	15.5	16.4	16.3	17.3	18.3
	12H	16.7	17.6	17.5	18.5	19.5	16.6	17.5	17.4	18.4	19.4
4H	2H	9.2	10.3	9.9	11.0	12.0	9.1	10.2	9.9	11.0	12.0
	3H	12.2	13.2	13.0	14.0	15.0	12.2	13.1	13.0	14.0	15.0
	4H	14.0	14.9	14.8	15.7	16.7	13.9	14.8	14.8	15.6	16.7
	6H	15.9	16.7	16.8	17.6	18.6	15.9	16.6	16.7	17.5	18.6
	8H	17.0	17.7	17.9	18.6	19.7	16.9	17.7	17.8	18.5	19.6
	12H	18.3	18.9	19.1	19.8	20.9	18.2	18.9	19.0	19.7	20.8
8H	4H	14.6	15.4	15.5	16.2	17.3	14.6	15.3	15.4	16.2	17.3
	6H	16.8	17.5	17.7	18.3	19.5	16.8	17.4	17.7	18.3	19.4
	8H	18.1	18.7	19.0	19.6	20.7	18.1	18.6	18.9	19.5	20.6
	12H	19.6	20.1	20.5	21.0	22.1	19.5	20.0	20.4	20.9	22.1
12H	4H	14.8	15.5	15.7	16.3	17.4	14.8	15.4	15.6	16.3	17.4
	6H	17.1	17.7	18.0	18.6	19.7	17.1	17.6	18.0	18.5	19.7
	8H	18.5	19.0	19.4	19.9	21.1	18.5	18.9	19.4	19.9	21.0
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 / - 0.4					+ 0.3 / - 0.4				

CIE Pub.117 Corrected 250.4 lm Total Lamp Luminous Flux.(8log(F/F0) = -4.8)

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

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) $k(RI) \times RCR = 5$									
$k = 0.60$	39	26	19	38	26	18	35	24	18	11
0.80	48	34	25	46	33	25	42	31	23	15
1.00	55	41	32	53	40	31	48	39	29	19
1.25	62	48	39	59	46	37	53	42	35	23
1.50	68	54	44	64	51	42	57	47	39	26
2.00	75	63	53	71	59	51	63	54	46	31
2.50	80	68	59	76	65	57	67	58	51	35
3.00	84	73	65	79	70	62	70	62	56	38
4.00	90	80	72	84	76	69	74	67	62	42
5.00	93	85	78	87	80	74	77	71	66	45
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004					Suspended			SHRNOM = 1.25		

