

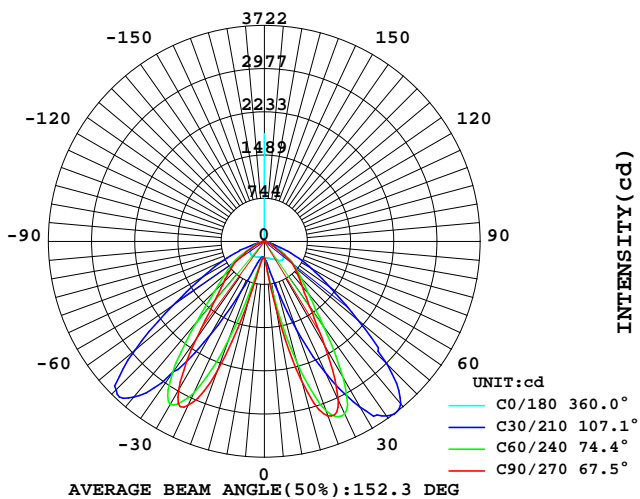
LUMINAIRE PHOTOMETRIC TEST REPORT

Report number:

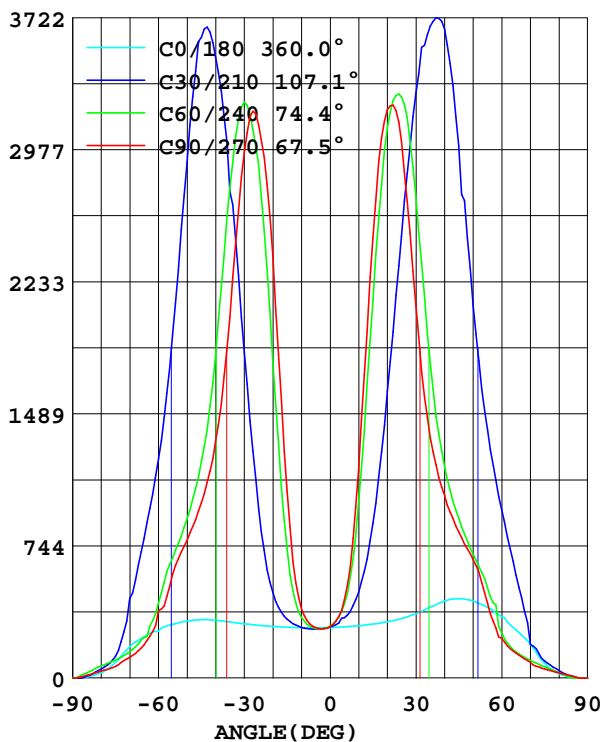
MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1150*65mm	SERIAL No.:

DATA OF LAMP		I _{max} (cd)	3722	S/MH(C0/180)	1.72
MODEL		EFFICIENCY(%)	100.0	S/MH(C90/270)	2.19
NOMINAL POWER(W)	34	TOTAL FLUX(lm)	5230.9	Voltage(V)	218.8
RATED VOLTAGE(V)	218	EFFICIENCY(lm/W)	155.8	Current(A)	0.163
NOMINAL FLUX(lm)	5231.0	h up(%)	0.0	Power(W)	33.58
LAMPS QUANTITY	1	h down(%)	100.0	Power Factor(PF)	0.939
TEST VOLTAGE(V)	218.8	Effective Flux(lm)	4824.3	EEI	0.095

LUMINOUS INTENSITY DISTRIBUTION



LUMINOUS INTENSITY DISTRIBUTION



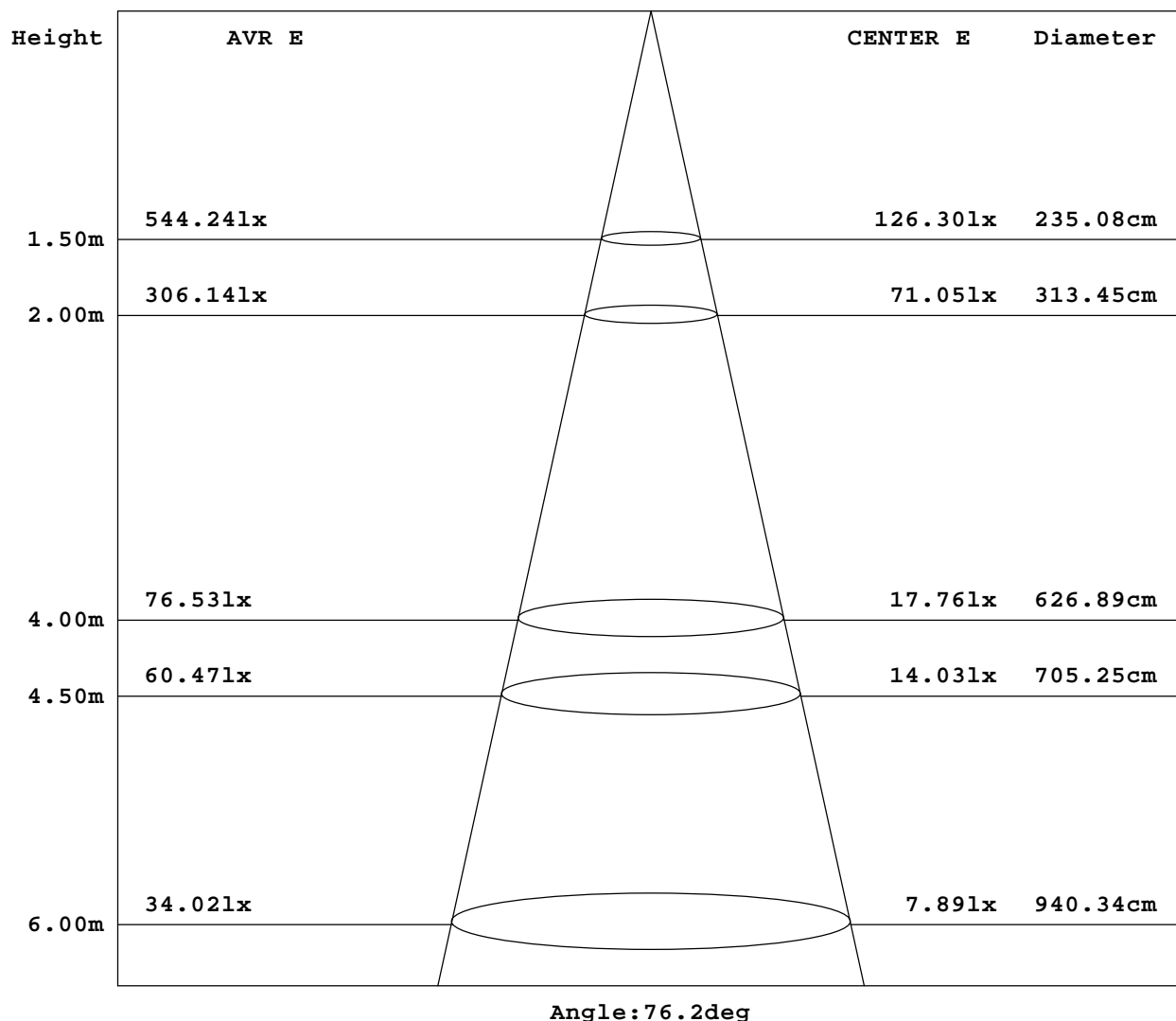
Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2019年08月12日

Test Set: 8.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

AVERAGE AND CENTER E Figure

Report number:

MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1150*65mm	SERIAL No.:



Test System: HOPOO HPG1800
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019年08月12日

Test Set: 8.0deg/s C-Gamma (TYPE C)
 Humidity: 65.0%
 Test Distance: 11.000 m
 Remarks:

ZONAL FLUX DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1150*65mm	SERIAL No.:

g	C0	C45	C90	C135	C180	C225	C270	C315	g	Zone	tStal
5.0	282.4	277.4	283.9	277.9	287.5	378.6	443.4	370.7	0- 5	7.329	7.329
10.0	283.5	312.6	386.6	317.5	295.4	735.4	1169	659.7	5- 10	29.32	36.65
15.0	286.2	527.8	1048	460.7	304.2	1500	2483	1302	10- 15	87.62	124.2
20.0	289.9	1133	2386	965.8	316.9	2358	3203	2066	15- 20	214.5	338.8
25.0	296.5	1921	3114	1682	335.1	2883	3025	2600	20- 25	392.3	731.2
30.0	304.8	2542	2961	2249	361.8	3005	2103	2852	25- 30	555.0	1286
35.0	315.8	2752	2032	2595	399.8	2724	1353	2819	30- 35	653.4	1940
40.0	325.9	2657	1333	2573	433.4	2422	1027	2516	35- 40	687.2	2627
45.0	329.3	2416	988.5	2267	446.9	1950	823.5	2182	40- 45	676.9	3304
50.0	319.9	1899	775.0	1784	432.7	1399	666.1	1614	45- 50	603.3	3907
55.0	302.4	1307	583.6	1268	398.2	953.7	421.9	1093	50- 55	479.0	4386
60.0	264.5	828.2	380.4	829.4	345.1	602.1	224.8	686.9	55- 60	343.3	4730
65.0	231.9	507.7	187.5	515.9	270.6	362.3	139.2	437.7	60- 65	230.2	4960
70.0	175.4	297.4	116.9	300.0	188.1	143.2	87.07	225.1	65- 70	146.8	5107
75.0	89.49	113.5	66.38	116.9	84.04	80.05	50.77	91.73	70- 75	74.46	5181
80.0	30.20	59.24	38.18	55.43	23.90	36.07	29.47	42.84	75- 80	34.17	5215
85.0	4.549	19.06	15.07	17.49	0.315	3.484	9.026	7.054	80- 85	13.89	5229
90.0	0	0	0	0	0	0	0	0	85- 90	1.612	5231
95.0	0	0	0	0	0	0	0	0	90- 95	0	5231
100.0	0	0	0	0	0	0	0	0	95-100	0	5231
105.0	0	0	0	0	0	0	0	0	100-105	0	5231
110.0	0	0	0	0	0	0	0	0	105-110	0	5231
115.0	0	0	0	0	0	0	0	0	110-115	0	5231
120.0	0	0	0	0	0	0	0	0	115-120	0	5231
125.0	0	0	0	0	0	0	0	0	120-125	0	5231
130.0	0	0	0	0	0	0	0	0	125-130	0	5231
135.0	0	0	0	0	0	0	0	0	130-135	0	5231
140.0	0	0	0	0	0	0	0	0	135-140	0	5231
145.0	0	0	0	0	0	0	0	0	140-145	0	5231
150.0	0	0	0	0	0	0	0	0	145-150	0	5231
155.0	0	0	0	0	0	0	0	0	150-155	0	5231
160.0	0	0	0	0	0	0	0	0	155-160	0	5231
165.0	0	0	0	0	0	0	0	0	160-165	0	5231
170.0	0	0	0	0	0	0	0	0	165-170	0	5231
175.0	0	0	0	0	0	0	0	0	170-175	0	5231
180.0	0	0	0	0	0	0	0	0	175-180	0	5231
DEG	LUMINOUS INTENSITY:cd									UNIT:lm	

Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2019年08月12日

Test Set: 8.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

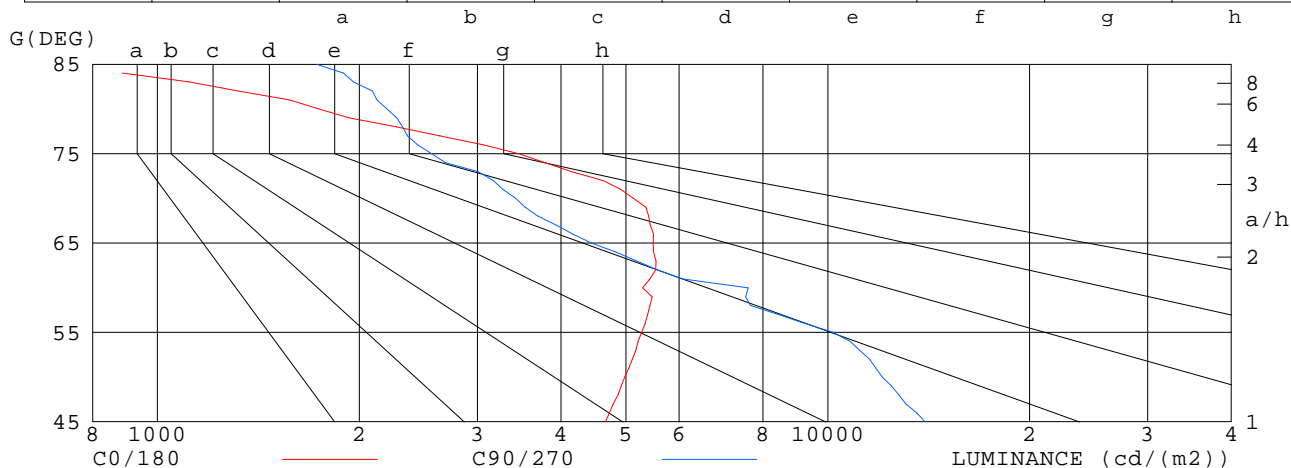
LUMINANCE LIMITATION CURVES

Report number:

MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1150*65mm	SERIAL No.:

LUMINANCE LIMITATION CURVES

GLARE	CLASS	ILLUMINANCE (lx)							
1.15	A	2000	1000	500	<=300				
1.50	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.20	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300



LUMINANCE cd/m2		
G (DEG)	C0/180	C90/270
85	522	1730
80	1739	2199
75	3458	2565
70	5128	3420
65	5487	4437
60	5292	7610
55	5273	10176
50	4978	12058
45	4657	13980

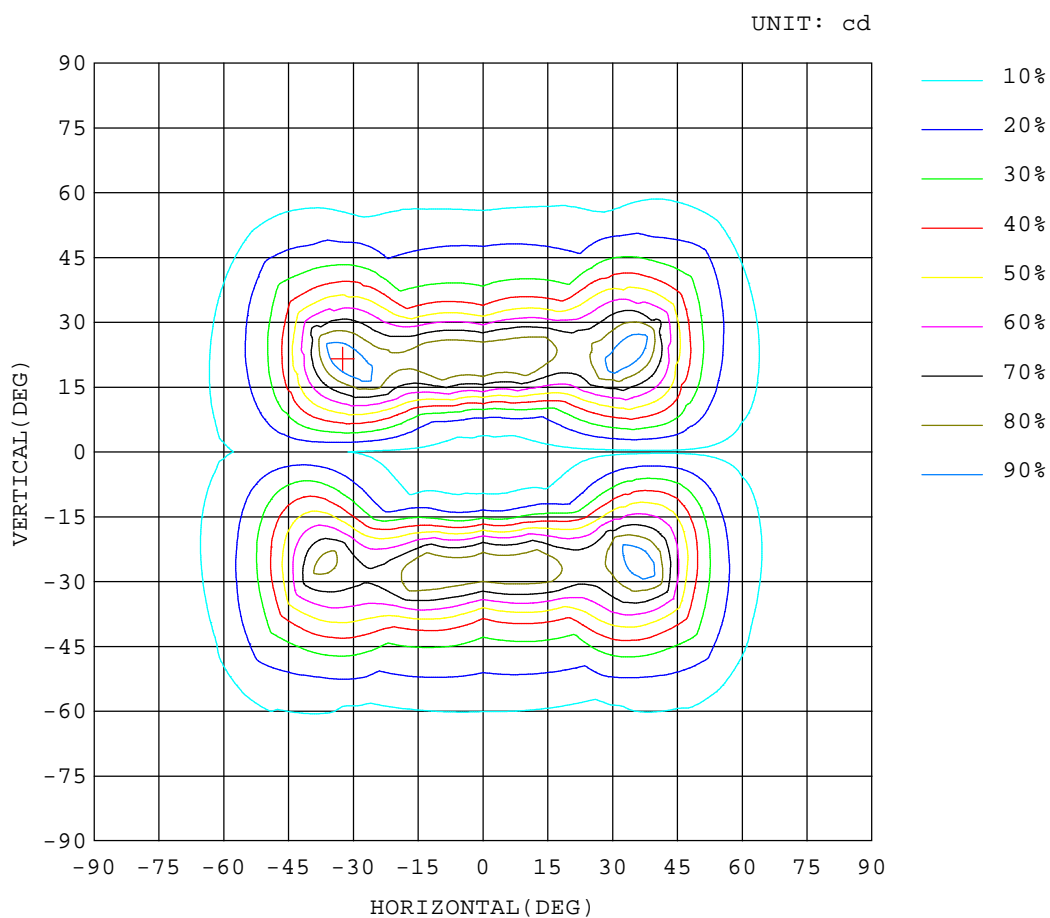
Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2019年08月12日

Test Set: 8.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1150*65mm	SERIAL No.:



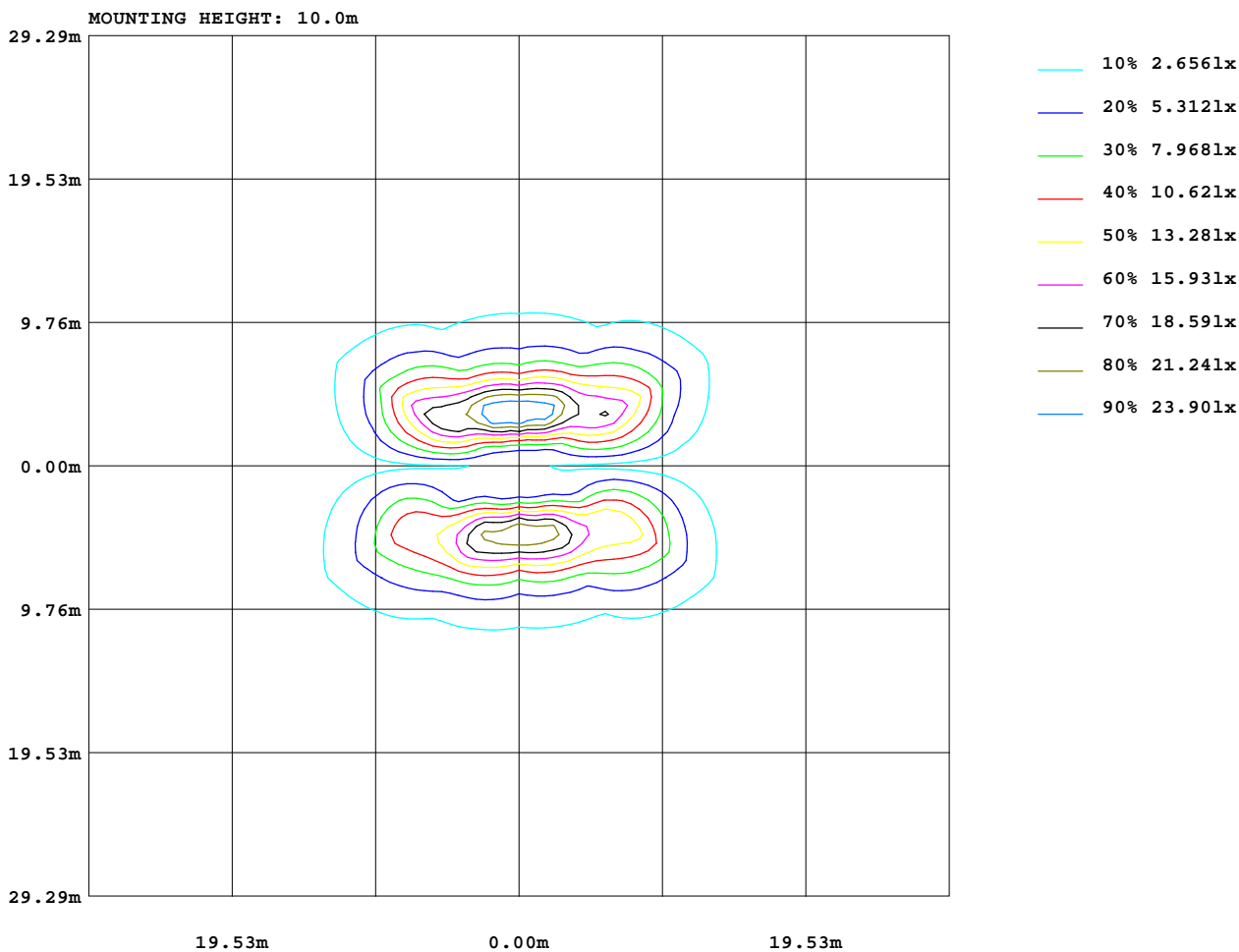
Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2019年08月12日

Test Set: 8.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

ISOLUX DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1150*65mm	SERIAL No.:



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2019年08月12日

Test Set: 8.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

AREA LUMINOUS FLUX

Report number:

MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1150*65mm	SERIAL No.:

VERTICAL (DEG)	AREA FLUX DIAGRAM																	UNIT:lm	Φ t	Φ a
	0.00	0.00	0.01	0.03	0.06	0.09	0.15	0.23	0.30	0.30	0.24	0.17	0.13	0.11	0.07	0.02	0.00	0.00	1.91	0.00
90	0.00	0.02	0.17	0.50	0.89	1.23	1.46	1.61	1.63	1.65	1.65	1.51	1.34	1.03	0.66	0.27	0.04	0.00	15.7	0.00
80	0.00	0.09	0.54	1.48	2.65	3.63	3.46	4.05	4.40	4.46	4.19	3.64	4.31	3.39	1.77	0.66	0.14	0.00	42.9	0.00
70	0.00	0.19	1.08	3.72	8.36	10.4	10.0	12.0	13.2	13.5	12.9	11.3	12.1	10.3	5.11	1.28	0.25	0.01	126	88.6
60	0.01	0.32	1.93	8.49	17.9	24.4	23.8	23.6	25.4	25.9	24.8	26.0	28.0	20.6	10.4	2.43	0.39	0.02	265	258
50	0.02	0.46	3.16	11.9	30.0	48.4	48.5	42.1	45.4	47.6	47.2	52.5	54.9	34.9	13.5	3.74	0.54	0.03	486	480
40	0.02	0.61	4.01	13.3	37.4	77.0	80.0	82.5	88.8	89.4	84.8	79.2	81.4	42.5	14.3	4.41	0.68	0.03	781	776
30	0.02	0.73	4.22	12.3	32.9	64.9	78.1	71.3	72.7	69.5	62.7	66.1	63.1	35.3	12.6	4.26	0.78	0.04	652	646
	0.03	0.78	3.86	9.07	18.5	29.0	31.1	22.5	17.3	16.2	17.8	25.0	26.1	17.6	8.13	3.49	0.81	0.04	248	228
	0.03	0.82	4.09	9.88	18.6	20.1	13.0	9.52	9.10	9.17	10.0	16.0	22.6	18.3	8.75	3.58	0.82	0.04	175	129
	0.02	0.81	4.89	14.5	35.1	45.9	32.2	32.8	32.3	34.8	38.3	45.3	56.2	38.6	14.2	4.50	0.81	0.04	432	426
	0.02	0.69	5.10	16.1	44.2	70.2	67.8	84.0	87.8	89.1	85.4	75.8	81.9	49.1	16.3	4.75	0.71	0.03	780	775
-30	0.02	0.52	4.47	14.9	38.2	57.0	61.4	71.6	69.2	66.4	63.1	59.9	62.9	41.2	15.0	4.14	0.55	0.02	631	626
-40	0.01	0.35	3.07	11.9	23.1	32.2	32.7	33.9	33.3	31.8	30.5	31.3	33.4	23.9	11.5	2.78	0.38	0.02	337	331
-50	0.00	0.22	1.42	6.75	12.2	14.9	15.6	17.6	17.9	17.6	16.6	14.5	14.7	11.8	6.08	1.37	0.25	0.01	170	157
-60	0.00	0.11	0.62	2.06	4.63	5.82	5.23	6.06	6.33	6.27	5.97	5.23	5.61	4.24	1.95	0.66	0.13	0.00	60.9	0.53
-70	0.00	0.03	0.23	0.68	1.33	2.00	2.34	2.41	2.29	2.31	2.46	2.42	2.06	1.38	0.71	0.23	0.03	0.00	22.9	0.00
-80	0.00	0.00	0.01	0.08	0.23	0.44	0.58	0.59	0.53	0.56	0.65	0.68	0.52	0.27	0.08	0.01	0.00	0.00	5.23	0.00
-90																				
	-90	-80	-70	-60	-50	-40	-30	-20	HORIZONTAL (DEG)	20	30	40	50	60	70	80	90			
Φ t	0.20	6.73	42.9	138	327	508	508	519	529	527	510	517	552	355	141	42.6	7.30	0.31	5231	
Φ a	0.00	0.00	16.3	127	314	492	488	491	498	496	483	496	535	342	127	14.7	0.00	0.00		4824

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2019年08月12日

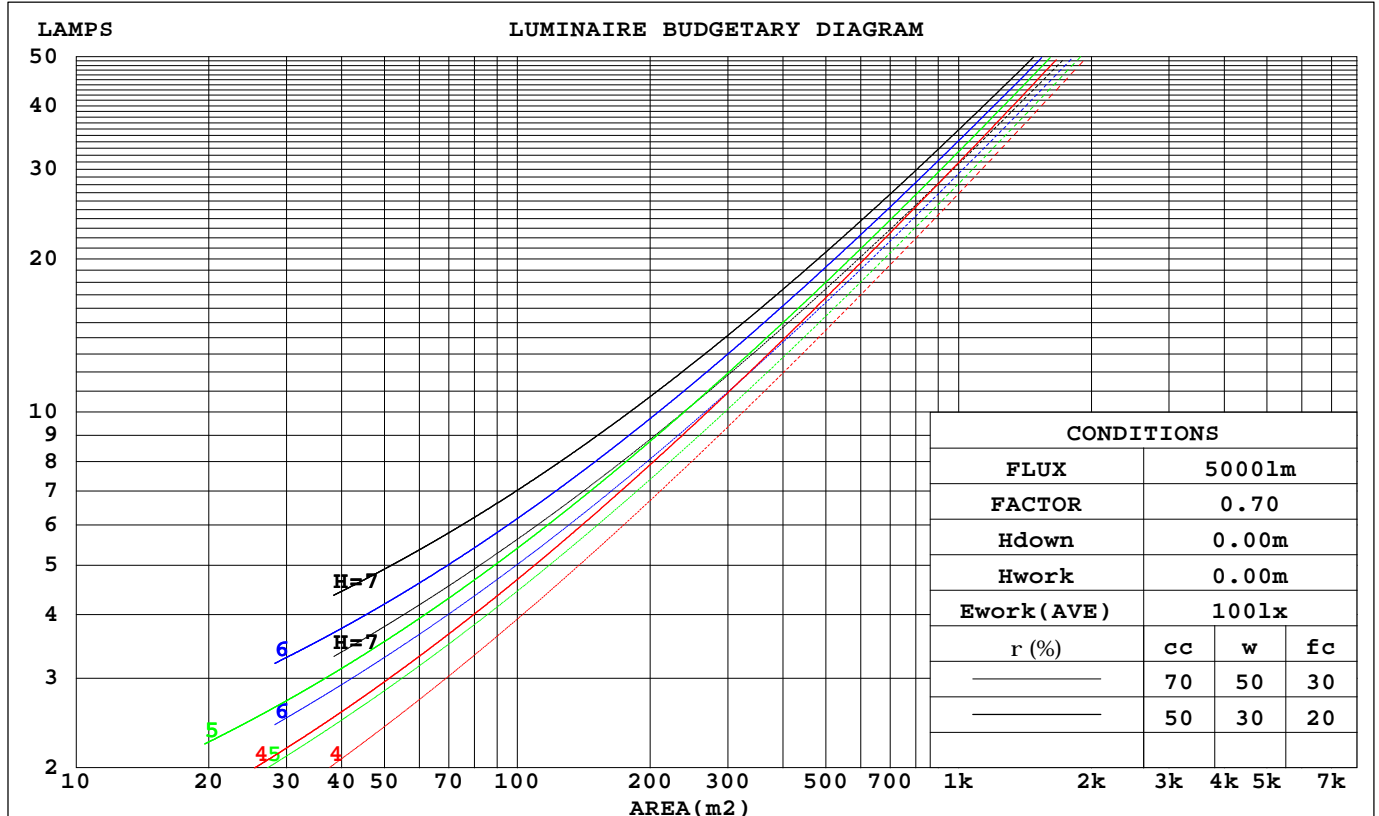
Test Set: 8.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:11.000 m
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number:

MANUFACTURER:															
Address:															
NAME:								TYPE:				WEIGHT:			
SPECIFICATION:								DIMENSION: 1150*65mm				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	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.06	1.03	.99	1.04	1.01	.98	.00	.97	.95	.96	.94	.92	.92	.91	.89	.87
2.0	.94	.88	.83	.92	.86	.82	.89	.84	.80	.85	.81	.78	.82	.79	.76	.74
3.0	.83	.75	.69	.81	.74	.69	.78	.73	.68	.76	.71	.66	.73	.69	.65	.63
4.0	.73	.65	.59	.72	.64	.58	.70	.63	.58	.67	.62	.57	.65	.60	.56	.54
5.0	.65	.57	.50	.64	.56	.50	.62	.55	.50	.60	.54	.49	.58	.53	.49	.46
6.0	.58	.50	.43	.58	.49	.43	.56	.48	.43	.54	.48	.43	.53	.47	.42	.40
7.0	.53	.44	.38	.52	.44	.38	.50	.43	.37	.49	.42	.37	.47	.41	.37	.35
8.0	.47	.39	.33	.47	.39	.33	.45	.38	.33	.44	.37	.33	.43	.37	.32	.31
9.0	.43	.35	.29	.42	.35	.29	.41	.34	.29	.40	.34	.29	.39	.33	.29	.27
10.0	.39	.31	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.25	.24



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2019年08月12日

Test Set: 8.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

WEC AND CCEC

Report number:

MANUFACTURER:											
Address:											
NAME:						TYPE:			WEIGHT:		
SPECIFICATION:						DIMENSION: 1150*65mm			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	.264	.150	.047	.257	.146	.046	.244	.140	.045	.232	.134	.043	.221	.128	.041															
2.0	.259	.142	.044	.253	.139	.043	.241	.134	.042	.231	.130	.041	.221	.125	.039															
3.0	.247	.132	.039	.242	.129	.039	.232	.126	.038	.222	.122	.037	.214	.118	.037															
4.0	.234	.121	.036	.229	.120	.035	.220	.117	.035	.212	.114	.034	.204	.111	.034															
5.0	.220	.112	.032	.216	.111	.032	.208	.108	.032	.200	.106	.031	.193	.103	.031															
6.0	.207	.104	.030	.203	.103	.030	.196	.101	.029	.190	.098	.029	.183	.097	.029															
7.0	.195	.096	.027	.192	.096	.027	.185	.094	.027	.179	.092	.027	.174	.090	.027															
8.0	.184	.090	.025	.181	.089	.025	.175	.087	.025	.170	.086	.025	.165	.085	.025															
9.0	.174	.084	.023	.171	.083	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023															
10.0	.164	.079	.022	.162	.078	.022	.157	.077	.022	.153	.076	.022	.148	.075	.021															

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.177	.157	.138	.152	.134	.119	.104	.092	.082	.060	.053	.048	.019	.017	.015	
2.0	.168	.132	.102	.144	.114	.088	.099	.079	.061	.057	.046	.036	.018	.015	.012	
3.0	.160	.114	.078	.137	.098	.067	.094	.068	.047	.054	.040	.028	.017	.013	.009	
4.0	.153	.101	.061	.131	.087	.053	.090	.061	.037	.052	.035	.022	.017	.012	.007	
5.0	.146	.090	.049	.126	.078	.042	.087	.055	.030	.050	.032	.018	.016	.010	.006	
6.0	.140	.082	.040	.120	.071	.035	.083	.050	.025	.048	.029	.015	.016	.010	.005	
7.0	.134	.075	.034	.115	.065	.029	.080	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.128	.069	.029	.110	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.123	.065	.025	.106	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.060	.022	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2019年08月12日

Test Set: 8.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:11.000 m
 Remarks:

Uncorrected UGR Table

Report number:

MANUFACTURER:											
Address:											
NAME:					TYPE:			WEIGHT:			
SPECIFICATION:					DIMENSION: 1150*65mm			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	2H	24.8	26.3	25.1	26.5	26.7	21.5	23.0	21.8	23.2	23.4
	3H	25.0	26.3	25.3	26.6	26.8	21.6	22.9	21.8	23.1	23.4
	4H	24.9	26.2	25.3	26.5	26.7	21.5	22.8	21.8	23.0	23.3
	6H	24.9	26.0	25.2	26.3	26.6	21.5	22.7	21.8	22.9	23.2
	8H	24.8	25.9	25.1	26.2	26.5	21.5	22.6	21.8	22.9	23.2
	12H	24.8	25.9	25.1	26.1	26.4	21.4	22.5	21.8	22.8	23.1
4H	2H	24.9	26.2	25.2	26.5	26.7	22.4	23.6	22.7	23.9	24.1
	3H	25.3	26.4	25.7	26.7	27.0	22.4	23.5	22.8	23.8	24.1
	4H	25.3	26.3	25.7	26.6	26.9	22.5	23.4	22.8	23.8	24.1
	6H	25.3	26.1	25.6	26.5	26.8	22.5	23.3	22.9	23.7	24.0
	8H	25.2	26.0	25.6	26.4	26.8	22.5	23.3	22.9	23.6	24.0
	12H	25.2	25.9	25.6	26.3	26.7	22.4	23.2	22.9	23.5	23.9
8H	4H	25.2	26.0	25.6	26.4	26.8	22.5	23.3	22.9	23.7	24.1
	6H	25.2	25.8	25.6	26.2	26.7	22.6	23.2	23.0	23.6	24.1
	8H	25.2	25.7	25.6	26.2	26.6	22.6	23.2	23.1	23.6	24.0
	12H	25.1	25.6	25.6	26.1	26.5	22.6	23.1	23.1	23.5	24.0
12H	4H	25.2	25.9	25.6	26.3	26.7	22.5	23.2	22.9	23.6	24.0
	6H	25.2	25.7	25.6	26.2	26.6	22.6	23.1	23.0	23.6	24.0
	8H	25.1	25.6	25.6	26.1	26.5	22.6	23.1	23.1	23.5	24.0
Variations with the observer position at spacings:											
S = 1.0H	+ 2.1 / - 1.2					+ 1.4 / - 2.2					
1.5H	+ 2.1 / - 5.7					+ 1.9 / - 1.2					
2.0H	+ 3.4 / - 7.7					+ 2.6 / - 3.8					

CIE Pub.117 Corrected 5231 lm Total Lamp Luminous Flux.(8log(F/F0) = 5.7)

Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2019年08月12日

Test Set: 8.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:11.000 m
 Remarks:

UTILIZATION FACTORS TABLE

Report number:

MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1150*65mm	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) $k(RI) \times RCR = 5$									
$k = 0.60$	60	49	42	59	48	42	58	48	42	35
0.80	71	60	53	70	60	53	68	59	52	46
1.00	80	70	63	79	70	63	77	71	63	56
1.25	88	78	72	86	78	71	84	76	71	64
1.50	92	84	78	91	83	77	88	81	76	69
2.00	99	92	86	97	90	85	94	88	84	77
2.50	102	96	90	100	94	89	97	92	88	80
3.00	105	99	95	103	98	94	99	95	91	84
4.00	108	104	100	106	102	98	102	99	96	87
5.00	110	106	103	108	104	101	104	101	98	89
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

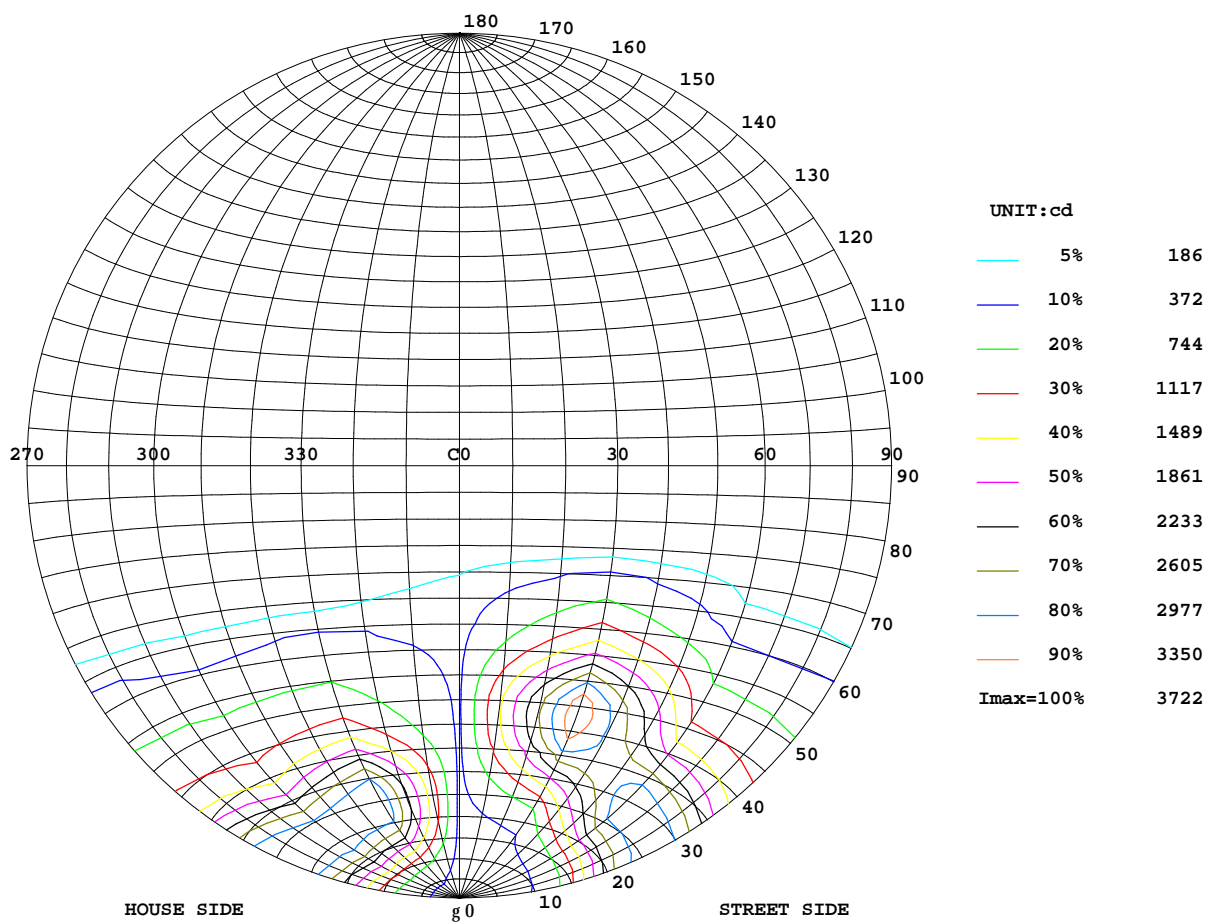
Test System:HOPOO HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:2019年08月12日

Test Set: 8.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:11.000 m
 Remarks:

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1150*65mm	SERIAL No.:



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2019年08月12日

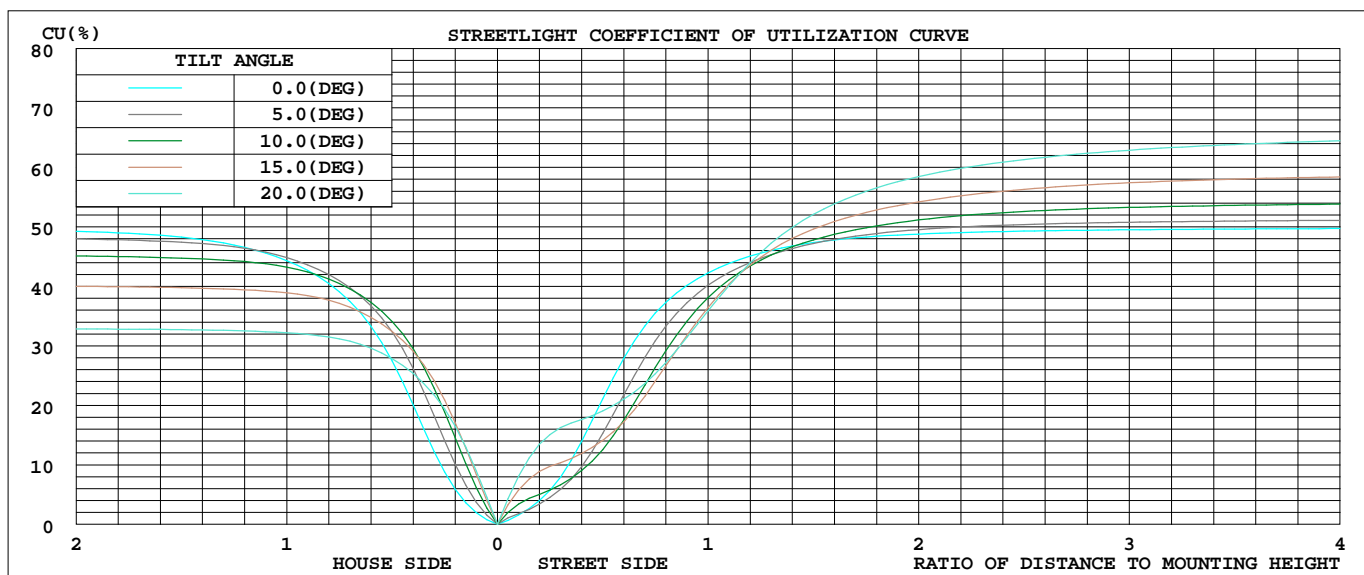
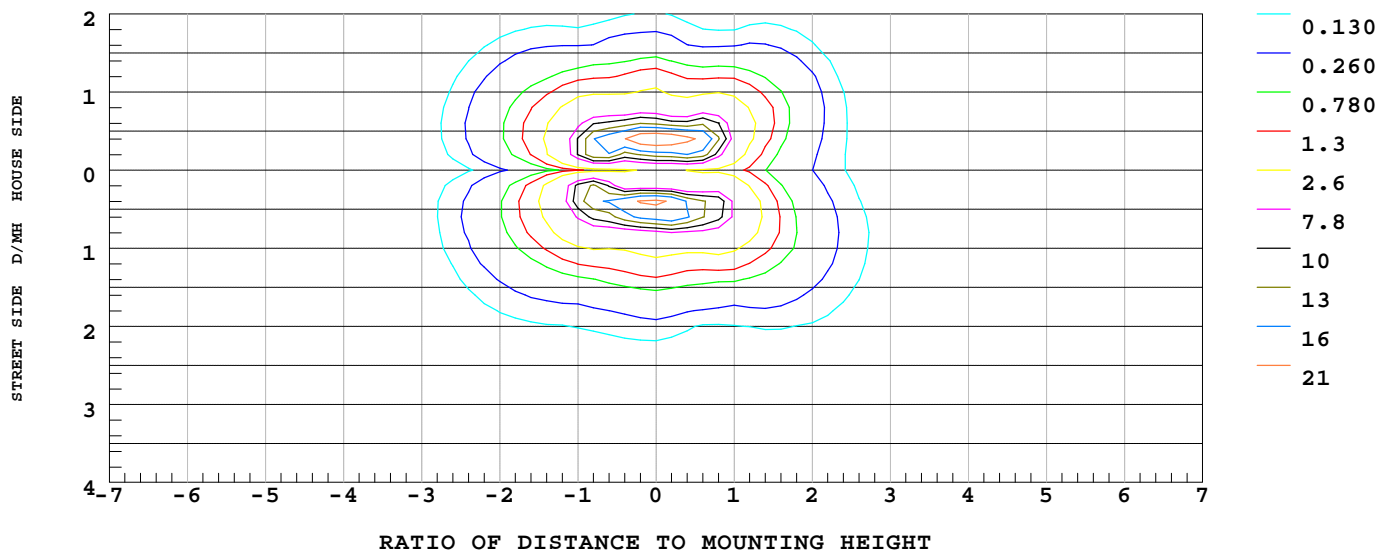
Test Set: 8.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

ISOLUX DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1150*65mm	SERIAL No.:

ILLUMINANCE AT MH=10 m,Enadir = 2.84 lx



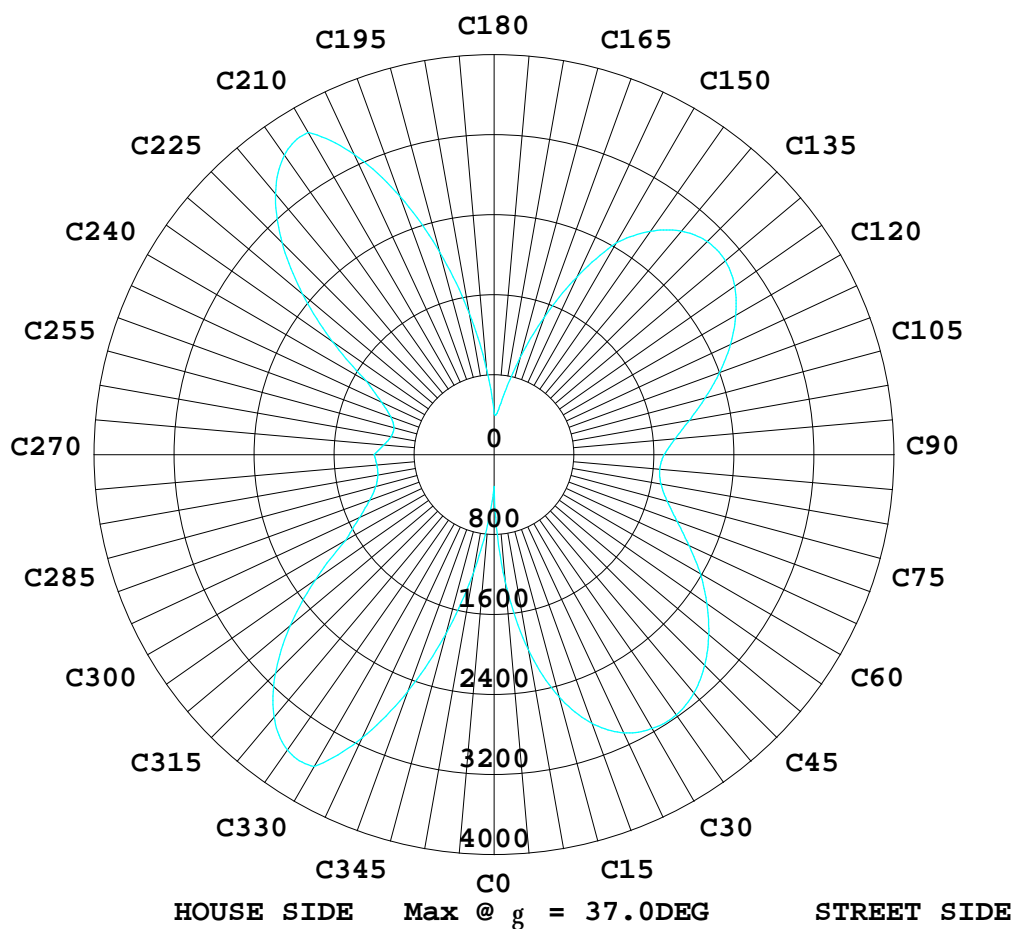
Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2019年08月12日

Test Set: 8.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks:

ISOCANDELA DIAGRAM

Report number:

MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION: 1150*65mm	SERIAL No.:



Test System:HOPOO HPG1800
Temperature:25.3DEG
Operators:
Test Date:2019年08月12日

Test Set: 8.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:11.000 m
Remarks: