

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

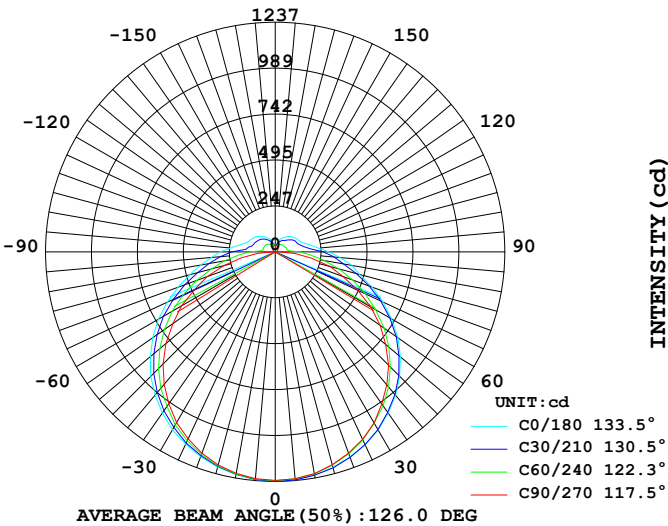
LUMINAIRE PHOTOMETRIC TEST REPORT

Report number:

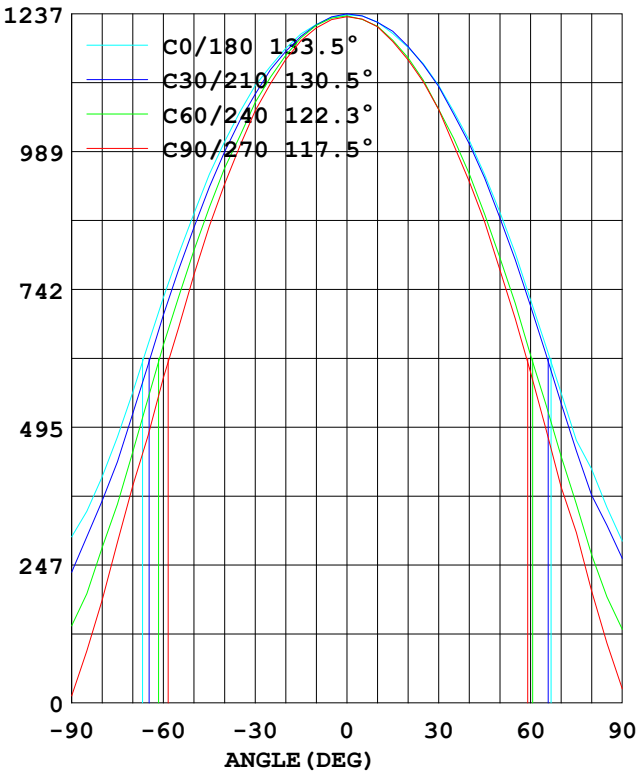
MANUFACTURER:		
Address:		
NAME: 1.5M-36W-5000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1500*152*52mm	SERIAL No.:

DATA OF LAMP		Imax(cd)	1237	S/MH(C0/180)	1.34
MODEL		EFFICIENCY(%)	100.0	S/MH(C90/270)	1.28
NOMINAL POWER(W)	36	TOTAL FLUX(lm)	4816.0	Voltage(V)	220.1
RATED VOLTAGE(V)	220	EFFICIENCY(lm/W)	130.6	Current(A)	0.175
NOMINAL FLUX(lm)	4816.0	η up(%)	11.6	Power(W)	36.88
LAMPS QUANTITY	1	η down(%)	88.4	Power Factor(PF)	0.956
TEST VOLTAGE(V)	220.1	Effective Flux(lm)	4521.2	EEI	0.111

LUMINOUS INTENSITY DISTRIBUTION



LUMINOUS INTENSITY DISTRIBUTION



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

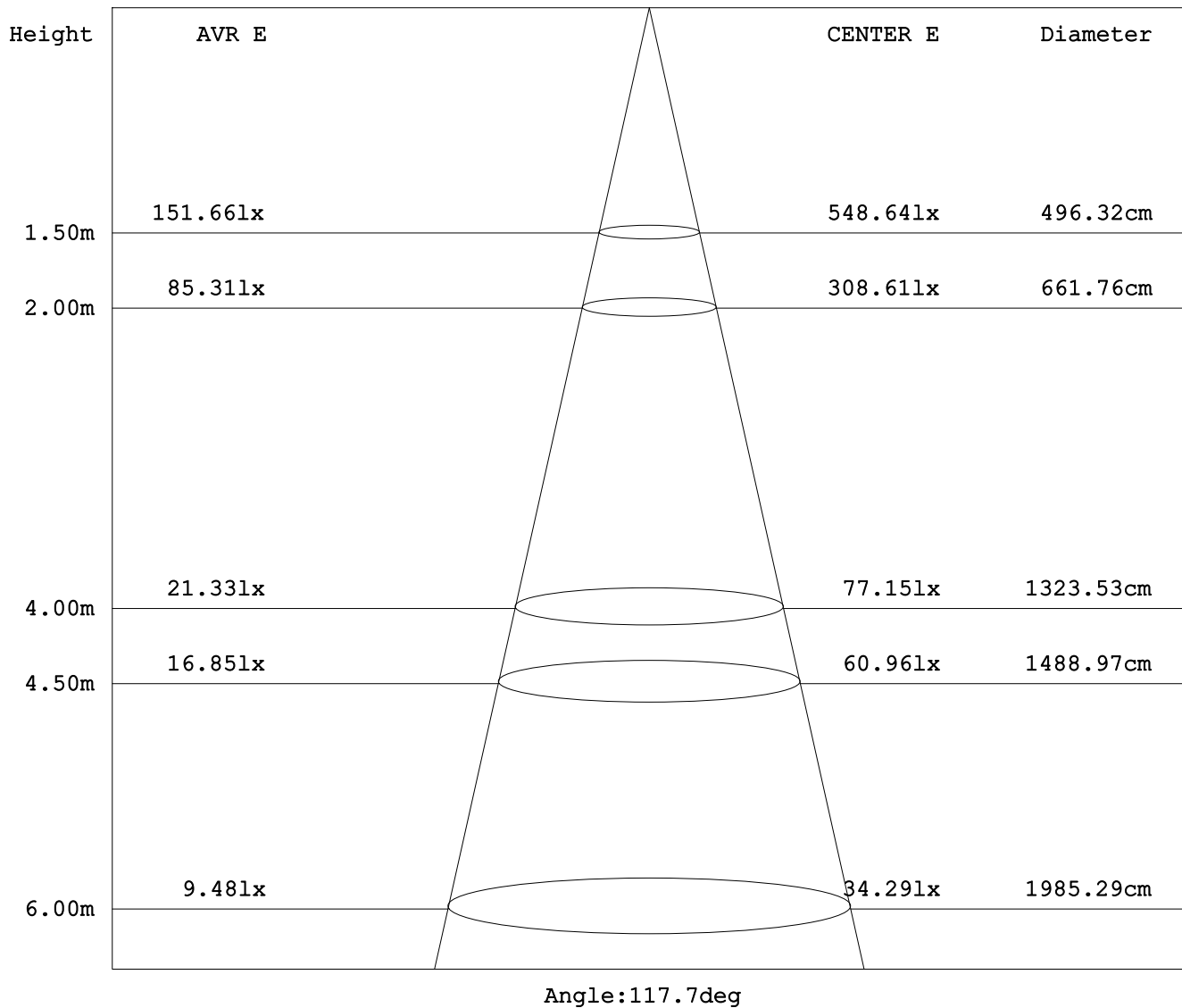
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

AVERAGE AND CENTER E Figure

Report number:

MANUFACTURER:		
Address:		
NAME: 1.5M-36W-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-36W-5000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1500*152*52mm	SERIAL No.:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Zone	total
10.0	1217	1216	1211	1219	1221	1218	1213	1215	0- 10	116.9	116.9
20.0	1174	1165	1154	1171	1176	1168	1154	1165	10- 20	337.7	454.7
30.0	1107	1085	1062	1093	1108	1086	1065	1084	20- 30	521.4	976.1
40.0	1007	973.9	930.4	982.6	1009	976.3	935.5	972.7	30- 40	647.0	1623
50.0	878.0	832.6	768.4	840.6	880.6	834.8	777.3	833.0	40- 50	700.2	2323
60.0	727.2	668.8	583.4	677.2	723.8	668.8	594.1	668.7	50- 60	672.5	2996
70.0	557.4	484.9	389.8	494.2	557.0	490.8	388.1	489.4	60- 70	569.9	3566
80.0	406.0	320.9	184.8	334.1	419.7	319.5	201.1	319.3	70- 80	421.0	3987
90.0	297.9	186.4	12.58	201.2	290.1	195.5	25.16	198.9	80- 90	269.5	4256
100.0	203.2	106.5	3.872	116.4	198.6	111.9	9.317	116.0	90-100	149.2	4406
110.0	157.0	94.98	7.623	99.88	150.6	96.86	12.46	102.0	100-110	106.1	4512
120.0	143.0	90.26	12.10	90.44	137.3	88.39	15.73	97.04	110-120	89.24	4601
130.0	128.7	83.00	16.81	81.73	124.6	78.28	19.23	88.33	120-130	74.81	4676
140.0	110.2	72.90	22.62	68.54	108.4	66.73	23.35	76.95	130-140	57.84	4734
150.0	88.33	60.37	27.83	57.35	89.54	58.62	27.58	63.70	140-150	40.65	4774
160.0	65.58	47.91	32.30	47.43	68.84	48.58	31.82	50.57	150-160	25.19	4800
170.0	44.28	40.47	35.81	38.65	47.06	39.08	35.93	41.74	160-170	12.65	4812
180.0	39.44	37.75	38.35	37.93	39.32	37.93	38.71	38.17	170-180	3.715	4816
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:

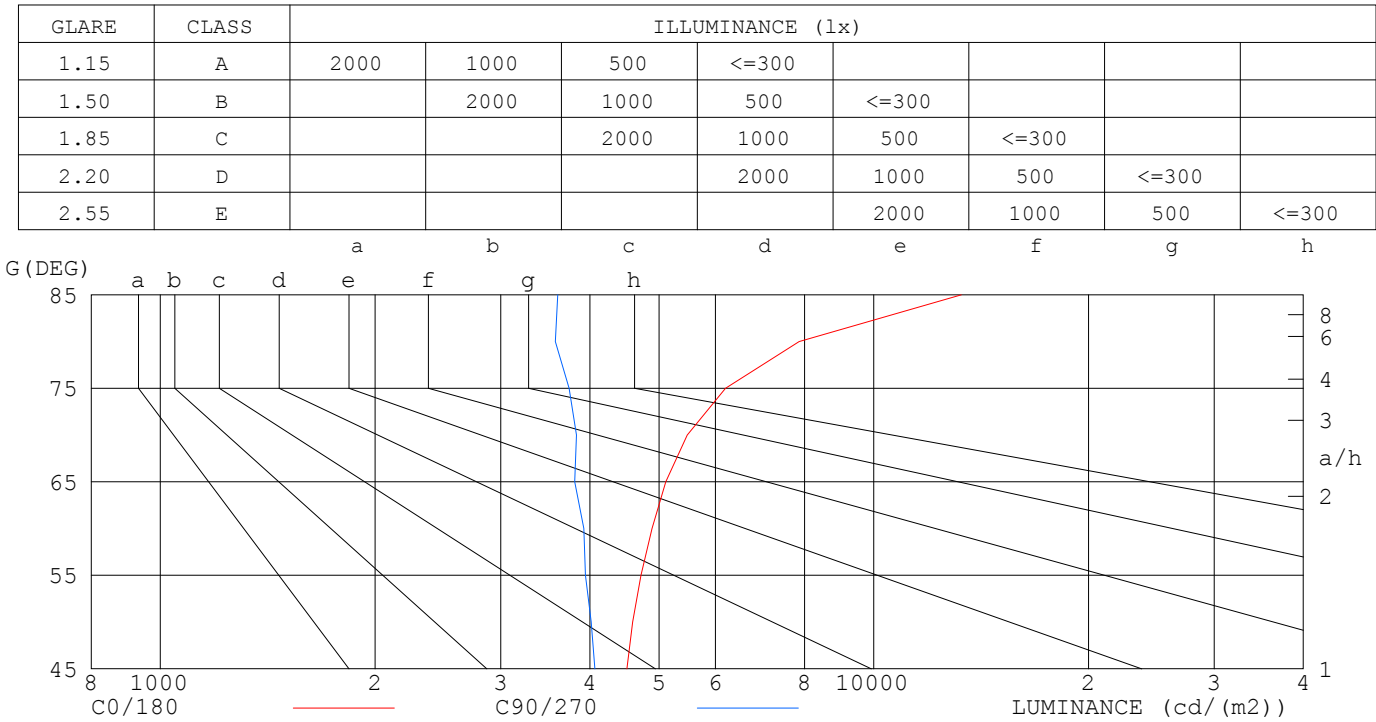
HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINANCE LIMITATION CURVES

Report number:

MANUFACTURER:					
Address:					
NAME: 1.5M-36W-5000K		TYPE:		WEIGHT:	
SPECIFICATION:		DIMENSION: 1500*152*52mm		SERIAL No.:	

LUMINANCE LIMITATION CURVES



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	13266	3607
80	7860	3579
75	6197	3741
70	5478	3831
65	5112	3810
60	4888	3922
55	4718	3943
50	4591	4018
45	4508	4066

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

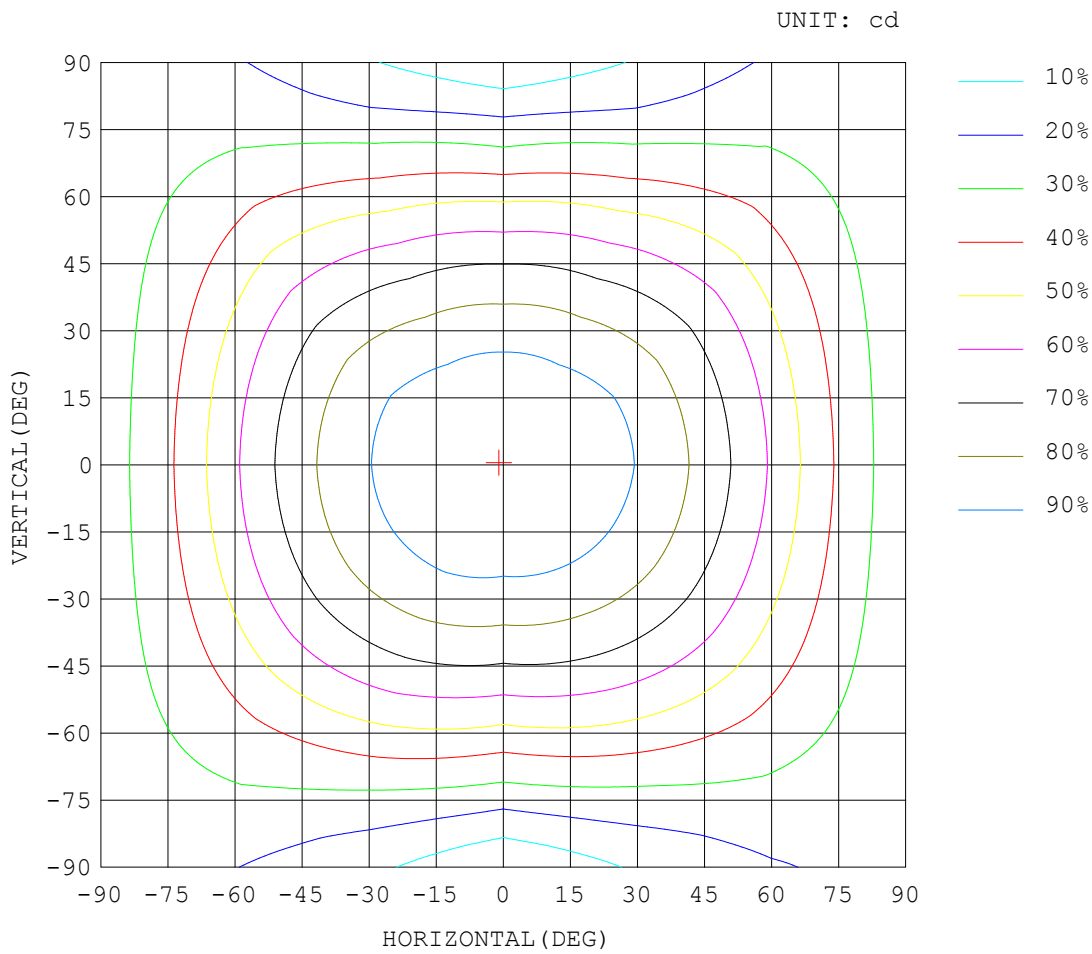
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.5M-36W-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

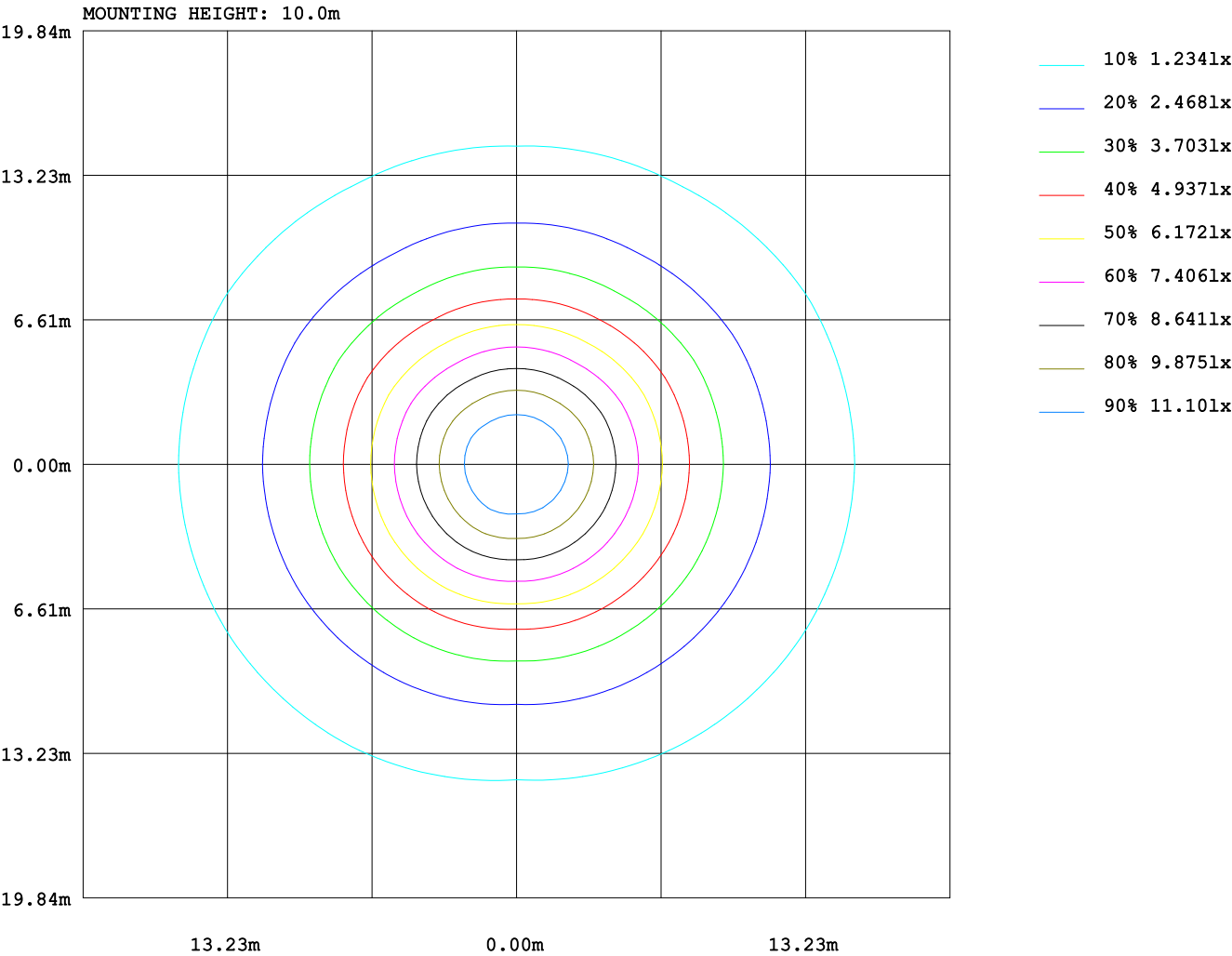
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.5M-36W-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-36W-5000K										TYPE:					WEIGHT:				
SPECIFICATION:										DIMENSION: 1500*152*52mm					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	0.77	2.28	3.72	4.74	5.11	5.05	4.78	4.39	3.75	3.75	4.39	4.78	5.08	5.17	4.82	3.78	2.32	0.79	69.5	64.4			
80	0.81	2.53	4.36	5.97	7.19	8.15	8.88	9.37	9.34	9.33	9.34	8.82	8.11	7.20	6.01	4.39	2.54	0.82	113	113			
70	0.84	2.78	5.02	7.48	9.78	11.7	13.3	14.6	15.0	15.0	14.6	13.3	11.7	9.75	7.49	5.01	2.76	0.85	161	161			
60	0.88	3.02	5.75	9.12	12.4	15.4	17.9	19.9	20.8	20.9	19.9	17.9	15.4	12.4	9.10	5.75	2.99	0.87	211	211			
50	0.91	3.25	6.48	10.6	14.9	18.9	22.1	24.6	26.0	26.0	24.6	22.1	18.9	14.9	10.6	6.48	3.22	0.90	256	256			
40	0.94	3.45	7.14	11.9	17.1	21.9	25.7	28.6	30.2	30.2	28.6	25.7	21.8	17.1	11.9	7.14	3.43	0.92	294	294			
30	0.96	3.61	7.67	12.9	18.7	24.2	28.6	31.7	33.5	33.5	31.7	28.5	24.1	18.6	12.9	7.67	3.61	0.94	324	324			
20	0.98	3.74	8.05	13.6	19.7	25.6	30.6	34.0	35.7	35.7	33.9	30.5	25.5	19.7	13.6	8.06	3.74	0.96	344	344			
10	0.99	3.81	8.25	14.0	20.2	26.3	31.4	35.1	37.0	36.9	35.0	31.3	26.2	20.2	14.0	8.27	3.82	0.97	354	354			
0	0.99	3.81	8.24	14.0	20.2	26.2	31.3	35.0	37.0	37.0	35.0	31.2	26.2	20.2	13.9	8.26	3.81	0.97	354	354			
-10	0.98	3.73	8.01	13.5	19.6	25.5	30.4	34.1	35.9	35.8	33.9	30.3	25.3	19.5	13.5	8.01	3.72	0.96	343	343			
-20	0.96	3.60	7.61	12.8	18.5	24.1	28.7	32.1	33.7	33.5	31.8	28.5	23.9	18.4	12.7	7.59	3.58	0.94	324	324			
-30	0.94	3.44	7.05	11.7	16.9	21.9	26.1	29.0	30.3	30.2	28.8	25.8	21.7	16.8	11.7	7.02	3.39	0.92	294	294			
-40	0.91	3.25	6.38	10.4	14.9	19.1	22.6	25.0	26.0	25.9	24.8	22.3	18.8	14.7	10.3	6.34	3.17	0.89	256	256			
-50	0.87	3.03	5.68	8.93	12.4	15.7	18.5	20.2	20.7	20.6	20.0	18.2	15.5	12.2	8.82	5.59	2.93	0.86	211	211			
-60	0.84	2.77	5.03	7.41	9.78	12.0	13.8	14.8	14.9	14.9	14.6	13.5	11.7	9.57	7.22	4.86	2.68	0.83	162	162			
-70	0.80	2.51	4.33	6.03	7.41	8.53	9.25	9.45	9.12	9.05	9.26	8.95	8.21	7.13	5.79	4.16	2.44	0.80	113	113			
-80	0.76	2.25	3.64	4.70	5.26	5.45	5.20	4.50	3.50	3.43	4.30	4.89	5.11	4.95	4.43	3.48	2.20	0.77	68.8	63.9			
-90																							
	-90	-80	-70	-60	-50	-40	-30	-20	HORIZONTAL (DEG)					20	30	40	50	60	70	80	90		
Φ t	16.1	56.9	113	180	251	316	370	407	423	422	405	367	314	249	179	112	56.4	15.9	4816				
Φ a	16.1	56.9	113	180	251	316	370	405	421	420	403	367	314	249	179	112	56.4	15.9		4521			

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:

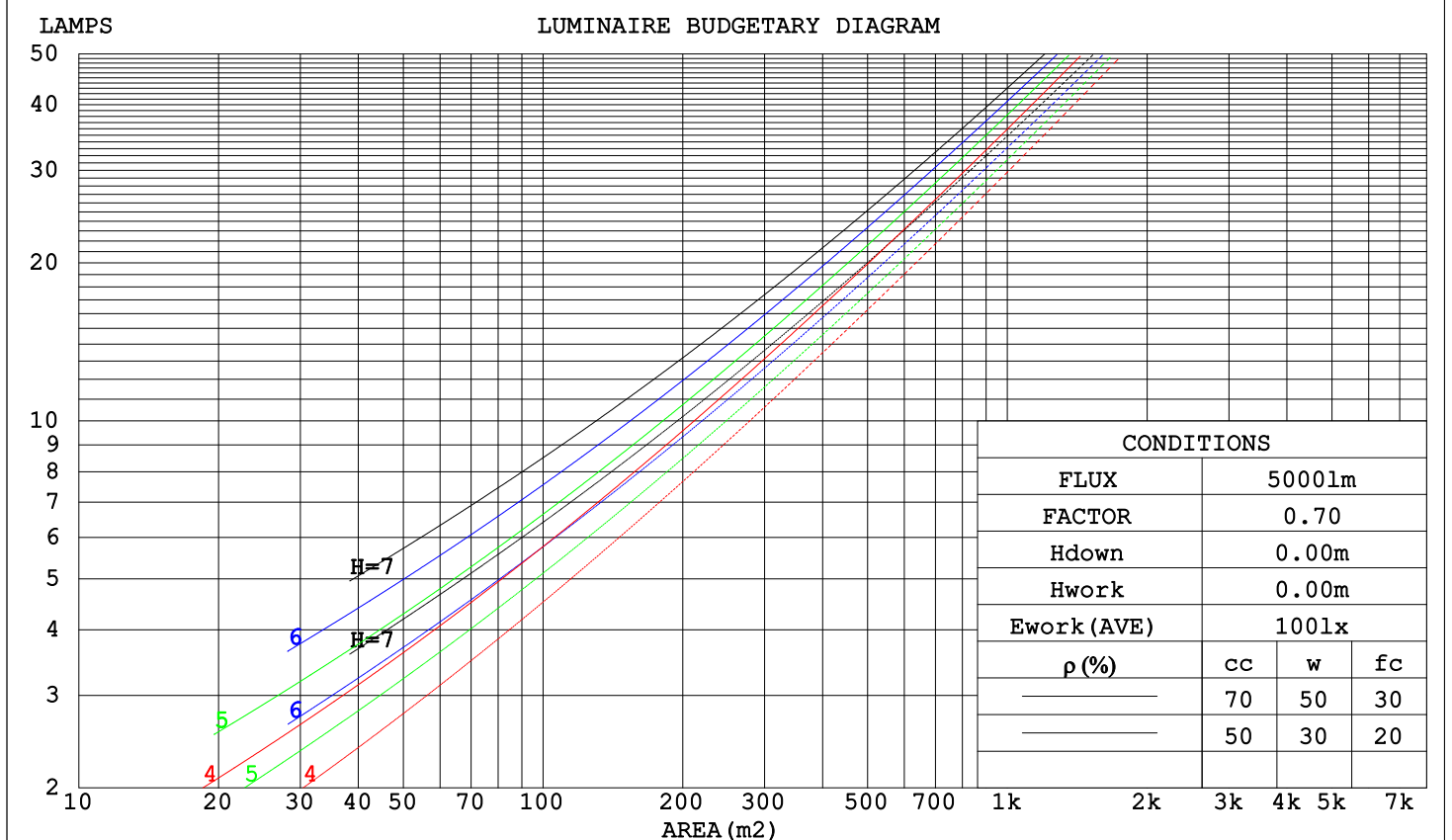
HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number:

MANUFACTURER:															
Address:															
NAME: 1.5M-36W-5000K								TYPE:				WEIGHT:			
SPECIFICATION:								DIMENSION: 1500*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-36W-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	.361	.205	.065	.350	.200	.063	.330	.189	.060	.312	.180	.058	.295	.171	.055	
2.0	.321	.176	.054	.311	.171	.053	.293	.163	.051	.276	.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	.203	.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	.238	.238	.238	.163	.163	.163	.093	.093	.093	.030	.030	.030	
1.0	.273	.245	.220	.234	.210	.189	.160	.145	.131	.092	.084	.076	.029	.027	.025	
2.0	.266	.222	.184	.228	.191	.159	.156	.132	.111	.090	.077	.065	.029	.025	.021	
3.0	.258	.205	.162	.222	.177	.140	.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	.157	.119	.144	.110	.084	.083	.065	.050	.027	.021	.016	
6.0	.236	.174	.130	.203	.151	.113	.140	.105	.080	.081	.062	.047	.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	.098	.074	.077	.058	.044	.025	.019	.015	
9.0	.216	.157	.117	.186	.136	.102	.129	.096	.072	.075	.056	.043	.024	.019	.014	
10.0	.210	.153	.114	.181	.132	.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-36W-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	17.7	19.2	18.1	19.6	20.0	16.9	18.3	17.3	18.7	19.2
3H	19.8	21.1	20.3	21.6	22.1	18.6	19.9	19.0	20.3	20.8
4H	20.9	22.2	21.4	22.6	23.1	19.3	20.6	19.8	21.0	21.5
6H	22.1	23.3	22.6	23.8	24.3	19.9	21.0	20.4	21.5	22.0
8H	22.7	23.9	23.2	24.4	24.9	20.1	21.2	20.6	21.7	22.2
12H	23.5	24.6	24.0	25.1	25.7	20.2	21.3	20.7	21.8	22.4
4H 2H	18.3	19.6	18.8	20.0	20.5	17.7	19.0	18.2	19.4	19.9
3H	20.6	21.7	21.1	22.2	22.8	19.6	20.7	20.1	21.2	21.7
4H	21.9	22.9	22.4	23.4	24.0	20.5	21.5	21.0	22.0	22.6
6H	23.3	24.2	23.8	24.7	25.3	21.2	22.1	21.8	22.7	23.3
8H	24.0	24.9	24.6	25.4	26.1	21.5	22.3	22.1	22.9	23.5
12H	24.9	25.7	25.5	26.3	26.9	21.7	22.5	22.3	23.1	23.7
8H 4H	22.2	23.1	22.8	23.6	24.3	21.0	21.9	21.6	22.5	23.1
6H	23.9	24.6	24.5	25.2	25.9	22.0	22.8	22.7	23.4	24.0
8H	24.8	25.5	25.5	26.1	26.8	22.5	23.1	23.1	23.7	24.4
12H	26.0	26.5	26.6	27.2	27.9	22.9	23.4	23.5	24.0	24.8
12H 4H	22.3	23.0	22.9	23.6	24.3	21.2	22.0	21.8	22.5	23.2
6H	24.0	24.6	24.6	25.2	25.9	22.3	23.0	22.9	23.6	24.3
8H	25.0	25.6	25.7	26.2	27.0	22.9	23.4	23.5	24.1	24.8
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 4816 lm Total Lamp Luminous Flux. (8log(F/F0) = 5.5)

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-36W-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	56	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	93	85	79	87	81	75	64
4.00	100	93	87	97	90	85	91	85	81	68
5.00	103	97	92	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

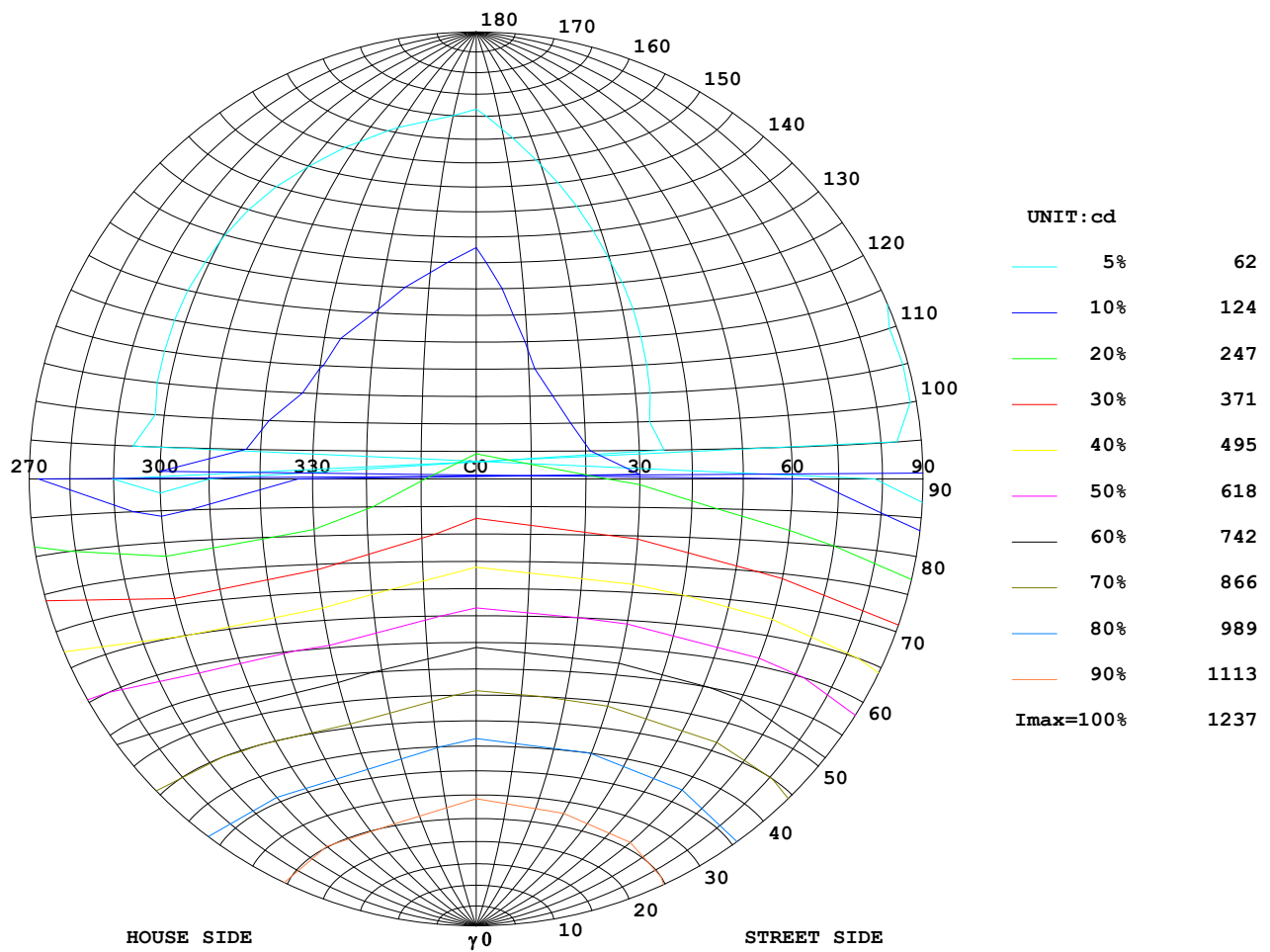
Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:11.000 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.5M-36W-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:

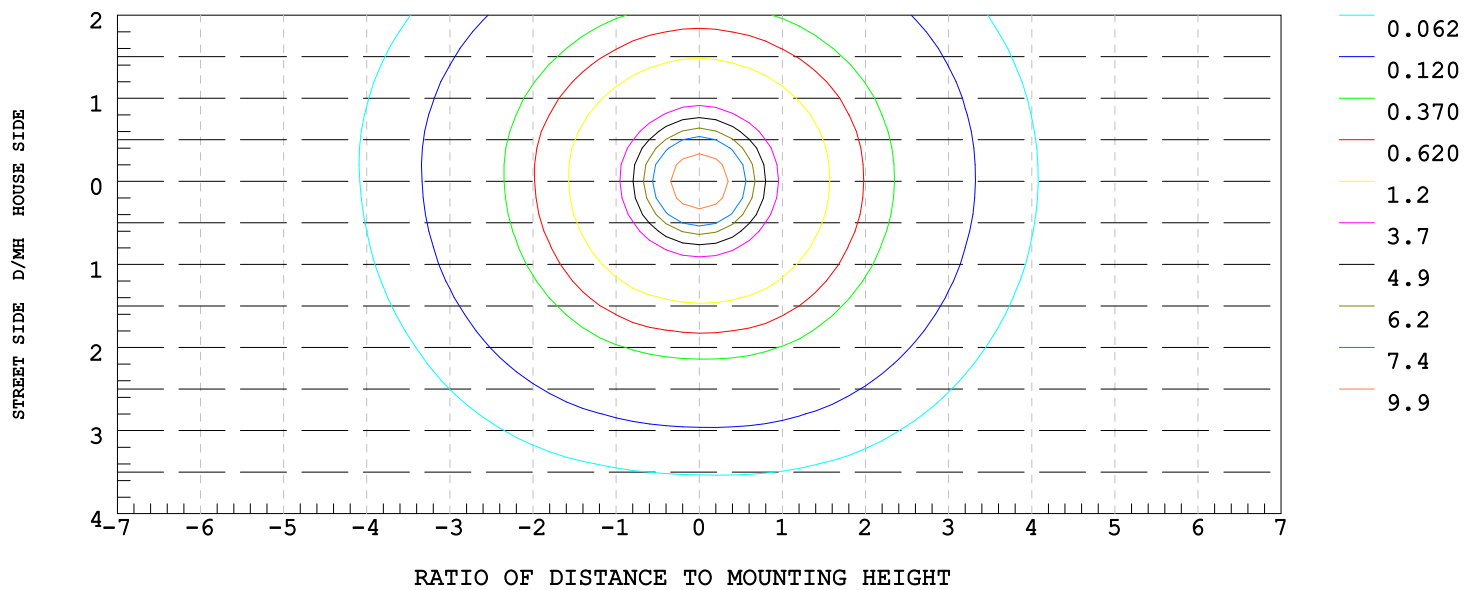
HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.5M-36W-5000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1500*152*52mm	SERIAL No.:

ILLUMINANCE AT MH=10 m, Enadir = 12.34 lx



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

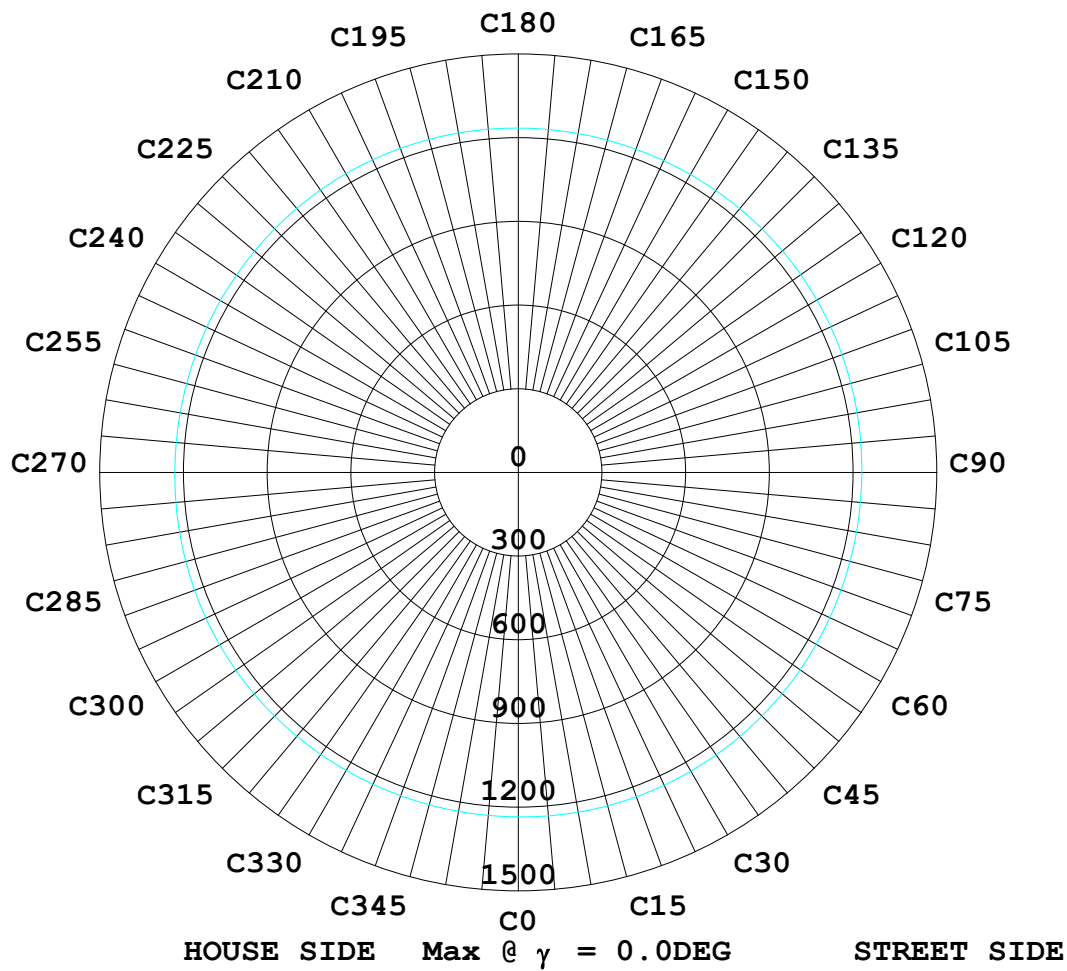
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.5M-36W-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: