

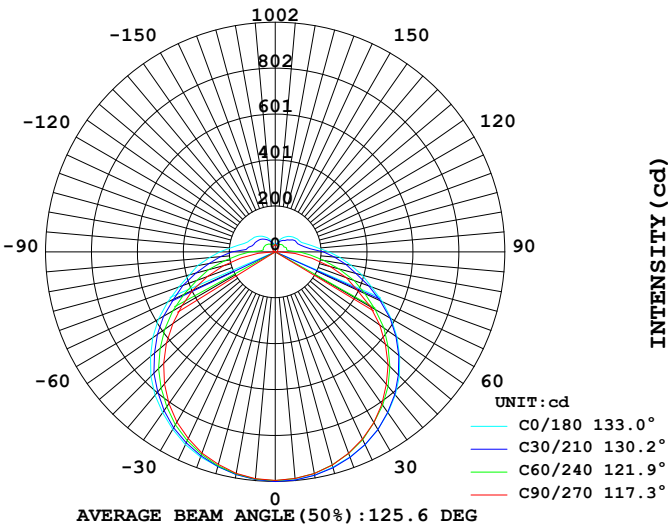
LUMINAIRE PHOTOMETRIC TEST REPORT

Report number:

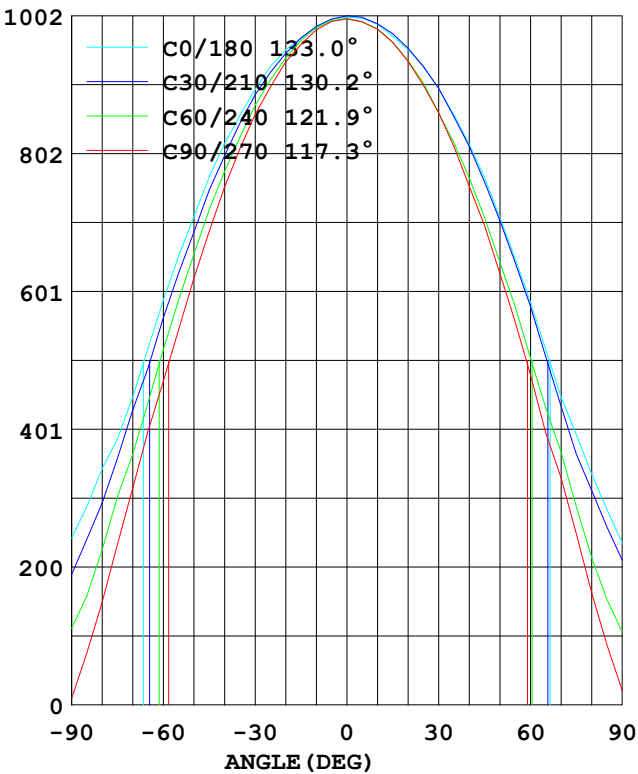
MANUFACTURER:		
Address:		
NAME: 1.5M-28W-5000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1500*152*52mm	SERIAL No.:

DATA OF LAMP		Imax(cd)	1002	S/MH(C0/180)	1.33
MODEL		EFFICIENCY(%)	100.0	S/MH(C90/270)	1.28
NOMINAL POWER(W)	30	TOTAL FLUX(lm)	3904.5	Voltage(V)	220.0
RATED VOLTAGE(V)	220	EFFICIENCY(lm/W)	133.7	Current(A)	0.141
NOMINAL FLUX(lm)	3904.6	η up(%)	11.6	Power(W)	29.20
LAMPS QUANTITY	1	η down(%)	88.4	Power Factor(PF)	0.936
TEST VOLTAGE(V)	220.0	Effective Flux(lm)	3673.7	EEI	0.108

LUMINOUS INTENSITY DISTRIBUTION



LUMINOUS INTENSITY DISTRIBUTION



Test System:HOPOO HPG1800  
Temperature:25.3DEG  
Operators:  
Test Date:2022年11月14日

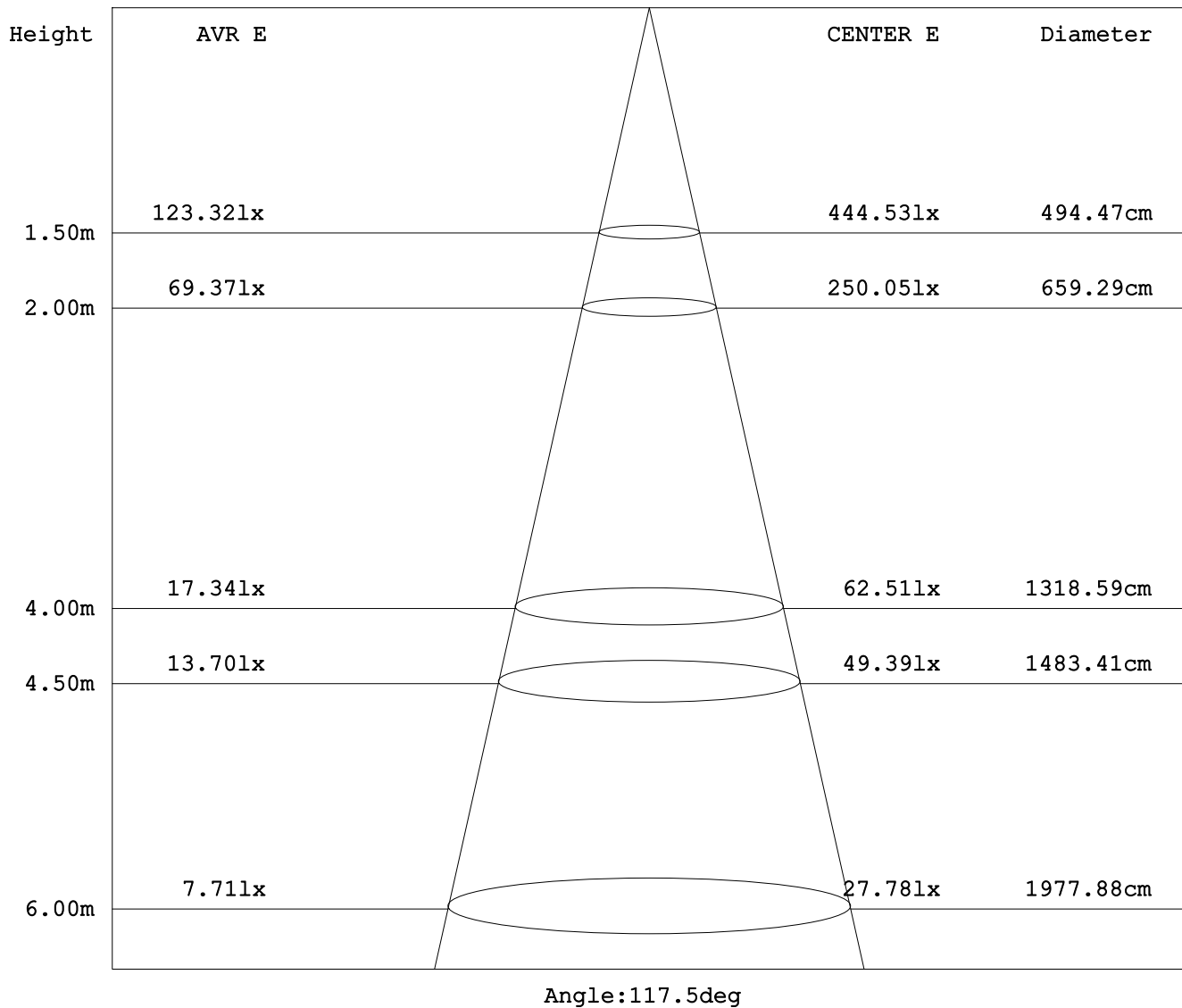
Test Set: 10.0deg/s C-Gamma (TYPE C)  
Humidity:65.0%  
Test Distance:11.000 m  
Remarks:

# HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

## AVERAGE AND CENTER E Figure

Report number:

MANUFACTURER:		
Address:		
NAME: 1.5M-28W-5000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1500*152*52mm	SERIAL No.:



Test System: HOPOO HPG1800  
 Temperature: 25.3DEG  
 Operators:  
 Test Date: 2022年11月14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: 1.5M-28W-5000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1500*152*52mm	SERIAL No.:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	zone	total
10.0	986.5	985.3	981.5	988.0	989.5	986.5	982.6	984.2	0- 10	94.75	94.75
20.0	952.7	944.0	934.9	947.4	952.9	945.6	935.5	942.5	10- 20	273.5	368.2
30.0	894.9	879.3	858.3	885.1	895.7	878.4	861.0	877.4	20- 30	422.2	790.5
40.0	816.0	786.9	752.7	795.0	815.1	789.1	754.1	787.8	30- 40	523.6	1314
50.0	710.2	671.7	620.6	680.6	708.5	673.9	627.5	673.9	40- 50	566.0	1880
60.0	588.9	539.9	470.8	548.9	585.3	542.2	480.2	539.2	50- 60	543.4	2424
70.0	447.8	396.8	315.5	397.5	447.8	401.1	330.5	398.8	60- 70	461.4	2885
80.0	343.5	259.8	149.6	271.5	336.0	263.6	163.4	266.0	70- 80	344.8	3230
90.0	242.3	150.4	9.679	164.0	235.2	158.2	20.69	162.3	80- 90	219.9	3450
100.0	165.5	85.97	2.420	95.28	160.9	90.44	7.623	95.10	90-100	121.2	3571
110.0	128.2	76.89	5.808	81.61	122.2	78.46	10.16	83.30	100-110	86.24	3657
120.0	115.9	72.90	9.679	74.11	112.5	71.87	12.94	79.19	110-120	72.61	3730
130.0	104.7	67.21	13.79	67.21	101.7	62.91	15.97	71.93	120-130	60.81	3791
140.0	89.41	58.62	18.39	56.20	88.45	53.96	19.60	62.55	130-140	47.07	3838
150.0	71.87	48.88	22.50	46.88	72.84	47.25	22.99	52.09	140-150	33.00	3871
160.0	53.11	38.59	26.13	38.72	55.41	39.14	26.01	40.95	150-160	20.45	3891
170.0	35.93	32.79	29.16	31.52	37.87	31.94	29.52	33.69	160-170	10.27	3902
180.0	32.18	30.67	30.85	30.79	32.54	30.49	31.94	30.67	170-180	3.012	3905
DEG	LUMINOUS INTENSITY:cd									UNIT:lm	

Test System:HOPOO HPG1800  
Temperature:25.3DEG  
Operators:  
Test Date:2022年11月14日

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

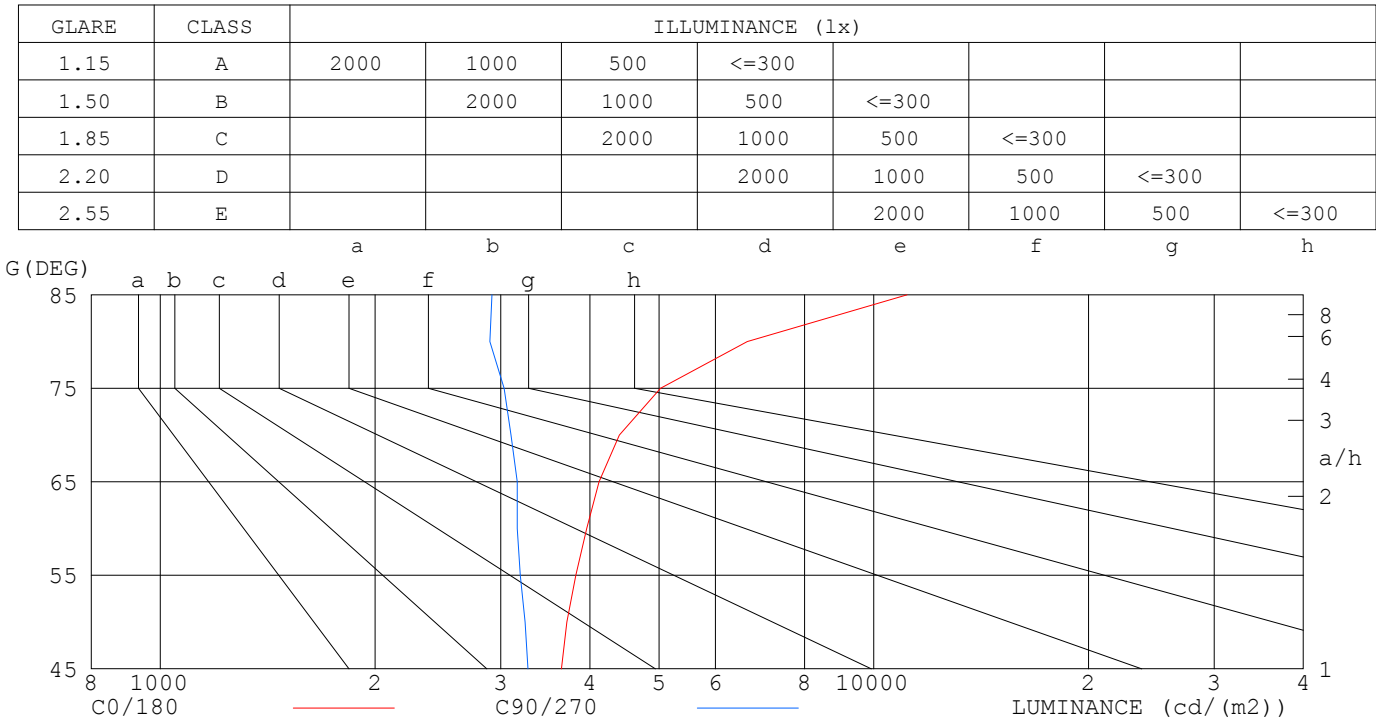
HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINANCE LIMITATION CURVES

Report number:

MANUFACTURER:					
Address:					
NAME: 1.5M-28W-5000K		TYPE:		WEIGHT:	
SPECIFICATION:		DIMENSION: 1500*152*52mm		SERIAL No.:	

LUMINANCE LIMITATION CURVES



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	11133	2916
80	6649	2897
75	5023	3033
70	4401	3101
65	4121	3165
60	3959	3165
55	3824	3196
50	3714	3245
45	3650	3275

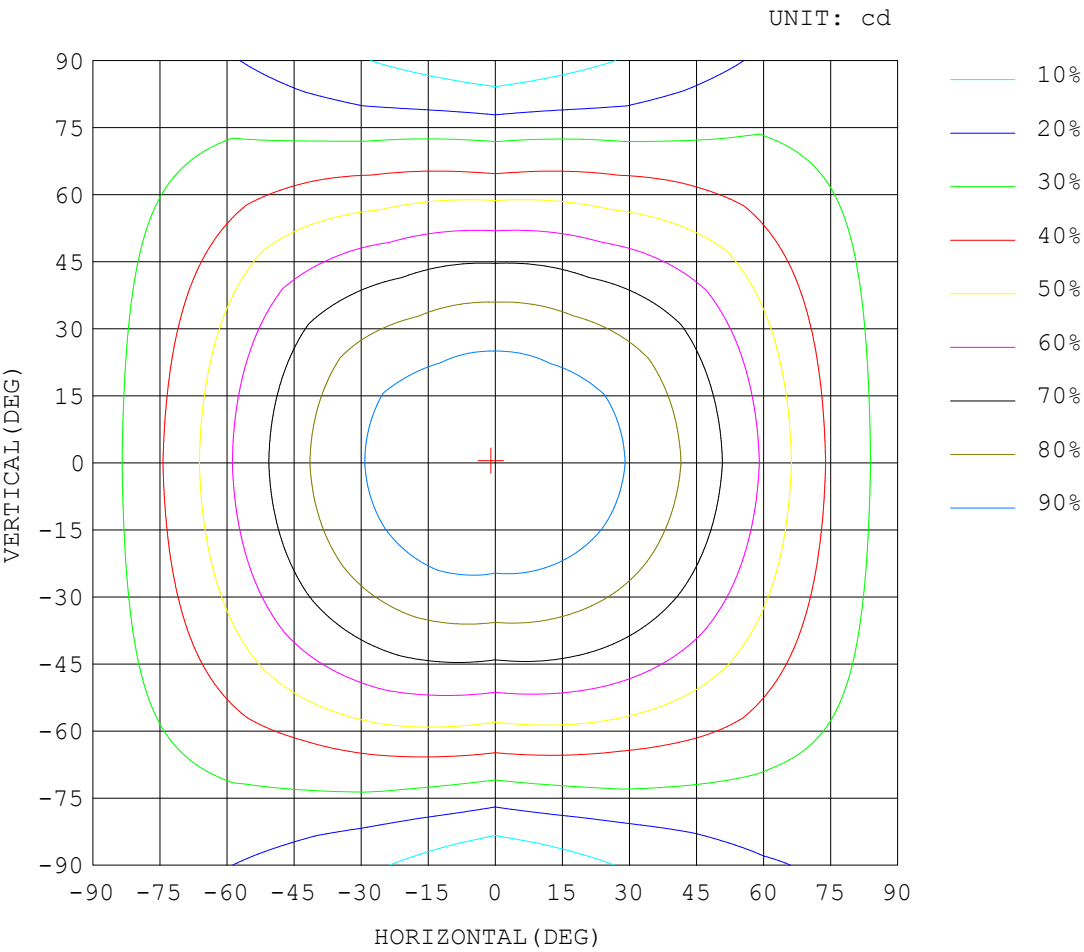
Test System:HOPOO HPG1800  
Temperature:25.3DEG  
Operators:  
Test Date:2022年11月14日

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: 1.5M-28W-5000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1500*152*52mm	SERIAL No.:



Test System:HOPOO HPG1800  
Temperature:25.3DEG  
Operators:  
Test Date:2022年11月14日

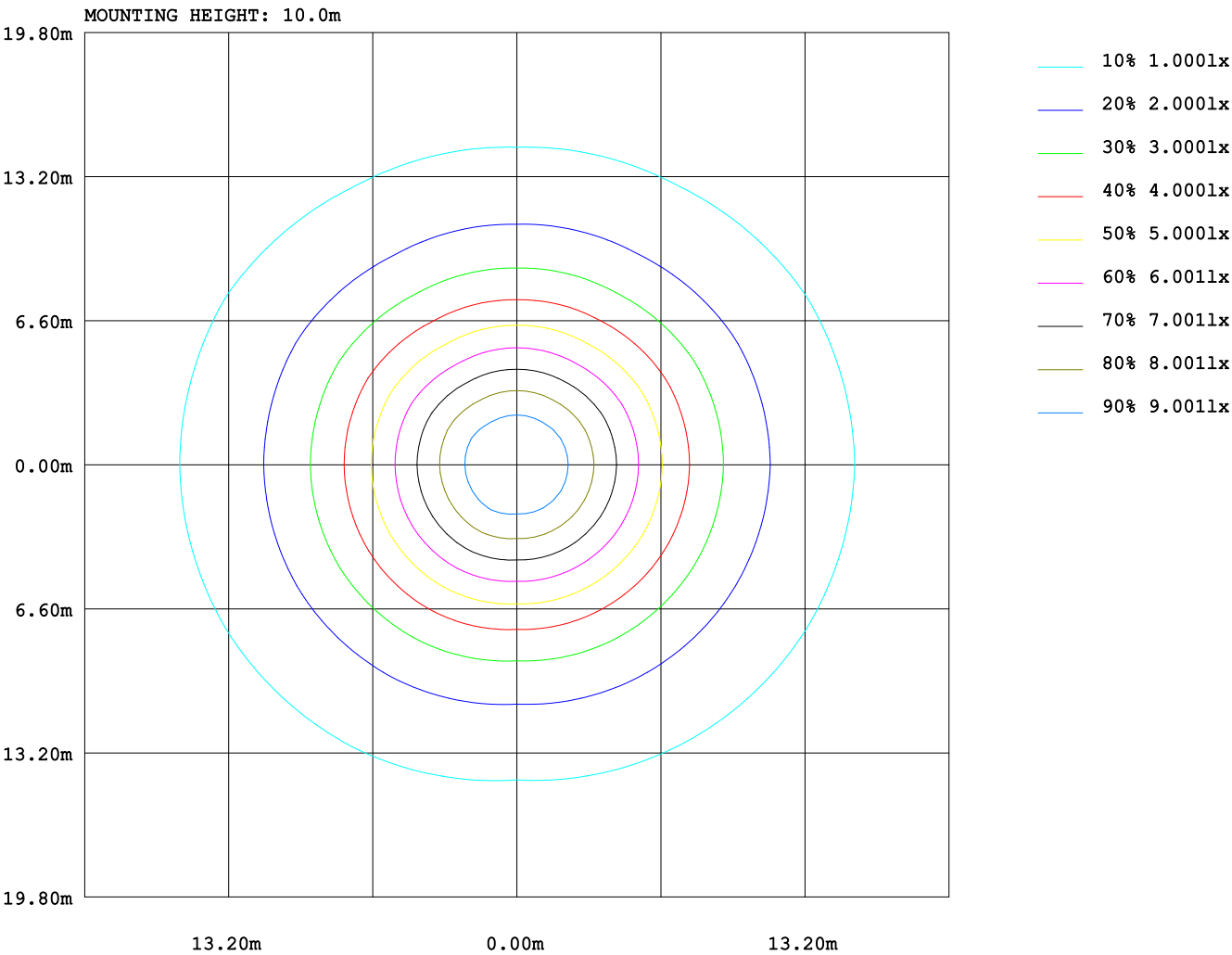
Test Set: 10.0deg/s C-Gamma (TYPE C)  
Humidity:65.0%  
Test Distance:11.000 m  
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.5M-28W-5000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1500*152*52mm	SERIAL No.:



Test System:HOPOO HPG1800  
Temperature:25.3DEG  
Operators:  
Test Date:2022年11月14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: 1.5M-28W-5000K										TYPE:					WEIGHT:				
SPECIFICATION:										DIMENSION: 1500*152*52mm					SERIAL No.:				

VERTICAL (DEG)	AREA FLUX DIAGRAM																		UNIT:lm		Φ t	Φ a
	0.62	1.85	3.02	3.84	4.14	4.08	3.86	3.55	3.04	3.05	3.58	3.90	4.15	4.22	3.93	3.09	1.90	0.64	56.5	52.4		
90	0.65	2.05	3.57	4.93	5.89	6.61	7.21	7.66	7.69	7.68	7.65	7.19	6.62	5.94	5.01	3.64	2.10	0.67	92.8	92.8		
80	0.68	2.26	4.13	6.08	7.93	9.61	10.9	11.9	12.2	12.2	11.9	10.9	9.58	7.91	6.11	4.19	2.30	0.70	132	132		
70	0.71	2.46	4.69	7.37	10.0	12.5	14.4	16.1	16.8	16.8	16.1	14.4	12.4	10.0	7.33	4.70	2.51	0.72	171	171		
60	0.74	2.65	5.25	8.60	12.1	15.3	17.8	19.9	21.0	21.0	19.9	17.9	15.2	12.0	8.56	5.23	2.68	0.75	207	207		
50	0.76	2.82	5.77	9.66	13.8	17.6	20.8	23.1	24.4	24.4	23.1	20.8	17.6	13.8	9.61	5.75	2.83	0.77	238	238		
40	0.78	2.96	6.19	10.4	15.1	19.5	23.1	25.6	27.1	27.1	25.6	23.1	19.5	15.1	10.4	6.18	2.95	0.79	262	262		
30	0.79	3.06	6.49	11.0	15.9	20.7	24.8	27.5	28.9	28.9	27.4	24.7	20.6	15.9	11.0	6.50	3.05	0.80	279	279		
	0.80	3.12	6.66	11.2	16.3	21.2	25.4	28.4	30.0	29.9	28.3	25.4	21.2	16.4	11.3	6.67	3.11	0.81	287	287		
	0.80	3.12	6.65	11.2	16.3	21.2	25.4	28.4	30.0	29.9	28.3	25.3	21.2	16.3	11.3	6.66	3.10	0.81	287	287		
	0.79	3.06	6.46	10.9	15.8	20.6	24.7	27.6	29.1	29.0	27.5	24.6	20.5	15.8	10.9	6.46	3.04	0.80	278	278		
-30	0.77	2.95	6.14	10.3	14.9	19.4	23.2	26.0	27.2	27.1	25.8	23.0	19.3	14.8	10.3	6.14	2.94	0.79	262	262		
-40	0.76	2.82	5.71	9.52	13.7	17.7	21.1	23.5	24.5	24.4	23.3	20.9	17.5	13.5	9.46	5.71	2.80	0.76	238	238		
-50	0.73	2.64	5.21	8.43	12.0	15.4	18.3	20.2	21.0	20.9	20.0	18.0	15.2	11.9	8.40	5.19	2.63	0.74	207	207		
-60	0.71	2.45	4.69	7.25	10.0	12.7	15.0	16.3	16.7	16.7	16.1	14.7	12.5	9.91	7.26	4.60	2.43	0.71	171	171		
-70	0.68	2.24	4.09	6.12	8.01	9.77	11.2	12.0	12.2	12.1	11.9	10.9	9.61	7.91	5.96	3.99	2.22	0.69	132	132		
-80	0.65	2.03	3.51	4.90	6.07	7.05	7.64	7.75	7.41	7.37	7.61	7.41	6.79	5.83	4.69	3.39	2.00	0.66	92.8	92.8		
-90	0.62	1.82	2.95	3.82	4.28	4.45	4.24	3.66	2.84	2.77	3.47	3.95	4.13	4.00	3.58	2.82	1.79	0.63	55.9	51.9		
	-90	-80	-70	-60	-50	-40	-30	-20	HORIZONTAL (DEG)					20	30	40	50	60	70	80	90	
Φ t	13.0	46.4	91.2	146	203	256	300	330	343	342	328	298	254	202	145	90.9	46.4	13.2	3905			
Φ a	13.0	46.4	91.2	146	203	256	299	328	341	340	327	297	254	202	145	90.9	46.4	13.2		3674		

Test System:HOPOO HPG1800  
Temperature:25.3DEG  
Operators:  
Test Date:2022年11月14日

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

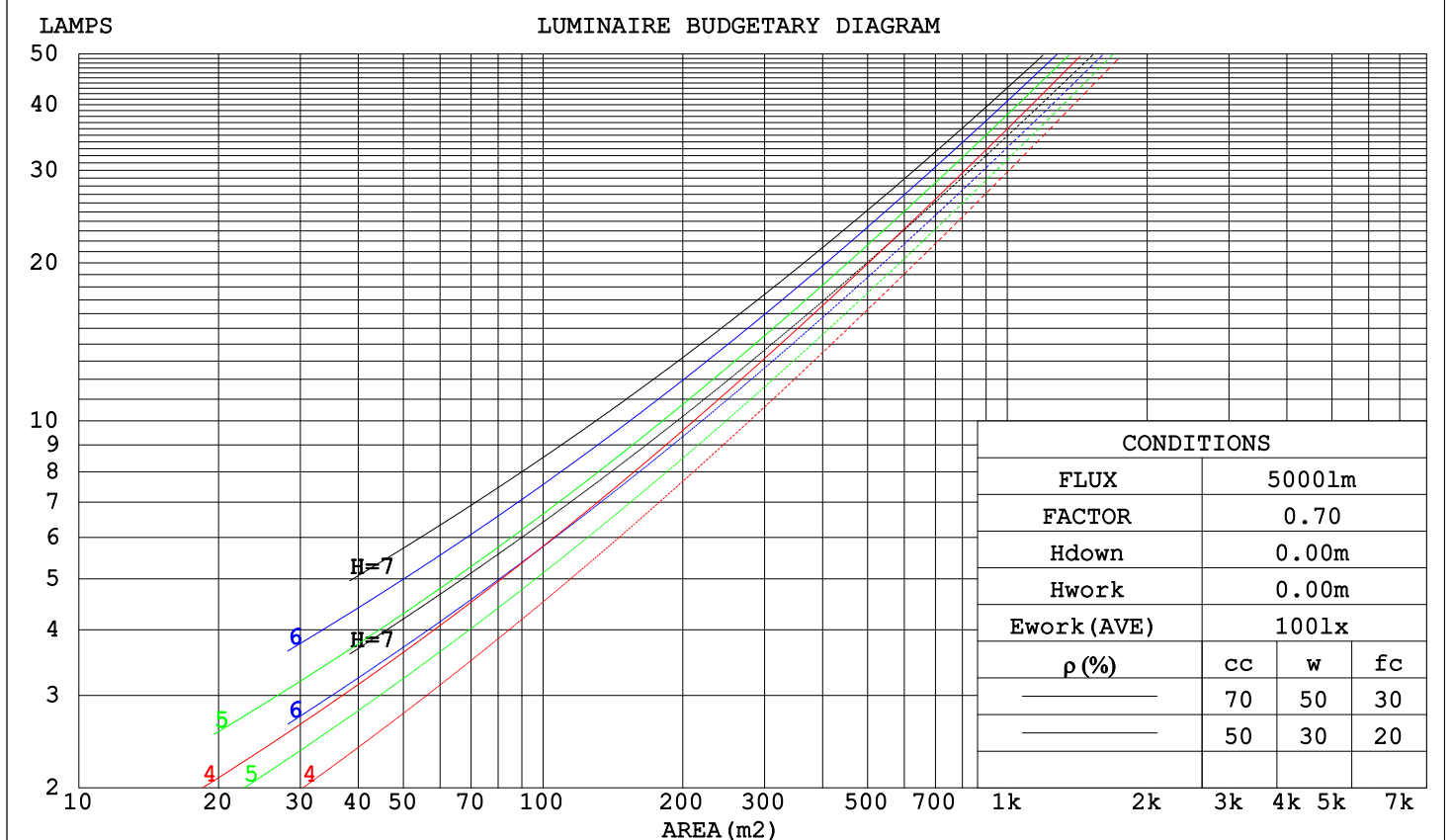
# HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number:

MANUFACTURER:															
Address:															
NAME: 1.5M-28W-5000K								TYPE:				WEIGHT:			
SPECIFICATION:								DIMENSION: 1500*152*52mm				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:HOPOO HPG1800  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2022年11月14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: 1.5M-28W-5000K								TYPE:				WEIGHT:			
SPECIFICATION:								DIMENSION: 1500*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	.362	.206	.065	.351	.200	.064	.331	.190	.061	.312	.180	.058	.295	.171	.055	
2.0	.321	.176	.054	.311	.172	.053	.293	.163	.051	.277	.155	.049	.261	.148	.047	
3.0	.289	.154	.046	.280	.150	.045	.264	.143	.043	.249	.136	.042	.235	.130	.040	
4.0	.262	.136	.040	.254	.133	.039	.239	.127	.038	.226	.121	.037	.213	.116	.035	
5.0	.239	.122	.035	.232	.119	.035	.219	.114	.034	.207	.109	.032	.195	.104	.031	
6.0	.220	.110	.032	.214	.108	.031	.202	.103	.030	.190	.099	.029	.180	.095	.028	
7.0	.204	.101	.029	.198	.099	.028	.187	.094	.027	.177	.091	.026	.167	.087	.025	
8.0	.189	.092	.026	.184	.091	.026	.174	.087	.025	.165	.083	.024	.156	.080	.023	
9.0	.177	.085	.024	.172	.084	.023	.163	.080	.023	.154	.077	.022	.146	.074	.021	
10.0	.165	.079	.022	.161	.078	.022	.153	.075	.021	.145	.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	.279	.279	.279	.239	.239	.239	.163	.163	.163	.094	.094	.094	.030	.030	.030	
1.0	.273	.245	.220	.234	.210	.189	.160	.145	.131	.092	.084	.076	.029	.027	.025	
2.0	.266	.222	.185	.228	.191	.160	.156	.132	.111	.090	.077	.065	.029	.025	.021	
3.0	.259	.205	.162	.222	.177	.141	.152	.123	.099	.088	.072	.058	.028	.023	.019	
4.0	.251	.192	.147	.215	.166	.128	.148	.116	.090	.086	.068	.053	.028	.022	.018	
5.0	.243	.182	.137	.209	.158	.119	.144	.110	.084	.083	.065	.050	.027	.021	.016	
6.0	.236	.174	.130	.203	.151	.113	.140	.106	.080	.081	.062	.048	.026	.020	.016	
7.0	.229	.167	.124	.197	.145	.108	.136	.102	.077	.079	.060	.046	.026	.020	.015	
8.0	.222	.162	.120	.191	.140	.105	.132	.099	.074	.077	.058	.044	.025	.019	.015	
9.0	.216	.157	.117	.186	.136	.102	.129	.096	.072	.075	.057	.043	.024	.019	.014	
10.0	.210	.153	.114	.181	.133	.100	.126	.093	.071	.073	.055	.042	.024	.018	.014	

Test System:HOPOO HPG1800  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2022年11月14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: 1.5M-28W-5000K					TYPE:			WEIGHT:			
SPECIFICATION:					DIMENSION: 1500*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	19.2	16.2	17.6	16.6	18.0	18.5	
	3H	19.1	20.4	19.5	20.8	21.3	17.9	19.2	18.3	19.6	20.1
	4H	20.2	21.4	20.7	21.9	22.4	18.6	19.9	19.1	20.3	20.8
	6H	21.5	22.6	22.0	23.1	23.6	19.2	20.3	19.7	20.8	21.3
	8H	22.1	23.3	22.6	23.8	24.3	19.3	20.5	19.9	21.0	21.5
	12H	22.9	24.0	23.4	24.5	25.1	19.5	20.6	20.0	21.1	21.6
4H 2H	17.6	18.8	18.0	19.3	19.8	17.0	18.2	17.4	18.7	19.2	
	3H	19.9	21.0	20.4	21.5	22.1	18.9	20.0	19.4	20.5	21.1
	4H	21.2	22.2	21.7	22.7	23.3	19.8	20.8	20.3	21.3	21.9
	6H	22.6	23.5	23.2	24.1	24.7	20.5	21.4	21.1	22.0	22.6
	8H	23.4	24.3	24.0	24.8	25.5	20.8	21.6	21.4	22.2	22.8
	12H	24.3	25.1	24.9	25.7	26.4	21.0	21.8	21.6	22.4	23.0
8H 4H	21.5	22.4	22.1	23.0	23.6	20.4	21.2	21.0	21.8	22.4	
	6H	23.2	23.9	23.9	24.5	25.2	21.4	22.1	22.0	22.7	23.3
	8H	24.2	24.8	24.8	25.5	26.2	21.8	22.4	22.4	23.0	23.7
	12H	25.4	25.9	26.0	26.6	27.3	22.2	22.7	22.8	23.3	24.1
12H 4H	21.6	22.3	22.2	22.9	23.6	20.5	21.3	21.1	21.9	22.5	
	6H	23.3	24.0	24.0	24.6	25.3	21.6	22.3	22.3	22.9	23.6
	8H	24.4	25.0	25.1	25.6	26.3	22.2	22.7	22.8	23.4	24.1
Variations with the observer position at spacings:											
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.4					

CIE Pub.117 Corrected 3905 lm Total Lamp Luminous Flux. (8log(F/F0) = 4.7)

Test System:HOPOO HPG1800  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2022年11月14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: 1.5M-28W-5000K					TYPE:			WEIGHT:		
SPECIFICATION:					DIMENSION: 1500*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	32	50	38	31	48	38	31	24
0.80	60	48	40	59	47	40	56	46	39	31
1.00	68	56	48	67	55	48	64	56	47	38
1.25	75	64	55	73	62	55	70	60	53	44
1.50	81	69	61	78	68	60	74	65	58	49
2.00	88	78	70	85	76	69	80	72	66	56
2.50	92	83	75	89	81	74	84	77	71	60
3.00	96	87	80	92	85	79	87	80	75	64
4.00	100	93	87	97	90	85	91	85	81	68
5.00	103	97	91	99	94	89	93	88	85	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11月14日

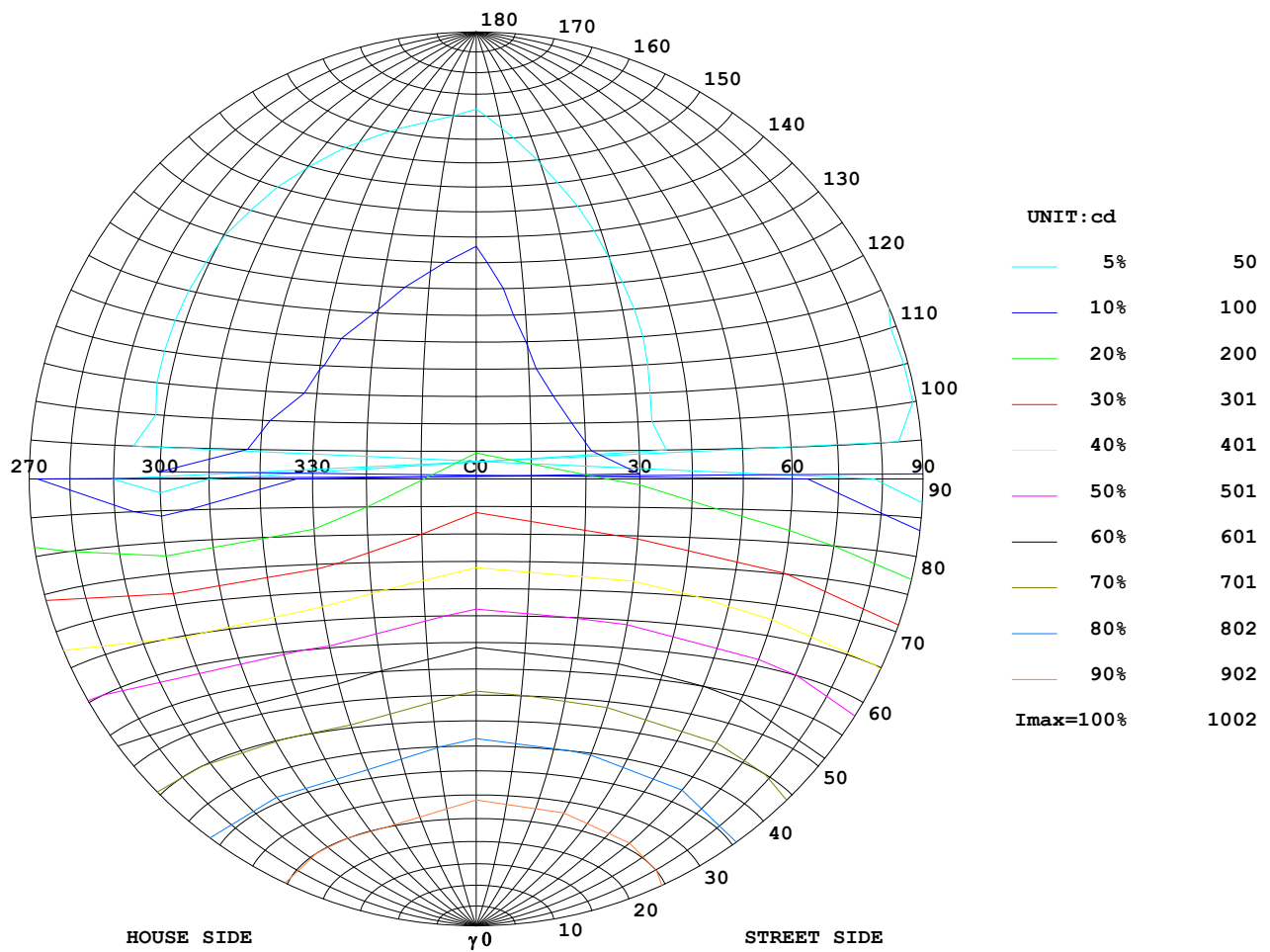
Test Set: 10.0deg/s C-Gamma (TYPE C)  
 Humidity:65.0%  
 Test Distance:11.000 m  
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.5M-28W-5000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1500*152*52mm	SERIAL No.:



Test System:HOPOO HPG1800  
Temperature:25.3DEG  
Operators:  
Test Date:2022年11月14日

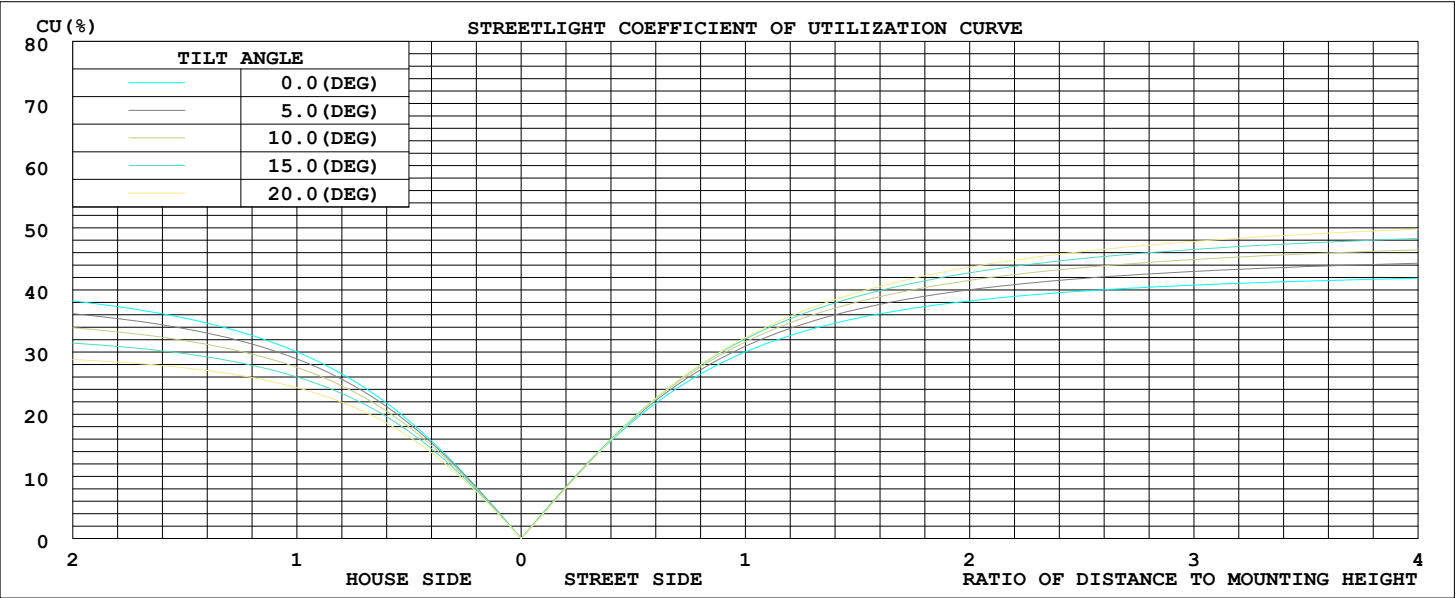
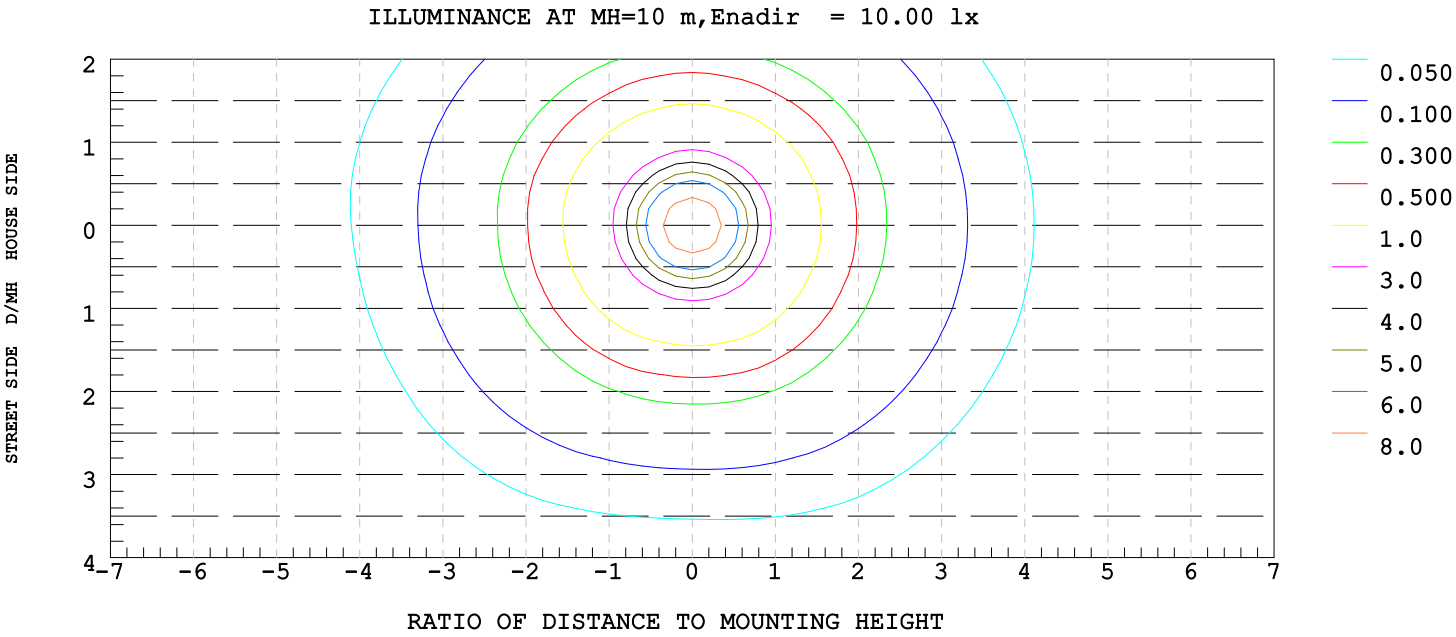
Test Set: 10.0deg/s C-Gamma (TYPE C)  
Humidity:65.0%  
Test Distance:11.000 m  
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.5M-28W-5000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1500*152*52mm	SERIAL No.:



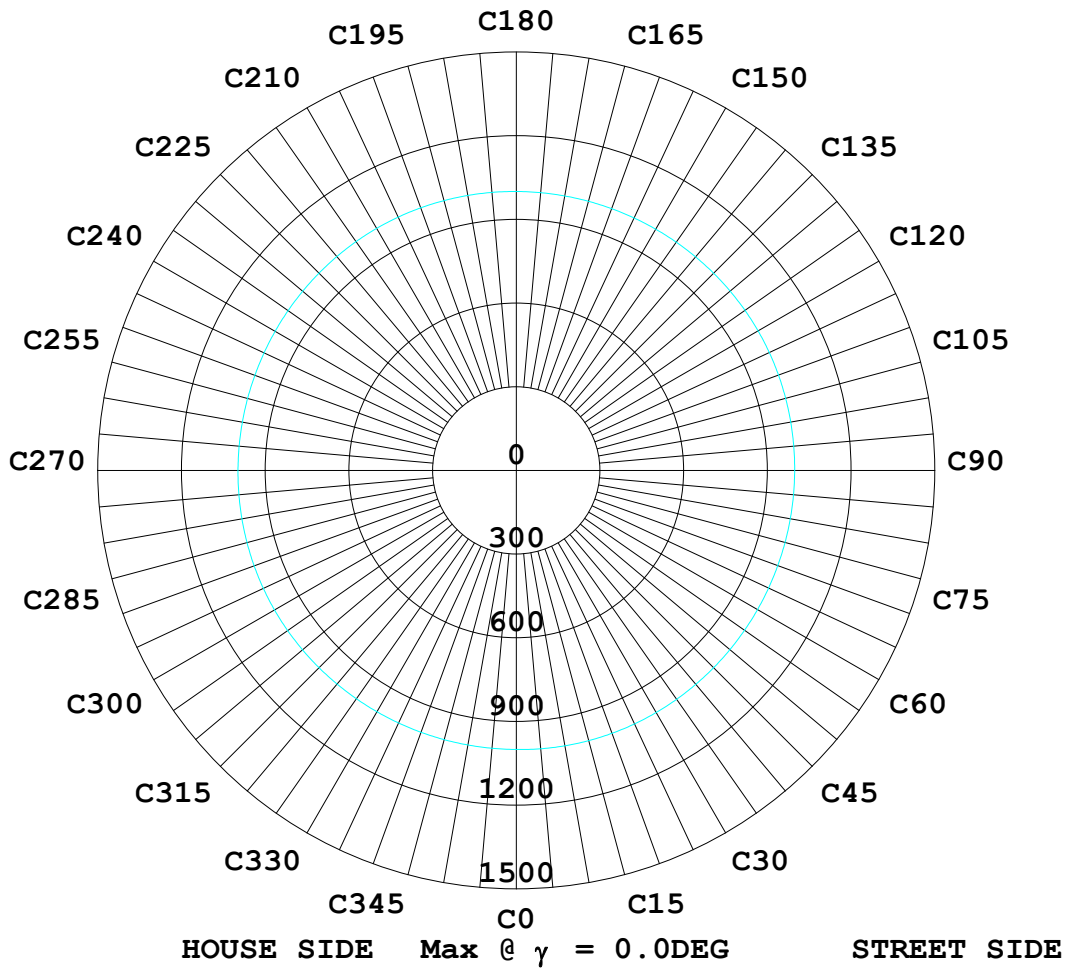
Test System:HOPOO HPG1800  
Temperature:25.3DEG  
Operators:  
Test Date:2022年11月14日

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: 1.5M-28W-5000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1500*152*52mm	SERIAL No.:



Test System:HOPOO HPG1800  
Temperature:25.3DEG  
Operators:  
Test Date:2022年11月14日

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