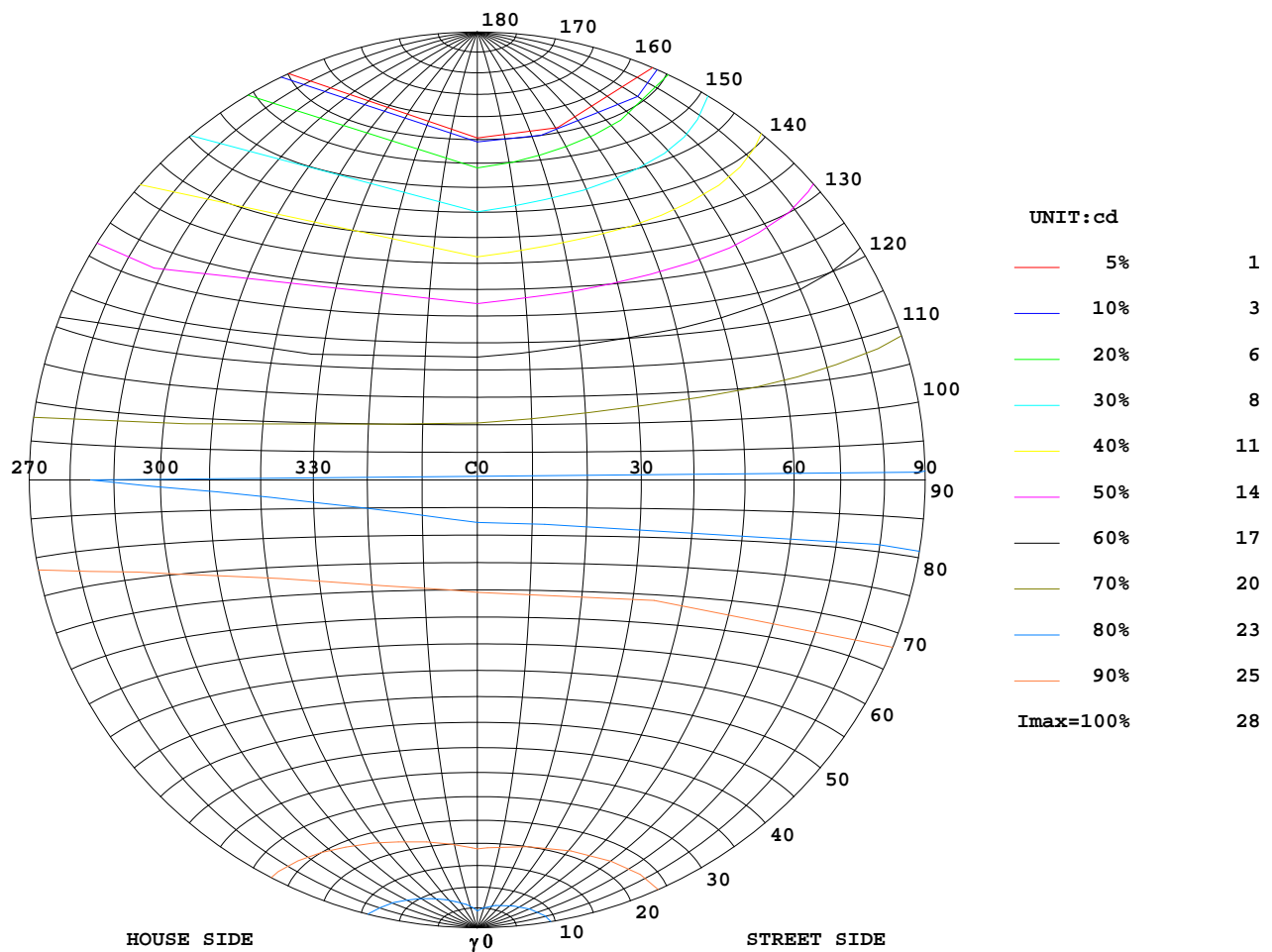
Test System:HOP00 HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:06-30-2023

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:06-30-2023

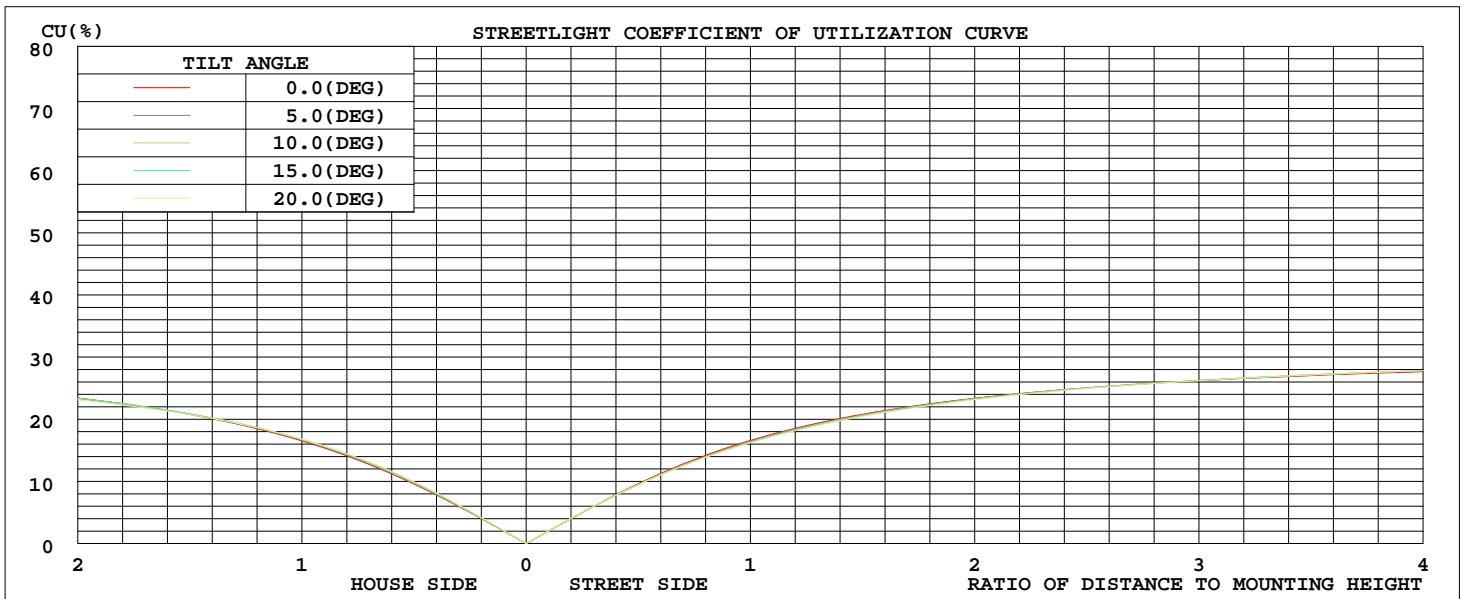
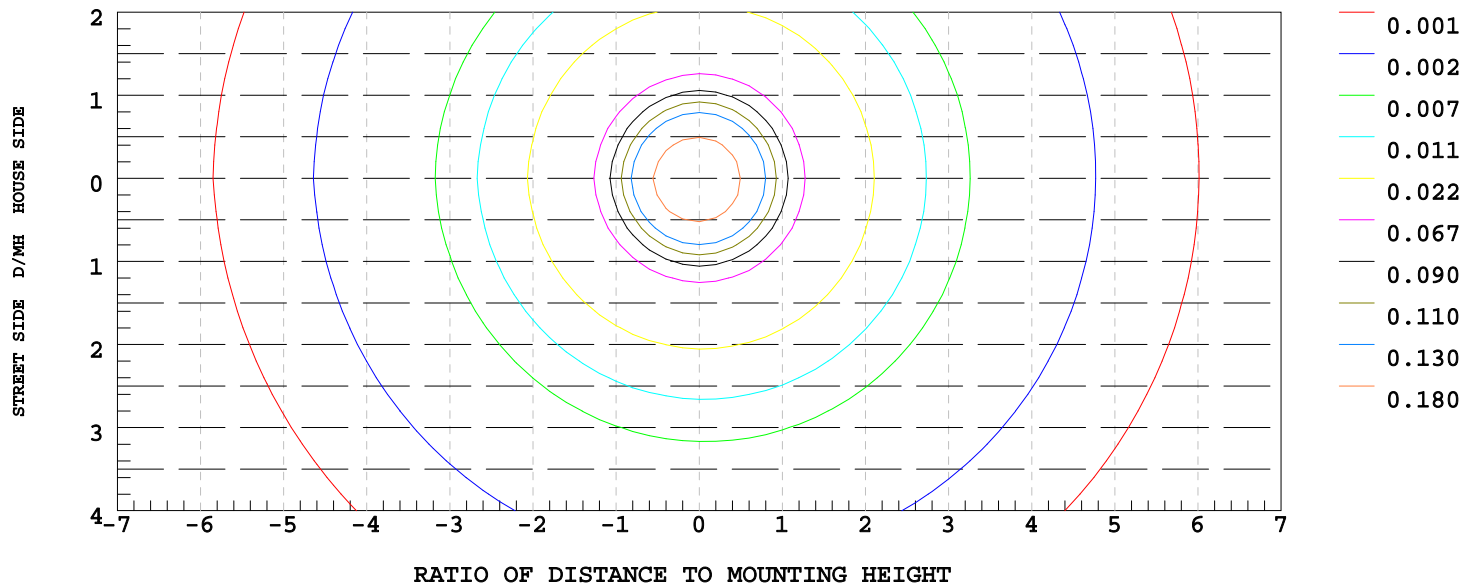
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

ISOLUX DIAGRAM

Report number:

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

ILLUMINANCE AT MH=10 m,Enadir = 0.22 lx



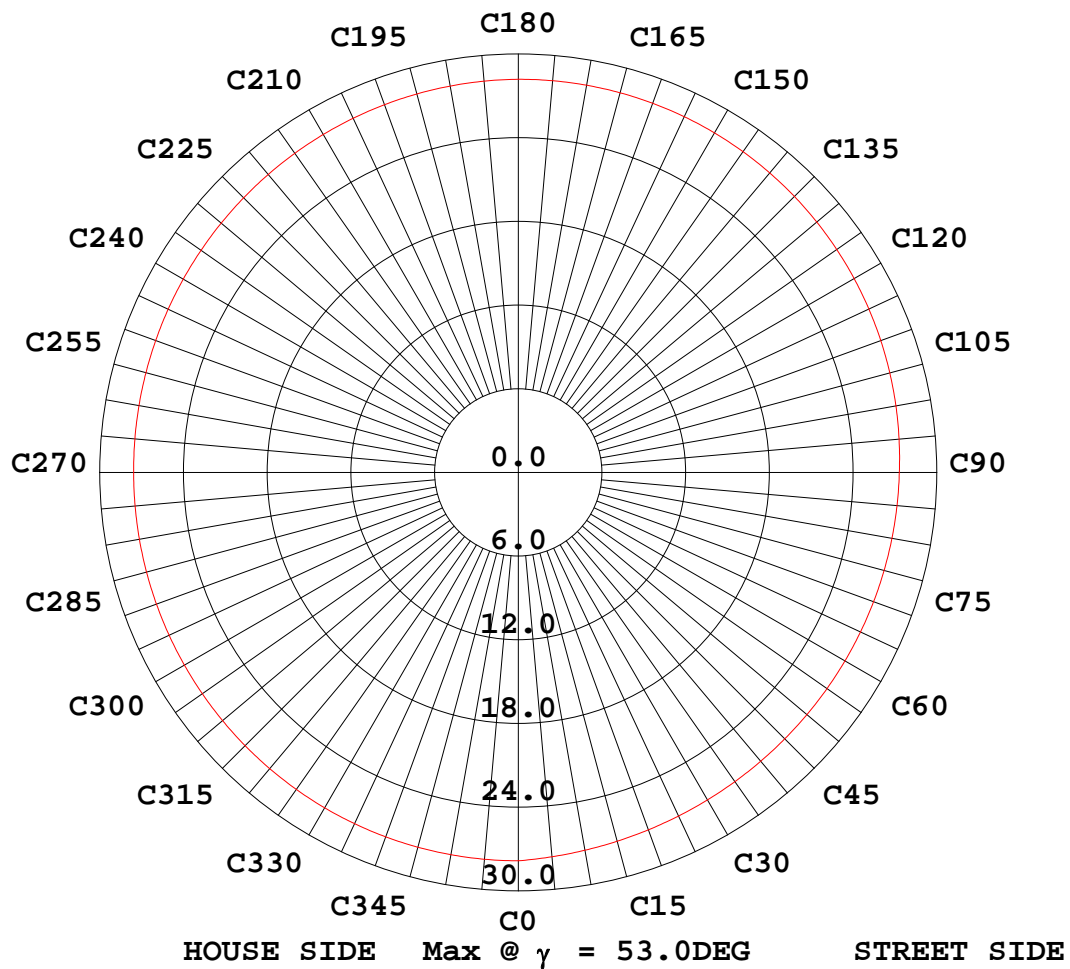
Test System:HOPPO HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

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:06-30-2023

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	21.9	21.4	21.9	21.4
5.0	22.6	21.7	21.3	21.3
10.0	23.5	22.6	21.8	21.9
15.0	24.5	23.6	22.7	22.8
20.0	25.6	24.6	23.7	23.8
25.0	26.5	25.6	24.9	24.8
30.0	27.2	26.3	25.8	25.7
35.0	27.7	26.9	26.7	26.5
40.0	28.0	27.3	27.4	27.1
45.0	28.1	27.5	27.8	27.4
50.0	28.0	27.4	28.1	27.5
55.0	27.6	27.1	28.1	27.5
60.0	27.0	26.6	27.9	27.2
65.0	26.2	25.9	27.5	26.7
70.0	25.2	25.0	26.8	26.0
75.0	24.1	23.8	26.0	25.1
80.0	23.0	22.7	25.0	24.0
85.0	22.1	21.6	23.8	22.9
90.0	21.5	20.9	22.7	22.0
95.0	20.7	20.2	21.9	21.4
100.0	19.8	19.3	21.2	20.7
105.0	18.6	18.3	20.4	19.8
110.0	17.5	17.2	19.5	18.8
115.0	16.2	15.9	18.3	17.8
120.0	14.7	14.6	17.2	16.6
125.0	13.2	13.1	15.9	15.3
130.0	11.7	11.7	14.4	13.9
135.0	10.0	10.0	13.0	12.4
140.0	8.47	8.53	11.4	10.9
145.0	6.88	6.95	9.87	9.36
150.0	5.28	5.34	8.13	7.72
155.0	1.96	1.51	5.22	6.14
160.0	0.23	0.12	0.27	0.89
165.0	0.15	0.08	0.16	0.24
170.0	0.11	0.06	0.09	0.15
175.0	0.09	0.05	0.07	0.11
180.0	0.07	0.05	0.07	0.08

Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:06-30-2023

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