

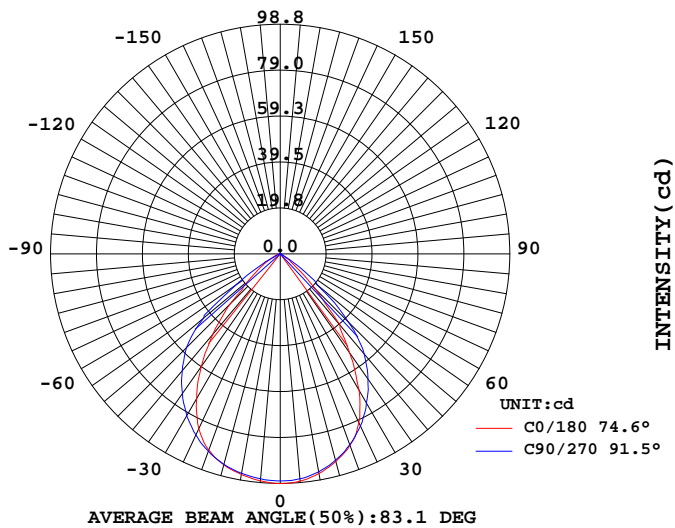
LUMINAIRE PHOTOMETRIC TEST REPORT

Report number:

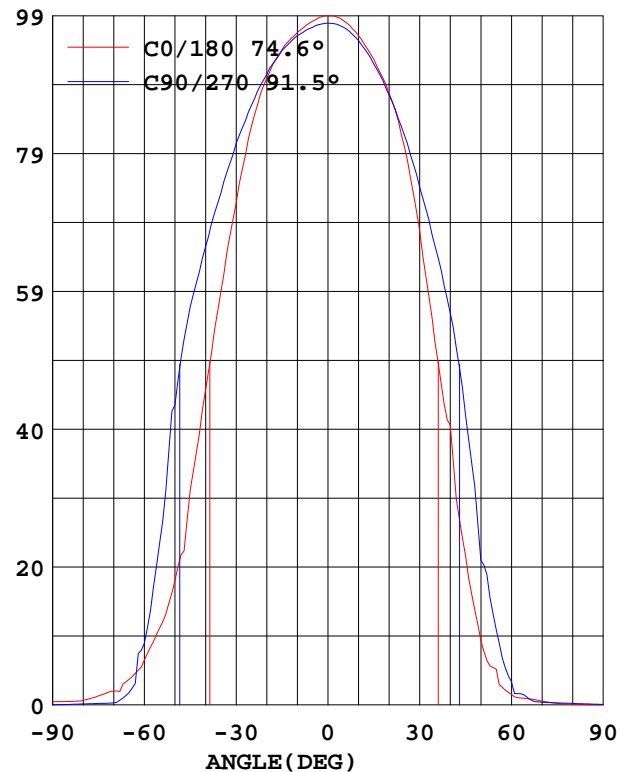
MANUFACTURER:					
Address:					
NAME:			TYPE:		WEIGHT:
SPECIFICATION:	CCT(K): 0		DIMENSION:		SERIAL No.:

DATA OF LAMP		Imax(cd)	98.77	S/MH(C0/180)	1.11
MODEL		EFFICIENCY(%)	100.0	S/MH(C90/270)	1.22
NOMINAL POWER(W)	3	TOTAL FLUX(lm)	156.6	Voltage(V)	12.04
RATED VOLTAGE(V)	12	EFFICIENCY(lm/W)	54.0	Current(A)	0.296
NOMINAL FLUX(lm)	156.6	η up(%)	0.8	Power(W)	2.900
LAMPS QUANTITY	1	η down(%)	99.2	Power Factor(PF)	0.812
TEST VOLTAGE(V)	12.0	Effective Flux(lm)	128.7	EEI	0.178

LUMINOUS INTENSITY DISTRIBUTION



LUMINOUS INTENSITY DISTRIBUTION



Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:07-13-2023

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.:

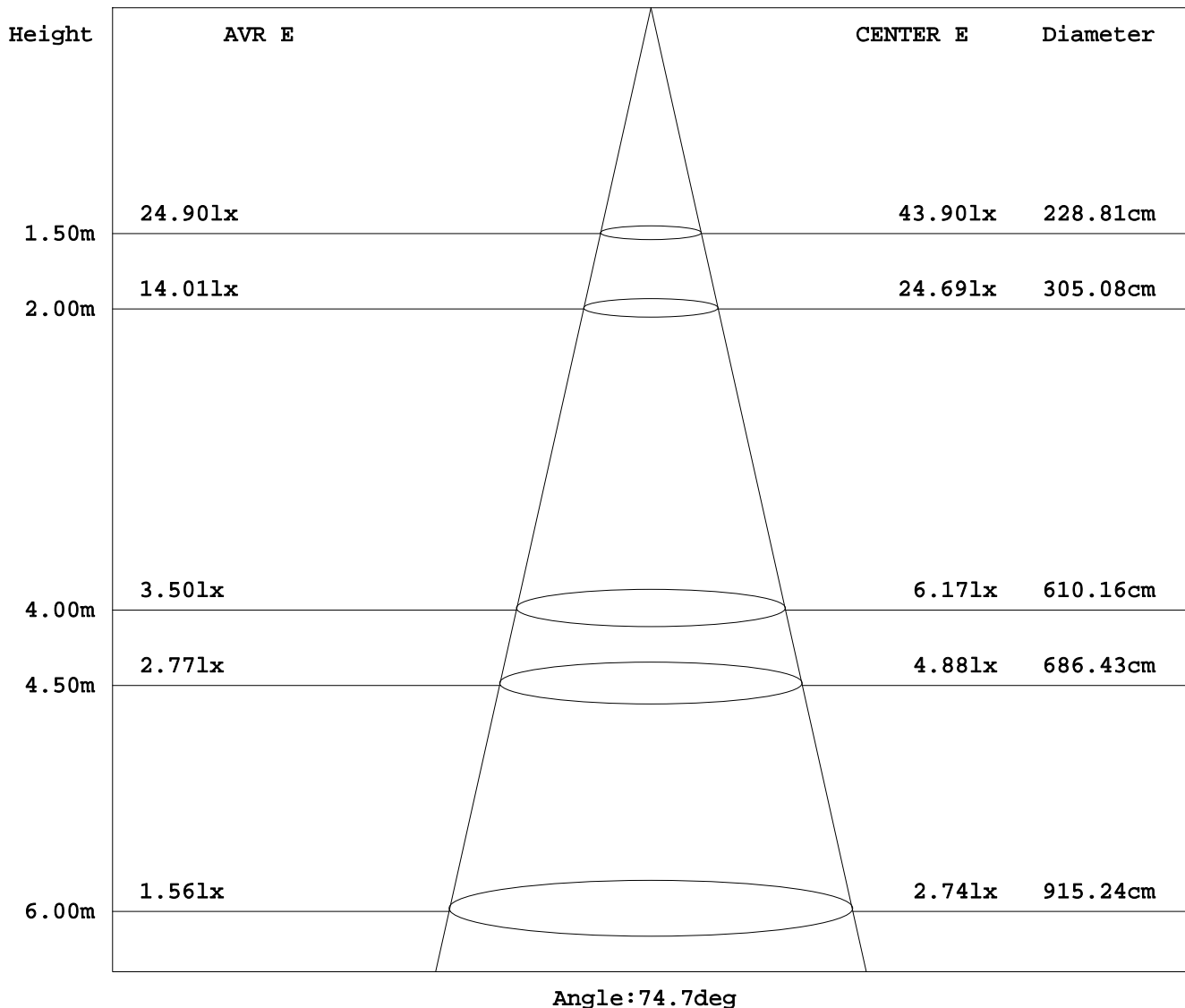
Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:07-13-2023

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: HOPOO HP880D
Temperature: 25.3DEG
Operators:
Test Date: 07-13-2023

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	98.01	97.10	98.10	97.12					0- 5	2.341	2.341
10.0	96.36	95.88	95.91	95.21					5- 10	6.919	9.260
15.0	93.91	93.77	92.54	91.87					10- 15	11.20	20.46
20.0	89.82	90.35	87.65	87.41					15- 20	14.99	35.45
25.0	82.93	85.94	80.05	81.70					20- 25	18.00	53.46
30.0	71.88	80.44	67.96	74.17					25- 30	19.79	73.26
35.0	59.21	73.34	52.06	65.82					30- 35	20.07	93.33
40.0	45.13	65.64	40.10	56.14					35- 40	18.98	112.3
45.0	30.89	57.13	21.30	41.40					40- 45	16.42	128.7
50.0	17.81	42.99	9.236	20.74					45- 50	12.15	140.9
55.0	11.00	23.13	5.135	10.79					50- 55	7.663	148.5
60.0	6.434	8.848	1.494	3.328					55- 60	3.815	152.3
65.0	3.661	1.749	0.902	1.146					60- 65	1.548	153.9
70.0	1.987	0.276	0.546	0.381					65- 70	0.609	154.5
75.0	1.288	0.207	0.221	0.296					70- 75	0.341	154.8
80.0	0.644	0.145	0.071	0.215					75- 80	0.202	155.0
85.0	0.484	0.068	0.018	0.140					80- 85	0.116	155.1
90.0	0.455	0.018	0.002	0.082					85- 90	0.086	155.2
95.0	0.421	0	0.003	0.059					90- 95	0.070	155.3
100.0	0.344	0.004	0.008	0.059					95-100	0.062	155.4
105.0	0.154	0.004	0.020	0.067					100-105	0.044	155.4
110.0	0.066	0.021	0.034	0.078					105-110	0.026	155.4
115.0	0.070	0.055	0.064	0.111					110-115	0.031	155.5
120.0	0.087	0.112	0.106	0.167					115-120	0.046	155.5
125.0	0.131	0.190	0.167	0.261					120-125	0.069	155.6
130.0	0.197	0.284	0.246	0.351					125-130	0.099	155.7
135.0	0.282	0.353	0.331	0.426					130-135	0.125	155.8
140.0	0.373	0.388	0.406	0.486					135-140	0.142	155.9
145.0	0.436	0.397	0.453	0.516					140-145	0.145	156.1
150.0	0.463	0.381	0.465	0.523					145-150	0.135	156.2
155.0	0.442	0.344	0.444	0.497					150-155	0.113	156.3
160.0	0.397	0.305	0.401	0.459					155-160	0.087	156.4
165.0	0.344	0.261	0.352	0.408					160-165	0.061	156.5
170.0	0.290	0.242	0.303	0.351					165-170	0.038	156.5
175.0	0.268	0.241	0.283	0.296					170-175	0.020	156.5
180.0	0.268	0.258	0.268	0.264					175-180	0.006	156.6
DEG	LUMINOUS INTENSITY:cd									UNIT:lm	

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:07-13-2023

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

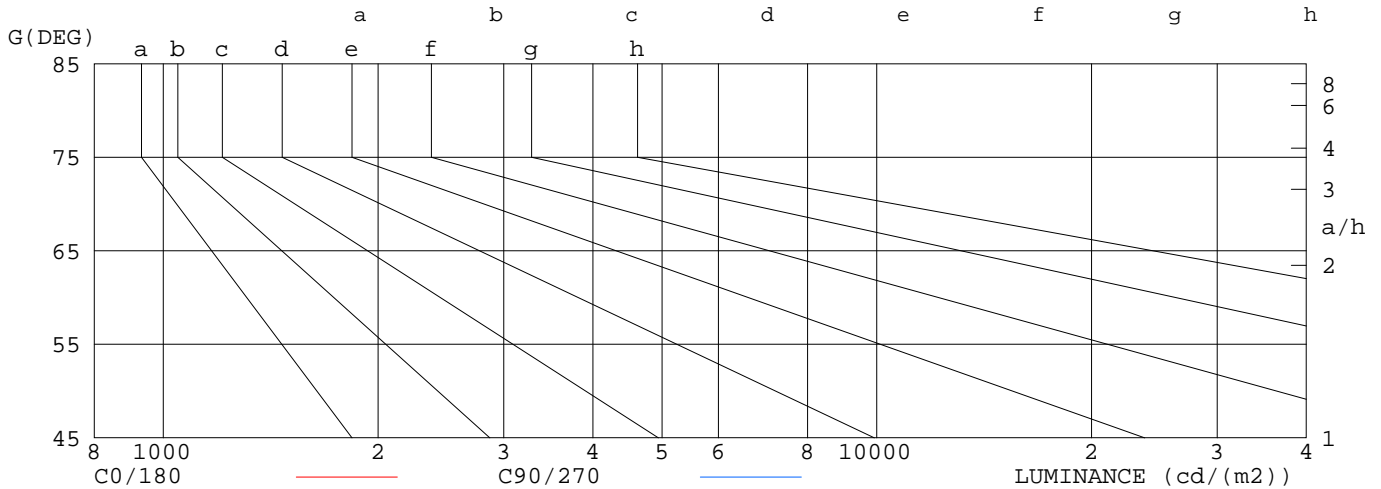
LUMINANCE LIMITATION CURVES

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/m2		
G(DEG)	C0/180	C90/270
85	56	8
80	37	8
75	50	8
70	58	8
65	87	41
60	129	177
55	192	403
50	277	669
45	437	808

Test System:HOP00 HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:07-13-2023

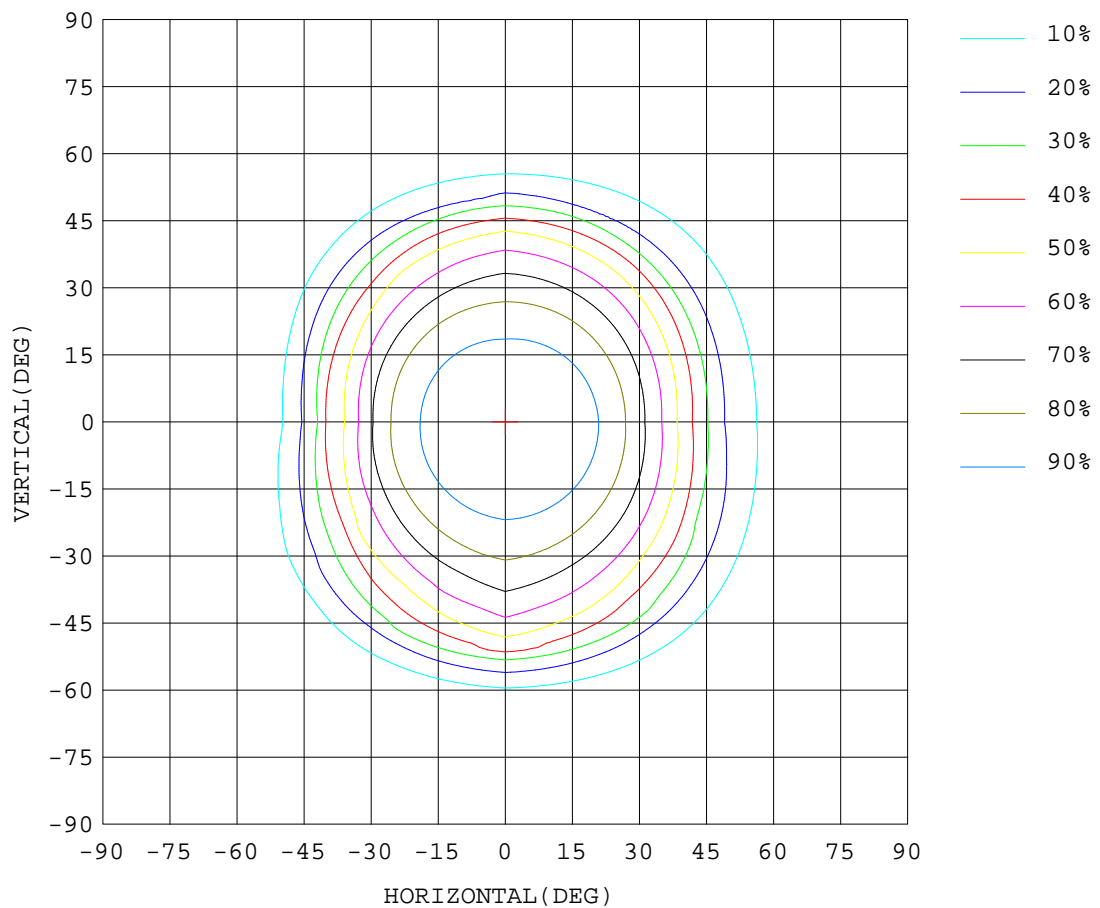
Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

ISOCANDELA DIAGRAM

Report number:

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

UNIT: cd



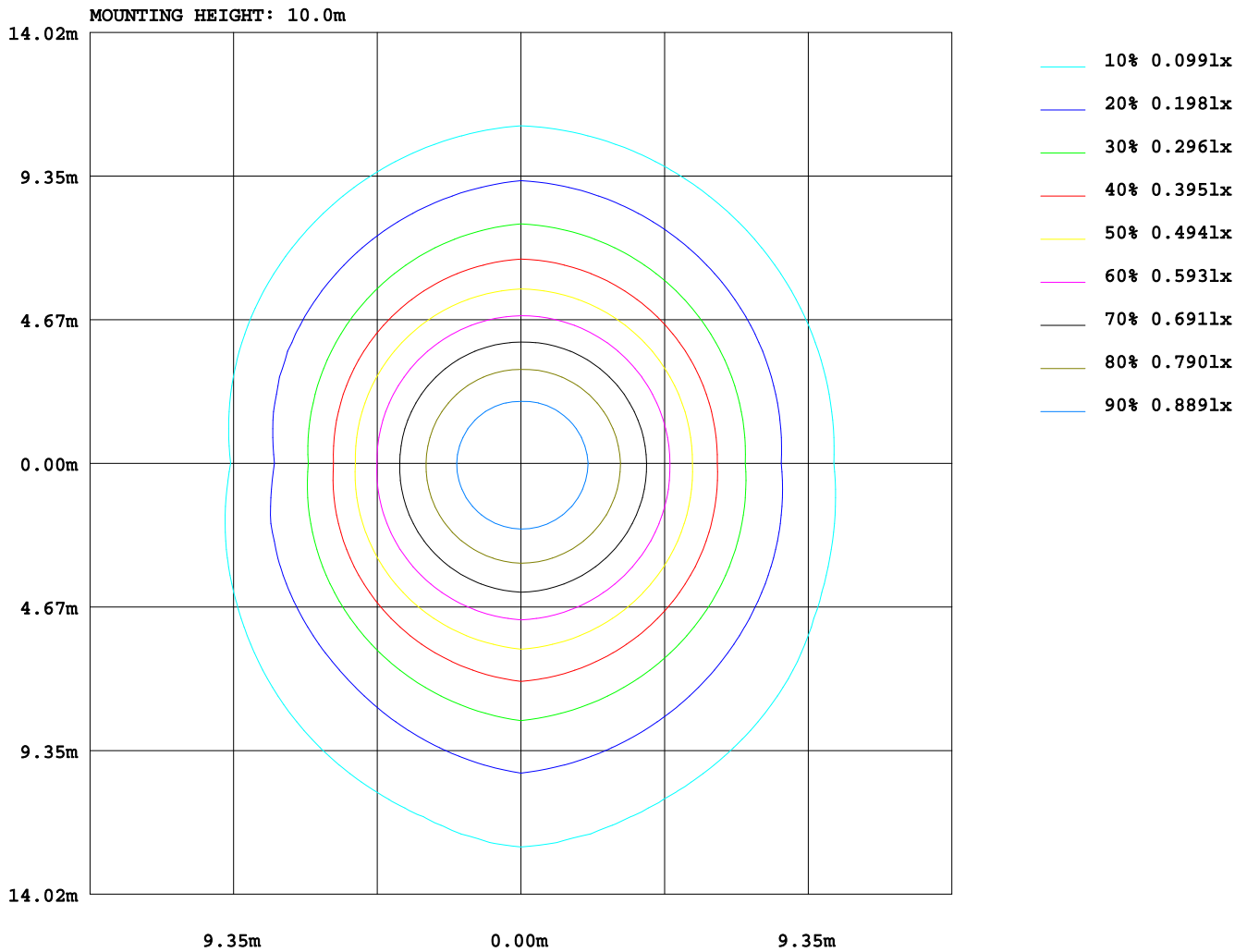
Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:07-13-2023

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:07-13-2023

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:07-13-2023

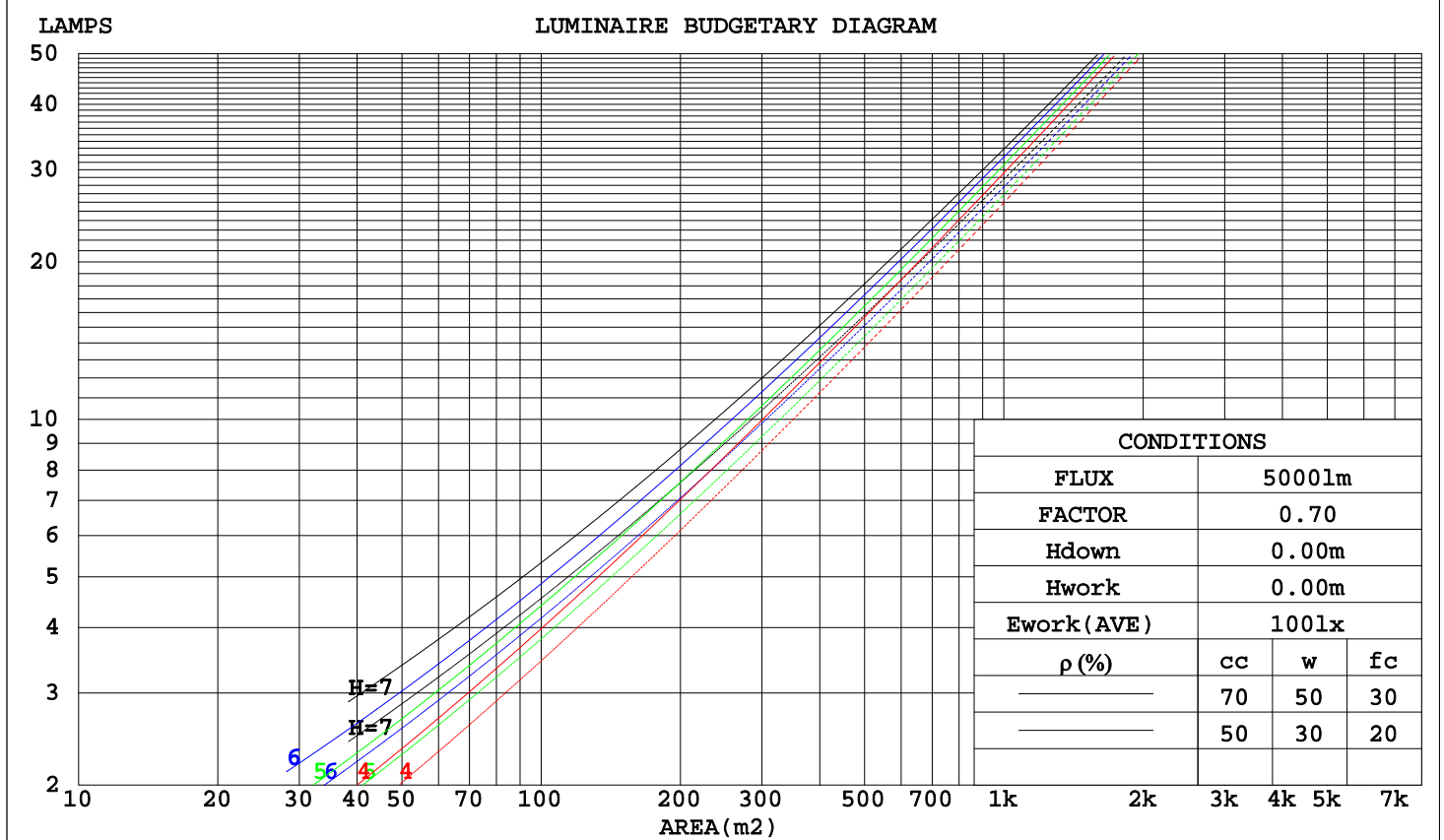
Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:1.000 m
 Remarks:

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:HOP00 HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:07-13-2023

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	.212	.120	.038	.205	.117	.037	.191	.110	.035	.179	.103	.033	.168	.097	.031	
2.0	.207	.113	.035	.201	.110	.034	.189	.105	.033	.179	.100	.031	.169	.096	.030	
3.0	.198	.106	.032	.193	.103	.031	.183	.099	.030	.174	.095	.029	.165	.092	.028	
4.0	.189	.098	.029	.184	.097	.029	.176	.093	.028	.168	.090	.027	.160	.087	.027	
5.0	.180	.092	.027	.176	.090	.026	.168	.088	.026	.161	.085	.025	.154	.082	.025	
6.0	.171	.086	.025	.167	.085	.024	.161	.082	.024	.154	.080	.024	.148	.078	.023	
7.0	.163	.080	.023	.159	.079	.023	.153	.078	.022	.148	.076	.022	.142	.074	.022	
8.0	.155	.076	.021	.152	.075	.021	.146	.073	.021	.141	.072	.021	.136	.070	.020	
9.0	.147	.071	.020	.145	.071	.020	.140	.069	.020	.135	.068	.019	.131	.066	.019	
10.0	.141	.067	.019	.138	.067	.019	.134	.065	.018	.129	.064	.018	.125	.063	.018	

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	.197	.197	.197	.168	.168	.168	.115	.115	.115	.066	.066	.066	.021	.021	.021	
1.0	.180	.163	.149	.154	.140	.128	.105	.097	.088	.061	.056	.051	.019	.018	.017	
2.0	.167	.139	.115	.143	.120	.099	.098	.083	.069	.057	.048	.041	.018	.016	.013	
3.0	.157	.120	.091	.135	.104	.079	.093	.072	.055	.053	.042	.033	.017	.014	.011	
4.0	.149	.106	.074	.128	.092	.064	.088	.064	.045	.051	.037	.027	.016	.012	.009	
5.0	.141	.095	.061	.121	.082	.053	.083	.058	.038	.048	.034	.022	.016	.011	.007	
6.0	.134	.086	.052	.116	.075	.045	.080	.052	.032	.046	.031	.019	.015	.010	.006	
7.0	.128	.079	.045	.110	.069	.039	.076	.048	.028	.044	.028	.016	.014	.009	.005	
8.0	.123	.073	.039	.106	.064	.034	.073	.045	.024	.043	.026	.014	.014	.009	.005	
9.0	.118	.068	.035	.101	.059	.031	.070	.042	.022	.041	.025	.013	.013	.008	.004	
10.0	.113	.064	.032	.097	.056	.028	.068	.039	.020	.039	.023	.012	.013	.008	.004	

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:07-13-2023

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	7.3	8.5	7.6	8.7	8.9	9.3	10.5	9.6	10.7	10.9
3H	7.2	8.3	7.5	8.5	8.7	9.1	10.2	9.4	10.4	10.6
4H	7.2	8.2	7.5	8.4	8.7	9.0	10.0	9.3	10.3	10.5
6H	7.1	8.0	7.4	8.3	8.6	8.9	9.9	9.3	10.1	10.4
8H	7.0	8.0	7.4	8.2	8.5	8.9	9.8	9.2	10.1	10.4
12H	7.0	7.9	7.4	8.2	8.5	8.8	9.7	9.2	10.0	10.3
4H 2H	7.2	8.2	7.5	8.5	8.7	9.1	10.1	9.4	10.4	10.6
3H	7.2	8.0	7.5	8.3	8.6	8.9	9.8	9.3	10.1	10.4
4H	7.1	7.9	7.5	8.2	8.5	8.8	9.6	9.2	9.9	10.3
6H	7.1	7.7	7.5	8.1	8.5	8.8	9.4	9.1	9.8	10.2
8H	7.0	7.7	7.4	8.0	8.4	8.7	9.3	9.1	9.7	10.1
12H	7.0	7.6	7.4	8.0	8.4	8.7	9.2	9.1	9.6	10.0
8H 4H	7.0	7.6	7.4	8.0	8.4	8.7	9.3	9.1	9.7	10.1
6H	6.9	7.5	7.4	7.9	8.3	8.6	9.1	9.1	9.5	10.0
8H	6.9	7.4	7.4	7.8	8.3	8.6	9.0	9.0	9.5	9.9
12H	6.9	7.3	7.4	7.8	8.3	8.5	8.9	9.0	9.4	9.9
12H 4H	6.9	7.5	7.4	7.9	8.3	8.7	9.2	9.1	9.6	10.0
6H	6.9	7.3	7.4	7.8	8.2	8.6	9.0	9.0	9.5	9.9
8H	6.9	7.3	7.4	7.7	8.2	8.5	8.9	9.0	9.4	9.9
Variations with the observer position at spacings:										
S = 1.0H	+ 2.0 / - 4.0					+ 1.8 / - 2.9				
1.5H	+ 1.4 / - 3.0					+ 1.5 / - 2.5				
2.0H	+ 3.2 / - 5.5					+ 4.0 / -10.0				

CIE Pub.117 Corrected 156.6 lm Total Lamp Luminous Flux.(8log(F/F0) = -6.4)

Test System:HOPPO HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:07-13-2023

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	73	64	59	73	64	59	72	64	59	54
0.80	83	75	69	82	74	69	81	73	69	64
1.00	90	83	78	89	82	77	87	82	77	71
1.25	96	89	84	95	88	84	92	87	83	78
1.50	100	93	89	98	92	88	96	91	87	81
2.00	104	99	95	103	98	94	100	95	92	86
2.50	107	102	98	105	100	97	101	98	95	88
3.00	109	104	101	107	103	100	103	100	97	90
4.00	111	107	104	109	106	103	105	102	100	92
5.00	113	109	107	110	107	105	106	104	102	93
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNOM = 1.25										

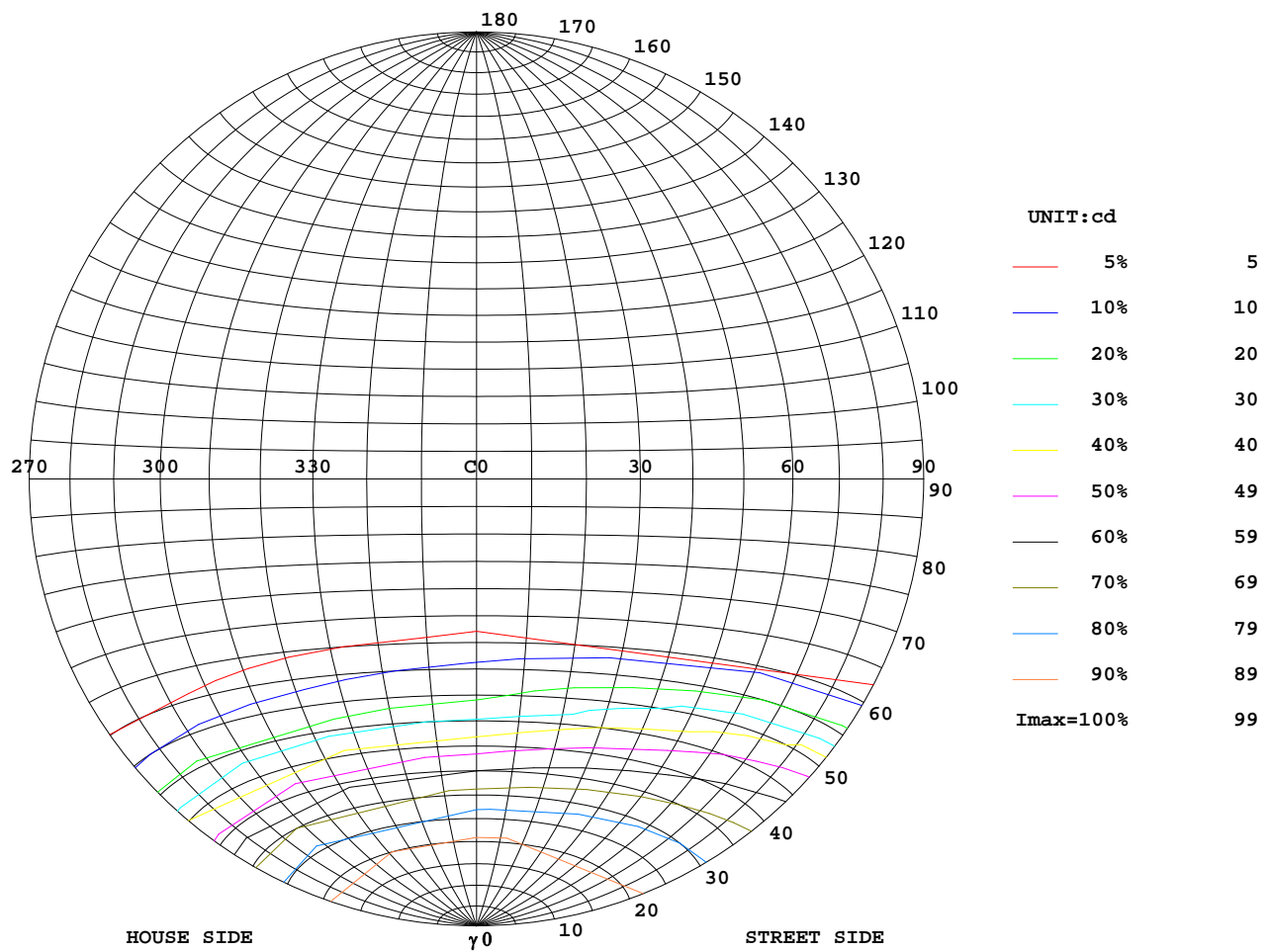
Test System:HOP00 HP880D
 Temperature:25.3DEG
 Operators:
 Test Date:07-13-2023

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:07-13-2023

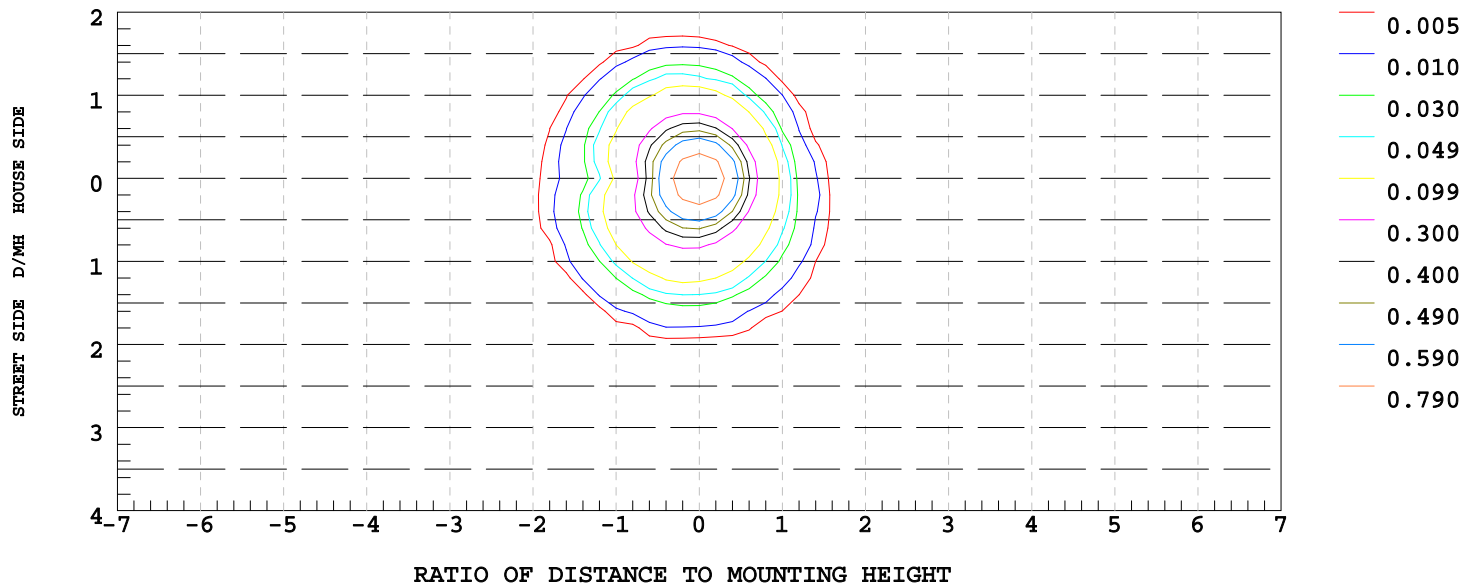
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:1.000 m
Remarks:

ISOLUX DIAGRAM

Report number:

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

ILLUMINANCE AT MH=10 m,Enadir = 0.99 lx



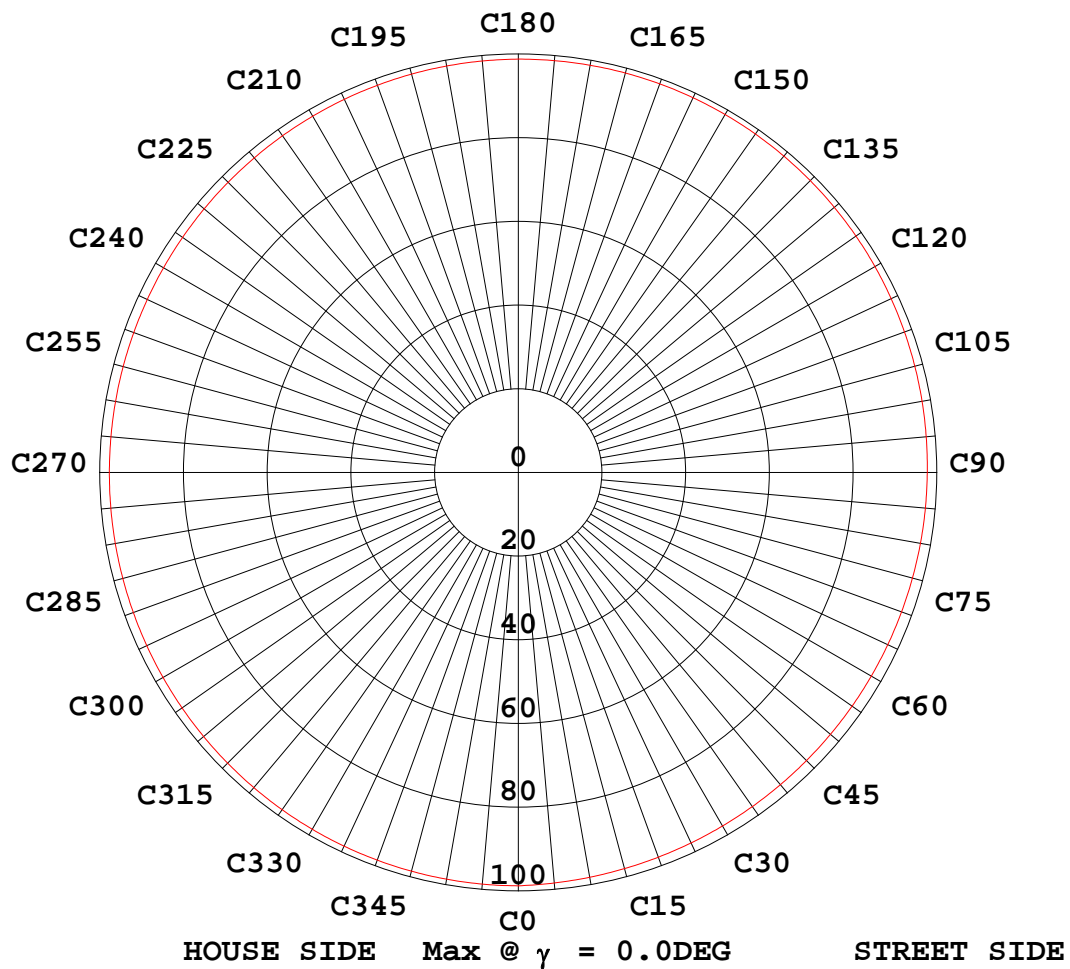
Test System:HOP00 HP880D
Temperature:25.3DEG
Operators:
Test Date:07-13-2023

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:07-13-2023

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	98.7	97.7	98.7	97.7
5.0	98.0	97.1	98.1	97.1
10.0	96.3	95.8	95.9	95.2
15.0	93.9	93.7	92.5	91.8
20.0	89.8	90.3	87.6	87.4
25.0	82.9	85.9	80.0	81.7
30.0	71.8	80.4	67.9	74.1
35.0	59.2	73.3	52.0	65.8
40.0	45.1	65.6	40.1	56.1
45.0	30.8	57.1	21.3	41.4
50.0	17.8	42.9	9.23	20.7
55.0	11.0	23.1	5.13	10.7
60.0	6.43	8.84	1.49	3.32
65.0	3.66	1.74	0.90	1.14
70.0	1.98	0.28	0.55	0.38
75.0	1.28	0.21	0.22	0.30
80.0	0.64	0.14	0.07	0.22
85.0	0.48	0.07	0.02	0.14
90.0	0.46	0.02	0.00	0.08
95.0	0.42	0.00	0.00	0.06
100.0	0.34	0.00	0.01	0.06
105.0	0.15	0.00	0.02	0.07
110.0	0.07	0.02	0.03	0.08
115.0	0.07	0.05	0.06	0.11
120.0	0.09	0.11	0.11	0.17
125.0	0.13	0.19	0.17	0.26
130.0	0.20	0.28	0.25	0.35
135.0	0.28	0.35	0.33	0.43
140.0	0.37	0.39	0.41	0.49
145.0	0.44	0.40	0.45	0.52
150.0	0.46	0.38	0.47	0.52
155.0	0.44	0.34	0.44	0.50
160.0	0.40	0.31	0.40	0.46
165.0	0.34	0.26	0.35	0.41
170.0	0.29	0.24	0.30	0.35
175.0	0.27	0.24	0.28	0.30
180.0	0.27	0.26	0.27	0.26

Test System:HOPPO HP880D
Temperature:25.3DEG
Operators:
Test Date:07-13-2023

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