

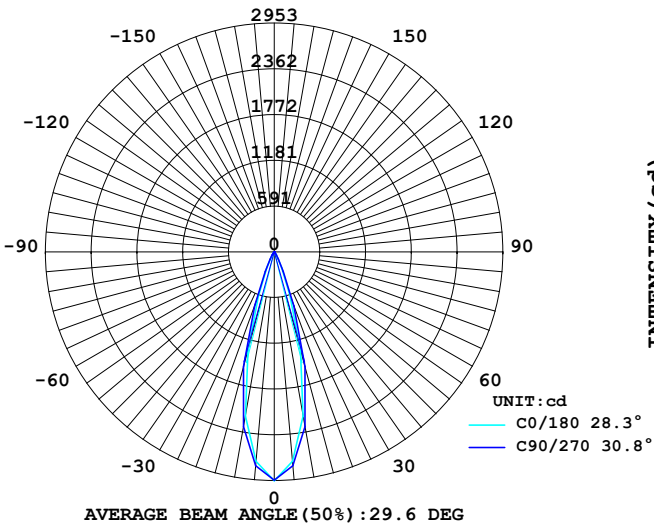
LUMINAIRE PHOTOMETRIC TEST REPORT

Report number:

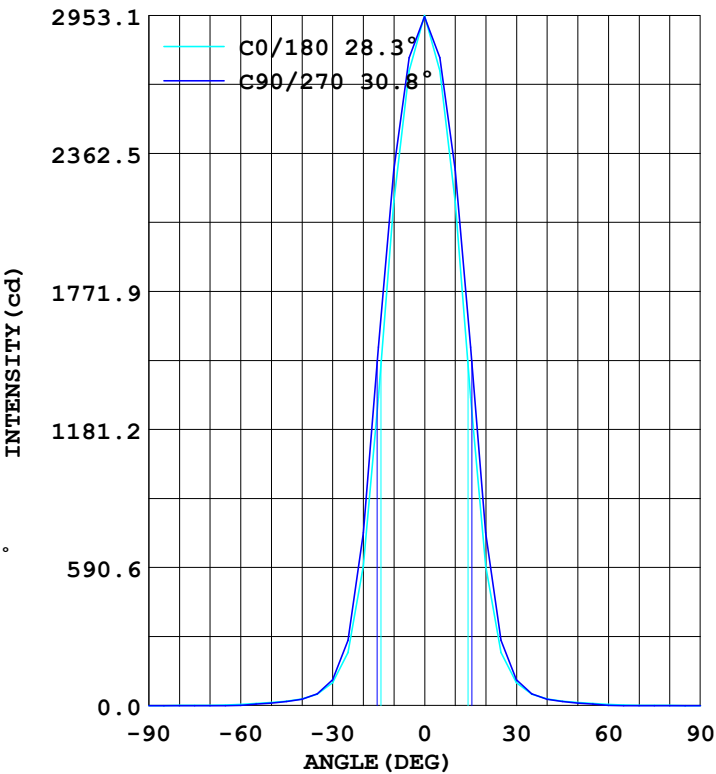
MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	SERIAL No.:

DATA OF LAMP		Imax(cd)	2953	S/MH (C0/180)	0.46
MODEL		EFFICIENCY (%)	100.0	S/MH (C90/270)	0.49
NOMINAL POWER(W)	10	TOTAL FLUX(lm)	834.59	Voltage(V)	230.2
RATED VOLTAGE (V)	230	EFFICIENCY (lm/W)	83.1	Current(A)	0.080
NOMINAL FLUX(lm)	834.6	η up (%)	0.0	Power(W)	10.04
LAMPS QUANTITY	1	η down (%)	100.0	Power Factor (PF)	0.543
TEST VOLTAGE (V)	230.3	Effective Flux(lm)	731.3	EEI	0.000 (E)

LUMINOUS INTENSITY DISTRIBUTION



LUMINOUS INTENSITY DISTRIBUTION



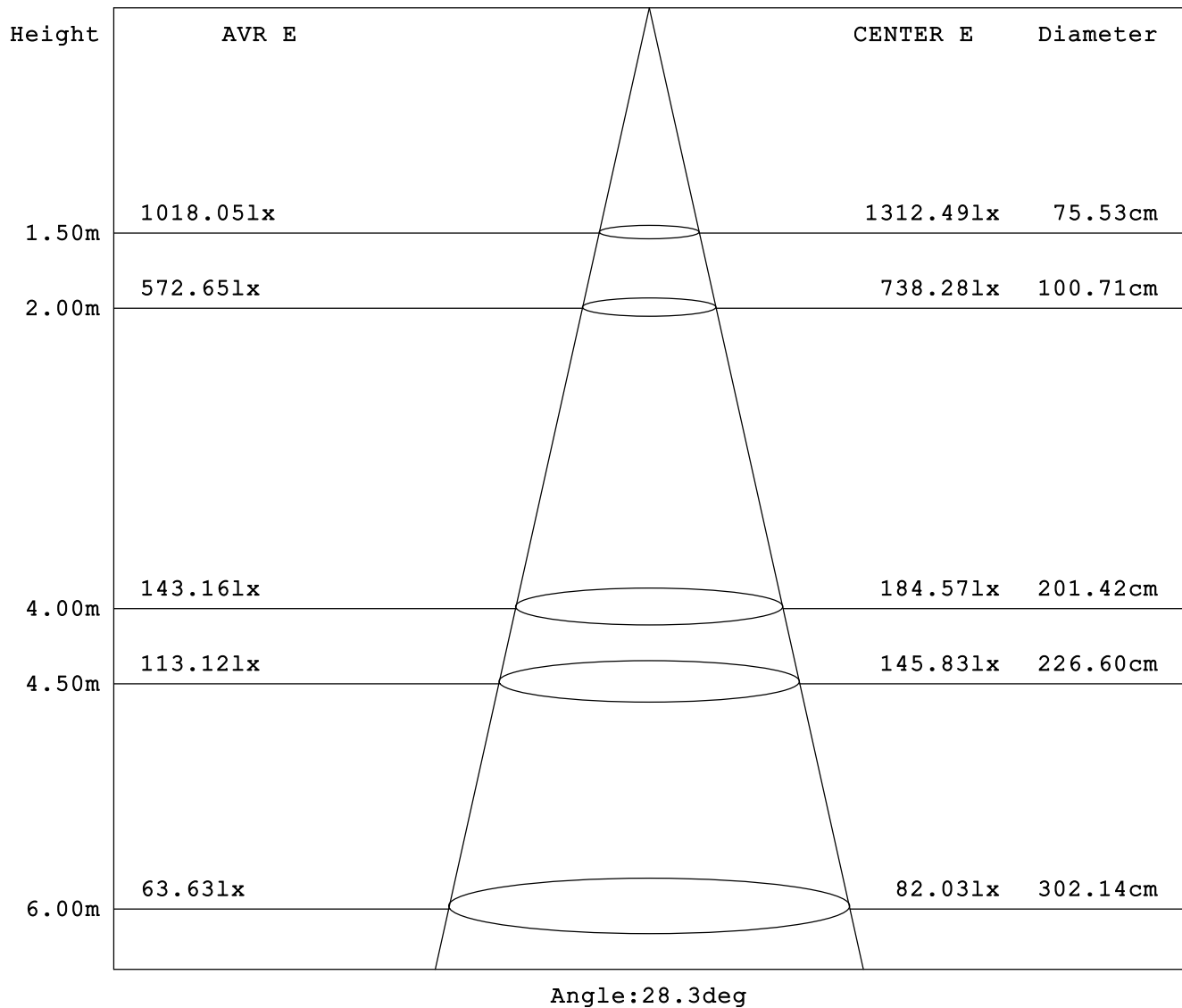
Test System:HopooColor HPG1800
Temperature:25.3DEG
Operators:
Test Date:09-08-2026

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:8.300 m
Remarks:

AVERAGE AND CENTER E Figure

Report number:

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



Test System:HopooColor HPG1800
Temperature:25.3DEG
Operators:
Test Date:09-08-2026

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:8.300 m
Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

ZONAL FLUX DIAGRAM

Report number:

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

γ	C0	C90	C180	C270					γ	Zone	total
10.0	2154	2291	2154	2291					0- 10	245.7	245.7
20.0	597.8	738.4	597.8	738.4					10- 20	388.9	634.6
30.0	97.68	110.7	97.68	110.7					20- 30	141.7	776.4
40.0	28.31	27.07	28.31	27.07					30- 40	35.56	812.0
50.0	13.02	10.81	13.02	10.81					40- 50	14.43	826.4
60.0	4.546	1.308	4.546	1.308					50- 60	6.528	832.9
70.0	1.102	0	1.102	0					60- 70	1.347	834.3
80.0	0.069	0	0.069	0					70- 80	0.263	834.5
90.0	0	0	0	0					80- 90	0.009	834.5
100.0									90-100		
110.0									100-110		
120.0									110-120		
130.0									120-130		
140.0									130-140		
150.0									140-150		
160.0									150-160		
170.0									160-170		
180.0									170-180		
DEG	LUMINOUS INTENSITY:cd									UNIT:lm	

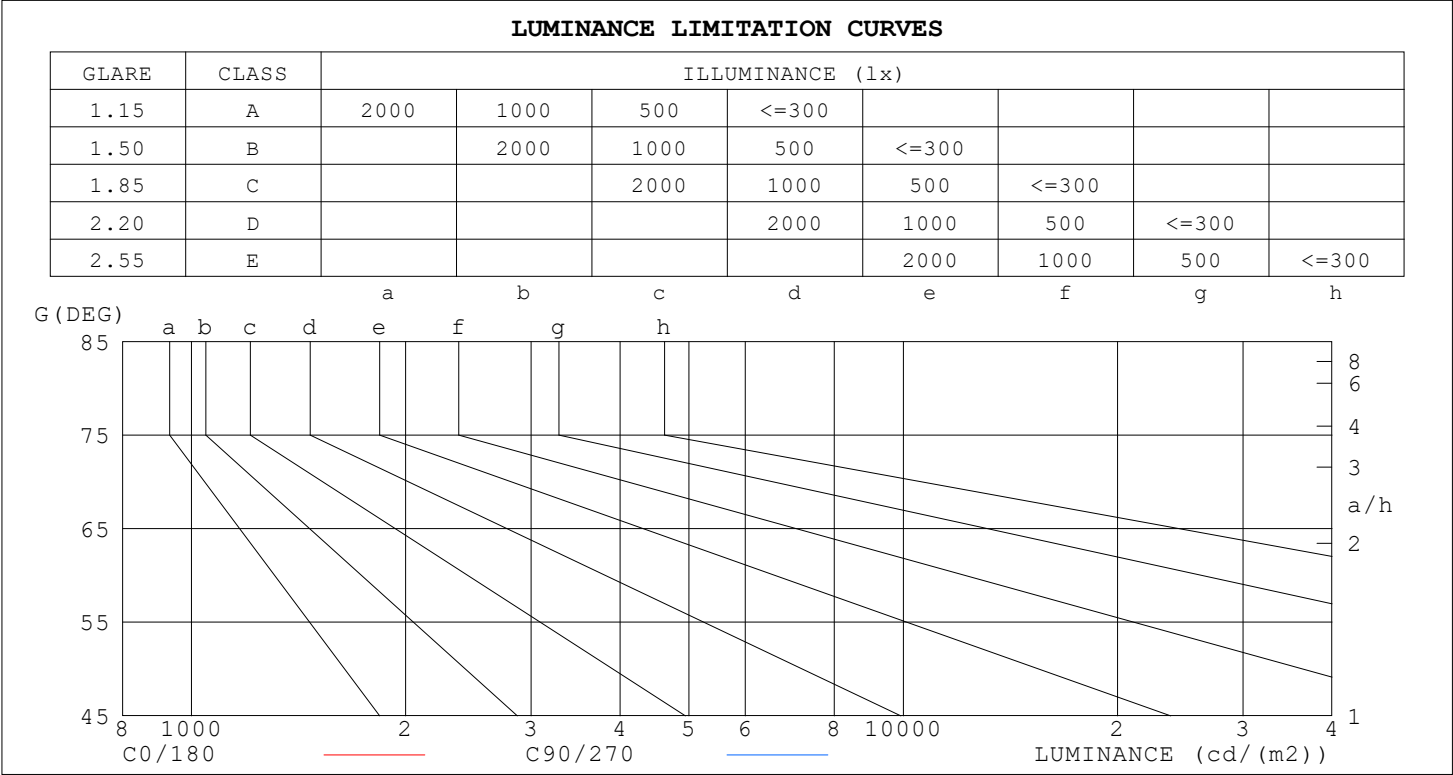
Test System:HopooColor HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:09-08-2026

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:8.300 m
 Remarks:

LUMINANCE LIMITATION CURVES

Report number:

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



LUMINANCE cd/m2		
G (DEG)	C0/180	C90/270
85	0	0
80	4	0
75	16	0
70	32	0
65	47	0
60	91	26
55	144	109
50	203	168
45	268	236

Test System:HopooColor HPG1800
Temperature:25.3DEG
Operators:
Test Date:09-08-2026

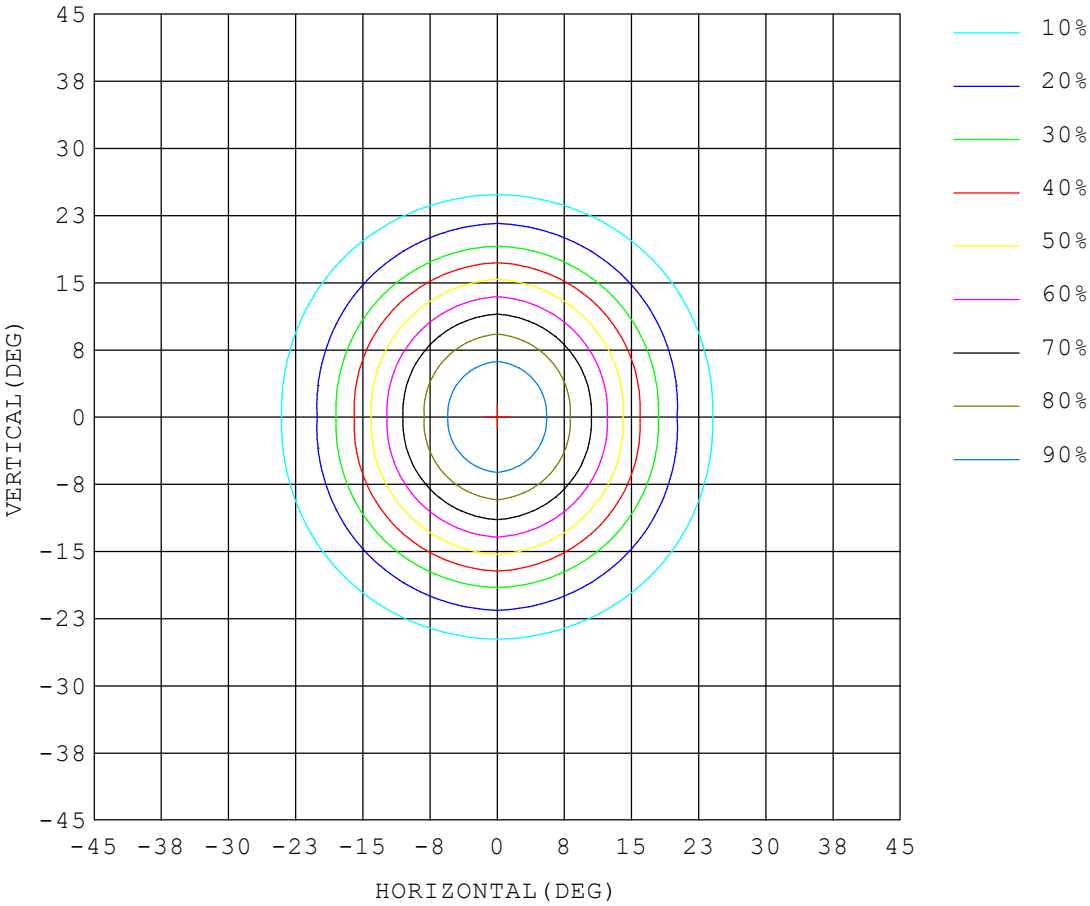
Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:8.300 m
Remarks:

ISOCANDELA DIAGRAM

Report number:

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

UNIT: cd



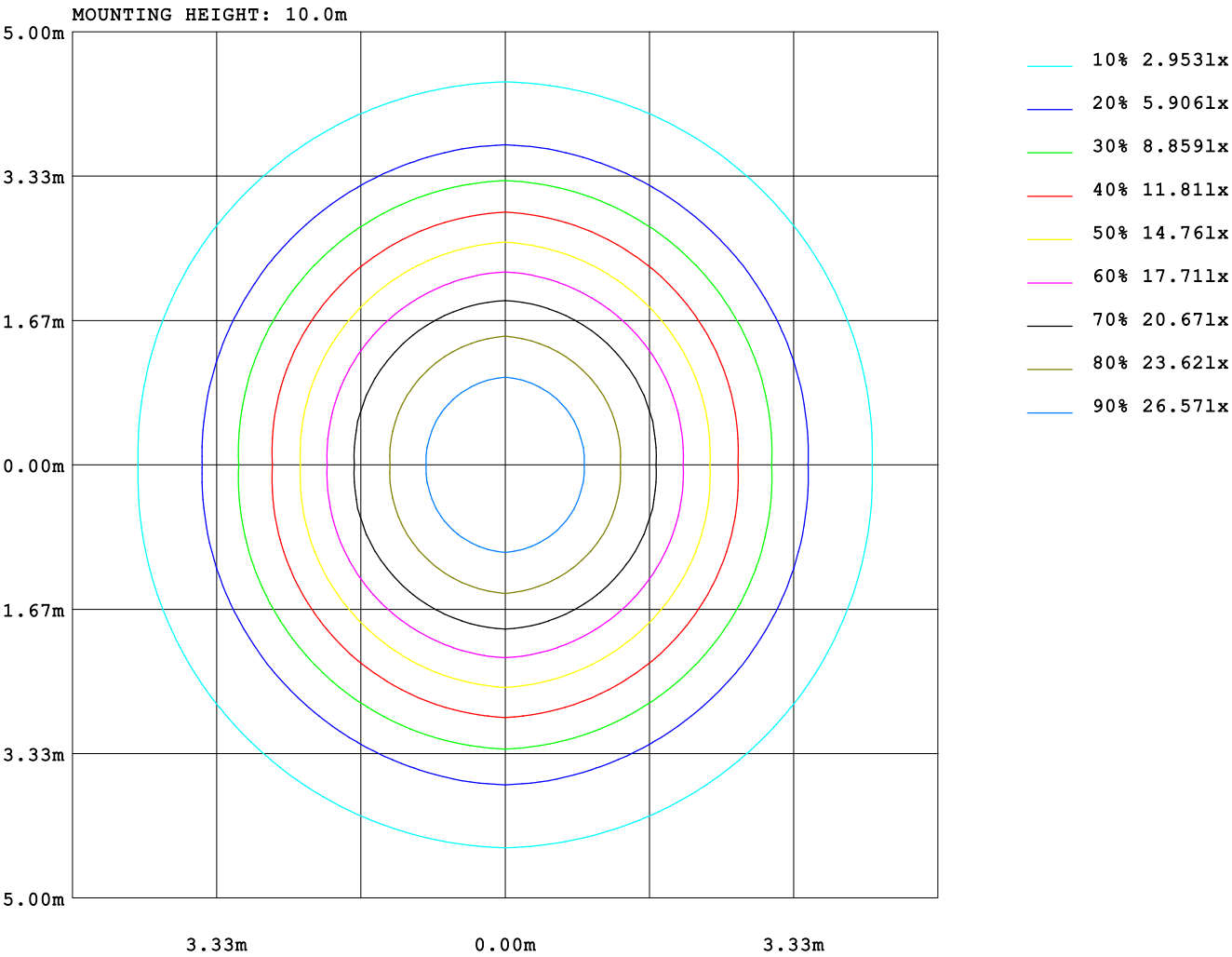
Test System:HopooColor HPG1800
Temperature:25.3DEG
Operators:
Test Date:09-08-2026

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:8.300 m
Remarks:

ISOLUX DIAGRAM

Report number:

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



Test System:HopooColor HPG1800	Test Set: 5.0deg/s C-Gamma (TYPE C)
Temperature:25.3DEG	Humidity:65.0%
Operators:	Test Distance:8.300 m
Test Date:09-08-2026	Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

AREA LUMINOUS FLUX

Report number:

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

VERTICAL (DEG)	AREA FLUX DIAGRAM																		UNIT:lm	Φ t	Φ a
	45	40	35	30	25	20	15	10	5	0	5	10	15	20	25	30	35	40	45		
45	0.03	0.05	0.07	0.09	0.11	0.13	0.14	0.16	0.17	0.17	0.16	0.14	0.13	0.11	0.09	0.07	0.05	0.03	1.86	0.00	
40	0.05	0.07	0.09	0.12	0.15	0.19	0.23	0.27	0.29	0.29	0.27	0.23	0.19	0.15	0.12	0.09	0.07	0.05	2.93	0.00	
35	0.06	0.09	0.12	0.17	0.23	0.32	0.43	0.53	0.60	0.60	0.53	0.43	0.32	0.23	0.17	0.12	0.09	0.06	5.09	0.00	
30	0.08	0.11	0.16	0.24	0.38	0.59	0.88	1.20	1.43	1.43	1.20	0.88	0.59	0.38	0.24	0.16	0.11	0.08	10.1	0.00	
25	0.09	0.14	0.21	0.36	0.64	1.15	1.93	2.94	3.69	3.69	2.94	1.93	1.15	0.64	0.36	0.21	0.14	0.09	22.3	13.3	
20	0.10	0.16	0.28	0.53	1.08	2.22	4.22	6.52	8.24	8.24	6.52	4.22	2.22	1.08	0.53	0.28	0.16	0.10	46.7	40.3	
15	0.12	0.19	0.36	0.75	1.70	3.94	7.60	11.4	13.9	13.9	11.4	7.60	3.94	1.70	0.75	0.36	0.19	0.12	80.3	75.0	
10	0.13	0.22	0.43	0.97	2.43	5.73	10.8	15.8	18.6	18.6	15.8	10.8	5.73	2.43	0.97	0.43	0.22	0.13	111	106	
5	0.13	0.23	0.47	1.08	2.86	6.84	12.6	18.0	21.1	21.1	18.0	12.6	6.84	2.86	1.08	0.47	0.23	0.13	127	123	
0	0.13	0.23	0.47	1.08	2.86	6.84	12.6	18.0	21.1	21.1	18.0	12.6	6.84	2.86	1.08	0.47	0.23	0.13	127	123	
-5	0.13	0.22	0.43	0.97	2.43	5.73	10.8	15.8	18.6	18.6	15.8	10.8	5.73	2.43	0.97	0.43	0.22	0.13	111	106	
-10	0.12	0.19	0.36	0.75	1.70	3.94	7.60	11.4	13.9	13.9	11.4	7.60	3.94	1.70	0.75	0.36	0.19	0.12	80.3	75.0	
-15	0.10	0.16	0.28	0.53	1.08	2.22	4.22	6.52	8.24	8.24	6.52	4.22	2.22	1.08	0.53	0.28	0.16	0.10	46.7	40.3	
-20	0.09	0.14	0.21	0.36	0.64	1.15	1.93	2.94	3.69	3.69	2.94	1.93	1.15	0.64	0.36	0.21	0.14	0.09	22.3	13.3	
-25	0.08	0.11	0.16	0.24	0.38	0.59	0.88	1.20	1.43	1.43	1.20	0.88	0.59	0.38	0.24	0.16	0.11	0.08	10.1	0.00	
-30	0.06	0.09	0.12	0.17	0.23	0.32	0.43	0.53	0.60	0.60	0.53	0.43	0.32	0.23	0.17	0.12	0.09	0.06	5.09	0.00	
-35	0.05	0.07	0.09	0.12	0.15	0.19	0.23	0.27	0.29	0.29	0.27	0.23	0.19	0.15	0.12	0.09	0.07	0.05	2.93	0.00	
-40	0.03	0.05	0.07	0.09	0.11	0.13	0.14	0.16	0.17	0.17	0.16	0.14	0.13	0.11	0.09	0.07	0.05	0.03	1.86	0.00	
-45																					
	-45	-40	-35	-30	-25	-20	-15	-10	HORIZONTAL (DEG)				10	15	20	25	30	35	40	45	
Φ t	1.56	2.50	4.37	8.62	19.1	42.2	77.9	114	137	137	114	77.9	42.2	19.1	8.62	4.37	2.50	1.56	835		
Φ a	0.00	0.00	0.00	0.00	9.52	35.4	72.0	109	131	131	109	72.0	35.4	9.52	0.00	0.00	0.00	0.00		731	

Test System:HopooColor HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:09-08-2026

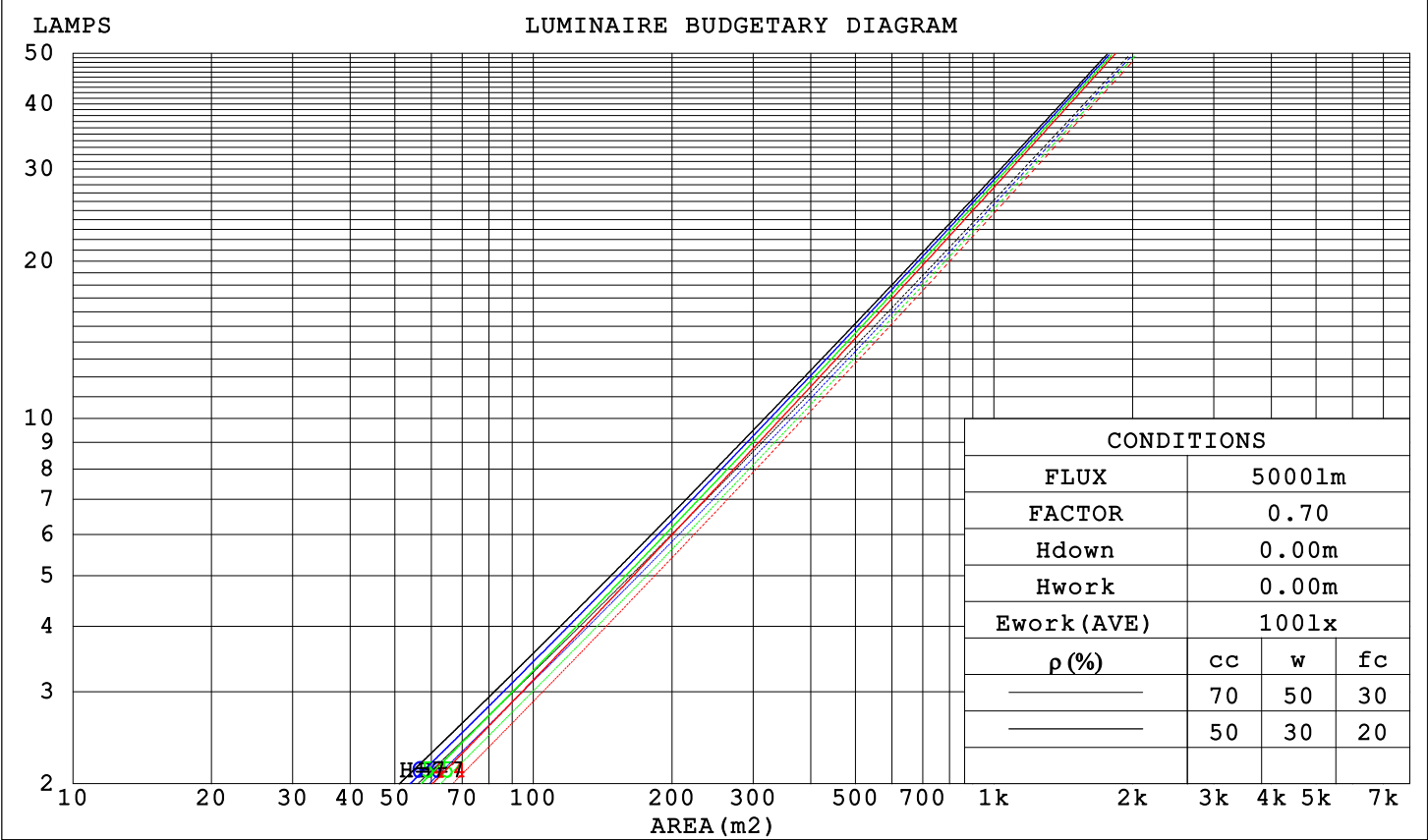
Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:8.300 m
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number:

MANUFACTURER:															
Address:															
NAME:								TYPE:				WEIGHT:			
SPECIFICATION:								DIMENSION:				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						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	1.13	1.11	1.09	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.01	.99	.99	.98	.96
2.0	1.07	1.04	1.01	1.05	1.02	1.00	1.02	.00	.98	.99	.97	.96	.97	.95	.94	.92
3.0	1.02	.98	.95	1.01	.97	.94	.98	.95	.93	.96	.94	.92	.94	.92	.90	.89
4.0	.98	.93	.90	.97	.93	.90	.95	.91	.89	.93	.90	.88	.91	.89	.87	.86
5.0	.94	.89	.86	.93	.89	.86	.91	.88	.85	.90	.87	.84	.88	.86	.84	.83
6.0	.90	.86	.83	.89	.85	.82	.88	.85	.82	.87	.84	.81	.86	.83	.81	.80
7.0	.87	.83	.79	.86	.82	.79	.85	.82	.79	.84	.81	.78	.83	.80	.78	.77
8.0	.84	.80	.77	.83	.79	.76	.83	.79	.76	.82	.78	.76	.81	.78	.76	.75
9.0	.81	.77	.74	.81	.77	.74	.80	.76	.74	.79	.76	.73	.79	.75	.73	.72
10.0	.79	.74	.72	.78	.74	.72	.78	.74	.71	.77	.74	.71	.76	.73	.71	.70



Test System:HopooColor HPG1800

Temperature:25.3DEG

Operators:

Test Date:09-08-2026

Test Set: 5.0deg/s C-Gamma (TYPE C)

Humidity:65.0%

Test Distance:8.300 m

Remarks:

HOPOO GONIOPHOTOMETERS SYSTEM TEST REPORT

WEC AND CCEC

Report number:

MANUFACTURER:															
Address:															
NAME:								TYPE:				WEIGHT:			
SPECIFICATION:								DIMENSION:				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
pf _c	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)									
0.0																
1.0	.143	.081	.026	.136	.078	.025	.124	.071	.023	.112	.065	.021	.102	.059	.019	
2.0	.133	.073	.022	.128	.070	.022	.117	.065	.020	.108	.061	.019	.099	.056	.018	
3.0	.125	.066	.020	.120	.064	.019	.112	.060	.018	.104	.057	.017	.096	.053	.016	
4.0	.117	.061	.018	.113	.059	.018	.106	.056	.017	.099	.053	.016	.093	.051	.015	
5.0	.111	.056	.016	.107	.055	.016	.101	.053	.016	.095	.050	.015	.090	.048	.014	
6.0	.105	.053	.015	.102	.052	.015	.097	.050	.014	.092	.048	.014	.087	.046	.014	
7.0	.100	.049	.014	.097	.049	.014	.093	.047	.014	.088	.045	.013	.084	.044	.013	
8.0	.095	.047	.013	.093	.046	.013	.089	.044	.013	.085	.043	.012	.082	.042	.012	
9.0	.091	.044	.012	.089	.044	.012	.086	.042	.012	.082	.041	.012	.079	.040	.012	
10.0	.087	.042	.012	.086	.041	.012	.083	.040	.011	.079	.039	.011	.077	.038	.011	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pf _c	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	.169	.158	.148	.144	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.151	.133	.117	.129	.114	.101	.089	.079	.071	.051	.046	.041	.016	.015	.013	
3.0	.136	.113	.095	.117	.098	.082	.080	.068	.058	.046	.040	.034	.015	.013	.011	
4.0	.124	.098	.078	.107	.085	.068	.073	.059	.048	.042	.035	.028	.014	.011	.009	
5.0	.114	.086	.065	.098	.074	.057	.068	.052	.040	.039	.030	.024	.013	.010	.008	
6.0	.105	.076	.055	.091	.066	.048	.063	.046	.034	.036	.027	.020	.012	.009	.007	
7.0	.098	.068	.047	.084	.059	.041	.058	.041	.029	.034	.024	.017	.011	.008	.006	
8.0	.092	.061	.040	.079	.053	.035	.055	.037	.025	.032	.022	.015	.010	.007	.005	
9.0	.086	.056	.035	.074	.048	.031	.051	.034	.022	.030	.020	.013	.010	.007	.004	
10.0	.081	.051	.031	.070	.044	.027	.049	.031	.019	.028	.018	.011	.009	.006	.004	

Test System:HopooColor HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:09-08-2026

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:8.300 m
 Remarks:

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	-2.4	-1.7	-2.2	-1.6	-1.4	-2.9	-2.2	-2.7	-2.0	-1.9
3H	-2.5	-1.8	-2.2	-1.6	-1.5	-3.0	-2.4	-2.8	-2.2	-2.0
4H	-2.5	-1.9	-2.3	-1.7	-1.5	-3.1	-2.5	-2.9	-2.3	-2.1
6H	-2.6	-2.0	-2.3	-1.8	-1.6	-3.2	-2.6	-2.9	-2.4	-2.2
8H	-2.7	-2.1	-2.4	-1.9	-1.6	-3.2	-2.7	-3.0	-2.4	-2.2
12H	-2.7	-2.2	-2.4	-1.9	-1.7	-3.3	-2.8	-3.0	-2.5	-2.2
4H 2H	-2.6	-1.9	-2.3	-1.7	-1.5	-3.0	-2.4	-2.8	-2.2	-2.0
3H	-2.6	-2.1	-2.3	-1.8	-1.6	-3.2	-2.7	-2.9	-2.4	-2.1
4H	-2.7	-2.2	-2.4	-1.9	-1.6	-3.3	-2.8	-3.0	-2.5	-2.2
6H	-2.8	-2.4	-2.5	-2.1	-1.7	-3.4	-3.0	-3.0	-2.6	-2.3
8H	-2.9	-2.5	-2.5	-2.1	-1.8	-3.4	-3.0	-3.1	-2.7	-2.3
12H	-2.9	-2.6	-2.5	-2.2	-1.8	-3.5	-3.1	-3.1	-2.8	-2.4
8H 4H	-2.9	-2.5	-2.5	-2.1	-1.8	-3.4	-3.0	-3.1	-2.7	-2.3
6H	-3.0	-2.7	-2.6	-2.3	-1.8	-3.6	-3.2	-3.1	-2.8	-2.4
8H	-3.0	-2.7	-2.6	-2.3	-1.9	-3.6	-3.3	-3.2	-2.9	-2.5
12H	-3.1	-2.9	-2.6	-2.4	-1.9	-3.7	-3.4	-3.2	-3.0	-2.5
12H 4H	-2.9	-2.6	-2.5	-2.2	-1.8	-3.5	-3.1	-3.1	-2.8	-2.4
6H	-3.0	-2.7	-2.6	-2.3	-1.9	-3.6	-3.3	-3.2	-2.9	-2.5
8H	-3.1	-2.9	-2.6	-2.4	-1.9	-3.7	-3.4	-3.2	-3.0	-2.5
Variations with the observer position at spacings:										
S = 1.0H	+ 1.9 / - 3.9					+ 2.5 / - 9.8				
1.5H	+ 2.2 / - 3.9					+ 2.5 / - 5.5				
2.0H	+ 4.1 / - 7.7					+ 4.3 / -15.4				

CIE Pub.117 Corrected 834.5 lm Total Lamp Luminous Flux.(8log(F/F0) = -0.6)

Test System:HopooColor HPG1800
 Temperature:25.3DEG
 Operators:
 Test Date:09-08-2026

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity:65.0%
 Test Distance:8.300 m
 Remarks:

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) $k(RI) \times RCR = 5$									
$k = 0.60$	90	84	80	89	84	80	89	83	80	77
0.80	97	92	88	96	91	88	95	91	88	84
1.00	101	96	92	100	95	92	99	95	92	88
1.25	105	100	97	104	99	96	102	98	95	92
1.50	107	103	100	106	102	99	104	101	98	94
2.00	109	106	103	108	105	102	105	103	100	95
2.50	111	107	105	109	106	104	106	104	102	96
3.00	112	109	107	111	108	106	107	105	103	97
4.00	114	112	110	112	110	108	109	107	106	99
5.00	116	113	112	113	112	110	109	108	107	100
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004				Suspended				SHRNOM = 1.25		

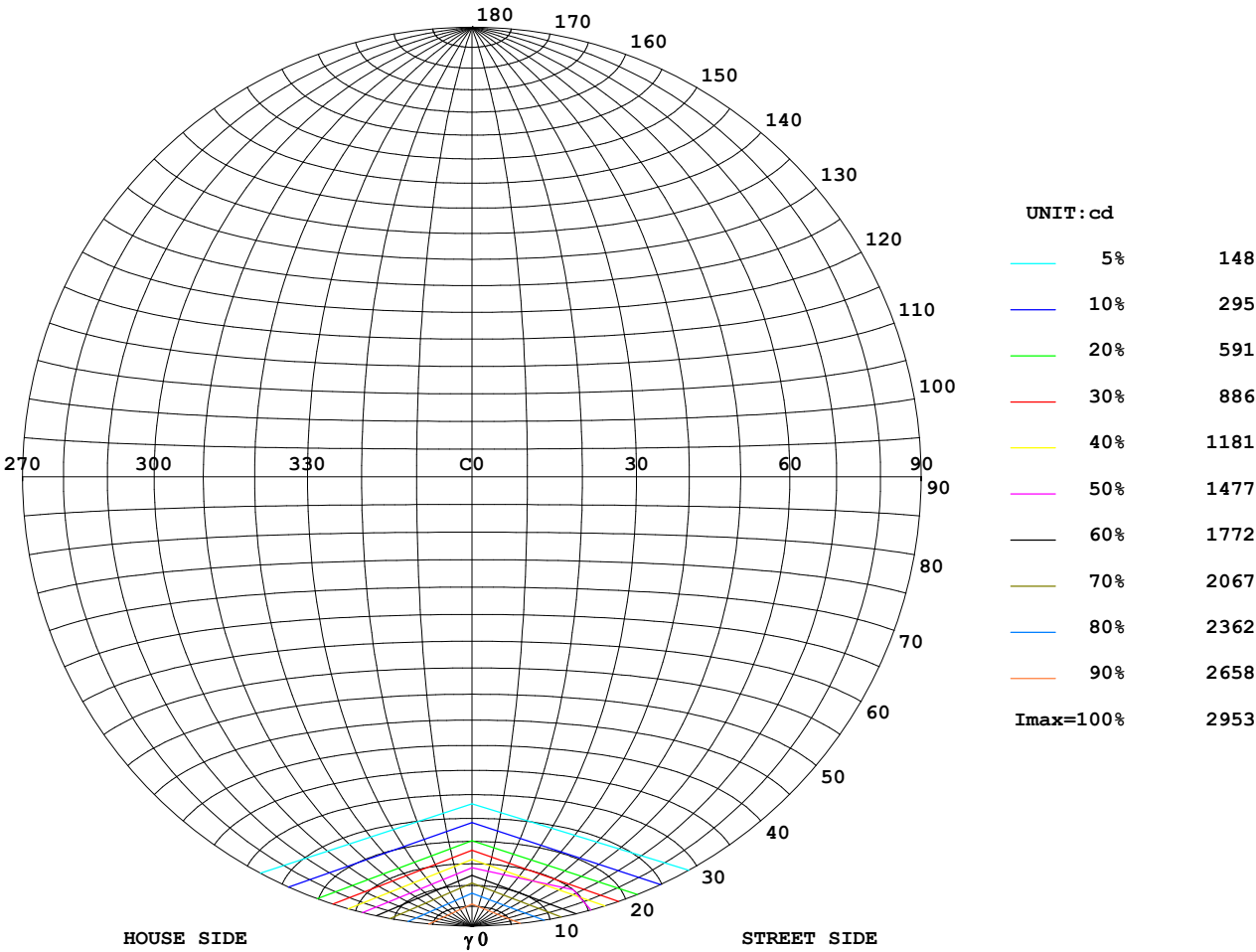
Test System: HopooColor HPG1800
 Temperature: 25.3DEG
 Operators:
 Test Date: 09-08-2026

Test Set: 5.0deg/s C-Gamma (TYPE C)
 Humidity: 65.0%
 Test Distance: 8.300 m
 Remarks:

ISOCANDELA DIAGRAM

Report number:

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



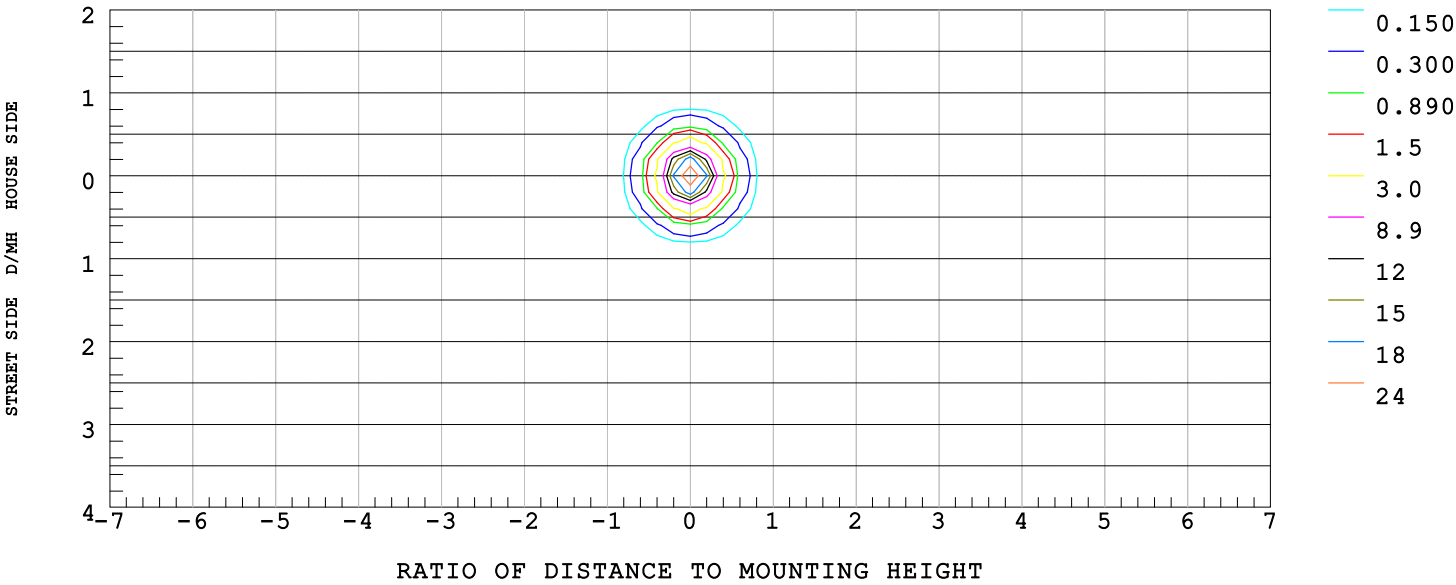
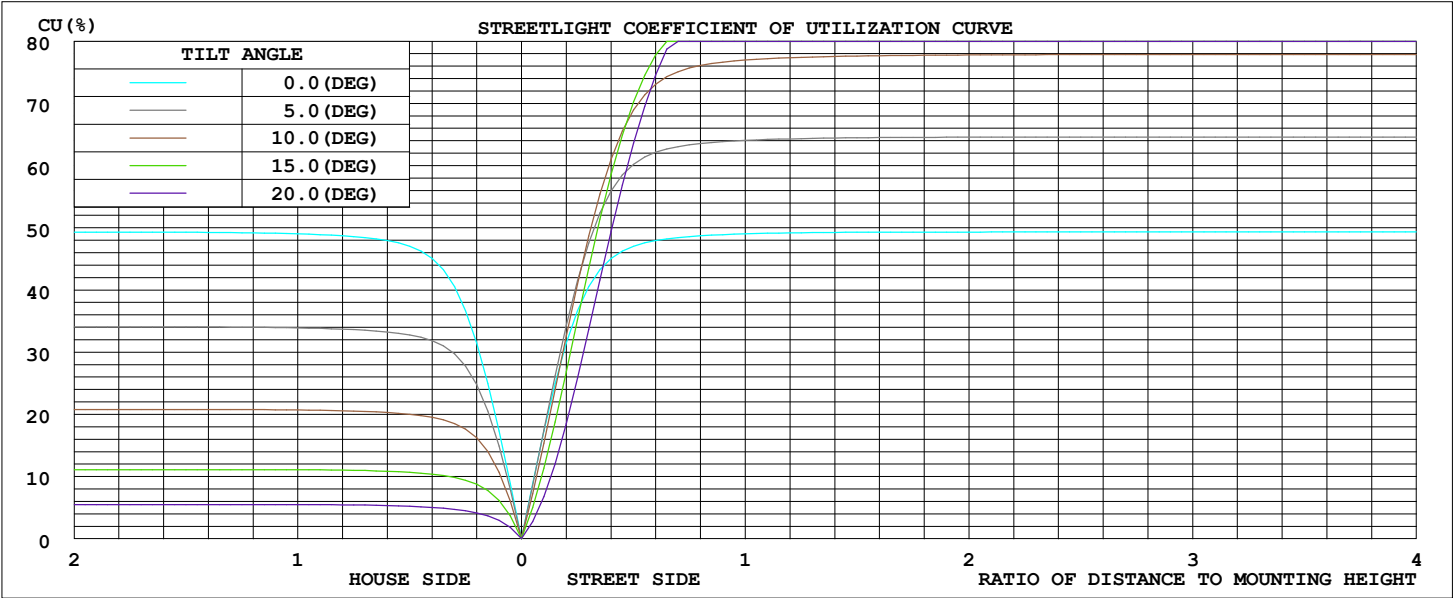
Test System:HopooColor HPG1800 Test Set: 5.0deg/s C-Gamma (TYPE C)
Temperature:25.3DEG Humidity:65.0%
Operators: Test Distance:8.300 m
Test Date:09-08-2026 Remarks:

ISOLUX DIAGRAM

Report number:

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

ILLUMINANCE AT MH=10 m,Enadir = 29.53 lx

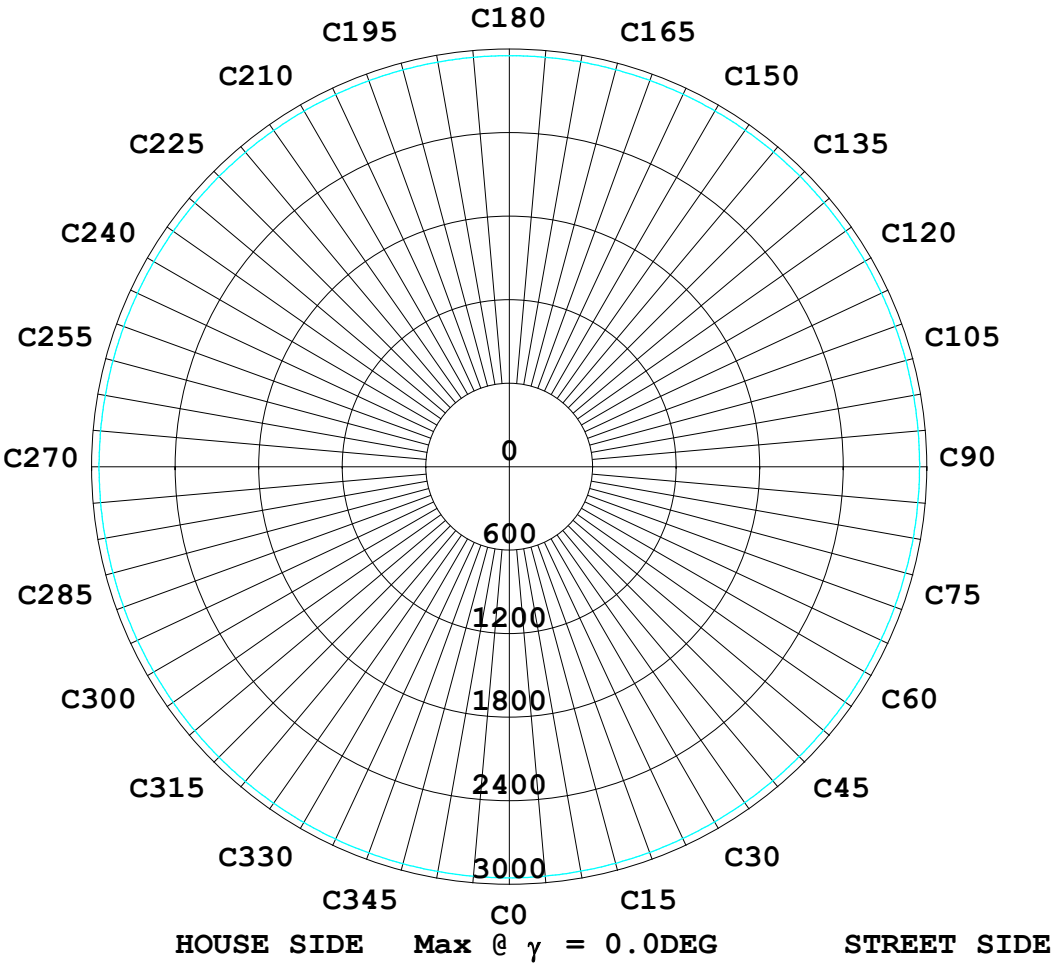


Test System:HopooColor HPG1800	Test Set: 5.0deg/s C-Gamma (TYPE C)
Temperature:25.3DEG	Humidity:65.0%
Operators:	Test Distance:8.300 m
Test Date:09-08-2026	Remarks:

ISOCANDELA DIAGRAM

Report number:

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



Test System:HopooColor HPG1800	Test Set: 5.0deg/s C-Gamma (TYPE C)
Temperature:25.3DEG	Humidity:65.0%
Operators:	Test Distance:8.300 m
Test Date:09-08-2026	Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Report number:

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

UNIT: cd

C (DEG)				
γ (DEG)	0	90	180	270
0.0	2953	2947	2953	2947
5.0	2715	2772	2715	2772
10.0	2154	2291	2154	2291
15.0	1318	1533	1318	1533
20.0	598	738	598	738
25.0	227	278	227	278
30.0	97.6	111	97.6	111
35.0	48.9	50.4	48.9	50.4
40.0	28.3	27.0	28.3	27.0
45.0	18.9	16.6	18.9	16.6
50.0	13.0	10.8	13.0	10.8
55.0	8.26	6.26	8.26	6.26
60.0	4.54	1.30	4.54	1.30
65.0	1.99	0.00	1.99	0.00
70.0	1.10	0.00	1.10	0.00
75.0	0.41	0.00	0.41	0.00
80.0	0.07	0.00	0.07	0.00
85.0	0.00	0.00	0.00	0.00
90.0	0.00	0.00	0.00	0.00

Test System:HopooColor HPG1800
Temperature:25.3DEG
Operators:
Test Date:09-08-2026

Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:8.300 m
Remarks: