

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

LAMP PHOTOMETRIC REPORT

MODEL: LRD-EGN-10W-50K-D

POWER: 10W

VOLTAGE: 120V

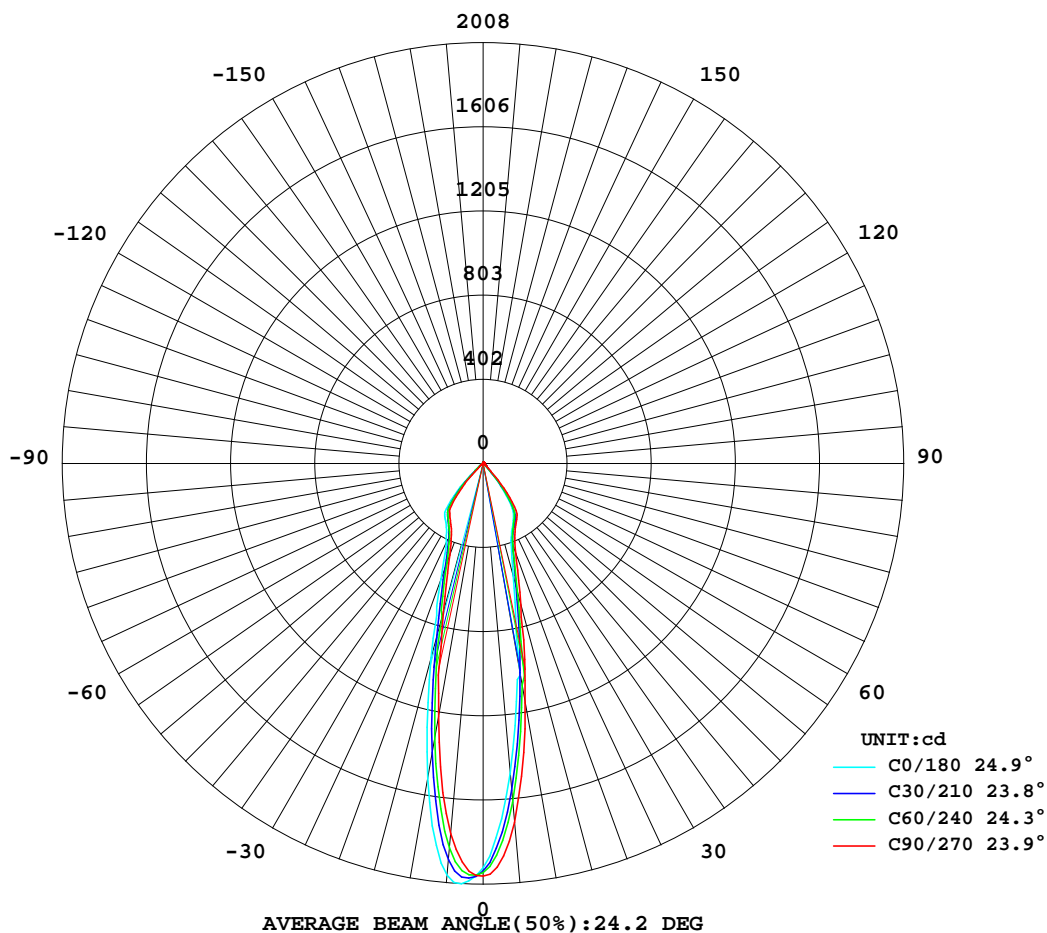
WORKING VOLTAGE: 120.4V

MANUFACTURER:

TOTAL FLUX: 786.37 lm

Efficiency: 81.489 lm/W

Test: U: 120.4V I: 0.081A P: 9.650W PF: 0.984



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2019年08月16日

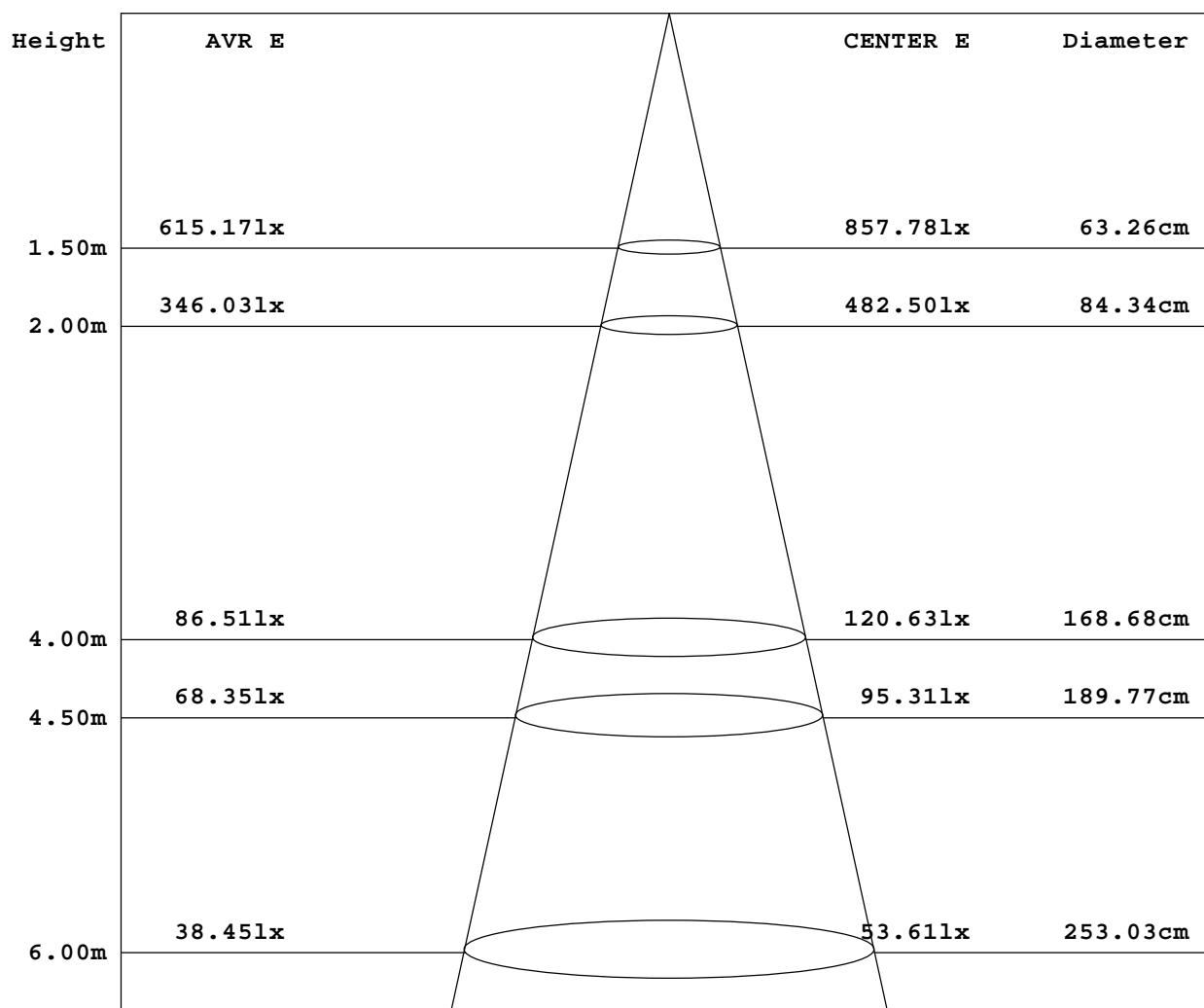
Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:5.900 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

AVERAGE AND CENTER E Figure

Report number:

MANUFACTURER:	Address:	
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:



Angle: 23.8deg

Test System: HOPOO HPG1800
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019年08月16日

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity: 65.0%
 Test Distance: 5.900 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ZONAL FLUX DIAGRAM

Report number:

MANUFACTURER:	Address:	
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:

g	C0	C45	C90	C135	C180	C225	C270	C315	g	zone	tBtal
5.0	1973	1870	1774	1735	1488	1595	1720	1771	0- 5	44.24	44.24
10.0	1524	1369	1227	1194	1026	1043	1160	1215	5- 10	104.1	148.3
15.0	965.3	808.5	733.3	719.4	555.3	620.0	701.6	723.7	10- 15	111.3	259.7
20.0	592.6	521.3	467.3	454.3	392.6	416.1	457.8	469.7	15- 20	95.12	354.8
25.0	417.5	384.3	359.0	358.2	333.3	343.5	361.7	368.4	20- 25	85.48	440.3
30.0	351.5	331.9	314.0	310.6	290.5	304.1	318.3	318.8	25- 30	85.74	526.0
35.0	318.4	295.5	279.6	272.6	213.8	239.0	274.2	284.5	30- 35	87.24	613.3
40.0	257.5	224.2	182.5	165.3	81.07	119.0	154.5	169.0	35- 40	75.09	688.4
45.0	130.9	95.22	55.27	47.09	23.04	32.47	52.11	47.77	40- 45	40.98	729.4
50.0	39.40	26.62	18.17	20.59	13.15	17.63	23.35	21.42	45- 50	14.51	743.9
55.0	19.63	15.40	11.13	13.34	8.876	12.30	15.83	13.80	50- 55	7.496	751.4
60.0	13.81	10.30	6.787	8.685	5.395	7.901	10.68	9.068	55- 60	5.222	756.6
65.0	9.120	6.457	4.107	5.552	3.515	5.134	7.031	5.674	60- 65	3.514	760.1
70.0	6.405	4.664	3.063	4.194	2.784	3.968	5.325	4.246	65- 70	2.506	762.6
75.0	5.151	3.829	2.541	3.463	2.367	3.550	4.803	3.776	70- 75	2.059	764.7
80.0	4.420	3.568	2.436	2.941	1.984	3.376	4.768	3.533	75- 80	1.892	766.6
85.0	3.863	3.393	2.401	2.506	1.810	3.359	4.664	3.359	80- 85	1.763	768.3
90.0	3.655	3.428	2.193	2.193	1.601	3.115	4.072	2.767	85- 90	1.677	770.0
95.0	3.202	2.715	1.287	1.792	1.531	2.784	2.924	2.106	90- 95	1.408	771.4
100.0	2.471	2.140	1.148	1.670	1.462	2.767	2.541	1.792	95-100	1.166	772.6
105.0	2.227	2.001	1.113	1.618	1.496	2.593	2.401	1.688	100-105	1.050	773.6
110.0	2.193	1.931	1.183	1.670	1.601	2.471	2.332	1.688	105-110	1.000	774.6
115.0	2.193	1.914	1.253	1.723	1.705	2.332	2.262	1.740	110-115	0.963	775.6
120.0	2.227	1.949	1.392	1.810	1.844	2.175	2.297	1.827	115-120	0.933	776.5
125.0	2.297	2.036	1.601	1.966	2.053	2.175	2.367	1.966	120-125	0.919	777.4
130.0	2.367	2.140	1.844	2.158	2.367	2.349	2.471	2.158	125-130	0.926	778.4
135.0	2.541	2.349	2.158	2.436	2.680	2.610	2.715	2.419	130-135	0.949	779.3
140.0	2.854	2.697	2.575	2.854	3.202	3.028	3.098	2.819	135-140	0.987	780.3
145.0	3.272	3.167	3.098	3.341	3.759	3.550	3.550	3.306	140-145	1.039	781.3
150.0	3.759	3.707	3.689	3.863	4.281	4.072	4.037	3.846	145-150	1.067	782.4
155.0	4.246	4.212	4.177	4.333	4.768	4.542	4.525	4.316	150-155	1.046	783.5
160.0	4.699	4.629	4.594	4.734	5.117	4.890	4.908	4.699	155-160	0.960	784.4
165.0	5.047	4.943	4.873	4.995	5.325	5.134	5.151	4.977	160-165	0.810	785.2
170.0	5.256	5.117	4.977	5.117	5.360	5.204	5.291	5.099	165-170	0.607	785.8
175.0	5.291	5.151	4.977	5.082	5.325	5.151	5.256	5.082	170-175	0.369	786.2
180.0	5.256	5.151	5.012	5.064	5.360	5.134	5.186	5.064	175-180	0.123	786.3
DEG	LUMINOUS INTENSITY:cd									UNIT:lm	

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2019年08月16日

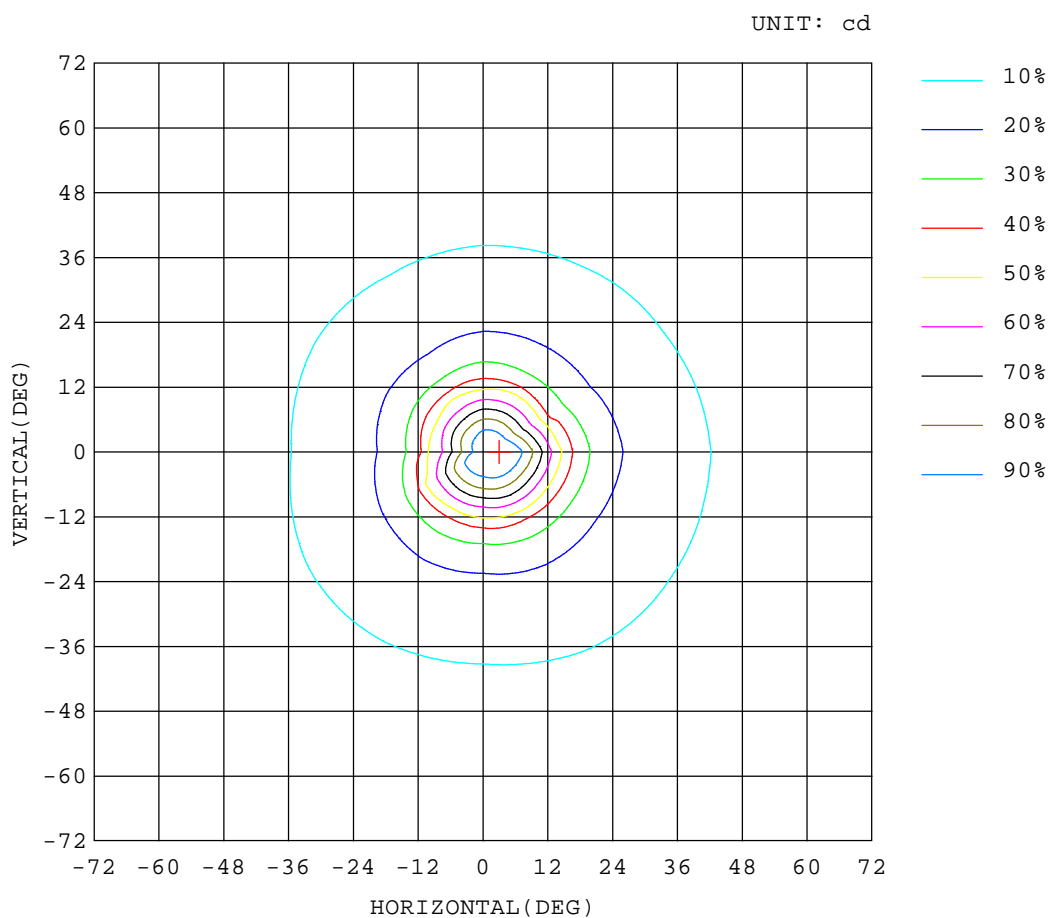
Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:5.900 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:	Address:	
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:



Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2019年08月16日

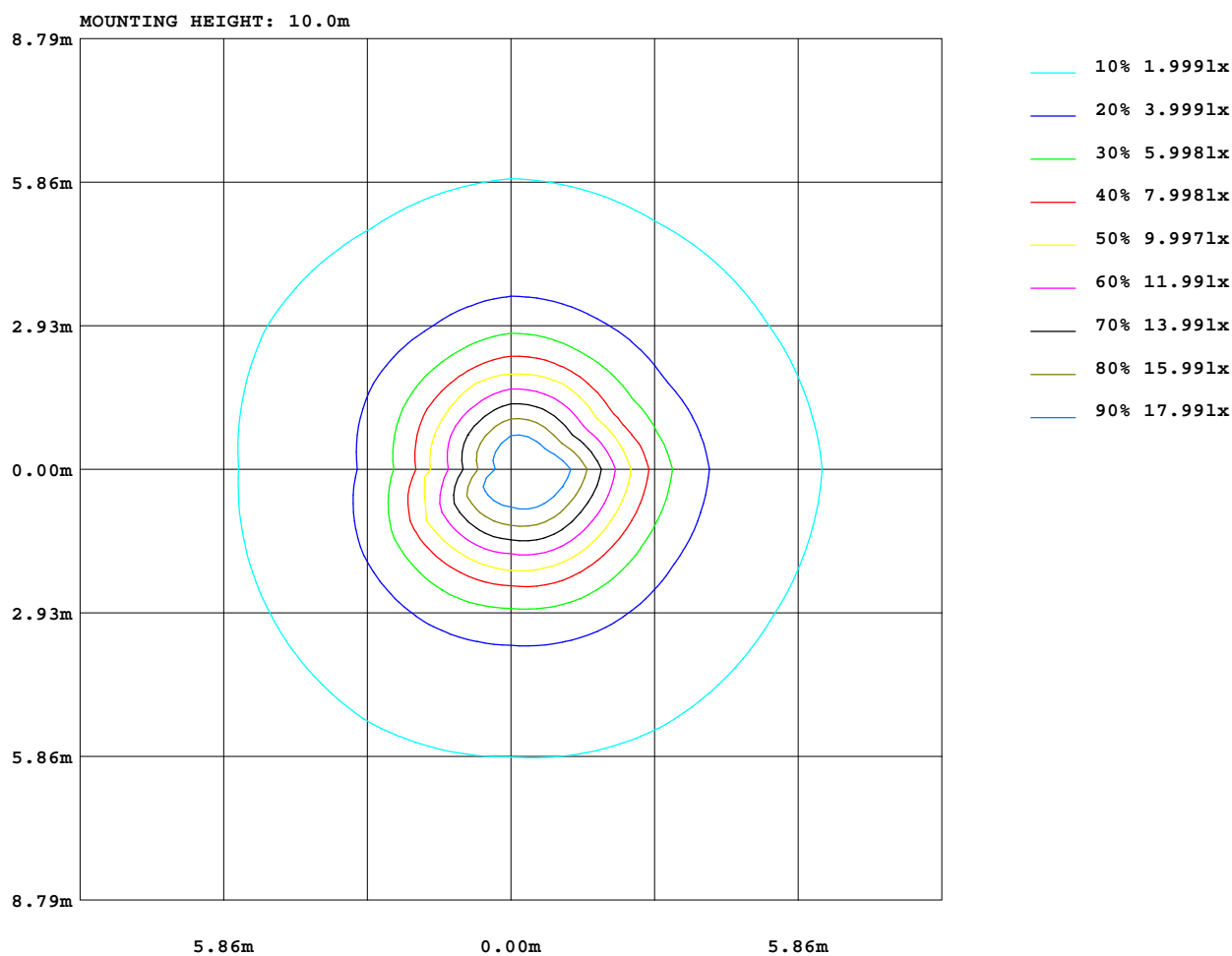
Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:5.900 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM

Report number:

MANUFACTURER:	Address:	
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:



Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2019年08月16日

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:5.900 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

AREA LUMINOUS FLUX

Report number:

MANUFACTURER:	Address:					
NAME:	TYPE:				WEIGHT:	
SPECIFICATION:	DIMENSION:				SERIAL No.:	

		AREA FLUX DIAGRAM																UNIT:lm		Φt	Φa
VERTICAL (DEG)	72	0.03	0.04	0.05	0.05	0.05	0.05	0.07	0.09	0.11	0.11	0.09	0.07	0.05	0.05	0.05	0.05	0.04	0.03	1.08	1.08
	64	0.03	0.04	0.05	0.06	0.07	0.08	0.11	0.16	0.19	0.20	0.16	0.12	0.09	0.08	0.07	0.06	0.05	0.03	1.63	1.63
	56	0.03	0.04	0.07	0.09	0.12	0.15	0.21	0.29	0.37	0.37	0.30	0.22	0.17	0.14	0.10	0.07	0.05	0.03	2.83	2.83
	48	0.03	0.05	0.08	0.14	0.21	0.28	0.43	0.84	1.29	1.38	1.02	0.54	0.33	0.23	0.16	0.10	0.06	0.04	7.21	7.21
	40	0.03	0.05	0.11	0.21	0.34	0.75	1.96	3.51	4.53	4.68	4.02	2.70	1.21	0.45	0.24	0.14	0.07	0.04	25.0	25.0
	32	0.03	0.06	0.13	0.27	0.73	2.49	4.58	5.72	6.35	6.43	5.96	5.16	3.49	1.28	0.39	0.18	0.09	0.04	43.4	43.4
	24	0.03	0.06	0.15	0.35	1.61	4.31	5.84	6.99	8.61	8.92	7.53	6.18	5.04	2.87	0.79	0.23	0.11	0.05	59.7	59.7
		0.03	0.06	0.15	0.45	2.51	5.10	6.72	10.2	16.6	17.7	11.7	7.55	5.71	4.11	1.46	0.30	0.12	0.05	90.7	90.7
		0.02	0.06	0.15	0.51	2.94	5.31	7.38	14.4	28.4	32.0	20.0	10.0	6.28	4.70	2.04	0.37	0.13	0.05	135	135
		0.02	0.06	0.14	0.55	3.02	5.31	7.57	15.9	30.5	33.8	21.6	10.3	6.32	4.75	2.11	0.37	0.13	0.05	143	143
		0.02	0.05	0.14	0.51	2.82	5.10	6.96	11.5	18.1	19.3	13.3	8.03	5.80	4.32	1.61	0.29	0.12	0.05	98.1	98.1
	-24	0.02	0.05	0.12	0.34	2.11	4.62	6.00	7.54	9.09	9.38	8.05	6.43	5.21	3.37	0.92	0.22	0.10	0.04	63.6	63.6
	-32	0.02	0.04	0.10	0.22	0.99	3.28	5.12	6.01	6.41	6.48	6.20	5.52	4.17	1.81	0.39	0.16	0.08	0.04	47.0	47.0
	-40	0.02	0.04	0.08	0.16	0.36	1.23	2.95	4.32	4.93	5.04	4.72	3.71	1.92	0.58	0.21	0.11	0.06	0.03	30.5	30.5
	-48	0.02	0.03	0.06	0.12	0.22	0.39	0.73	1.25	1.65	1.77	1.54	1.00	0.50	0.26	0.15	0.07	0.04	0.03	9.83	9.83
	-56	0.02	0.03	0.04	0.08	0.14	0.22	0.29	0.31	0.31	0.32	0.34	0.32	0.25	0.17	0.10	0.05	0.04	0.03	3.04	3.04
-64	0.01	0.02	0.04	0.06	0.09	0.13	0.15	0.16	0.15	0.15	0.17	0.17	0.15	0.10	0.07	0.04	0.03	0.02	1.70	1.70	
-72	0.01	0.02	0.03	0.05	0.07	0.09	0.09	0.08	0.07	0.08	0.09	0.10	0.10	0.08	0.05	0.04	0.03	0.02	1.09	1.09	
		-72	-64	-56	-48	-40	-32	-24	-16	HORIZONTAL (DEG)	16	24	32	40	48	56	64	72			
Φt	0.40	0.79	1.68	4.22	18.4	38.9	57.2	89.4	138	148	107	68.2	46.8	29.3	10.9	2.86	1.35	0.69	786		
Φa	0.40	0.79	1.68	4.22	18.4	38.9	57.2	89.4	138	148	107	68.2	46.8	29.3	10.9	2.86	1.35	0.69		786	

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2019年08月16日

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:5.900 m
 Remarks:

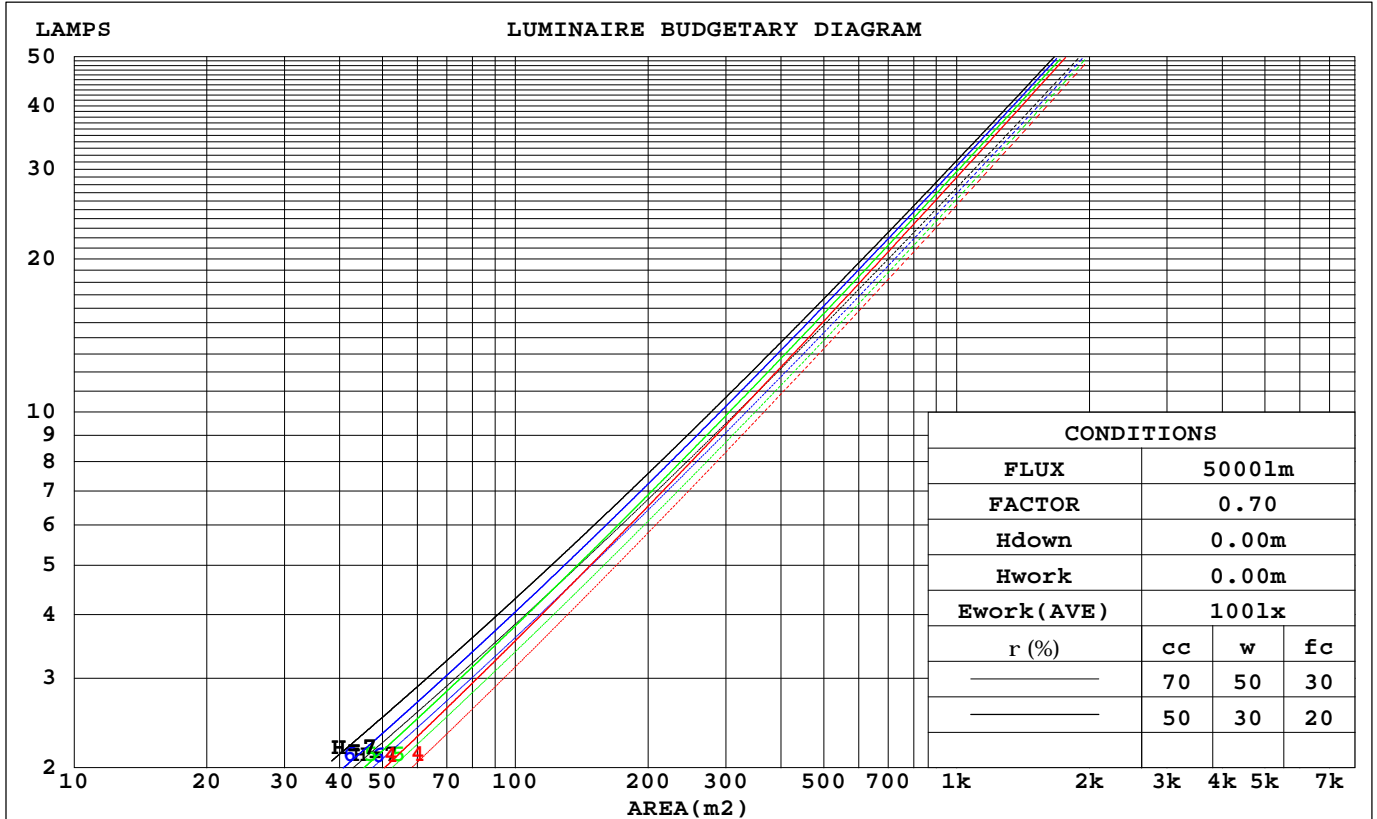
HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number:

MANUFACTURER:				Address:							
NAME:				TYPE:				WEIGHT:			
SPECIFICATION:				DIMENSION:				SERIAL No.:			

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
r fc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.10	1.10	1.10	1.05	1.05	1.05	1.00	1.00	1.00	.98
1.0	1.10	1.08	1.05	1.08	1.05	1.03	1.03	1.01	.00	.99	.98	.96	.95	.94	.93	.91
2.0	1.02	.98	.95	1.01	.97	.94	.97	.94	.91	.94	.91	.89	.91	.89	.87	.85
3.0	.96	.91	.87	.94	.90	.86	.91	.87	.84	.89	.85	.83	.86	.83	.81	.80
4.0	.90	.84	.80	.88	.83	.79	.86	.82	.78	.84	.80	.77	.82	.79	.76	.75
5.0	.84	.79	.74	.83	.78	.74	.81	.77	.73	.79	.75	.72	.78	.74	.71	.70
6.0	.79	.74	.69	.79	.73	.69	.77	.72	.69	.75	.71	.68	.74	.70	.67	.66
7.0	.75	.69	.65	.74	.69	.65	.73	.68	.64	.72	.67	.64	.70	.66	.64	.62
8.0	.71	.65	.61	.71	.65	.61	.69	.64	.61	.68	.64	.61	.67	.63	.60	.59
9.0	.68	.62	.58	.67	.62	.58	.66	.61	.58	.65	.61	.57	.64	.60	.57	.56
10.0	.64	.59	.55	.64	.59	.55	.63	.58	.55	.62	.58	.55	.61	.57	.54	.53



Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2019年08月16日

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:5.900 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

WEC AND CCEC

Report number:

MANUFACTURER:	Address:					
NAME:	TYPE:			WEIGHT:		
SPECIFICATION:	DIMENSION:			SERIAL No.:		

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.182	.103	.033	.174	.099	.032	.160	.092	.029	.148	.085	.027	.136	.079	.025	
2.0	.172	.094	.029	.165	.091	.028	.154	.085	.027	.143	.080	.025	.133	.075	.024	
3.0	.162	.086	.026	.157	.084	.025	.147	.079	.024	.137	.075	.023	.129	.071	.022	
4.0	.153	.080	.023	.149	.078	.023	.140	.074	.022	.132	.071	.021	.124	.068	.021	
5.0	.145	.074	.021	.141	.073	.021	.134	.070	.020	.126	.067	.020	.120	.064	.019	
6.0	.138	.069	.020	.134	.068	.020	.128	.065	.019	.121	.063	.019	.115	.061	.018	
7.0	.131	.065	.018	.128	.064	.018	.122	.062	.018	.116	.060	.017	.111	.058	.017	
8.0	.125	.061	.017	.122	.060	.017	.117	.058	.017	.112	.057	.016	.107	.055	.016	
9.0	.119	.058	.016	.117	.057	.016	.112	.055	.016	.107	.054	.015	.103	.052	.015	
10.0	.114	.055	.015	.112	.054	.015	.107	.053	.015	.103	.051	.015	.099	.050	.014	

rcc	80%			70%			50%			30%			10%			0
rw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
rfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.206	.206	.206	.176	.176	.176	.120	.120	.120	.069	.069	.069	.022	.022	.022	
1.0	.187	.173	.160	.160	.149	.138	.110	.102	.096	.063	.059	.056	.020	.019	.018	
2.0	.172	.149	.129	.148	.128	.111	.101	.088	.078	.058	.051	.045	.019	.017	.015	
3.0	.160	.130	.106	.137	.112	.092	.094	.078	.064	.054	.045	.038	.017	.015	.012	
4.0	.149	.115	.089	.128	.099	.077	.088	.069	.054	.051	.041	.032	.016	.013	.011	
5.0	.141	.103	.076	.121	.090	.066	.083	.063	.047	.048	.037	.028	.016	.012	.009	
6.0	.133	.094	.066	.114	.082	.058	.079	.057	.041	.046	.034	.024	.015	.011	.008	
7.0	.126	.087	.059	.109	.075	.051	.075	.053	.036	.044	.031	.022	.014	.010	.007	
8.0	.120	.080	.053	.104	.070	.046	.072	.049	.033	.042	.029	.019	.013	.009	.006	
9.0	.115	.075	.048	.099	.065	.042	.069	.046	.030	.040	.027	.018	.013	.009	.006	
10.0	.110	.071	.044	.095	.061	.039	.066	.043	.027	.038	.026	.016	.012	.008	.005	

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2019年08月16日

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:5.900 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

Uncorrected UGR Table

Report number:

MANUFACTURER:					Address:					
NAME:					TYPE:			WEIGHT:		
SPECIFICATION:					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	23.3	24.2	23.6	24.4	24.6	22.4	23.3	22.7	23.5	23.7
3H	23.2	24.0	23.5	24.3	24.5	22.3	23.1	22.6	23.4	23.6
4H	23.2	24.0	23.5	24.2	24.5	22.2	23.0	22.6	23.3	23.6
6H	23.2	23.9	23.5	24.2	24.5	22.2	23.0	22.5	23.2	23.5
8H	23.2	23.9	23.5	24.2	24.5	22.2	22.9	22.5	23.2	23.5
12H	23.2	23.9	23.6	24.2	24.5	22.2	22.9	22.6	23.2	23.5
4H 2H	23.1	23.9	23.4	24.1	24.4	22.2	23.0	22.5	23.3	23.5
3H	23.0	23.7	23.3	24.0	24.3	22.1	22.8	22.5	23.1	23.4
4H	22.9	23.6	23.3	23.9	24.3	22.1	22.7	22.5	23.1	23.4
6H	23.0	23.5	23.4	23.9	24.3	22.1	22.7	22.5	23.0	23.4
8H	23.0	23.5	23.5	23.9	24.3	22.1	22.6	22.6	23.0	23.4
12H	23.1	23.6	23.6	24.0	24.4	22.2	22.7	22.6	23.1	23.5
8H 4H	22.8	23.3	23.3	23.7	24.1	22.0	22.5	22.4	22.9	23.3
6H	22.9	23.3	23.3	23.7	24.2	22.1	22.5	22.6	22.9	23.4
8H	23.0	23.3	23.5	23.8	24.3	22.2	22.6	22.7	23.0	23.5
12H	23.2	23.5	23.7	24.0	24.5	22.4	22.7	22.9	23.2	23.7
12H 4H	22.8	23.3	23.2	23.7	24.1	21.9	22.4	22.4	22.8	23.3
6H	22.9	23.2	23.3	23.7	24.2	22.1	22.4	22.6	22.9	23.4
8H	23.0	23.3	23.5	23.8	24.3	22.2	22.6	22.7	23.0	23.6
Variations with the observer position at spacings:										
S = 1.0H	+ 2.4 / - 6.3					+ 2.2 / - 6.0				
1.5H	+ 4.4 / - 6.7					+ 4.5 / - 6.0				
2.0H	+ 6.8 / - 3.4					+ 3.2 / - 1.8				

CIE Pub.117 Corrected 786.3 lm Total Lamp Luminous Flux. (8log(F/F0) = -0.8)

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2019年08月16日

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:5.900 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

UTILIZATION FACTORS TABLE

Report number:

MANUFACTURER:	Address:		
NAME:	TYPE:	WEIGHT:	
SPECIFICATION:	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) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	73	83	77	73	82	76	72	69
0.80	92	85	81	91	85	81	89	84	80	76
1.00	96	90	86	95	90	86	94	90	85	81
1.25	101	95	91	100	94	91	97	93	90	85
1.50	104	98	95	102	98	94	100	96	93	88
2.00	107	102	99	105	101	98	102	99	96	90
2.50	109	104	101	107	103	100	103	100	98	91
3.00	110	107	103	108	105	102	105	102	100	93
4.00	112	109	107	110	108	105	106	104	102	95
5.00	114	111	109	111	109	107	107	105	104	96
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:2019年08月16日

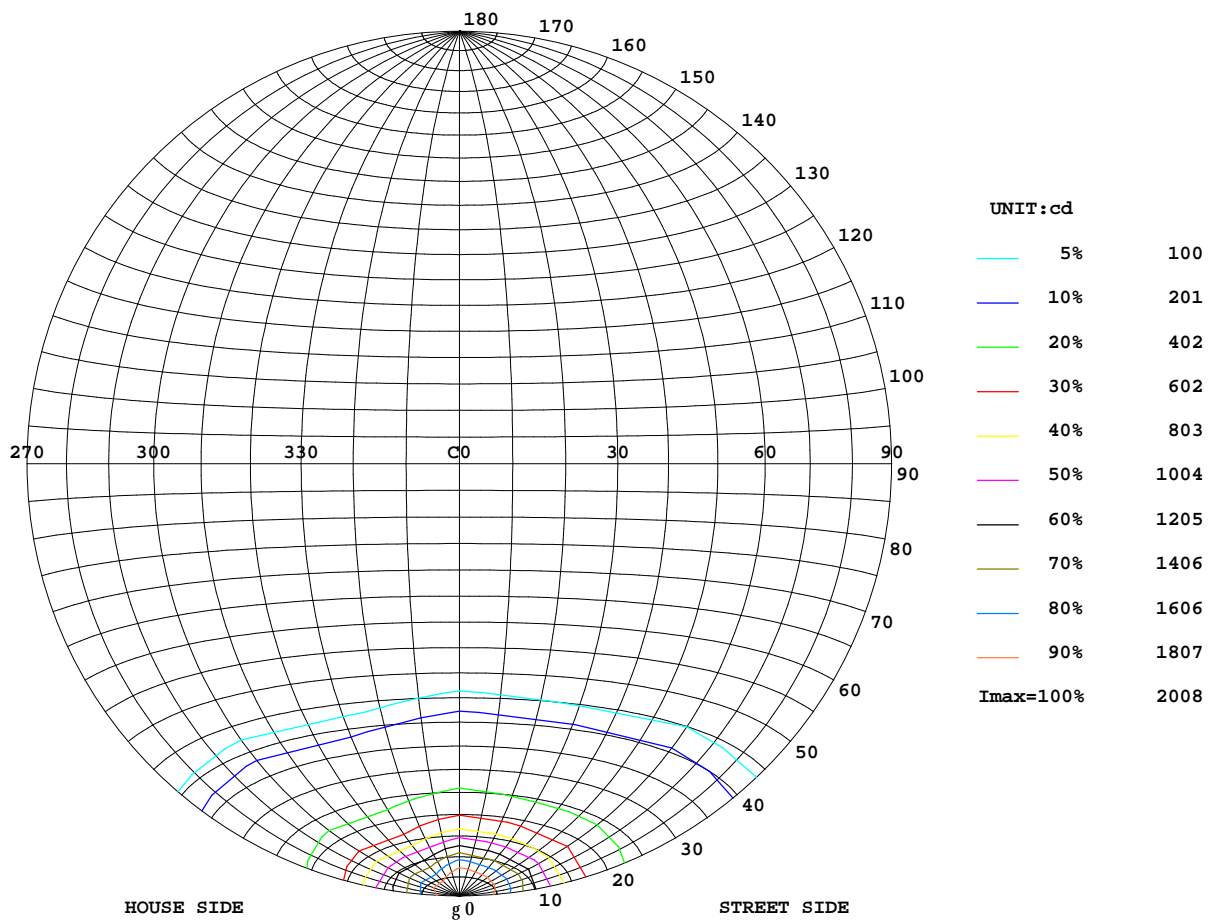
Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:5.900 m
 Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:	Address:		
NAME:	TYPE:	WEIGHT:	
SPECIFICATION:	DIMENSION:	SERIAL No.:	



Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2019年08月16日

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:5.900 m
 Remarks: