

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

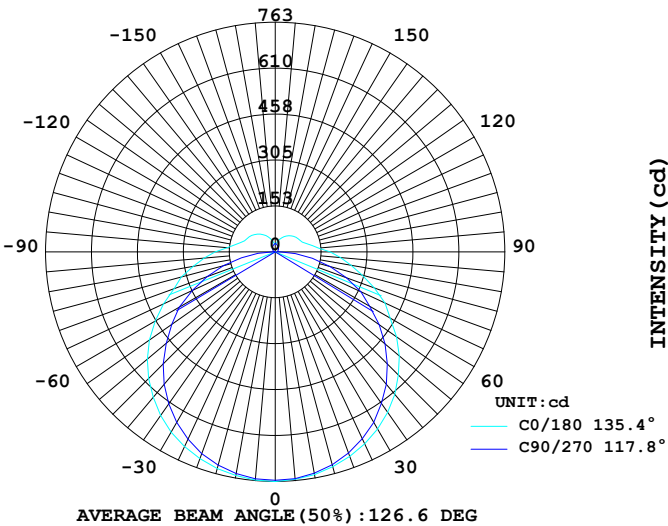
LUMINAIRE PHOTOMETRIC TEST REPORT

Report number:

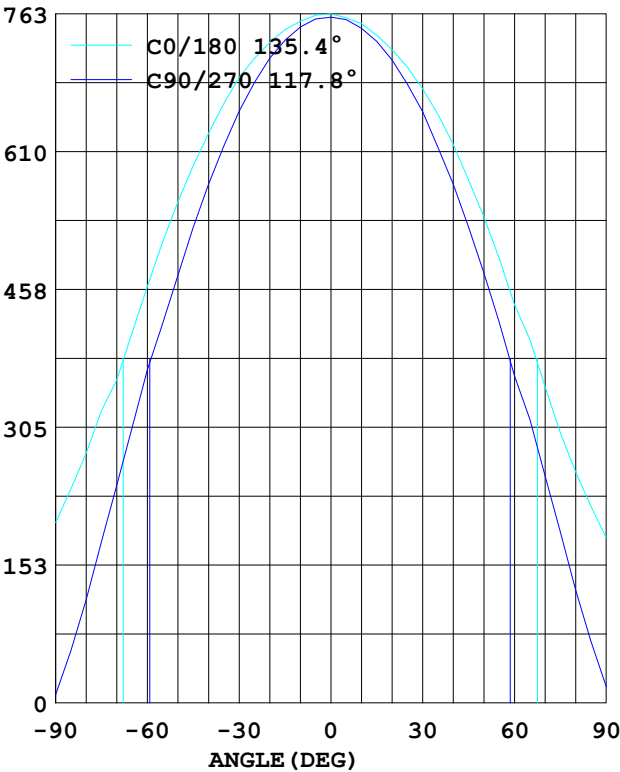
MANUFACTURER:		
Address:		
NAME: 1.2M-22W-4000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1200*152*52mm	SERIAL No.:

DATA OF LAMP		Imax(cd)	765.5	S/MH(C0/180)	1.35
MODEL		EFFICIENCY(%)	100.0	S/MH(C90/270)	1.28
NOMINAL POWER(W)	22	TOTAL FLUX(lm)	3014.6	Voltage(V)	220.1
RATED VOLTAGE(V)	220	EFFICIENCY(lm/W)	133.6	Current(A)	0.105
NOMINAL FLUX(lm)	3014.7	η up(%)	12.2	Power(W)	22.57
LAMPS QUANTITY	1	η down(%)	87.8	Power Factor(PF)	0.968
TEST VOLTAGE(V)	220.1	Effective Flux(lm)	2841.3	EEI	0.108

LUMINOUS INTENSITY DISTRIBUTION



LUMINOUS INTENSITY DISTRIBUTION



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2022年12月1日

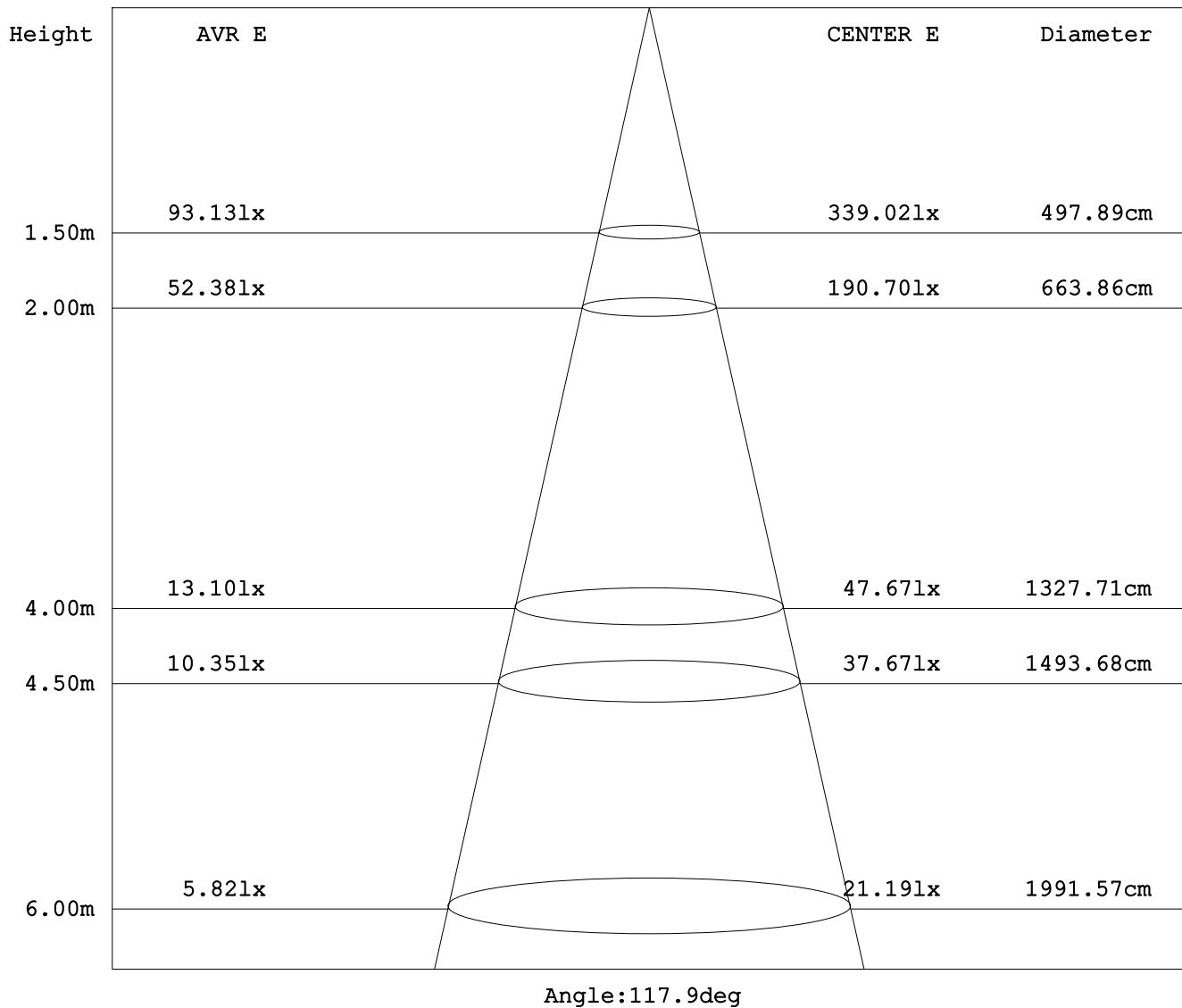
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

AVERAGE AND CENTER E Figure

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-22W-4000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1200*152*52mm	SERIAL No.:



Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2022年12月1日

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:11.000 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ZONAL FLUX DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-22W-4000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1200*152*52mm	SERIAL No.:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Zone	total
10.0	754.4	752.3	748.0	753.2	751.7	749.7	746.5	750.9	0- 10	72.20	72.20
20.0	730.9	720.6	713.4	721.4	722.9	715.4	711.4	719.4	10- 20	208.4	280.6
30.0	691.9	675.5	654.8	673.3	679.6	663.5	654.3	668.8	20- 30	321.7	602.3
40.0	630.4	606.5	574.0	603.4	618.1	593.7	574.0	602.2	30- 40	399.0	1001
50.0	554.6	519.0	473.2	517.2	538.0	506.2	476.1	514.6	40- 50	431.4	1433
60.0	460.8	417.0	368.6	415.9	441.0	410.2	362.1	419.2	50- 60	415.3	1848
70.0	357.5	314.7	241.0	314.8	350.2	305.6	251.6	315.8	60- 70	357.7	2206
80.0	276.6	204.7	114.3	205.8	255.7	197.2	125.3	209.1	70- 80	268.5	2475
90.0	199.5	120.6	9.075	125.2	182.5	118.7	17.78	130.9	80- 90	171.2	2646
100.0	137.0	69.27	2.904	71.63	124.1	65.40	7.260	74.83	90-100	96.72	2743
110.0	108.7	64.00	5.929	63.16	95.71	59.22	9.075	68.78	100-110	68.29	2811
120.0	100.5	61.28	8.228	60.31	87.96	55.84	11.97	65.34	110-120	59.07	2870
130.0	89.78	56.14	11.61	54.32	80.46	50.69	14.64	59.83	120-130	49.95	2920
140.0	77.07	49.67	15.24	47.31	70.30	43.49	17.06	52.81	130-140	39.00	2959
150.0	62.67	41.86	18.39	38.29	58.56	36.48	19.60	44.16	140-150	27.46	2986
160.0	46.46	33.87	22.02	31.21	44.89	30.79	22.50	35.27	150-160	17.02	3003
170.0	31.82	28.73	25.16	26.19	31.45	26.68	25.77	29.10	160-170	8.681	3012
180.0	27.58	26.92	27.83	26.80	26.86	27.10	27.83	27.04	170-180	2.615	3015
DEG	LUMINOUS INTENSITY:cd									UNIT:lm	

Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2022年12月1日

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

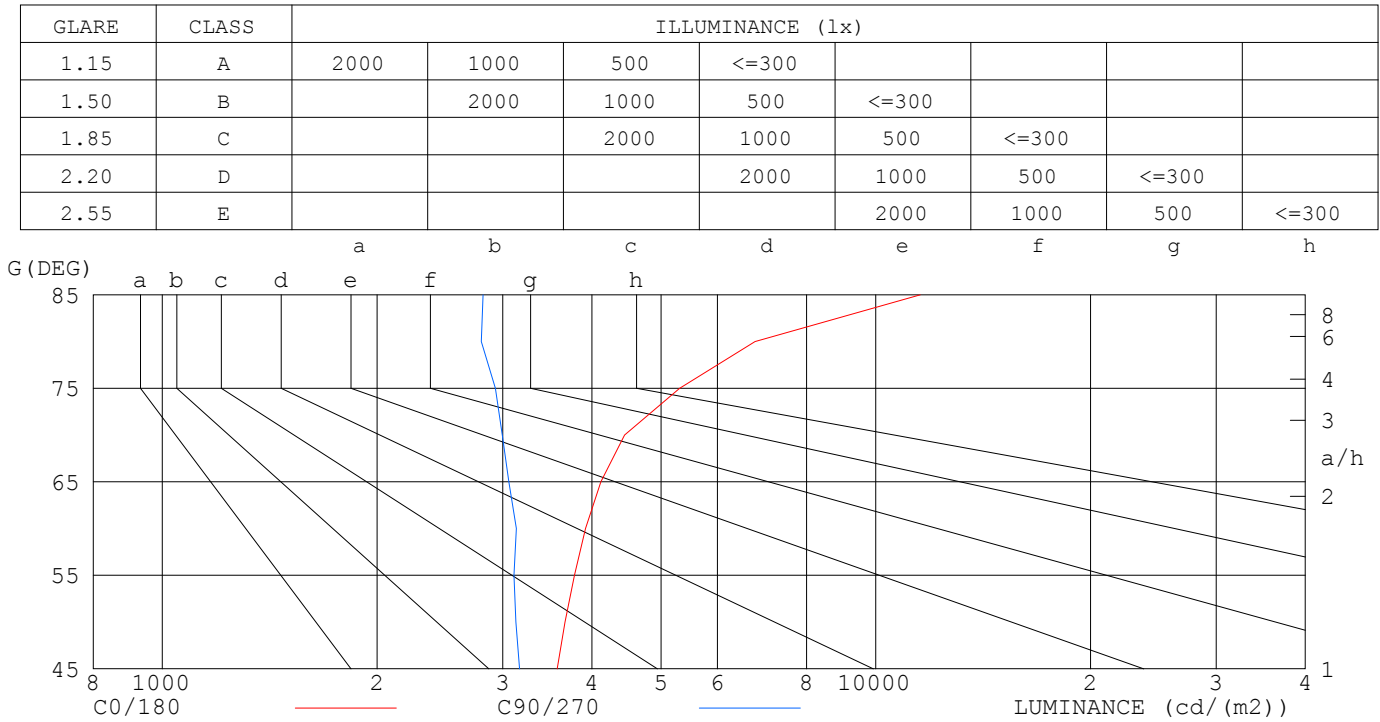
HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINANCE LIMITATION CURVES

Report number:

MANUFACTURER:					
Address:					
NAME: 1.2M-22W-4000K		TYPE:		WEIGHT:	
SPECIFICATION:		DIMENSION: 1200*152*52mm		SERIAL No.:	

LUMINANCE LIMITATION CURVES



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	11545	2815
80	6772	2799
75	5311	2930
70	4444	2996
65	4119	3060
60	3919	3135
55	3781	3111
50	3668	3130
45	3576	3167

Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2022年12月1日

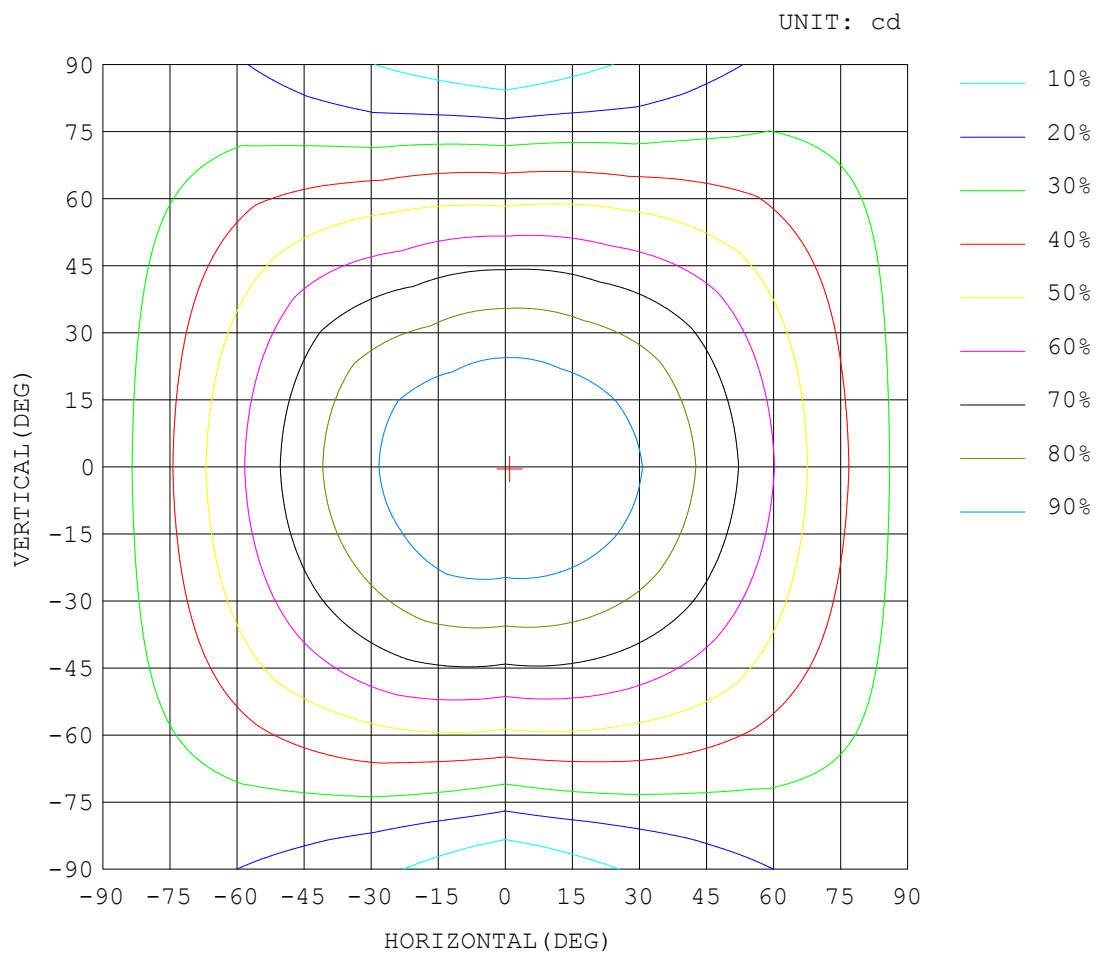
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-22W-4000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1200*152*52mm	SERIAL No.:



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2022年12月1日

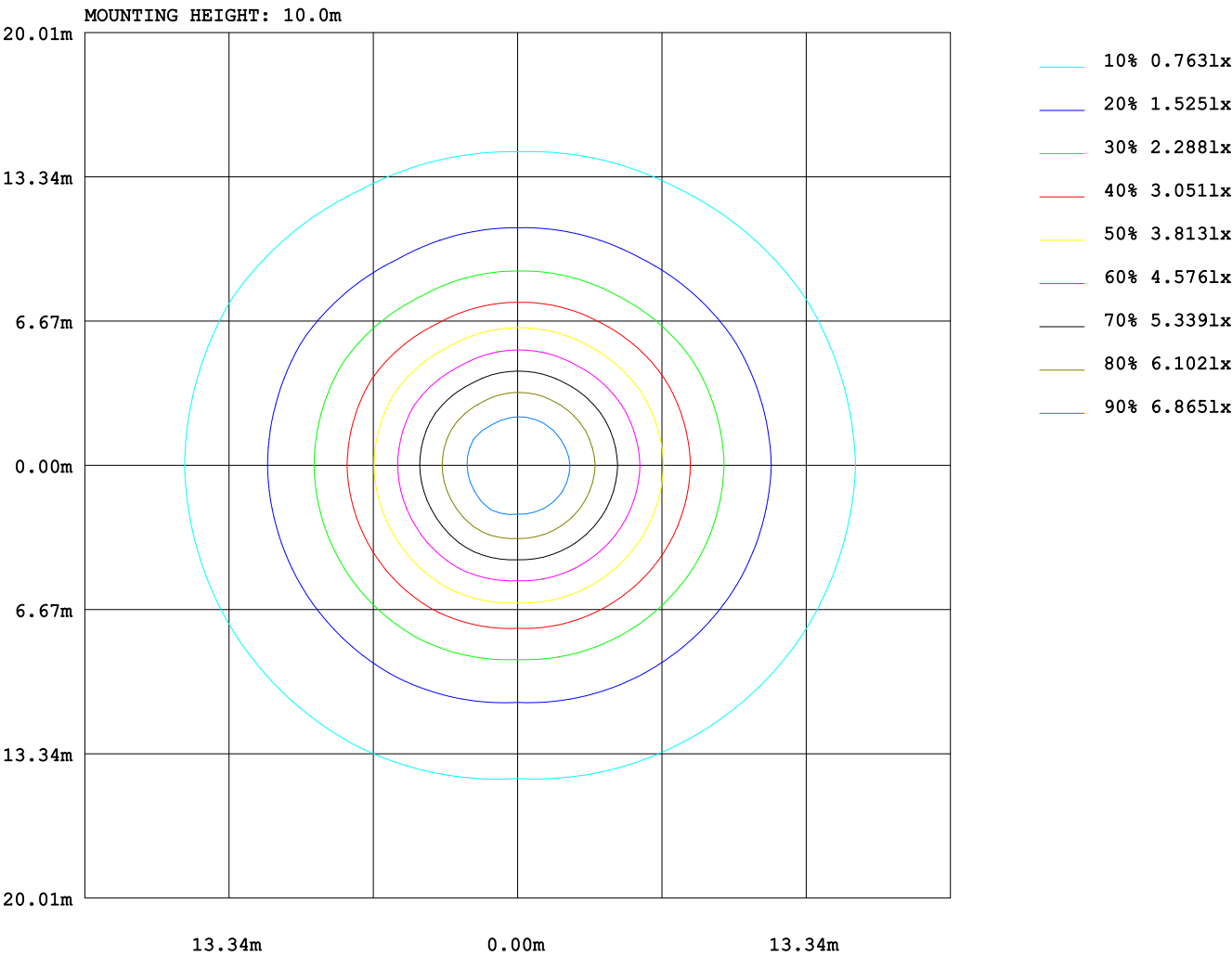
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-22W-4000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1200*152*52mm	SERIAL No.:



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2022年12月1日

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

AREA LUMINOUS FLUX

Report number:

MANUFACTURER:																			
Address:																			
NAME: 1.2M-22W-4000K										TYPE:					WEIGHT:				
SPECIFICATION:										DIMENSION: 1200*152*52mm					SERIAL No.:				

	AREA FLUX DIAGRAM																		UNIT:lm		Φ t	Φ a
	0.48	1.41	2.29	2.89	3.09	3.02	2.85	2.67	2.33	2.39	2.84	3.12	3.32	3.36	3.11	2.46	1.53	0.52	43.7	40.7		
90																						
80	0.50	1.56	2.69	3.71	4.43	4.95	5.37	5.76	5.83	5.87	5.89	5.59	5.20	4.69	3.95	2.88	1.69	0.55	71.1	71.1		
70	0.52	1.72	3.14	4.69	6.07	7.27	8.29	9.14	9.47	9.52	9.28	8.51	7.51	6.30	4.91	3.34	1.85	0.57	102	102		
60	0.54	1.87	3.61	5.70	7.65	9.49	10.9	12.1	12.7	12.8	12.3	11.2	9.71	7.84	5.89	3.81	2.01	0.59	131	131		
50	0.56	2.02	4.07	6.54	9.13	11.4	13.3	14.9	15.8	15.9	15.1	13.6	11.7	9.32	6.70	4.24	2.17	0.61	158	158		
40	0.58	2.15	4.46	7.28	10.4	13.3	15.6	17.3	18.5	18.6	17.6	15.9	13.5	10.6	7.46	4.60	2.31	0.63	181	181		
30	0.59	2.26	4.78	7.88	11.4	14.7	17.4	19.3	20.5	20.6	19.5	17.6	14.9	11.6	8.10	4.89	2.42	0.64	200	200		
VERTICAL (DEG)	0.60	2.35	5.00	8.31	12.0	15.6	18.7	20.8	21.9	22.0	20.9	18.8	15.8	12.3	8.56	5.12	2.49	0.65	213	213		
	0.61	2.39	5.13	8.55	12.3	16.1	19.2	21.6	22.8	22.8	21.6	19.4	16.3	12.6	8.84	5.26	2.54	0.66	219	219		
	0.61	2.39	5.13	8.53	12.3	16.1	19.2	21.5	22.8	22.8	21.7	19.5	16.3	12.6	8.83	5.26	2.53	0.66	219	219		
	0.60	2.34	5.00	8.28	12.0	15.6	18.7	21.0	22.2	22.1	21.0	18.9	15.8	12.2	8.54	5.11	2.48	0.65	213	213		
	0.59	2.25	4.77	7.84	11.3	14.7	17.6	19.8	20.8	20.7	19.8	17.7	14.9	11.5	8.05	4.87	2.39	0.64	201	201		
-30	0.58	2.14	4.44	7.25	10.3	13.4	16.1	17.9	18.7	18.7	17.8	16.0	13.5	10.5	7.41	4.54	2.27	0.62	183	183		
-40	0.56	2.01	4.03	6.55	9.13	11.7	14.0	15.4	16.0	16.0	15.3	13.9	11.7	9.25	6.65	4.15	2.13	0.60	160	160		
-50	0.54	1.86	3.57	5.64	7.76	9.73	11.4	12.5	12.9	12.8	12.4	11.3	9.74	7.83	5.72	3.69	1.96	0.58	132	132		
-60	0.52	1.70	3.10	4.65	6.22	7.65	8.70	9.30	9.41	9.40	9.28	8.65	7.61	6.24	4.72	3.20	1.80	0.56	103	103		
-70	0.50	1.55	2.66	3.71	4.61	5.39	5.89	5.97	5.68	5.65	5.88	5.75	5.29	4.59	3.75	2.74	1.63	0.54	71.8	71.8		
-80	0.48	1.39	2.23	2.89	3.27	3.43	3.28	2.83	2.18	2.14	2.71	3.09	3.27	3.20	2.89	2.28	1.46	0.51	43.6	40.6		
-90																						
	-90	-80	-70	-60	-50	-40	-30	-20	HORIZONTAL (DEG)				20	30	40	50	60	70	80	90		
Φ t	9.98	35.4	70.1	111	154	194	227	251	261	261	252	229	197	157	114	72.5	37.7	10.8	3015			
Φ a	9.98	35.4	70.1	111	154	194	227	249	260	260	250	229	197	157	114	72.5	37.7	10.8		2841		

Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2022年12月1日

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

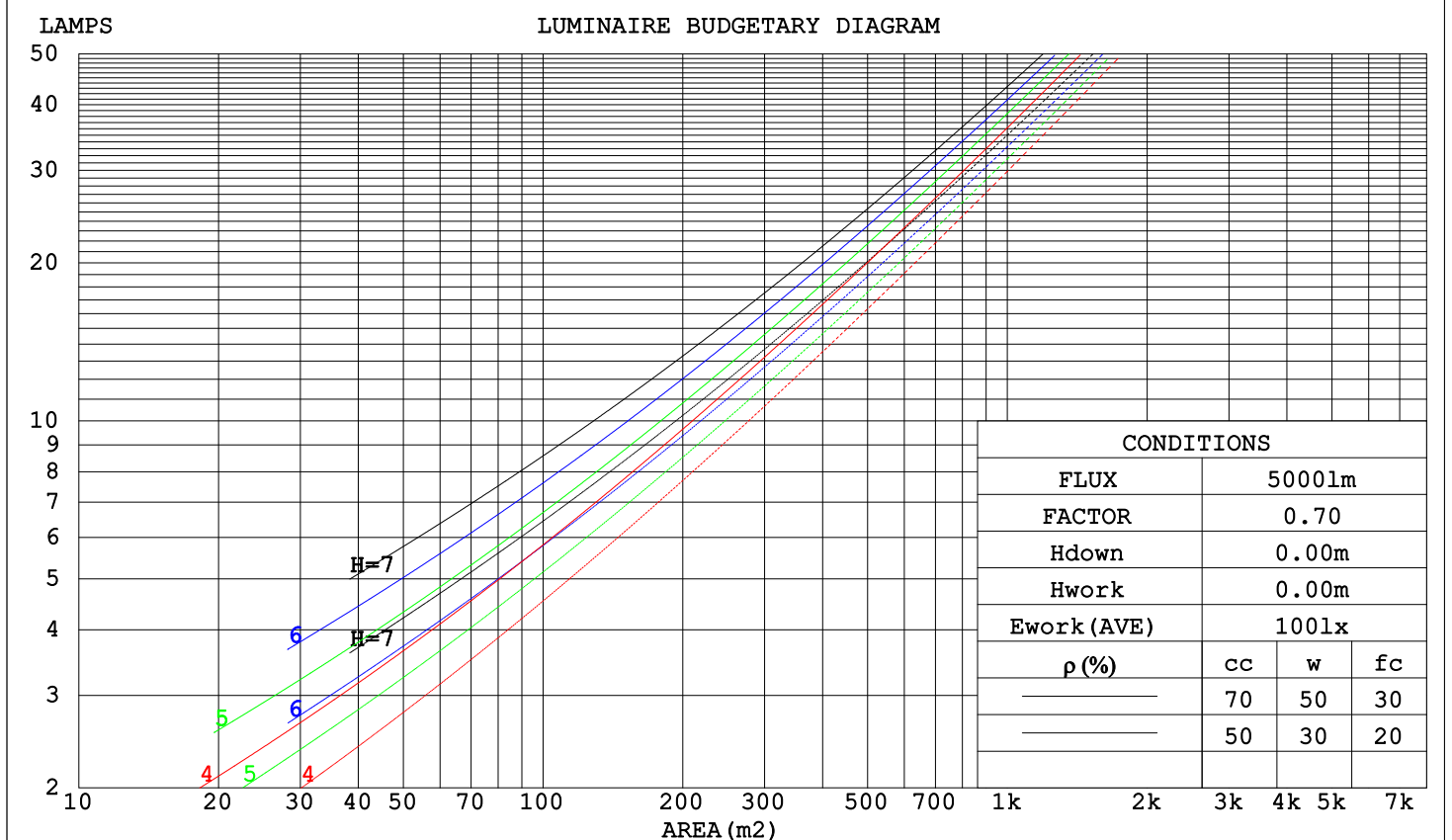
HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number:

MANUFACTURER:															
Address:															
NAME: 1.2M-22W-4000K								TYPE:				WEIGHT:			
SPECIFICATION:								DIMENSION: 1200*152*52mm				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:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2022年12月1日

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:11.000 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

WEC AND CCEC

Report number:

MANUFACTURER:															
Address:															
NAME: 1.2M-22W-4000K								TYPE:				WEIGHT:			
SPECIFICATION:								DIMENSION: 1200*152*52mm				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	.363	.206	.065	.352	.201	.064	.332	.190	.061	.313	.180	.058	.295	.171	.055															
2.0	.322	.176	.054	.312	.172	.053	.294	.163	.051	.277	.155	.049	.261	.148	.047															
3.0	.289	.154	.046	.280	.150	.045	.264	.143	.043	.249	.136	.042	.234	.130	.040															
4.0	.262	.136	.040	.254	.133	.039	.239	.127	.038	.226	.121	.037	.213	.116	.035															
5.0	.240	.122	.035	.232	.119	.035	.219	.114	.034	.206	.109	.032	.195	.104	.031															
6.0	.220	.110	.032	.214	.108	.031	.201	.103	.030	.190	.099	.029	.179	.094	.028															
7.0	.204	.101	.029	.198	.099	.028	.187	.094	.027	.176	.090	.026	.166	.086	.025															
8.0	.189	.092	.026	.184	.091	.026	.174	.087	.025	.164	.083	.024	.155	.080	.023															
9.0	.177	.085	.024	.172	.084	.023	.162	.080	.023	.154	.077	.022	.145	.074	.021															
10.0	.165	.079	.022	.161	.078	.022	.152	.075	.021	.144	.072	.020	.137	.069	.020															

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	.284	.284	.284	.242	.242	.242	.165	.165	.165	.095	.095	.095	.030	.030	.030	
1.0	.278	.250	.224	.238	.214	.193	.163	.147	.133	.094	.085	.078	.030	.027	.025	
2.0	.271	.226	.189	.232	.195	.163	.159	.135	.114	.092	.078	.067	.029	.025	.022	
3.0	.263	.210	.167	.226	.181	.145	.155	.126	.101	.090	.073	.060	.029	.024	.020	
4.0	.256	.197	.152	.219	.170	.132	.151	.119	.093	.087	.069	.055	.028	.023	.018	
5.0	.248	.187	.142	.213	.162	.123	.147	.113	.087	.085	.066	.052	.027	.022	.017	
6.0	.241	.179	.134	.207	.155	.117	.143	.108	.083	.083	.064	.049	.027	.021	.016	
7.0	.234	.172	.129	.201	.149	.112	.139	.105	.080	.081	.062	.047	.026	.020	.016	
8.0	.227	.166	.125	.195	.144	.109	.135	.101	.077	.079	.060	.046	.025	.020	.015	
9.0	.221	.162	.122	.190	.140	.106	.132	.099	.075	.077	.058	.045	.025	.019	.015	
10.0	.215	.157	.119	.185	.137	.104	.129	.096	.074	.075	.057	.044	.024	.019	.015	

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2022年12月1日

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:11.000 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

Uncorrected UGR Table

Report number:

MANUFACTURER:										
Address:										
NAME: 1.2M-22W-4000K					TYPE:			WEIGHT:		
SPECIFICATION:					DIMENSION: 1200*152*52mm			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	17.0	18.4	17.4	18.8	19.3	16.1	17.5	16.5	17.9	18.4
3H	19.1	20.5	19.6	20.9	21.4	17.8	19.1	18.3	19.6	20.0
4H	20.3	21.6	20.8	22.1	22.6	18.5	19.8	19.0	20.2	20.7
6H	21.6	22.8	22.1	23.3	23.8	19.1	20.2	19.6	20.7	21.3
8H	22.3	23.5	22.8	24.0	24.5	19.2	20.4	19.8	20.9	21.4
12H	23.1	24.2	23.7	24.7	25.3	19.4	20.5	19.9	21.0	21.5
4H 2H	17.6	18.8	18.1	19.3	19.8	16.9	18.2	17.4	18.6	19.1
3H	20.0	21.1	20.5	21.6	22.1	18.9	20.0	19.4	20.5	21.0
4H	21.3	22.3	21.9	22.9	23.5	19.7	20.7	20.3	21.3	21.9
6H	22.8	23.7	23.4	24.2	24.9	20.4	21.3	21.0	21.9	22.5
8H	23.6	24.4	24.2	25.0	25.7	20.7	21.5	21.3	22.1	22.8
12H	24.6	25.3	25.2	25.9	26.6	20.9	21.7	21.5	22.3	22.9
8H 4H	21.7	22.5	22.2	23.1	23.7	20.3	21.2	20.9	21.7	22.4
6H	23.4	24.1	24.0	24.7	25.4	21.3	22.0	21.9	22.6	23.3
8H	24.4	25.0	25.0	25.6	26.4	21.7	22.3	22.4	23.0	23.7
12H	25.6	26.1	26.2	26.8	27.5	22.1	22.6	22.7	23.3	24.0
12H 4H	21.7	22.5	22.3	23.0	23.7	20.5	21.2	21.1	21.8	22.5
6H	23.5	24.1	24.1	24.7	25.5	21.6	22.2	22.2	22.8	23.5
8H	24.6	25.1	25.2	25.8	26.5	22.1	22.7	22.8	23.3	24.1
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 / - 0.4				

CIE Pub.117 Corrected 3015 lm Total Lamp Luminous Flux. (8log(F/F0) = 3.8)

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2022年12月1日

Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:11.000 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

UTILIZATION FACTORS TABLE

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-22W-4000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1200*152*52mm	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) $k(RI) \times RCR = 5$									
$k = 0.60$	51	39	31	50	38	31	48	37	31	24
0.80	60	48	40	59	47	39	56	46	39	31
1.00	68	56	48	66	55	47	63	56	46	38
1.25	75	63	55	73	62	54	69	60	53	44
1.50	80	69	61	78	67	60	73	65	58	48
2.00	87	77	69	85	75	68	80	72	66	55
2.50	92	82	75	89	80	73	83	76	70	59
3.00	95	87	80	92	84	78	86	80	75	63
4.00	100	93	87	96	90	85	90	85	80	68
5.00	103	96	91	99	94	89	92	88	84	71
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2022年12月1日

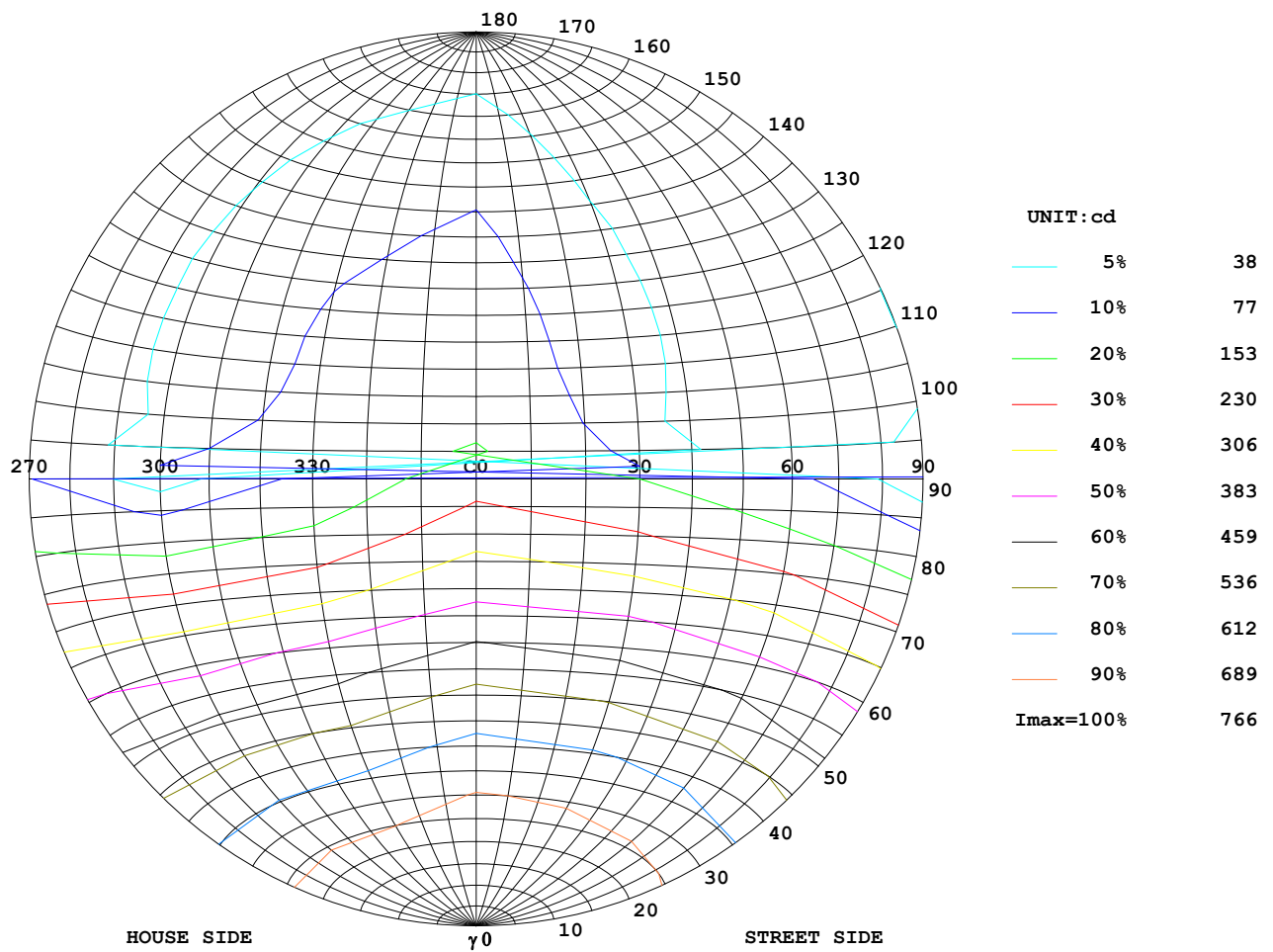
Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:11.000 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-22W-4000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1200*152*52mm	SERIAL No.:



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2022年12月1日

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

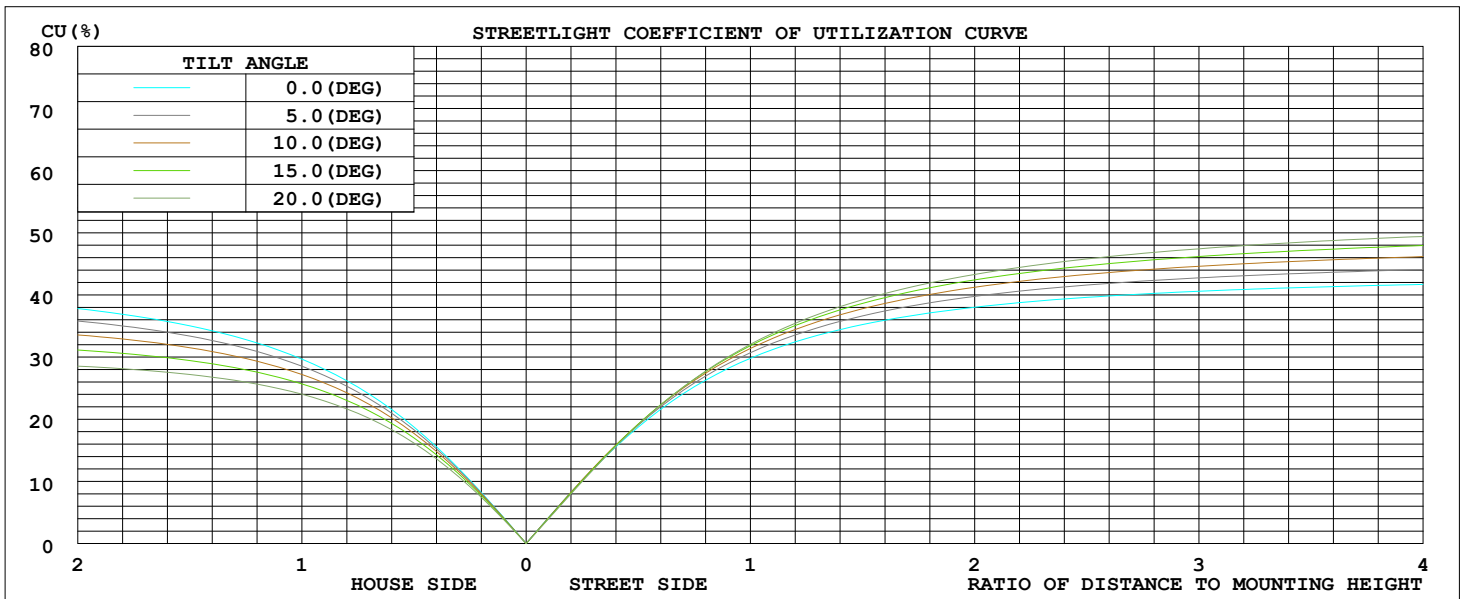
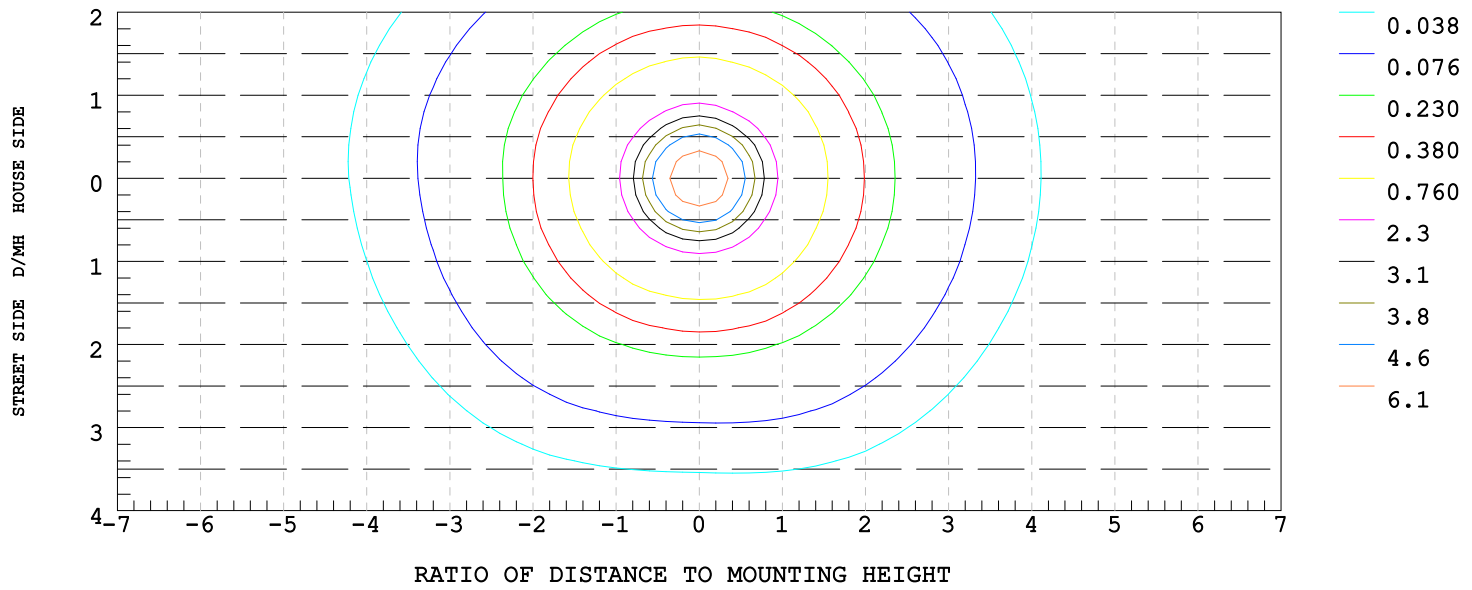
HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-22W-4000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1200*152*52mm	SERIAL No.:

ILLUMINANCE AT MH=10 m, Enadir = 7.63 lx



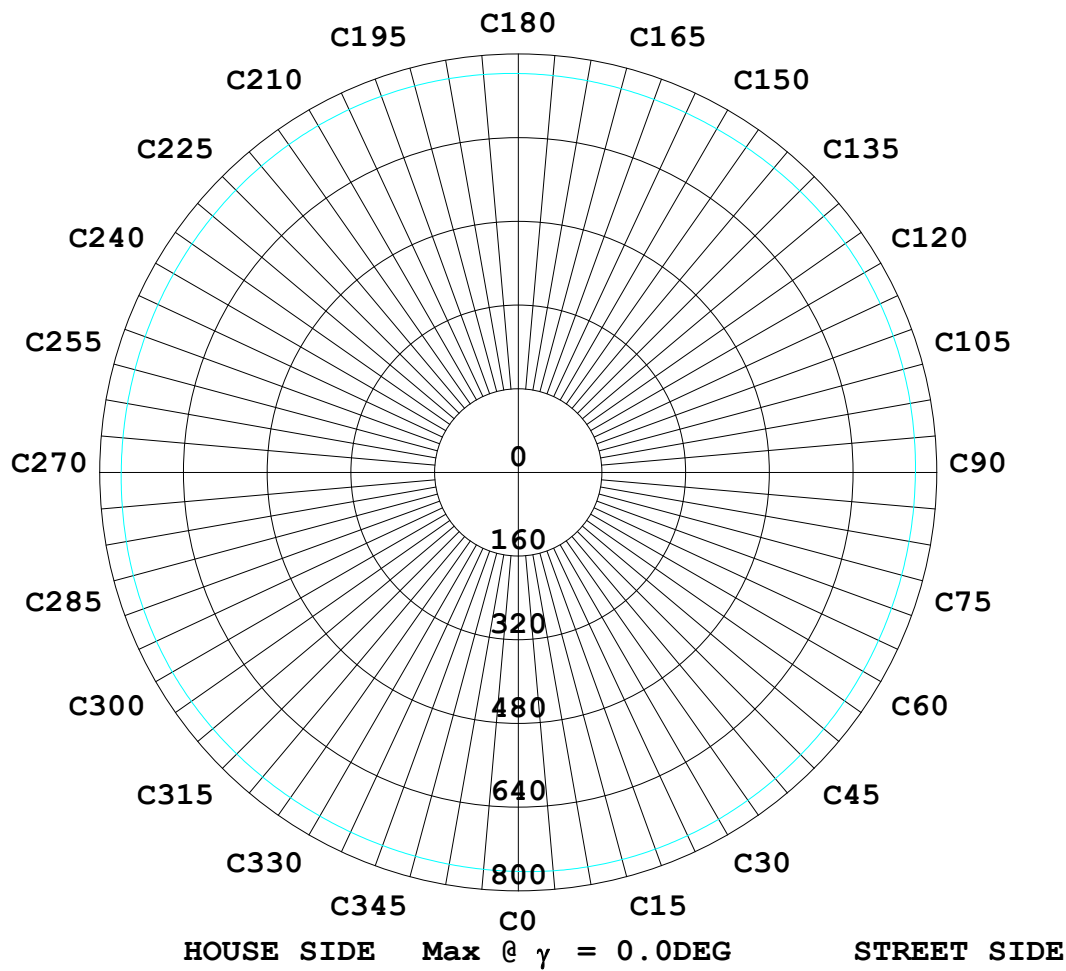
Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2022年12月1日

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-22W-4000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1200*152*52mm	SERIAL No.:



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2022年12月1日

Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks: