

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

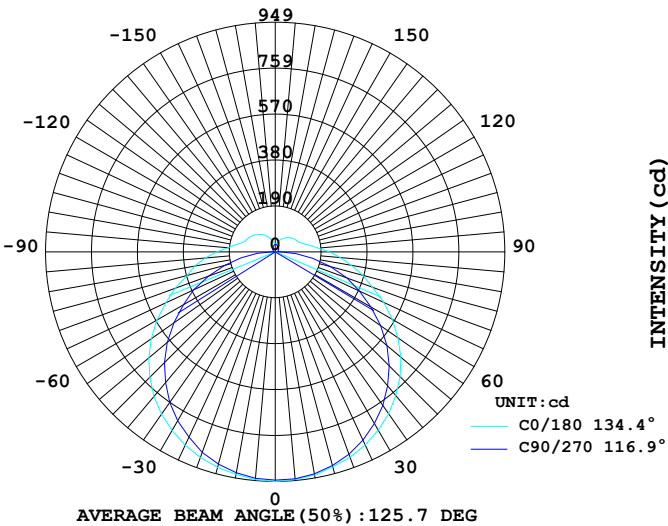
LUMINAIRE PHOTOMETRIC TEST REPORT

Report number:

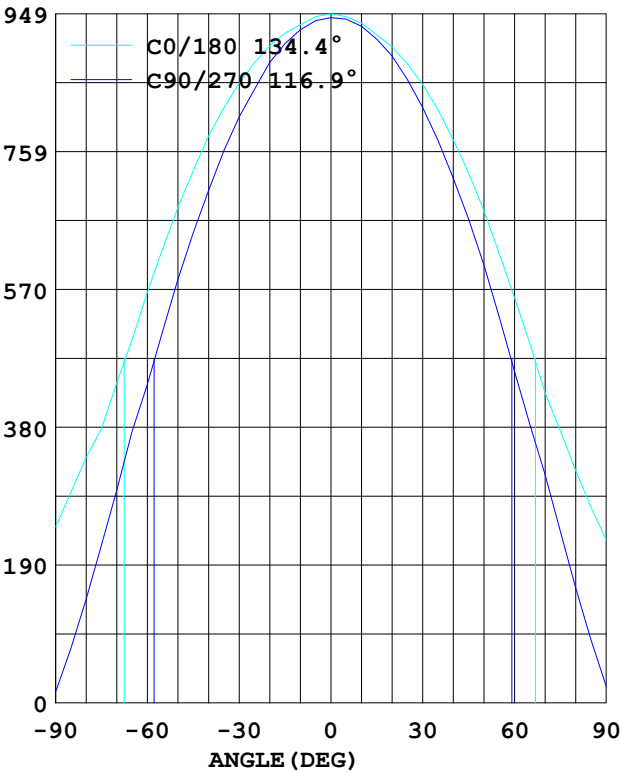
MANUFACTURER:		
Address:		
NAME: 1.2M-28W-4000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1200*152*52mm	SERIAL No.:

DATA OF LAMP		Imax(cd)	949.3	S/MH(C0/180)	1.34
MODEL		EFFICIENCY(%)	100.0	S/MH(C90/270)	1.27
NOMINAL POWER(W)	28	TOTAL FLUX(lm)	3725.0	Voltage(V)	220.1
RATED VOLTAGE(V)	220	EFFICIENCY(lm/W)	132.5	Current(A)	0.130
NOMINAL FLUX(lm)	3725.0	η up(%)	12.0	Power(W)	28.11
LAMPS QUANTITY	1	η down(%)	88.0	Power Factor(PF)	0.975
TEST VOLTAGE(V)	220.1	Effective Flux(lm)	3498.0	EEI	0.109

LUMINOUS INTENSITY DISTRIBUTION



LUMINOUS INTENSITY DISTRIBUTION



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

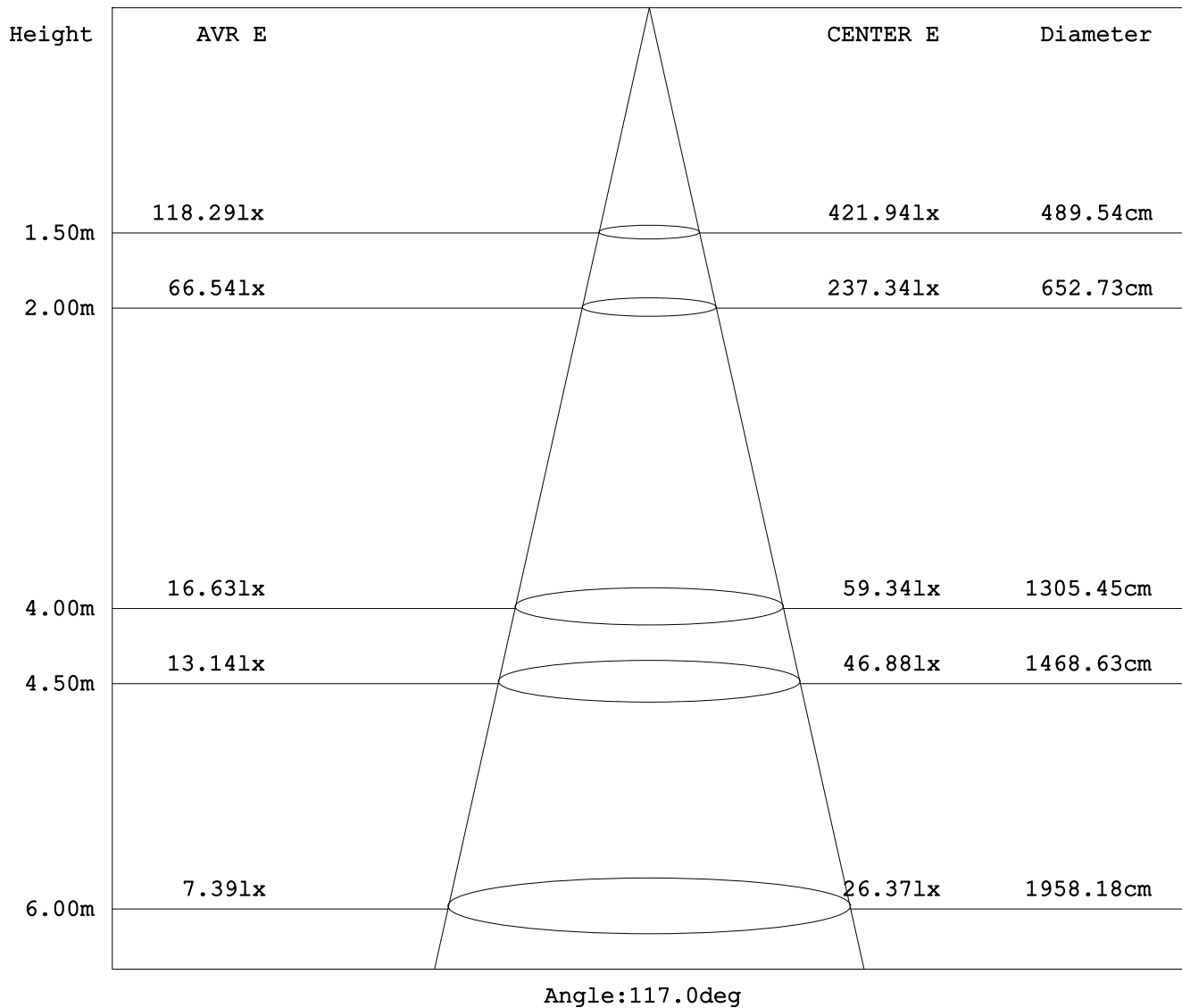
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

AVERAGE AND CENTER E Figure

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-28W-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-28W-4000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1200*152*52mm	SERIAL No.:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	zone	total
10.0	934.1	928.7	927.2	929.8	936.5	932.2	932.0	929.4	0- 10	89.50	89.50
20.0	904.7	888.8	882.2	892.2	903.6	894.4	891.0	892.6	10- 20	258.4	347.9
30.0	853.2	825.1	807.0	828.1	851.7	832.5	820.0	832.8	20- 30	398.9	746.8
40.0	780.8	739.0	705.5	745.6	775.6	746.5	722.6	749.2	30- 40	495.4	1242
50.0	682.6	631.6	583.7	639.7	678.3	640.6	603.5	645.1	40- 50	535.8	1778
60.0	565.7	504.3	438.8	512.9	558.6	513.1	457.2	519.0	50- 60	514.6	2293
70.0	441.1	376.8	293.1	389.0	427.6	377.3	314.9	389.1	60- 70	440.2	2733
80.0	338.1	248.6	143.1	256.7	320.4	251.1	159.1	267.5	70- 80	330.4	3063
90.0	242.4	146.8	15.24	155.5	224.4	147.8	22.50	167.5	80- 90	214.0	3277
100.0	169.1	83.79	4.719	86.21	148.8	82.58	10.28	98.67	90-100	120.9	3398
110.0	132.9	77.86	8.107	71.87	110.9	69.93	12.58	88.99	100-110	83.58	3482
120.0	122.9	74.47	9.196	65.58	98.61	66.00	15.85	84.33	110-120	70.80	3553
130.0	110.1	69.15	13.43	59.35	89.17	60.62	18.99	77.37	120-130	59.57	3612
140.0	94.25	60.92	16.45	49.24	77.92	53.48	22.02	68.00	130-140	46.60	3659
150.0	76.95	51.24	20.57	39.38	64.73	44.40	24.07	56.68	140-150	32.70	3692
160.0	57.59	41.62	24.80	32.60	50.45	35.99	26.25	44.70	150-160	20.11	3712
170.0	39.93	33.88	28.79	28.49	35.57	29.82	30.12	34.84	160-170	10.15	3722
180.0	33.39	30.18	31.58	30.31	33.03	30.31	31.82	30.43	170-180	3.009	3725
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:

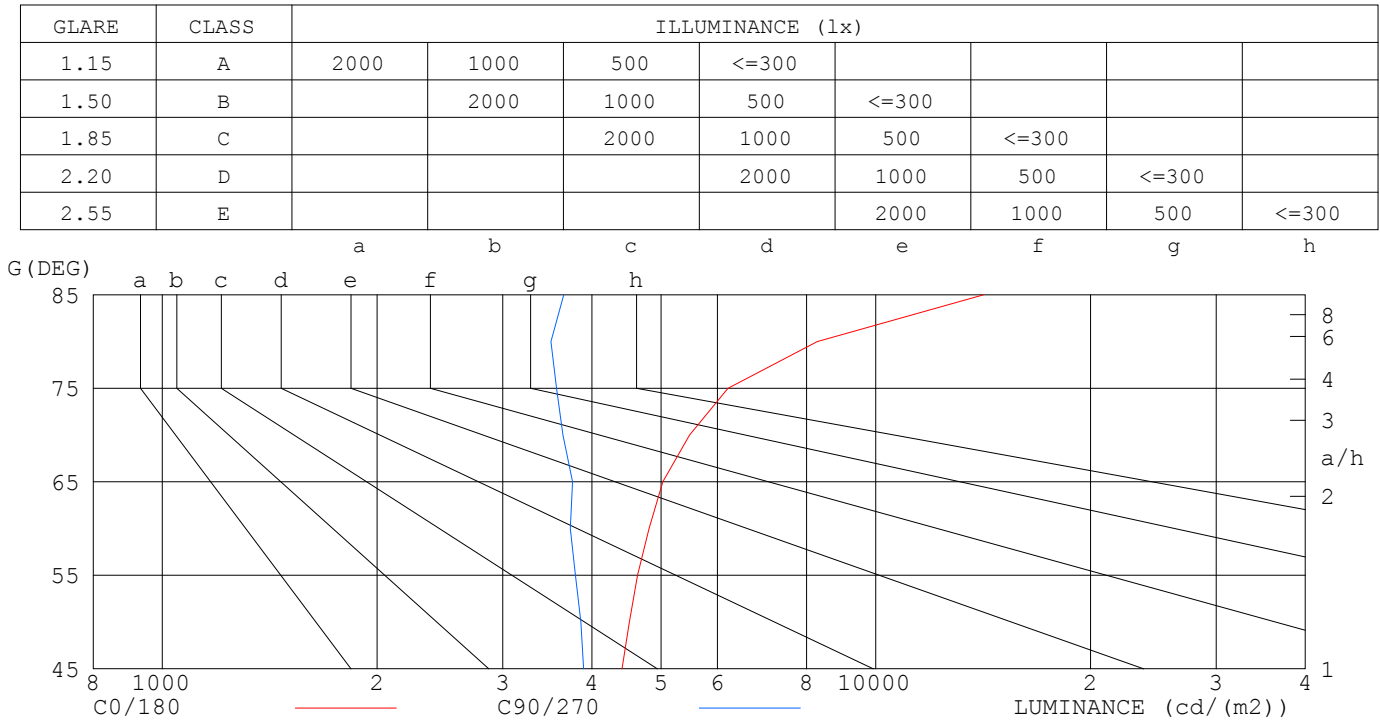
HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINANCE LIMITATION CURVES

Report number:

MANUFACTURER:					
Address:					
NAME: 1.2M-28W-4000K		TYPE:		WEIGHT:	
SPECIFICATION:		DIMENSION: 1200*152*52mm		SERIAL No.:	

LUMINANCE LIMITATION CURVES



LUMINANCE cd/ (m2)		
G (DEG)	C0/180	C90/270
85	14159	3653
80	8280	3504
75	6205	3570
70	5484	3644
65	5028	3759
60	4811	3732
55	4635	3793
50	4515	3861
45	4409	3895

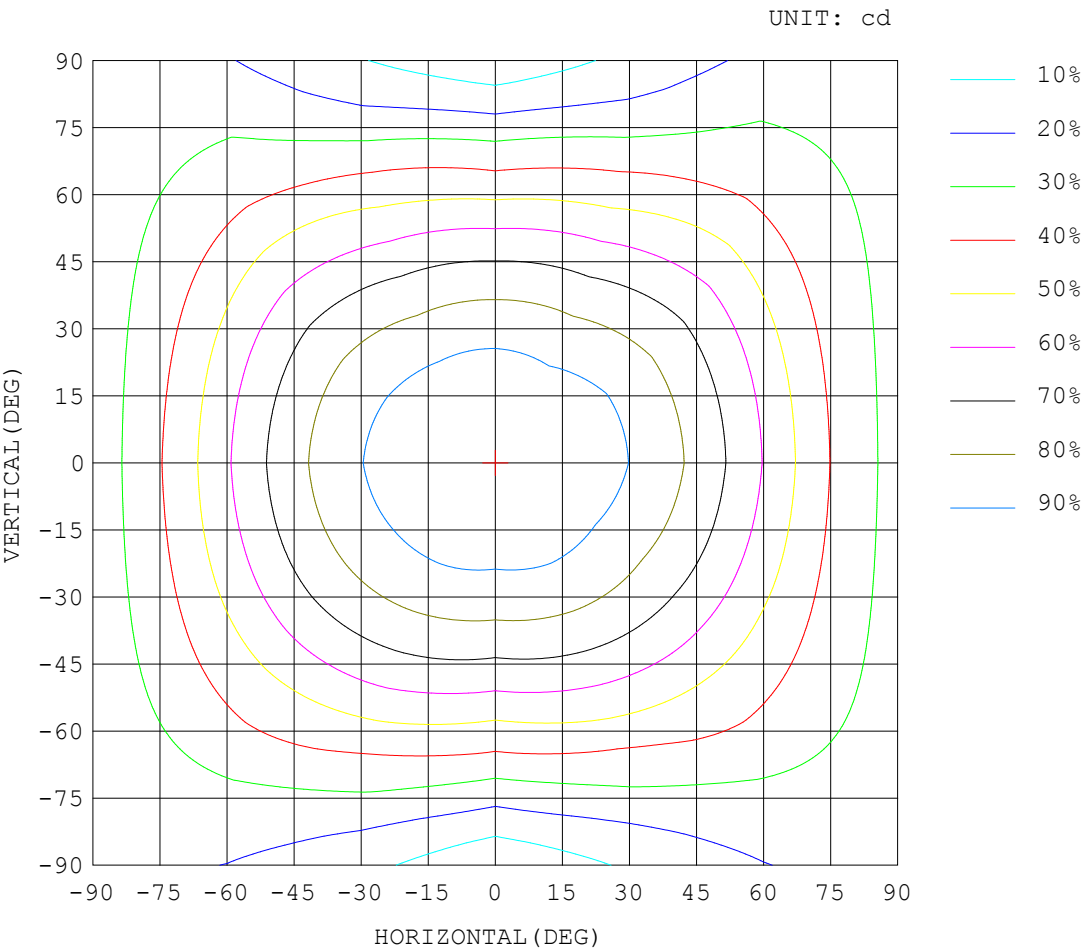
Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2022年12月1日

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-28W-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

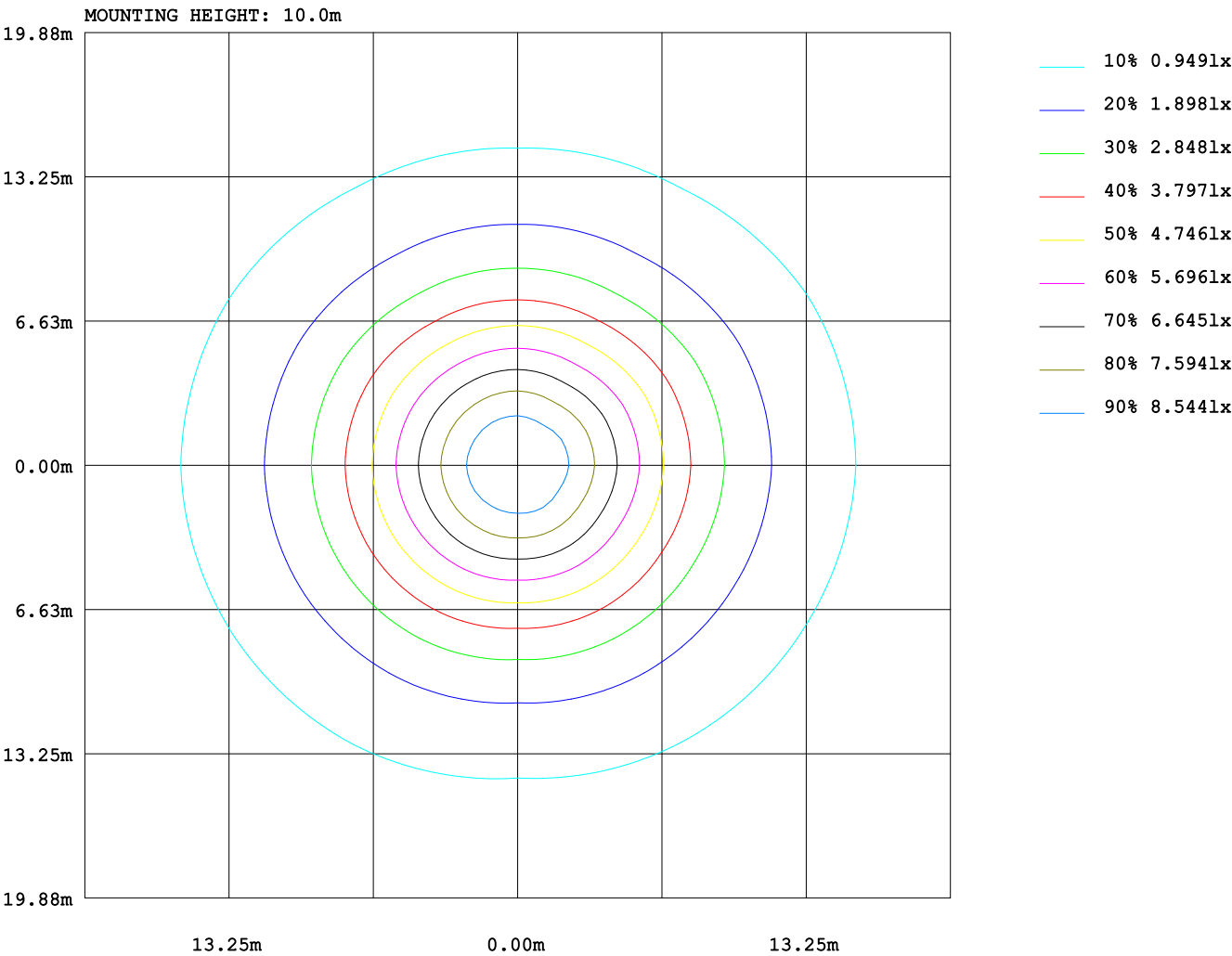
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-28W-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-28W-4000K									TYPE:					WEIGHT:				
SPECIFICATION:									DIMENSION: 1200*152*52mm					SERIAL No.:				

VERTICAL (DEG)	AREA FLUX DIAGRAM																		UNIT:lm		Φ t	Φ a
	0.59	1.75	2.85	3.63	3.90	3.83	3.64	3.40	2.97	3.06	3.66	4.05	4.29	4.31	3.97	3.10	1.90	0.64	55.6	52.2		
90	0.62	1.95	3.39	4.69	5.60	6.29	6.87	7.30	7.33	7.39	7.46	7.13	6.62	5.94	5.01	3.65	2.11	0.67	90.1	90.1		
80	0.65	2.15	3.93	5.76	7.49	9.16	10.5	11.5	11.8	11.8	11.5	10.5	9.35	7.76	6.03	4.16	2.31	0.70	127	127		
70	0.67	2.35	4.44	6.93	9.58	11.9	13.8	15.3	16.1	16.1	15.3	13.8	12.0	9.77	7.19	4.62	2.49	0.73	164	164		
60	0.70	2.52	4.97	8.11	11.4	14.4	17.0	19.0	20.1	20.0	19.0	17.0	14.6	11.6	8.35	5.13	2.65	0.75	198	198		
50	0.72	2.68	5.47	9.11	13.0	16.7	19.7	22.0	23.3	23.3	21.9	19.7	16.9	13.2	9.31	5.63	2.78	0.77	227	227		
40	0.74	2.81	5.89	9.88	14.2	18.4	21.9	24.4	25.8	25.7	24.3	22.0	18.6	14.4	10.0	6.02	2.90	0.79	249	249		
30	0.75	2.91	6.19	10.4	15.1	19.5	23.3	26.0	27.5	27.4	26.0	23.5	19.7	15.2	10.5	6.31	2.99	0.80	265	265		
-30	0.76	2.97	6.36	10.7	15.5	20.2	24.0	26.8	28.3	28.3	26.9	24.1	20.3	15.7	10.8	6.46	3.05	0.81	273	273		
	0.76	2.97	6.36	10.7	15.5	20.1	24.0	26.8	28.3	28.2	26.7	24.0	20.1	15.6	10.8	6.43	3.04	0.81	272	272		
	0.75	2.91	6.18	10.3	15.0	19.4	23.2	25.9	27.3	27.4	25.8	23.0	19.3	14.9	10.4	6.23	2.97	0.80	263	263		
	0.74	2.81	5.88	9.80	14.1	18.3	21.8	24.3	25.6	25.6	24.3	21.6	18.1	14.0	9.76	5.92	2.87	0.78	247	247		
-40	0.72	2.67	5.51	8.98	12.8	16.6	19.8	22.0	23.0	23.0	21.9	19.6	16.4	12.7	8.90	5.53	2.73	0.76	224	224		
-50	0.70	2.50	5.03	8.06	11.2	14.5	17.2	19.0	19.7	19.6	18.8	16.9	14.2	11.1	7.96	5.04	2.57	0.74	195	195		
-60	0.67	2.31	4.43	7.08	9.54	11.9	14.0	15.3	15.7	15.6	15.1	13.7	11.7	9.34	7.01	4.45	2.39	0.71	161	161		
-70	0.64	2.12	3.84	5.75	7.69	9.33	10.5	11.3	11.4	11.3	11.1	10.2	8.99	7.51	5.71	3.88	2.20	0.69	124	124		
-80	0.62	1.92	3.30	4.61	5.73	6.68	7.26	7.31	6.95	6.87	7.08	6.90	6.38	5.57	4.56	3.34	1.99	0.66	87.7	87.7		
-90	0.59	1.71	2.76	3.58	4.08	4.32	4.16	3.60	2.80	2.72	3.36	3.79	3.98	3.90	3.52	2.78	1.78	0.62	54.1	50.6		
-90 -80 -70 -60 -50 -40 -30 -20 HORIZONTAL (DEG) 20 30 40 50 60 70 80 90																						
Φ t	12.3	44.1	86.8	138	192	242	283	312	325	324	311	282	242	193	140	88.7	45.7	13.2	3725			
Φ a	12.3	44.1	86.8	138	192	242	283	311	323	322	310	282	242	193	140	88.7	45.7	13.2		3498		

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:

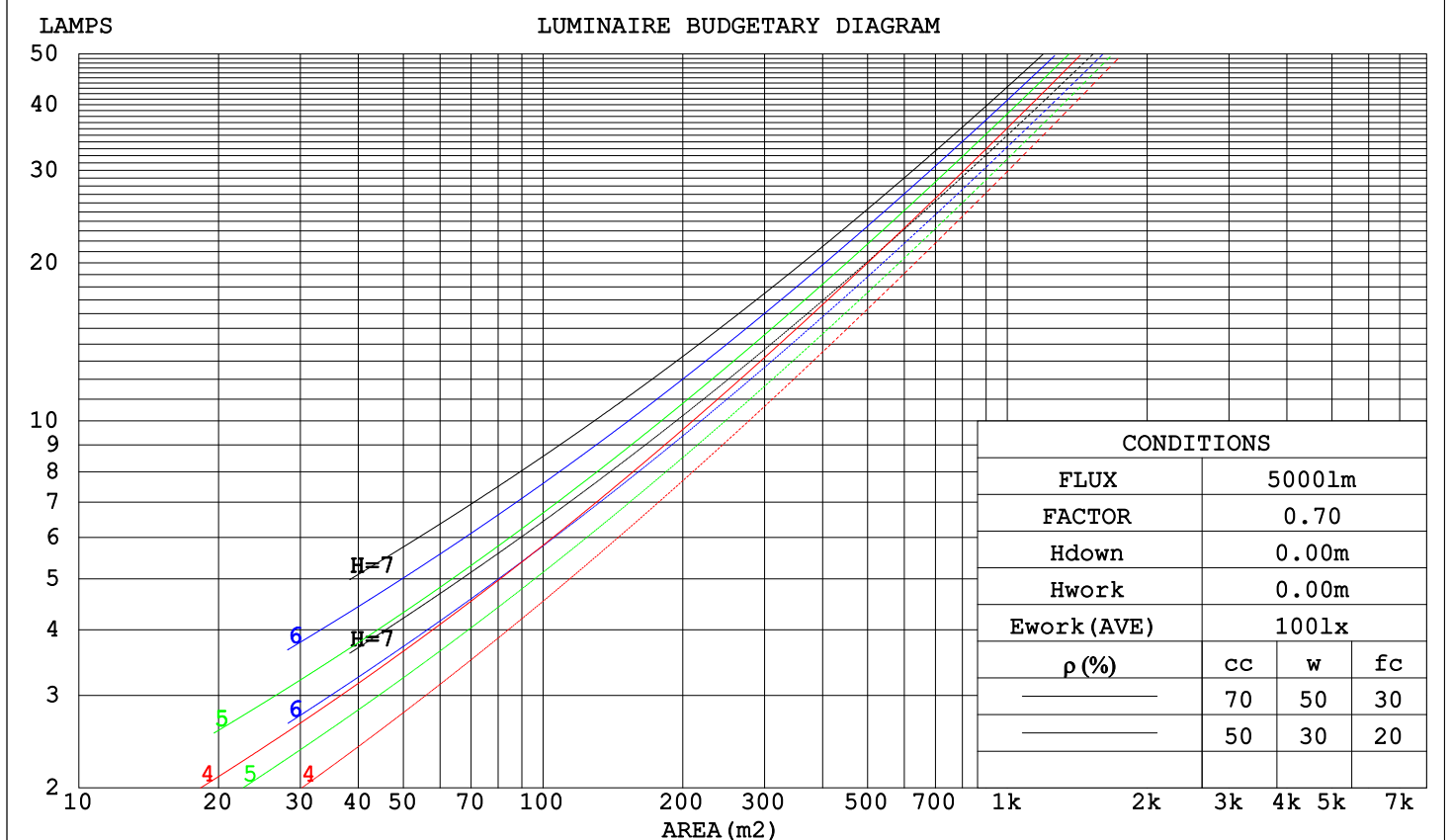
HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number:

MANUFACTURER:															
Address:															
NAME: 1.2M-28W-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-28W-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	.207	.065	.352	.201	.064	.332	.191	.061	.313	.181	.058	.296	.172	.055	
2.0	.322	.176	.054	.312	.172	.053	.294	.163	.051	.277	.155	.049	.261	.148	.047	
3.0	.289	.154	.046	.281	.150	.045	.264	.143	.043	.249	.136	.042	.235	.130	.040	
4.0	.262	.136	.040	.254	.133	.039	.240	.127	.038	.226	.121	.037	.213	.116	.035	
5.0	.240	.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	.176	.090	.026	.167	.087	.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	.166	.079	.022	.161	.078	.022	.153	.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	.282	.282	.282	.241	.241	.241	.165	.165	.165	.095	.095	.095	.030	.030	.030	
1.0	.276	.248	.222	.236	.213	.191	.162	.146	.132	.093	.085	.077	.030	.027	.025	
2.0	.269	.225	.187	.231	.193	.162	.158	.134	.113	.091	.078	.066	.029	.025	.022	
3.0	.262	.208	.165	.224	.179	.143	.154	.125	.100	.089	.073	.059	.029	.024	.019	
4.0	.254	.195	.150	.218	.169	.130	.150	.117	.092	.087	.069	.054	.028	.022	.018	
5.0	.246	.185	.140	.212	.160	.122	.146	.112	.086	.084	.066	.051	.027	.021	.017	
6.0	.239	.177	.133	.205	.153	.115	.142	.107	.082	.082	.063	.049	.027	.021	.016	
7.0	.232	.170	.127	.199	.148	.111	.138	.104	.079	.080	.061	.047	.026	.020	.015	
8.0	.225	.165	.123	.194	.143	.107	.134	.100	.076	.078	.059	.045	.025	.019	.015	
9.0	.219	.160	.120	.189	.139	.105	.131	.098	.074	.076	.058	.044	.025	.019	.015	
10.0	.213	.156	.117	.184	.135	.102	.128	.095	.073	.074	.056	.043	.024	.018	.014	

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-28W-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	17.5	18.9	17.9	19.3	19.8	16.7	18.1	17.1	18.6	19.0
3H	19.8	21.1	20.2	21.5	22.0	18.4	19.7	18.8	20.1	20.6
4H	20.9	22.1	21.4	22.6	23.1	19.1	20.3	19.6	20.8	21.3
6H	22.2	23.4	22.7	23.9	24.4	19.7	20.8	20.2	21.3	21.9
8H	22.9	24.1	23.4	24.6	25.1	19.9	21.0	20.4	21.5	22.0
12H	23.8	24.9	24.3	25.4	25.9	20.0	21.1	20.5	21.6	22.2
4H 2H	18.1	19.4	18.6	19.8	20.3	17.5	18.8	18.0	19.2	19.7
3H	20.6	21.7	21.1	22.2	22.7	19.4	20.5	19.9	21.0	21.5
4H	21.9	22.9	22.4	23.4	24.0	20.3	21.3	20.8	21.8	22.4
6H	23.4	24.3	24.0	24.8	25.5	21.0	21.9	21.6	22.5	23.1
8H	24.2	25.1	24.8	25.6	26.3	21.3	22.1	21.9	22.7	23.4
12H	25.2	26.0	25.8	26.6	27.2	21.5	22.3	22.1	22.9	23.6
8H 4H	22.2	23.1	22.8	23.6	24.3	20.9	21.7	21.5	22.3	22.9
6H	24.0	24.7	24.6	25.3	26.0	21.9	22.6	22.5	23.2	23.9
8H	25.0	25.6	25.6	26.3	27.0	22.3	23.0	23.0	23.6	24.3
12H	26.2	26.8	26.9	27.4	28.1	22.7	23.3	23.4	23.9	24.6
12H 4H	22.2	23.0	22.8	23.6	24.3	21.0	21.8	21.6	22.4	23.0
6H	24.1	24.7	24.7	25.3	26.0	22.2	22.8	22.8	23.4	24.1
8H	25.2	25.8	25.9	26.4	27.1	22.7	23.3	23.4	23.9	24.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.2					+ 0.3 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 3725 lm Total Lamp Luminous Flux. (8log(F/F0) = 4.6)

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-28W-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	74	65	58	48
2.00	87	77	70	85	75	68	80	72	66	55
2.50	92	82	75	89	80	74	83	76	71	59
3.00	95	87	80	92	85	78	86	80	75	63
4.00	100	93	87	96	90	85	90	85	81	68
5.00	103	97	91	99	94	89	93	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

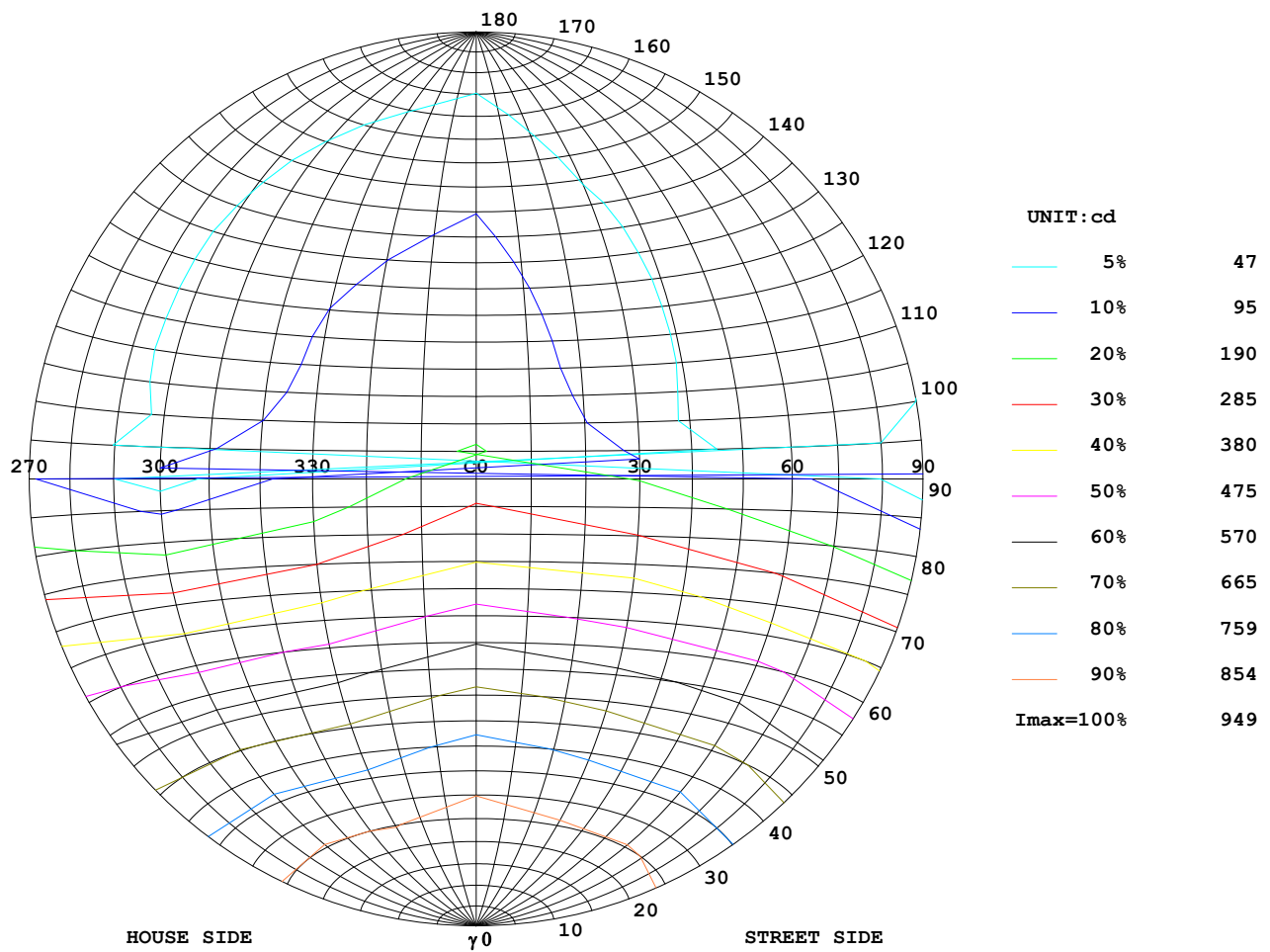
Test Set: 10.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:11.000 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-28W-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

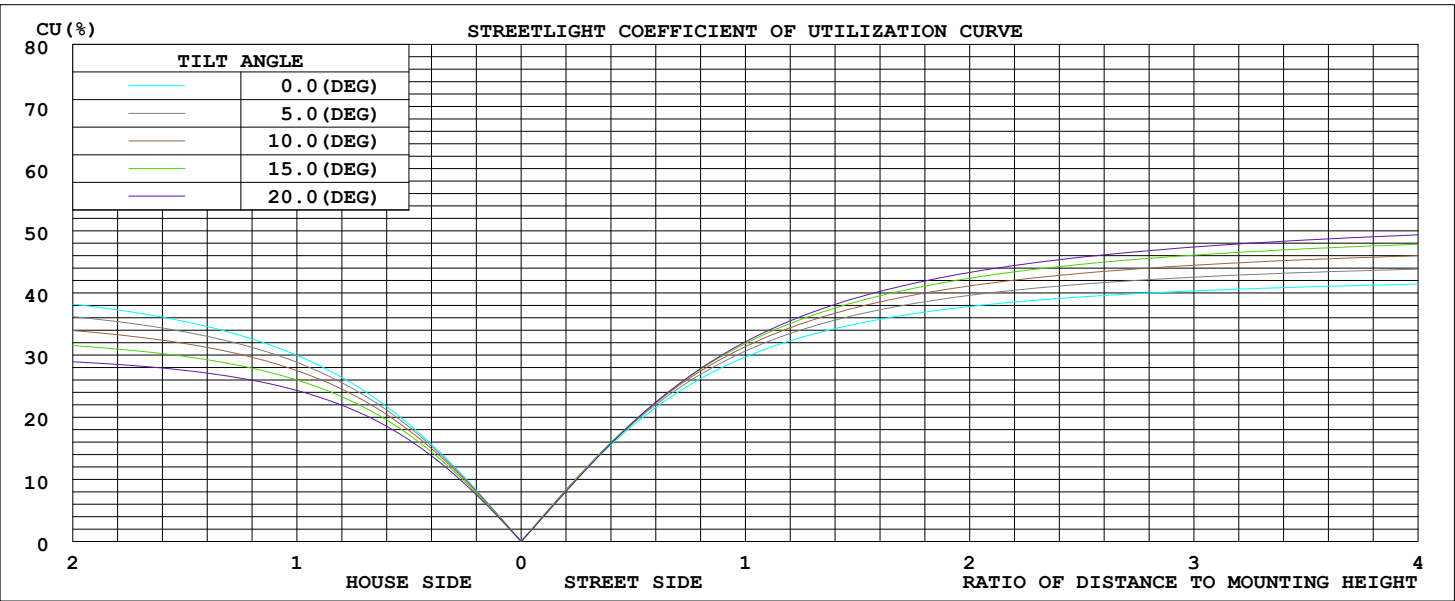
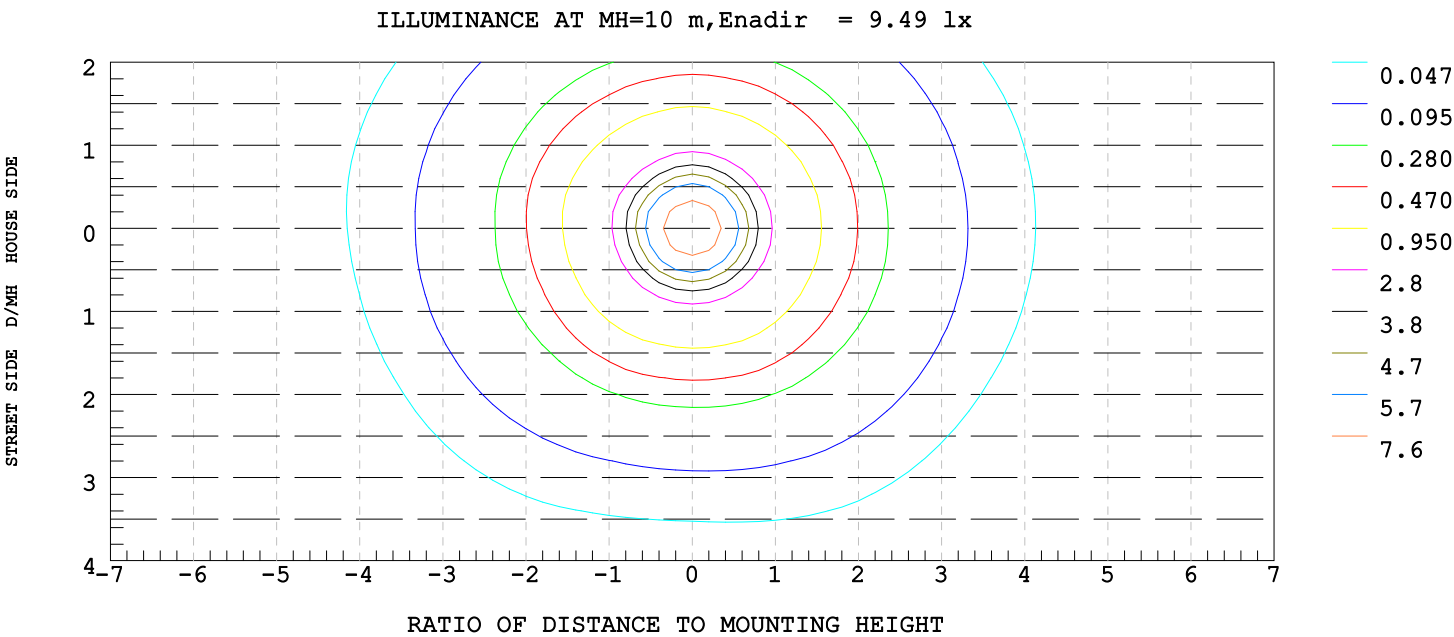
Test Set: 10.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-28W-4000K	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1200*152*52mm	SERIAL No.:



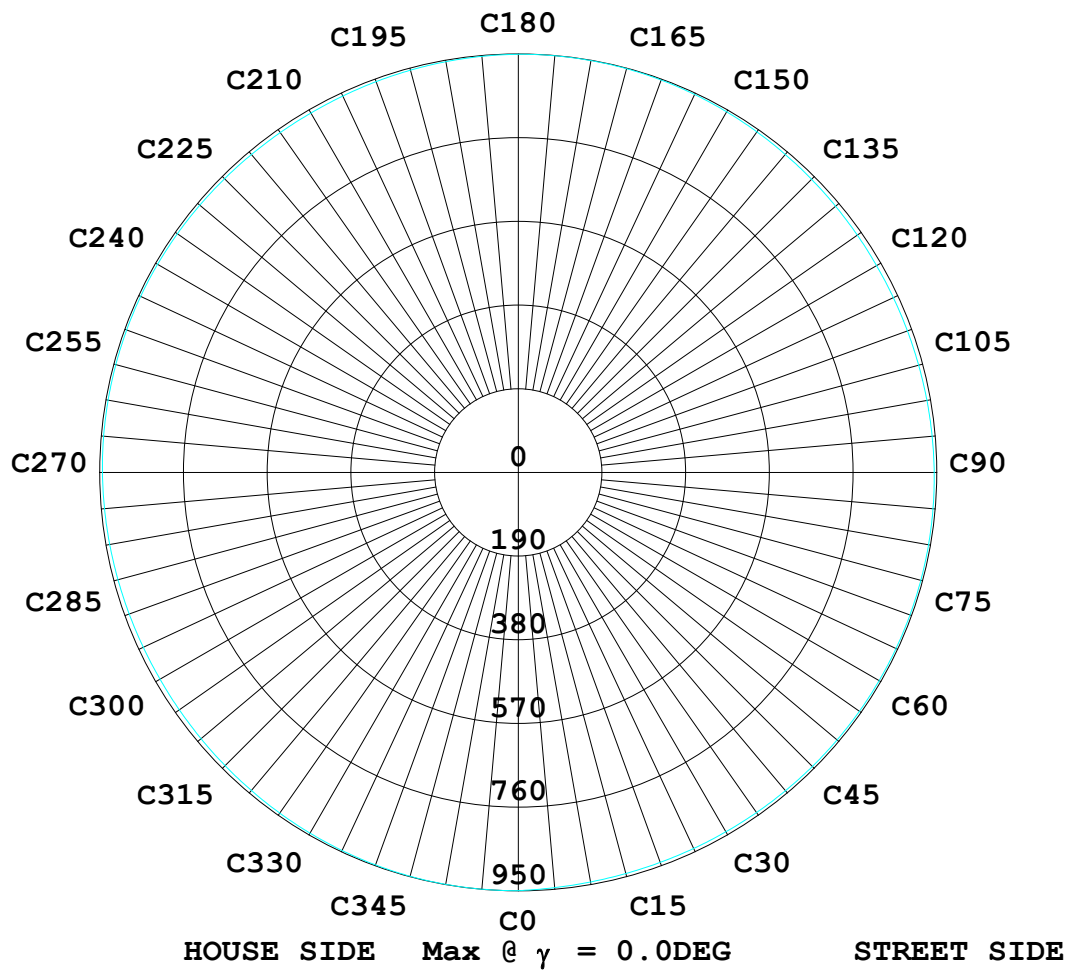
Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2022年12月1日

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

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME: 1.2M-28W-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: