

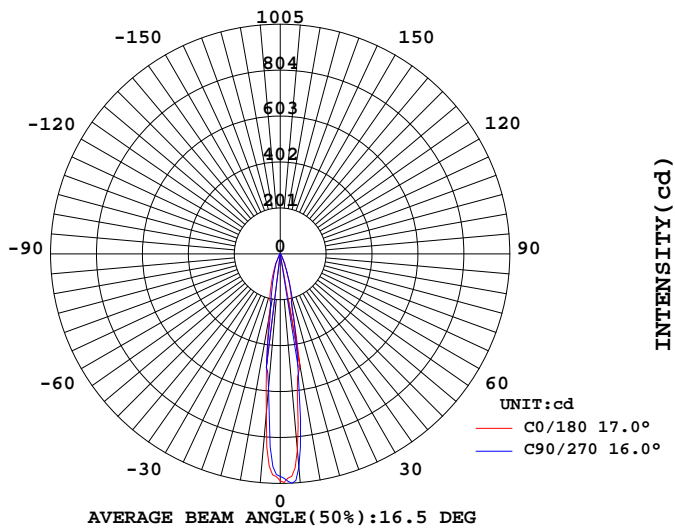
## LUMINAIRE PHOTOMETRIC TEST REPORT

Report number:

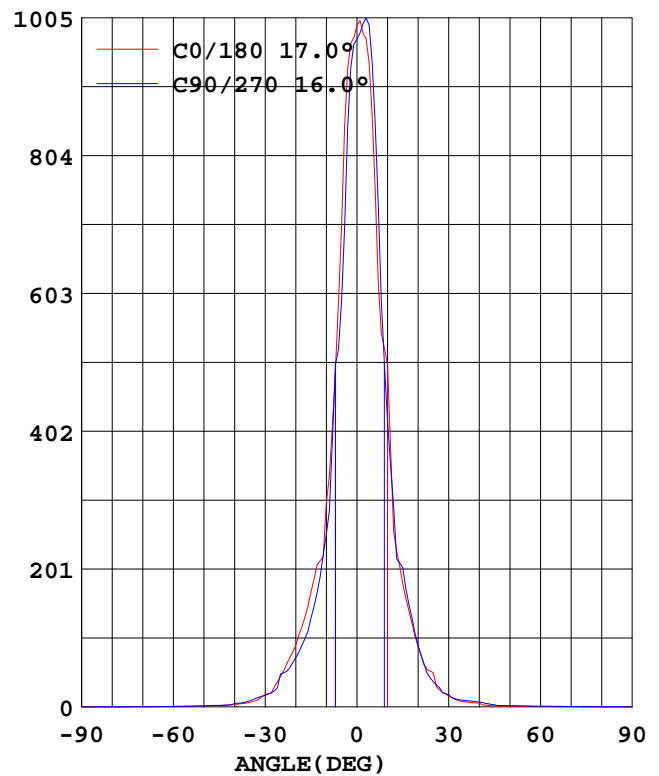
MANUFACTURER:					
Address:					
NAME:			TYPE:		WEIGHT:
SPECIFICATION:	CCT(K): 0		DIMENSION:		SERIAL No.:

DATA OF LAMP		Imax(cd)	1005	S/MH(C0/180)	0.24
MODEL		EFFICIENCY(%)	100.0	S/MH(C90/270)	0.25
NOMINAL POWER(W)	3	TOTAL FLUX(lm)	135.6	Voltage(V)	12.00
RATED VOLTAGE(V)	12	EFFICIENCY(lm/W)	40.9	Current(A)	0.368
NOMINAL FLUX(lm)	135.6	$\eta$ up(%)	0.6	Power(W)	3.320
LAMPS QUANTITY	1	$\eta$ down(%)	99.4	Power Factor(PF)	0.751
TEST VOLTAGE(V)	12.0	Effective Flux(lm)	101.6	EEI	0.240

LUMINOUS INTENSITY DISTRIBUTION



LUMINOUS INTENSITY DISTRIBUTION



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:

Color Temperature Data List

Report number:

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

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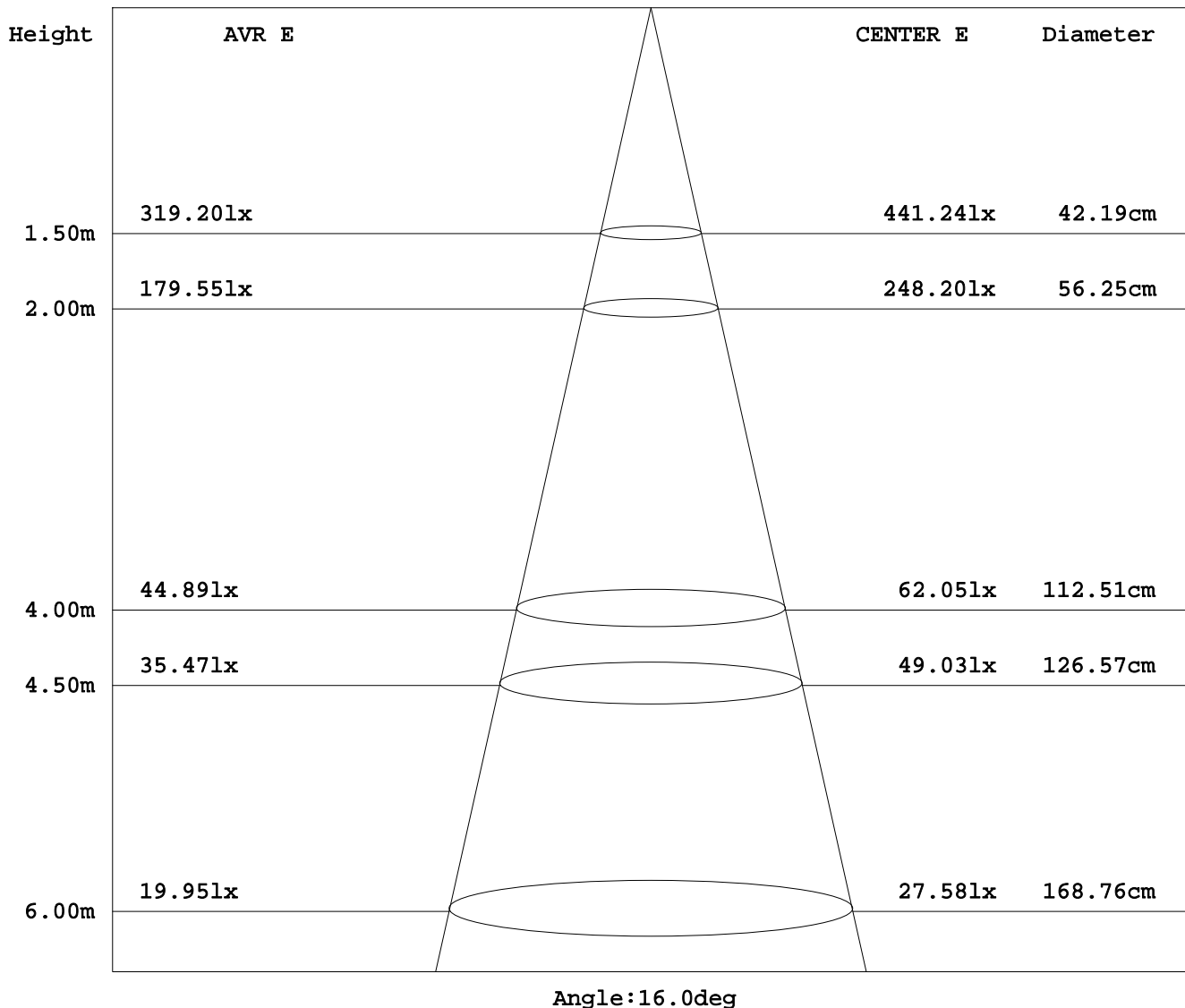
Test System:HOPOO HP880D  
Temperature:25.3DEG  
Operators:  
Test Date:11-02-2023

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	702.0	592.8	862.1	938.7					0- 5	21.42	21.42
10.0	295.7	250.9	498.2	416.2					5- 10	37.44	58.87
15.0	167.9	129.9	179.7	203.1					10- 15	27.51	86.38
20.0	88.93	71.45	88.18	89.46					15- 20	20.05	106.4
25.0	43.94	48.01	49.76	36.76					20- 25	12.59	119.0
30.0	18.09	16.95	15.85	17.50					25- 30	6.413	125.4
35.0	6.572	8.957	7.533	9.440					30- 35	3.454	128.9
40.0	3.630	5.056	5.627	7.131					35- 40	2.153	131.0
45.0	1.998	2.312	1.582	3.092					40- 45	1.219	132.2
50.0	1.509	1.555	1.150	1.924					45- 50	0.731	133.0
55.0	1.063	1.027	0.823	1.410					50- 55	0.558	133.5
60.0	0.694	0.693	0.593	1.045					55- 60	0.416	133.9
65.0	0.498	0.465	0.441	0.833					60- 65	0.318	134.3
70.0	0.330	0.328	0.308	0.585					65- 70	0.240	134.5
75.0	0.216	0.203	0.194	0.398					70- 75	0.166	134.7
80.0	0.125	0.072	0.098	0.240					75- 80	0.102	134.8
85.0	0.054	0.002	0.027	0.118					80- 85	0.049	134.8
90.0	0.014	0	0	0.037					85- 90	0.015	134.8
95.0	0.009	0	0	0.013					90- 95	0.004	134.8
100.0	0.007	0	0	0.009					95-100	0.003	134.8
105.0	0.005	0	0	0.011					100-105	0.002	134.8
110.0	0.005	0	0	0.007					105-110	0.002	134.8
115.0	0.004	0	0	0.010					110-115	0.002	134.8
120.0	0.008	0.012	0	0.009					115-120	0.002	134.8
125.0	0.009	0.015	0.008	0.011					120-125	0.004	134.8
130.0	0.014	0.023	0.019	0.017					125-130	0.006	134.9
135.0	0.031	0.048	0.042	0.028					130-135	0.011	134.9
140.0	0.062	0.104	0.096	0.059					135-140	0.021	134.9
145.0	0.137	0.215	0.195	0.117					140-145	0.039	134.9
150.0	0.272	0.392	0.349	0.223					145-150	0.068	135.0
155.0	0.498	0.695	0.595	0.399					150-155	0.106	135.1
160.0	0.839	0.979	0.896	0.688					155-160	0.145	135.2
165.0	1.058	0.951	1.105	1.013					160-165	0.158	135.4
170.0	0.836	0.626	0.914	1.091					165-170	0.116	135.5
175.0	0.497	0.404	0.590	0.745					170-175	0.052	135.6
180.0	0.403	0.400	0.410	0.413					175-180	0.012	135.6
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:

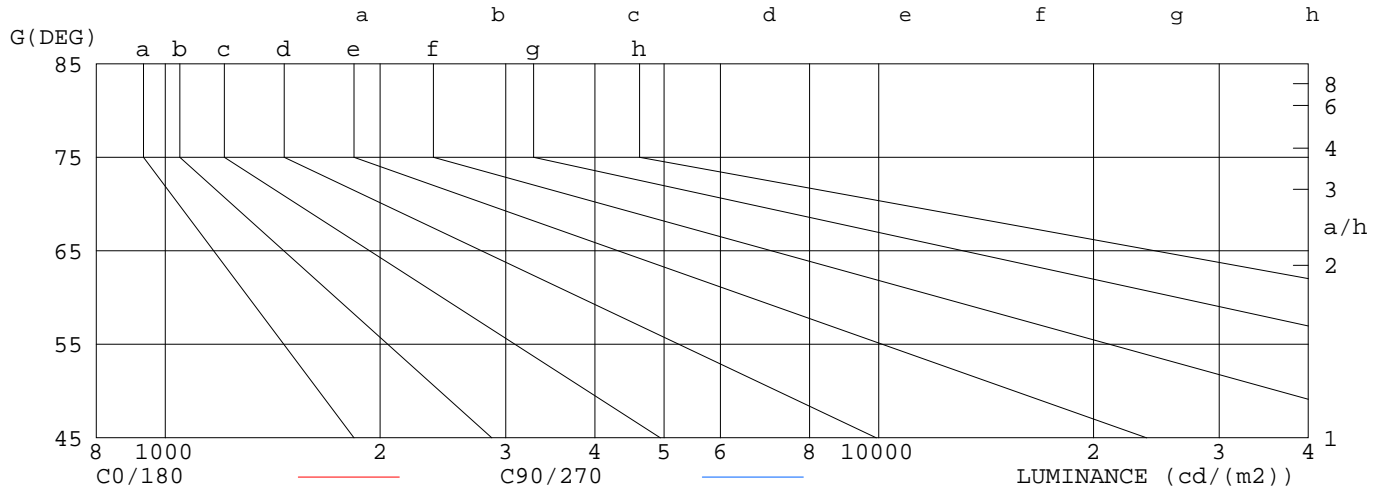
## LUMINANCE LIMITATION CURVES

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/m2		
G( DEG )	C0/180	C90/270
85	6	0
80	7	4
75	8	8
70	10	10
65	12	11
60	14	14
55	19	18
50	23	24
45	28	33

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

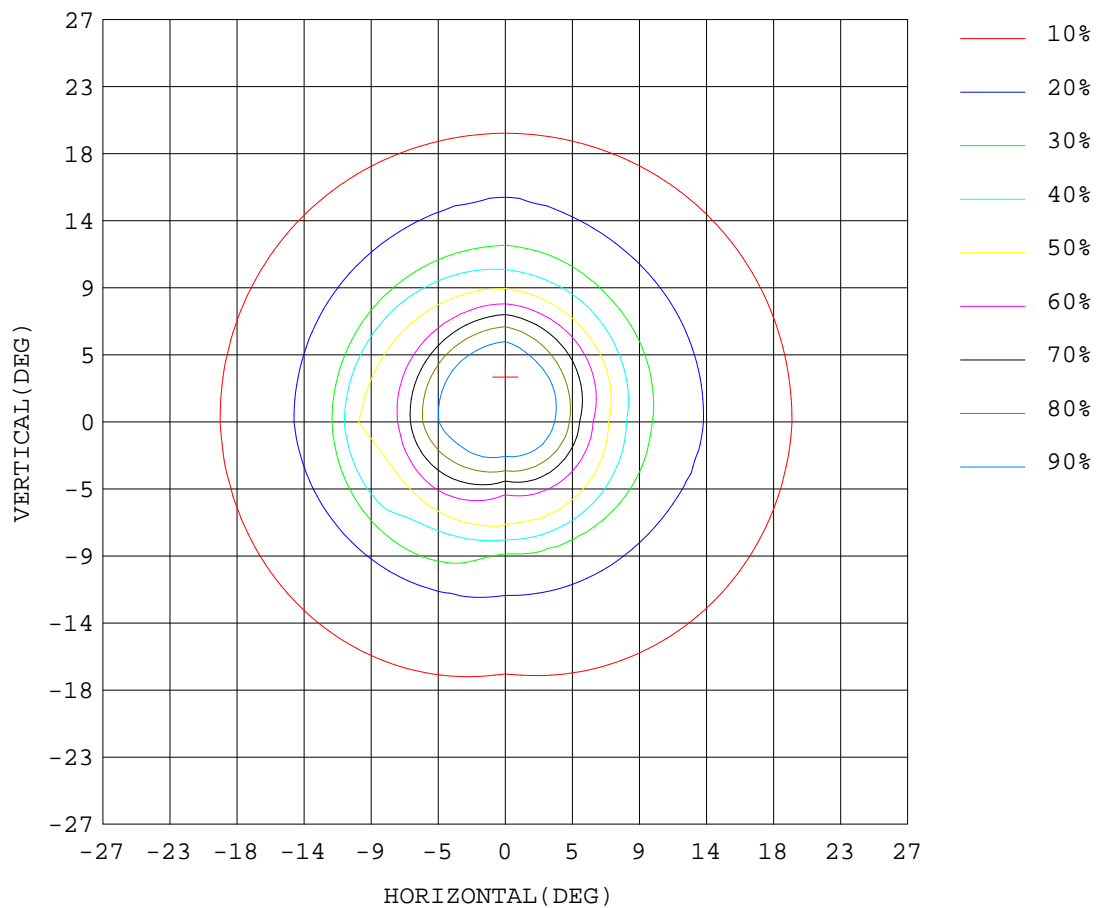
Test Set: 10.0deg/s C-Gamma (TYPE C)  
 Humidity:65.0%  
 Test Distance:1.000 m  
 Remarks:

## ISOCANDELA DIAGRAM

Report number:

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

UNIT: cd



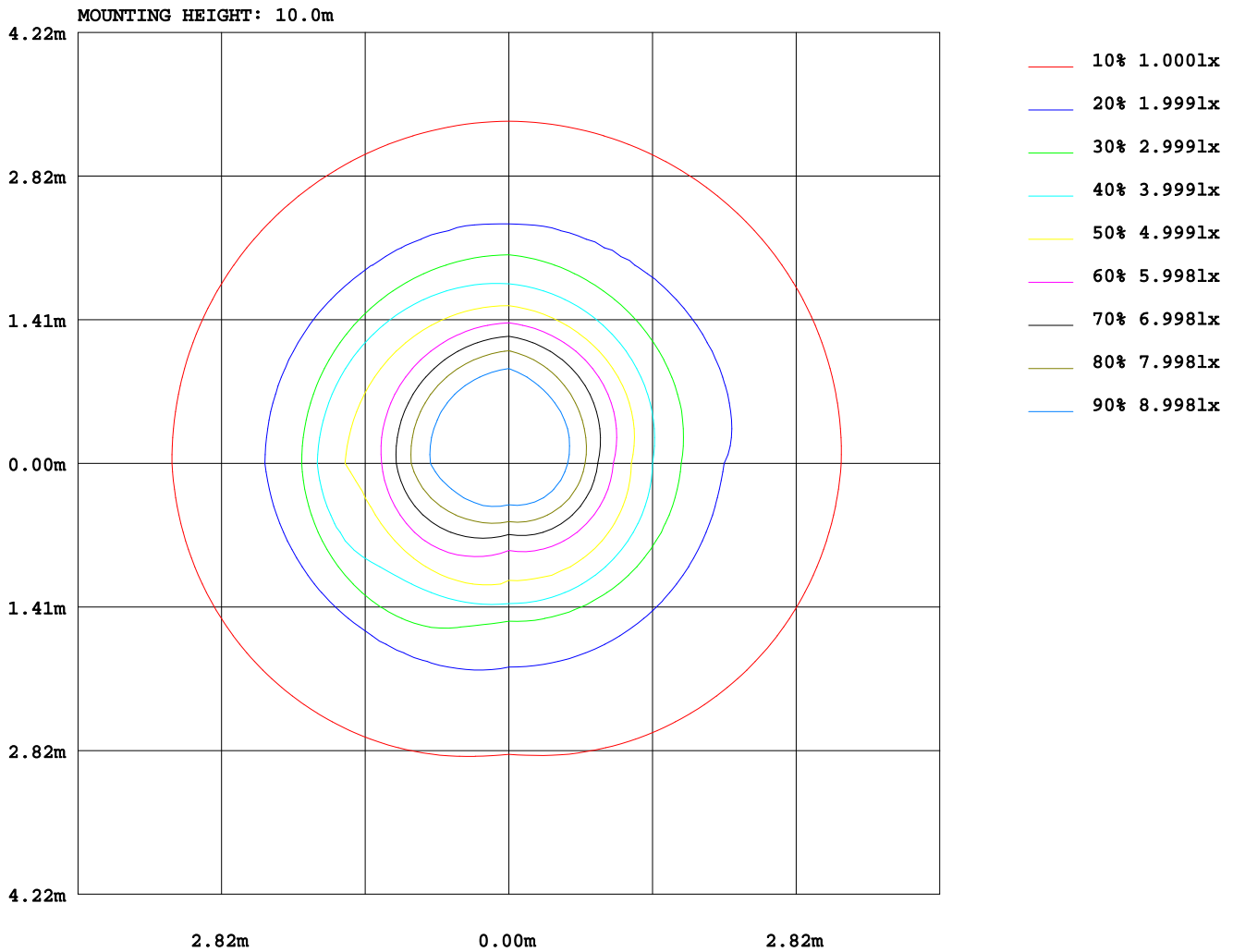
Test System:HOP00 HP880D  
Temperature:25.3DEG  
Operators:  
Test Date:11-02-2023

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.:				

		AREA FLUX DIAGRAM																UNIT:lm			Φ t	Φ a
		0.02	0.02	0.03	0.04	0.05	0.07	0.08	0.09	0.09	0.09	0.09	0.08	0.07	0.05	0.04	0.03	0.02	0.02	1.01	0.00	
VERTICAL (DEG)	27																					
	24																					
	21																					
	18																					
	15																					
	12																					
	9																					

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:

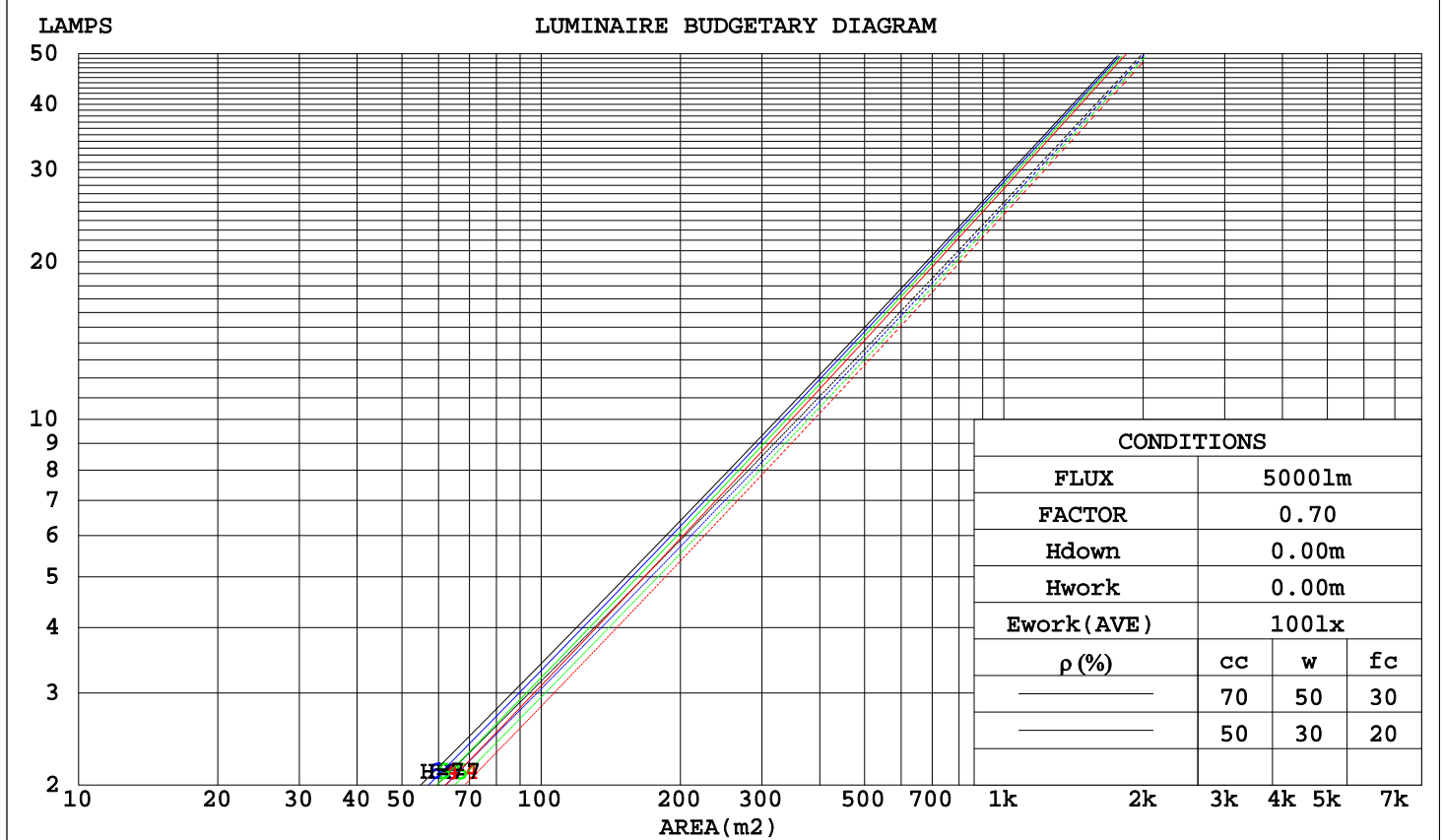


## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number:

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

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio															



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

## 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	.137	.078	.025	.130	.074	.024	.117	.067	.021	.105	.061	.020	.095	.055	.018	
2.0	.126	.069	.021	.121	.067	.020	.110	.061	.019	.101	.056	.018	.092	.052	.016	
3.0	.117	.062	.019	.113	.060	.018	.104	.056	.017	.096	.053	.016	.088	.049	.015	
4.0	.110	.057	.017	.106	.055	.016	.098	.052	.016	.091	.049	.015	.085	.046	.014	
5.0	.103	.052	.015	.099	.051	.015	.093	.049	.014	.087	.046	.014	.082	.044	.013	
6.0	.097	.049	.014	.094	.048	.014	.089	.045	.013	.083	.043	.013	.079	.041	.012	
7.0	.092	.045	.013	.089	.044	.013	.084	.043	.012	.080	.041	.012	.076	.039	.012	
8.0	.087	.043	.012	.085	.042	.012	.081	.040	.012	.077	.039	.011	.073	.038	.011	
9.0	.083	.040	.011	.081	.039	.011	.077	.038	.011	.074	.037	.011	.071	.036	.010	
10.0	.079	.038	.011	.078	.037	.010	.074	.036	.010	.071	.035	.010	.068	.034	.010	

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	.195	.195	.195	.166	.166	.166	.114	.114	.114	.065	.065	.065	.021	.021	.021	
1.0	.173	.162	.152	.148	.139	.131	.101	.096	.091	.058	.055	.053	.019	.018	.017	
2.0	.154	.137	.122	.132	.118	.106	.091	.082	.074	.052	.047	.043	.017	.015	.014	
3.0	.139	.118	.100	.120	.101	.087	.082	.070	.061	.047	.041	.036	.015	.013	.012	
4.0	.127	.102	.083	.109	.088	.072	.075	.062	.051	.043	.036	.030	.014	.012	.010	
5.0	.116	.090	.070	.100	.078	.061	.069	.054	.043	.040	.032	.026	.013	.010	.008	
6.0	.107	.080	.060	.092	.069	.053	.063	.048	.037	.037	.028	.022	.012	.009	.007	
7.0	.099	.072	.052	.085	.062	.045	.059	.044	.032	.034	.026	.019	.011	.008	.006	
8.0	.093	.065	.046	.080	.056	.040	.055	.039	.028	.032	.023	.017	.010	.008	.006	
9.0	.087	.059	.040	.075	.051	.035	.052	.036	.025	.030	.021	.015	.010	.007	.005	
10.0	.082	.054	.036	.071	.047	.031	.049	.033	.022	.029	.020	.013	.009	.006	.004	

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:

## 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		-9.2	-8.5	-9.0	-8.4	-8.2	-8.4	-7.8	-8.2	-7.6	-7.5
	3H	-8.9	-8.3	-8.7	-8.1	-7.9	-8.2	-7.7	-8.0	-7.5	-7.3
	4H	-8.8	-8.3	-8.6	-8.1	-7.8	-8.2	-7.6	-7.9	-7.4	-7.2
	6H	-8.8	-8.3	-8.5	-8.0	-7.8	-8.2	-7.7	-7.9	-7.4	-7.2
	8H	-8.8	-8.3	-8.5	-8.0	-7.8	-8.3	-7.7	-8.0	-7.5	-7.2
	12H	-8.8	-8.3	-8.5	-8.0	-7.8	-8.3	-7.8	-8.0	-7.5	-7.3
4H	2H	-9.1	-8.6	-8.9	-8.4	-8.2	-8.4	-7.9	-8.2	-7.6	-7.4
	3H	-8.8	-8.3	-8.5	-8.0	-7.8	-8.2	-7.7	-7.9	-7.4	-7.1
	4H	-8.7	-8.2	-8.3	-7.9	-7.6	-8.1	-7.6	-7.8	-7.3	-7.0
	6H	-8.6	-8.2	-8.2	-7.8	-7.5	-8.1	-7.7	-7.7	-7.4	-7.0
	8H	-8.6	-8.2	-8.2	-7.8	-7.5	-8.1	-7.8	-7.8	-7.4	-7.0
	12H	-8.6	-8.2	-8.2	-7.9	-7.5	-8.2	-7.9	-7.8	-7.5	-7.1
8H	4H	-8.7	-8.3	-8.3	-8.0	-7.6	-8.2	-7.8	-7.8	-7.4	-7.1
	6H	-8.6	-8.3	-8.2	-7.9	-7.5	-8.1	-7.8	-7.7	-7.4	-7.0
	8H	-8.6	-8.3	-8.1	-7.9	-7.4	-8.2	-7.9	-7.7	-7.5	-7.0
	12H	-8.5	-8.3	-8.1	-7.9	-7.4	-8.2	-8.0	-7.8	-7.6	-7.1
12H	4H	-8.8	-8.4	-8.3	-8.0	-7.6	-8.2	-7.9	-7.8	-7.5	-7.1
	6H	-8.6	-8.4	-8.2	-7.9	-7.5	-8.2	-7.9	-7.7	-7.5	-7.0
	8H	-8.6	-8.4	-8.1	-7.9	-7.4	-8.2	-8.0	-7.8	-7.5	-7.1
Variations with the observer position at spacings:											
S = 1.0H	+ 1.2 / - 1.8					+ 2.0 / - 2.4					
1.5H	+ 2.1 / - 1.3					+ 3.3 / - 1.8					
2.0H	+ 1.8 / - 1.4					+ 2.4 / - 1.6					

CIE Pub.117 Corrected 135.6 lm Total Lamp Luminous Flux.(8log(F/F0) = -6.9)

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	90	84	80	89	83	80	88	83	80	76
0.80	97	91	88	96	91	88	95	90	87	84
1.00	101	95	92	100	95	92	98	95	91	87
1.25	104	99	96	103	99	96	101	98	95	91
1.50	107	102	99	106	102	99	103	100	98	93
2.00	109	105	102	108	104	101	105	102	100	95
2.50	111	107	104	109	106	103	106	103	101	95
3.00	112	109	106	110	107	105	107	105	103	96
4.00	114	111	109	112	110	108	108	107	105	98
5.00	115	113	111	113	111	110	109	108	107	99
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNOM = 1.25										

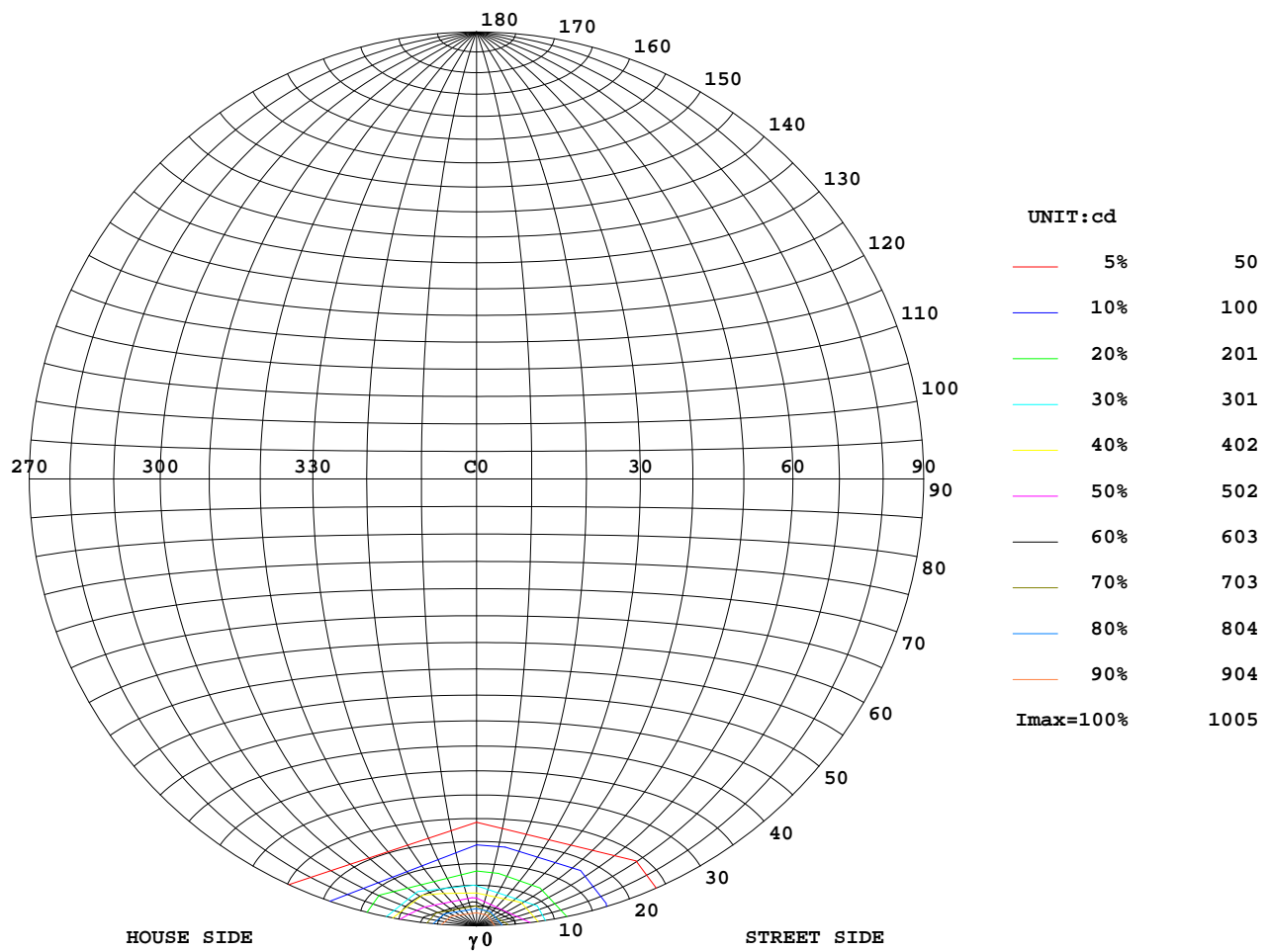
Test System:HOPPO HP880D  
 Temperature:25.3DEG  
 Operators:  
 Test Date:11-02-2023

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

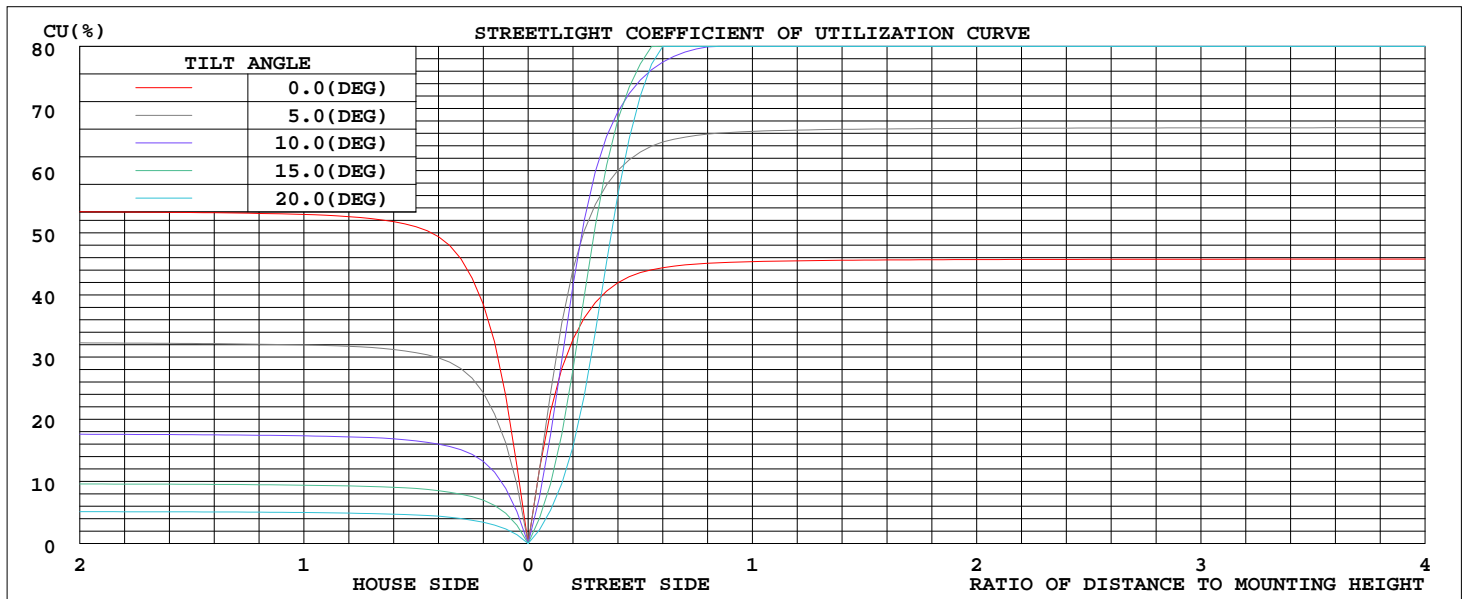
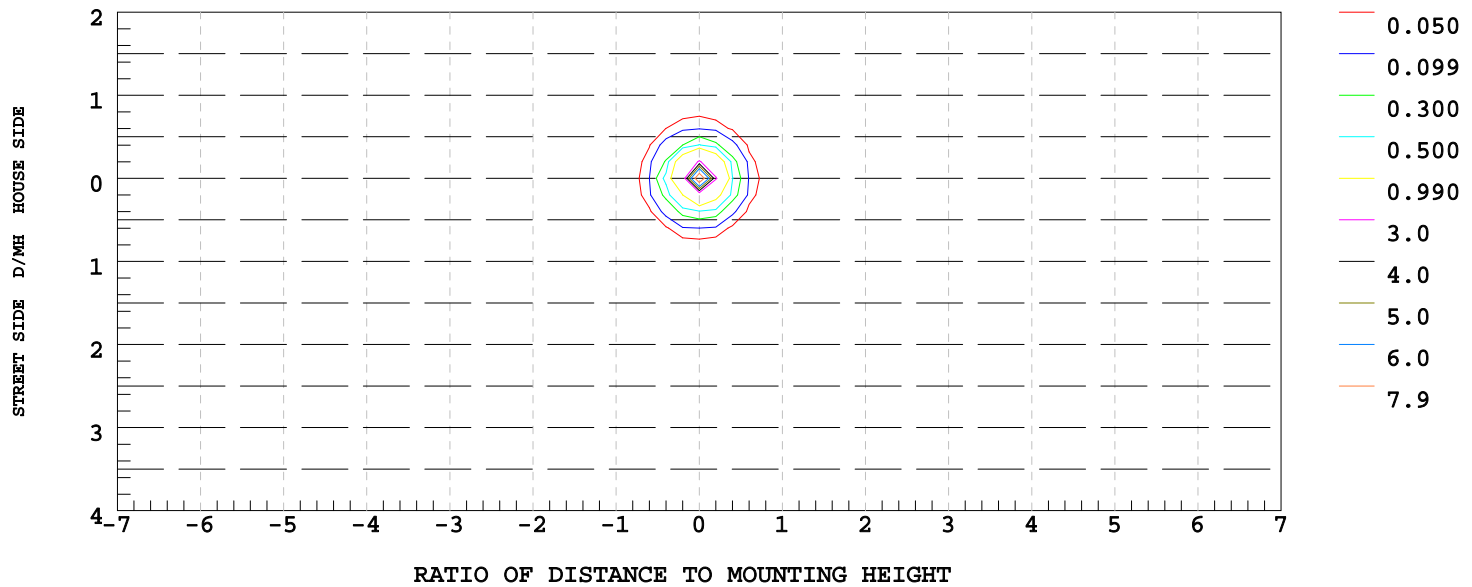
Test Set: 10.0deg/s C-Gamma (TYPE C)  
Humidity:65.0%  
Test Distance:1.000 m  
Remarks:

## ISOLUX DIAGRAM

Report number:

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

ILLUMINANCE AT MH=10 m, Enadir = 9.93 lx



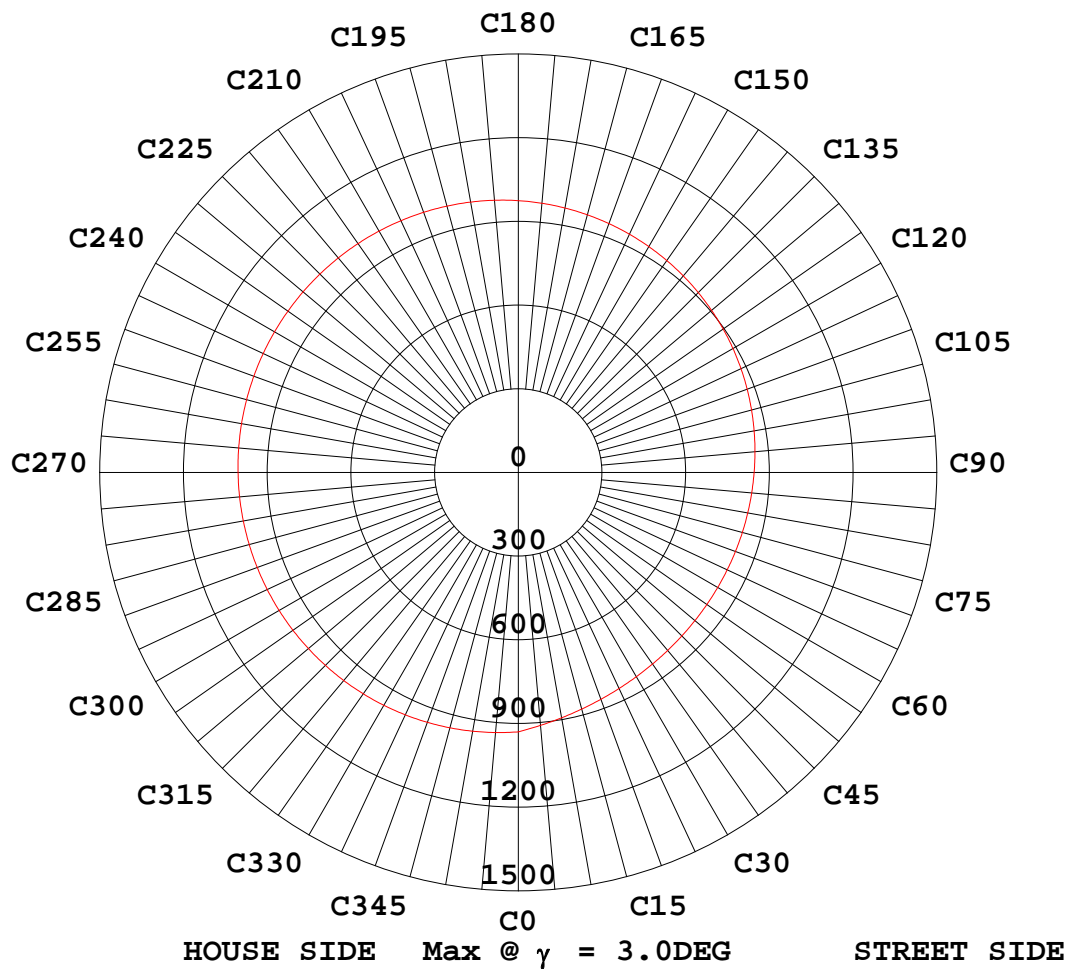
Test System:HOPPO HP880D  
Temperature:25.3DEG  
Operators:  
Test Date:11-02-2023

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:

## 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	993	973	993	973
5.0	702	593	862	939
10.0	296	251	498	416
15.0	168	130	180	203
20.0	88.9	71.4	88.1	89.4
25.0	43.9	48.0	49.7	36.7
30.0	18.0	16.9	15.8	17.5
35.0	6.57	8.95	7.53	9.44
40.0	3.63	5.05	5.62	7.13
45.0	1.99	2.31	1.58	3.09
50.0	1.50	1.55	1.15	1.92
55.0	1.06	1.02	0.82	1.41
60.0	0.69	0.69	0.59	1.04
65.0	0.50	0.47	0.44	0.83
70.0	0.33	0.33	0.31	0.58
75.0	0.22	0.20	0.19	0.40
80.0	0.13	0.07	0.10	0.24
85.0	0.05	0.00	0.03	0.12
90.0	0.01	0.00	0.00	0.04
95.0	0.01	0.00	0.00	0.01
100.0	0.01	0.00	0.00	0.01
105.0	0.00	0.00	0.00	0.01
110.0	0.00	0.00	0.00	0.01
115.0	0.00	0.00	0.00	0.01
120.0	0.01	0.01	0.00	0.01
125.0	0.01	0.01	0.01	0.01
130.0	0.01	0.02	0.02	0.02
135.0	0.03	0.05	0.04	0.03
140.0	0.06	0.10	0.10	0.06
145.0	0.14	0.22	0.19	0.12
150.0	0.27	0.39	0.35	0.22
155.0	0.50	0.69	0.60	0.40
160.0	0.84	0.98	0.90	0.69
165.0	1.05	0.95	1.10	1.01
170.0	0.84	0.63	0.91	1.09
175.0	0.50	0.40	0.59	0.75
180.0	0.40	0.40	0.41	0.41

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: