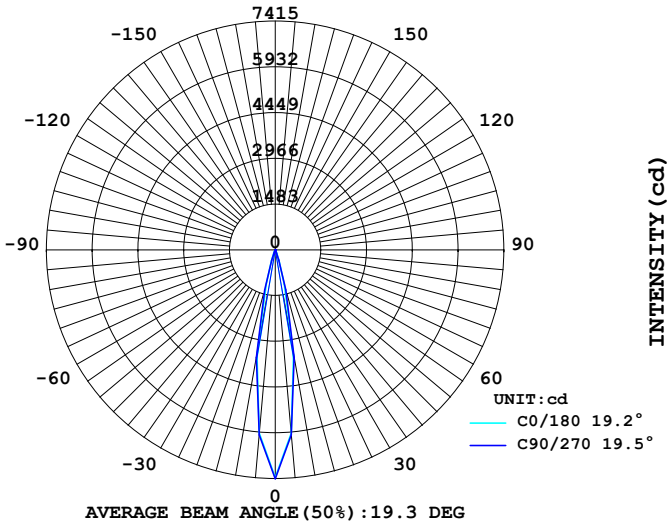
LUMINAIRE PHOTOMETRIC TEST REPORT

Report number:

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

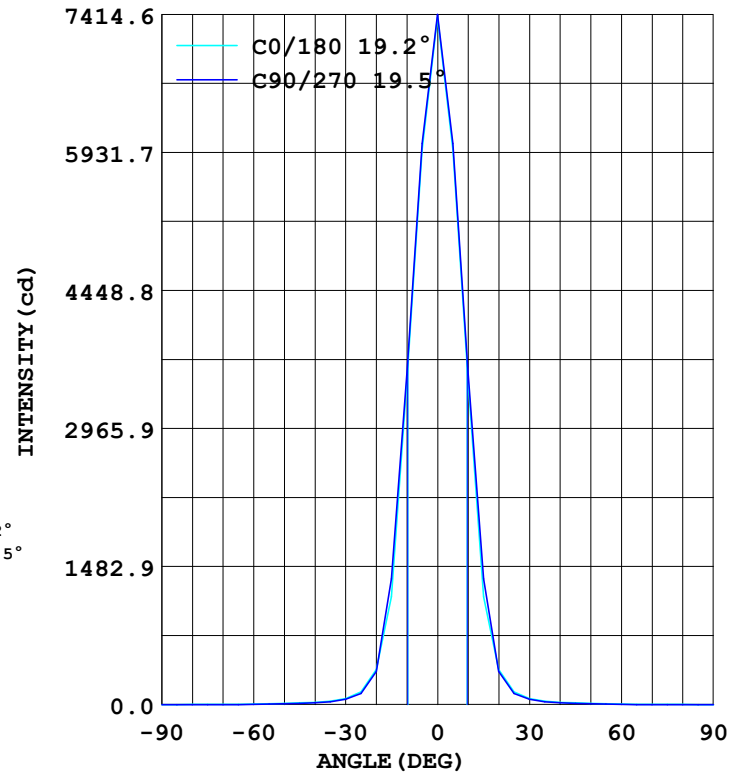
DATA OF LAMP		Imax(cd)	7415	S/MH(C0/180)	0.32
MODEL		EFFICIENCY(%)	100.0	S/MH(C90/270)	0.33
NOMINAL POWER(W)	16	TOTAL FLUX(lm)	1033.5	Voltage(V)	230.2
RATED VOLTAGE(V)	230	EFFICIENCY(lm/W)	68.6	Current(A)	0.115
NOMINAL FLUX(lm)	1033.6	η up(%)	0.0	Power(W)	15.07
LAMPS QUANTITY	1	η down(%)	100.0	Power Factor(PF)	0.568
TEST VOLTAGE(V)	230.3	Effictive Flux(lm)	915.2	EEI	0.000(E)

LUMINOUS INTENSITY DISTRIBUTION



AVERAGE BEAM ANGLE(50%):19.3 DEG

LUMINOUS INTENSITY DISTRIBUTION



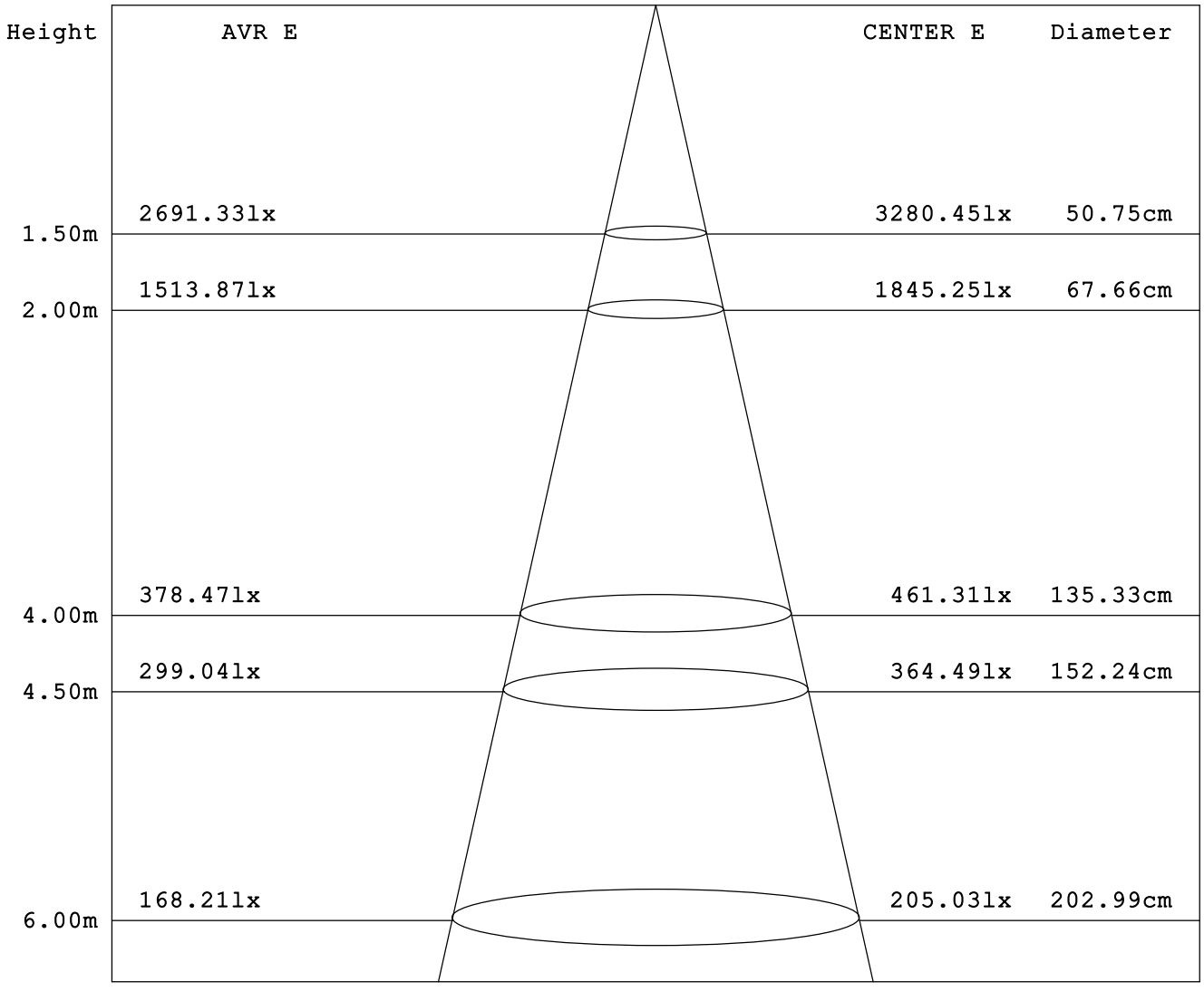
Test System:HopooColor HPG1800
Temperature:25.3DEG
Operators:
Test Date:09-08-2026

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.:



Angle:19.2deg

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:

ZONAL FLUX DIAGRAM

Report number:

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

γ	C0	C90	C180	C270					γ	zone	total
10.0	3460	3539	3460	3539					0- 10	499.7	499.7
20.0	376.0	355.4	376.0	355.4					10- 20	415.4	915.2
30.0	64.48	55.66	64.48	55.66					20- 30	75.23	990.4
40.0	23.07	17.70	23.07	17.70					30- 40	22.45	1013
50.0	13.43	9.782	13.43	9.782					40- 50	11.90	1025
60.0	5.028	2.273	5.028	2.273					50- 60	6.906	1032
70.0	1.102	0	1.102	0					60- 70	1.557	1033
80.0	0.069	0	0.069	0					70- 80	0.281	1034
90.0	0	0	0	0					80- 90	0.009	1034
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 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:

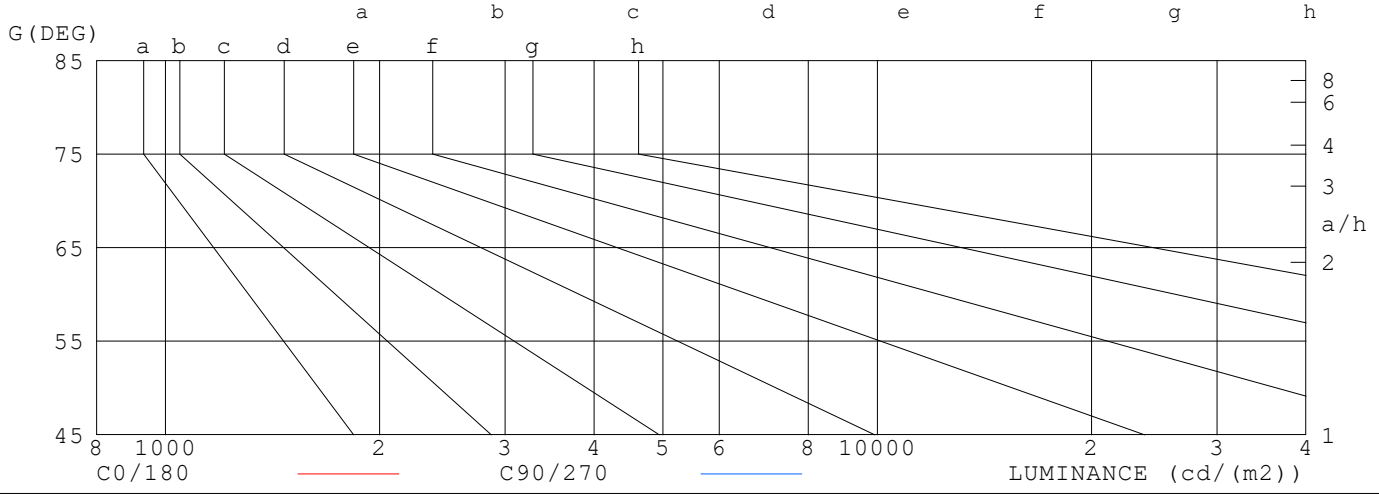
LUMINANCE LIMITATION CURVES

Report number:

MANUFACTURER:		
Address:		
NAME:	TYPE:	WEIGHT:
SPECIFICATION:	DIMENSION:	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
		a	b	c	d	e	f	g	h



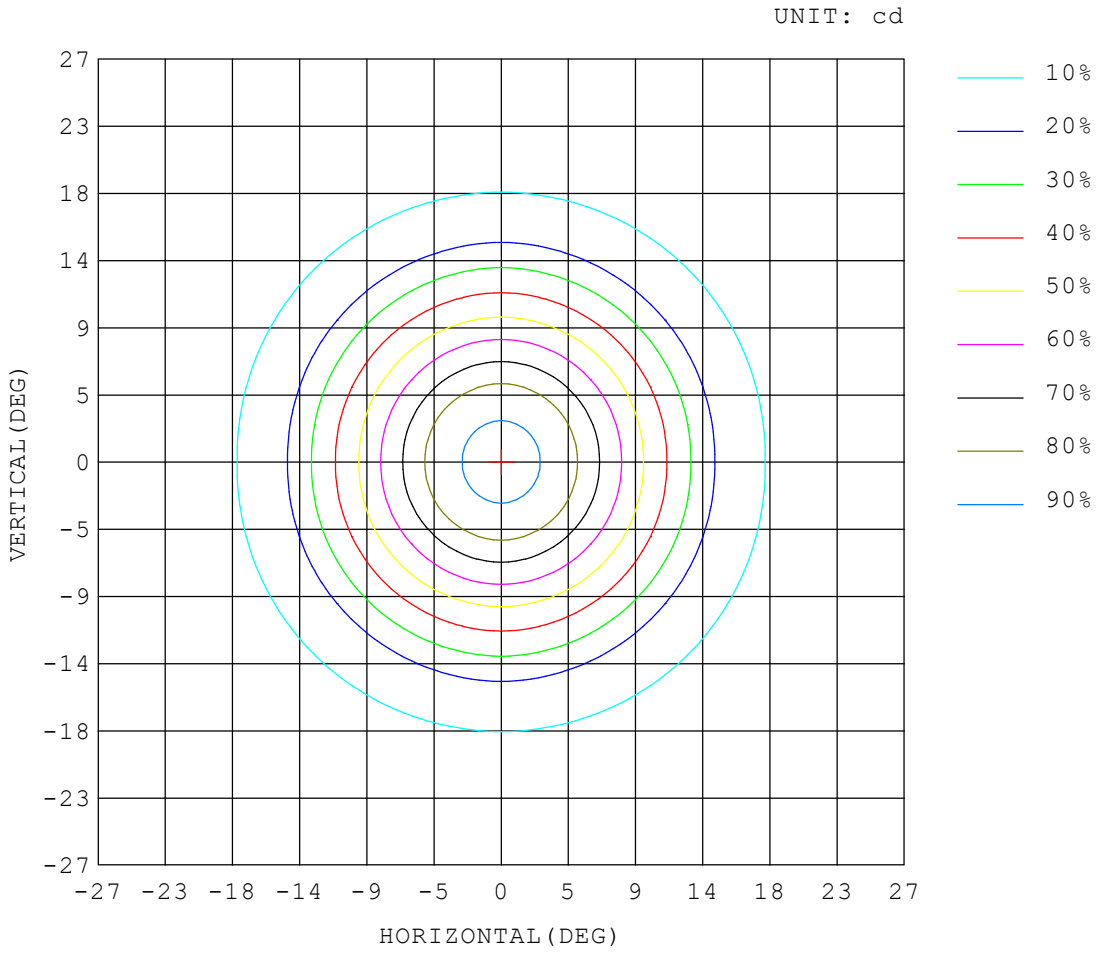
LUMINANCE cd/m2		
G(DEG)	C0/180	C90/270
85	0	0
80	4	0
75	19	0
70	32	0
65	51	0
60	101	45
55	165	110
50	209	152
45	244	179

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.:



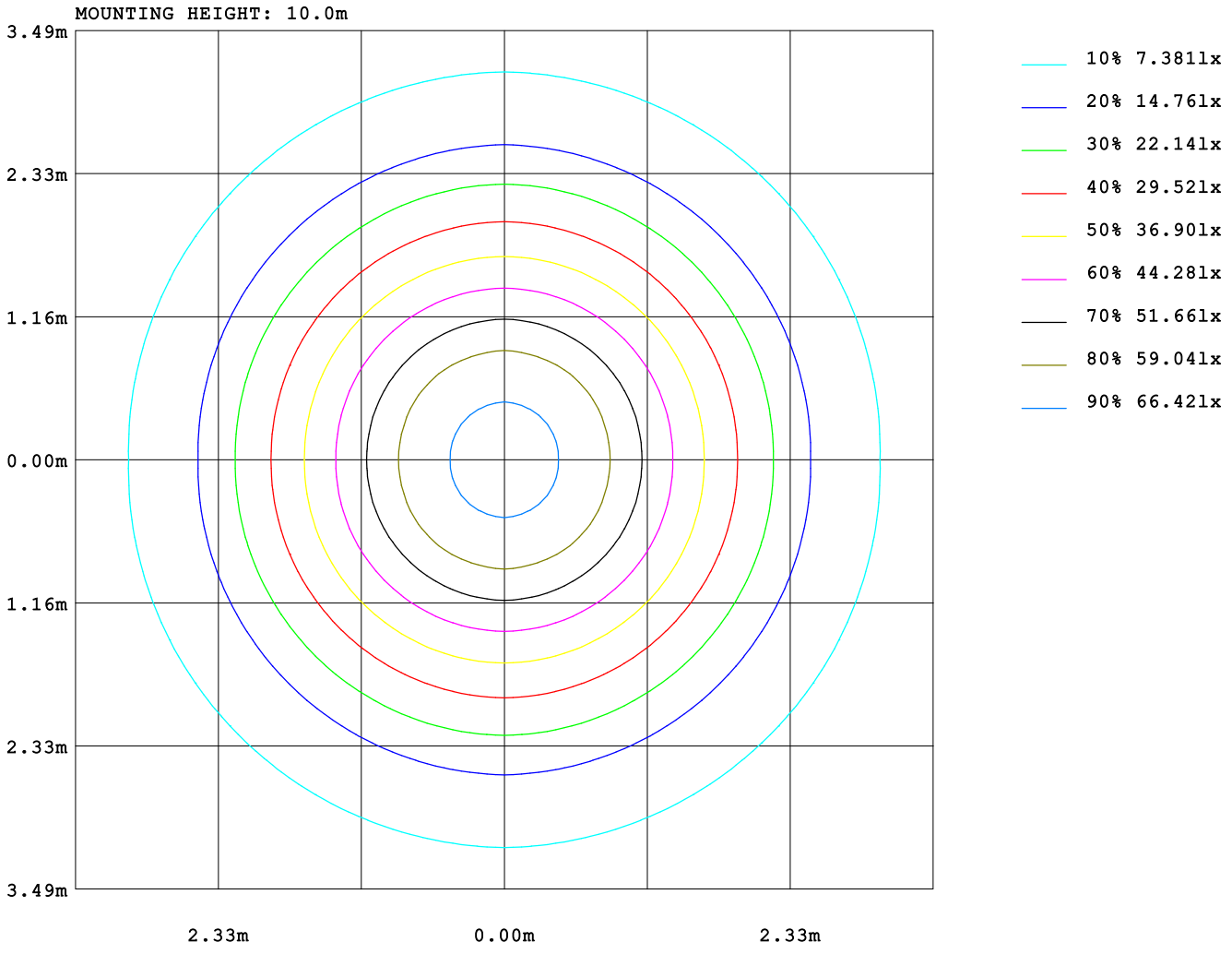
Test System:HopooColor HPG1800
Temperature:25.3DEG
Operators:
Test Date:09-08-2026

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
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:

AREA LUMINOUS FLUX

Report number:

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

AREA FLUX DIAGRAM — UNIT:lm

VERTICAL(DEG)	-27	-24	-21	-18	-15	-12	-9	-6	HORIZONTAL(DEG) 6	9	12	15	18	21	24	27	Φ t	Φ a
27	0.08	0.10	0.13	0.16	0.20	0.24	0.28	0.30	0.32	0.32	0.30	0.28	0.24	0.20	0.16	0.13	0.10	0.08	3.63	0.00
24	0.10	0.13	0.18	0.24	0.30	0.39	0.50	0.60	0.64	0.64	0.60	0.50	0.39	0.30	0.24	0.18	0.13	0.10	6.14	0.00
21	0.13	0.17	0.25	0.34	0.51	0.71	0.89	1.11	1.28	1.28	1.11	0.89	0.71	0.51	0.34	0.25	0.17	0.13	10.8	0.00
18	0.16	0.23	0.34	0.56	0.82	1.27	1.94	2.49	2.81	2.81	2.49	1.94	1.27	0.82	0.56	0.34	0.23	0.16	21.2	11.8
15	0.20	0.29	0.51	0.82	1.45	2.41	3.39	4.54	5.34	5.34	4.54	3.39	2.41	1.45	0.82	0.51	0.29	0.20	37.9	31.4
12	0.24	0.38	0.70	1.24	2.34	3.76	6.00	7.86	8.92	8.92	7.86	6.00	3.76	2.34	1.24	0.70	0.38	0.24	62.9	57.4
9	0.28	0.50	0.87	1.81	3.17	5.87	8.76	11.2	12.8	12.8	11.2	8.76	5.87	3.17	1.81	0.87	0.50	0.28	90.7	85.7
	0.30	0.59	1.06	2.22	4.17	7.61	11.1	14.4	16.4	16.4	14.4	11.1	7.61	4.17	2.22	1.06	0.59	0.30	116	111
	0.33	0.64	1.19	2.41	4.83	8.57	12.5	16.3	18.5	18.5	16.3	12.5	8.57	4.83	2.41	1.19	0.64	0.33	131	126
	0.33	0.64	1.19	2.41	4.83	8.57	12.5	16.3	18.5	18.5	16.3	12.5	8.57	4.83	2.41	1.19	0.64	0.33	131	126
	0.30	0.59	1.06	2.22	4.17	7.61	11.1	14.4	16.4	16.4	14.4	11.1	7.61	4.17	2.22	1.06	0.59	0.30	116	111
-9	0.28	0.50	0.87	1.81	3.17	5.87	8.76	11.2	12.8	12.8	11.2	8.76	5.87	3.17	1.81	0.87	0.50	0.28	90.7	85.7
-12	0.24	0.38	0.70	1.24	2.34	3.76	6.00	7.86	8.92	8.92	7.86	6.00	3.76	2.34	1.24	0.70	0.38	0.24	62.9	57.4
-15	0.20	0.29	0.51	0.82	1.45	2.41	3.39	4.54	5.34	5.34	4.54	3.39	2.41	1.45	0.82	0.51	0.29	0.20	37.9	31.4
-18	0.16	0.23	0.34	0.56	0.82	1.27	1.94	2.49	2.81	2.81	2.49	1.94	1.27	0.82	0.56	0.34	0.23	0.16	21.2	11.8
-21	0.13	0.17	0.25	0.34	0.51	0.71	0.89	1.11	1.28	1.28	1.11	0.89	0.71	0.51	0.34	0.25	0.17	0.13	10.8	0.00
-24	0.10	0.13	0.18	0.24	0.30	0.39	0.50	0.60	0.64	0.64	0.60	0.50	0.39	0.30	0.24	0.18	0.13	0.10	6.14	0.00
-27	0.08	0.10	0.13	0.16	0.20	0.24	0.28	0.30	0.32	0.32	0.30	0.28	0.24	0.20	0.16	0.13	0.10	0.08	3.63	0.00
Φ t	3.62	6.09	10.4	19.6	35.6	61.7	90.9	118	134	134	118	90.9	61.7	35.6	19.6	10.4	6.09	3.62	1034	
Φ a	0.00	0.00	0.00	10.0	29.1	56.1	85.8	113	130	130	113	85.8	56.1	29.1	10.0	0.00	0.00	0.00		915

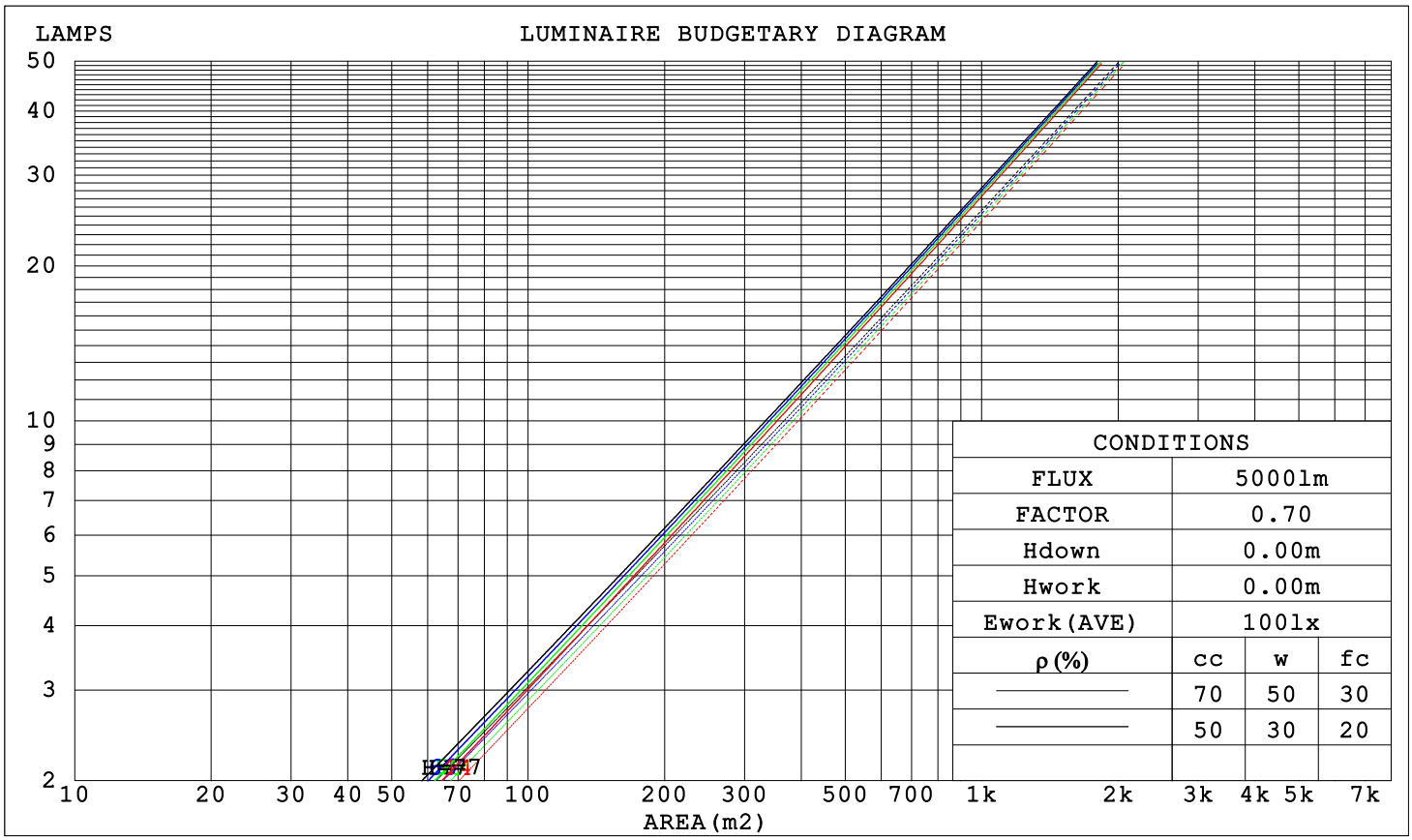
Test System:HopooColor HPG1800 Test Set: 5.0deg/s C-Gamma (TYPE C)
Temperature:25.3DEG Humidity:65.0%
Operators: Test Distance:8.300 m
Test Date:09-08-2026 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Report number:

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

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	1.12	1.10	1.11	1.10	1.08	1.07	1.06	1.05	1.04	1.03	1.02	1.00	.00	.99	.97
2.0	1.09	1.06	1.04	1.07	1.05	1.03	1.04	1.02	1.00	1.01	.00	.98	.99	.97	.96	.95
3.0	1.05	1.01	.99	1.03	1.00	.98	1.01	.99	.97	.99	.97	.95	.97	.95	.94	.92
4.0	1.01	.98	.95	1.00	.97	.94	.98	.96	.93	.96	.94	.92	.95	.93	.91	.90
5.0	.98	.94	.92	.97	.94	.91	.96	.93	.91	.94	.92	.90	.93	.91	.89	.88
6.0	.95	.92	.89	.95	.91	.89	.93	.90	.88	.92	.90	.88	.91	.89	.87	.86
7.0	.93	.89	.87	.92	.89	.86	.91	.88	.86	.90	.88	.86	.89	.87	.85	.84
8.0	.91	.87	.85	.90	.87	.84	.89	.86	.84	.89	.86	.84	.88	.85	.84	.83
9.0	.89	.85	.83	.88	.85	.83	.88	.85	.82	.87	.84	.82	.86	.84	.82	.81
10.0	.87	.83	.81	.86	.83	.81	.86	.83	.81	.85	.83	.81	.85	.82	.80	.80



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:

WEC AND CCEC

Report number:

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

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coeffcients(WEC)									
0.0																
1.0	.127	.072	.023	.120	.069	.022	.108	.062	.020	.096	.056	.018	.086	.050	.016	
2.0	.116	.064	.020	.111	.061	.019	.101	.056	.017	.092	.051	.016	.083	.047	.015	
3.0	.108	.057	.017	.103	.055	.017	.095	.051	.016	.087	.048	.015	.080	.044	.014	
4.0	.100	.052	.015	.096	.050	.015	.089	.047	.014	.083	.045	.013	.077	.042	.013	
5.0	.094	.048	.014	.091	.047	.014	.085	.044	.013	.079	.042	.012	.074	.040	.012	
6.0	.088	.044	.013	.086	.043	.012	.080	.041	.012	.076	.039	.012	.071	.037	.011	
7.0	.083	.041	.012	.081	.040	.011	.077	.039	.011	.072	.037	.011	.069	.036	.010	
8.0	.079	.039	.011	.077	.038	.011	.073	.037	.010	.070	.035	.010	.066	.034	.010	
9.0	.075	.036	.010	.073	.036	.010	.070	.035	.010	.067	.034	.010	.064	.032	.009	
10.0	.072	.034	.010	.070	.034	.009	.067	.033	.009	.064	.032	.009	.062	.031	.009	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	.168	.158	.149	.143	.135	.128	.098	.093	.089	.056	.054	.052	.018	.017	.017	
2.0	.149	.133	.119	.127	.114	.103	.087	.079	.072	.050	.046	.042	.016	.015	.014	
3.0	.133	.113	.097	.114	.098	.084	.078	.068	.059	.045	.040	.035	.015	.013	.011	
4.0	.120	.098	.081	.103	.084	.070	.071	.059	.049	.041	.034	.029	.013	.011	.010	
5.0	.109	.085	.067	.094	.074	.059	.065	.051	.041	.037	.030	.025	.012	.010	.008	
6.0	.100	.075	.057	.086	.065	.050	.059	.045	.035	.034	.027	.021	.011	.009	.007	
7.0	.092	.067	.049	.079	.058	.043	.055	.040	.030	.032	.024	.018	.010	.008	.006	
8.0	.085	.060	.042	.073	.052	.037	.051	.036	.026	.029	.021	.016	.010	.007	.005	
9.0	.079	.054	.037	.068	.047	.032	.047	.033	.023	.027	.019	.014	.009	.006	.005	
10.0	.074	.049	.032	.064	.043	.028	.044	.030	.020	.026	.018	.012	.008	.006	.004	

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:

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	-3.9	-3.3	-3.7	-3.2	-3.0	-5.2	-4.6	-5.0	-4.5	-4.3
3H	-3.9	-3.4	-3.7	-3.2	-3.0	-5.3	-4.8	-5.1	-4.6	-4.4
4H	-4.0	-3.5	-3.7	-3.3	-3.1	-5.4	-4.9	-5.2	-4.7	-4.5
6H	-4.1	-3.6	-3.8	-3.3	-3.1	-5.5	-5.0	-5.2	-4.8	-4.5
8H	-4.1	-3.6	-3.8	-3.4	-3.1	-5.5	-5.1	-5.3	-4.8	-4.6
12H	-4.2	-3.7	-3.9	-3.4	-3.2	-5.6	-5.1	-5.3	-4.9	-4.6
4H 2H	-4.0	-3.5	-3.7	-3.3	-3.1	-5.2	-4.7	-5.0	-4.5	-4.3
3H	-4.0	-3.6	-3.7	-3.3	-3.1	-5.4	-4.9	-5.1	-4.7	-4.4
4H	-4.1	-3.7	-3.8	-3.4	-3.1	-5.5	-5.1	-5.2	-4.8	-4.5
6H	-4.2	-3.8	-3.9	-3.5	-3.2	-5.6	-5.2	-5.2	-4.9	-4.6
8H	-4.3	-3.9	-3.9	-3.6	-3.2	-5.6	-5.3	-5.3	-4.9	-4.6
12H	-4.3	-4.0	-3.9	-3.6	-3.3	-5.7	-5.4	-5.3	-5.0	-4.6
8H 4H	-4.3	-3.9	-3.9	-3.6	-3.2	-5.6	-5.3	-5.3	-4.9	-4.6
6H	-4.4	-4.1	-4.0	-3.7	-3.3	-5.8	-5.5	-5.3	-5.1	-4.7
8H	-4.4	-4.2	-4.0	-3.8	-3.3	-5.8	-5.6	-5.4	-5.1	-4.7
12H	-4.5	-4.3	-4.1	-3.9	-3.4	-5.9	-5.7	-5.4	-5.2	-4.8
12H 4H	-4.3	-4.0	-3.9	-3.6	-3.3	-5.7	-5.4	-5.3	-5.0	-4.6
6H	-4.4	-4.2	-4.0	-3.8	-3.3	-5.8	-5.6	-5.4	-5.1	-4.7
8H	-4.5	-4.3	-4.1	-3.9	-3.4	-5.9	-5.7	-5.4	-5.2	-4.8
Variations with the observer position at spacings:										
S = 1.0H	+ 1.4 / - 2.4					+ 1.9 / - 5.1				
1.5H	+ 0.9 / - 2.1					+ 0.8 / - 2.3				
2.0H	+ 3.0 / - 7.6					+ 3.3 / -15.4				

CIE Pub.117 Corrected 1034 lm Total Lamp Luminous Flux.(8log(F/F0) = 0.1)

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:

UTILIZATION FACTORS TABLE

Report number:

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

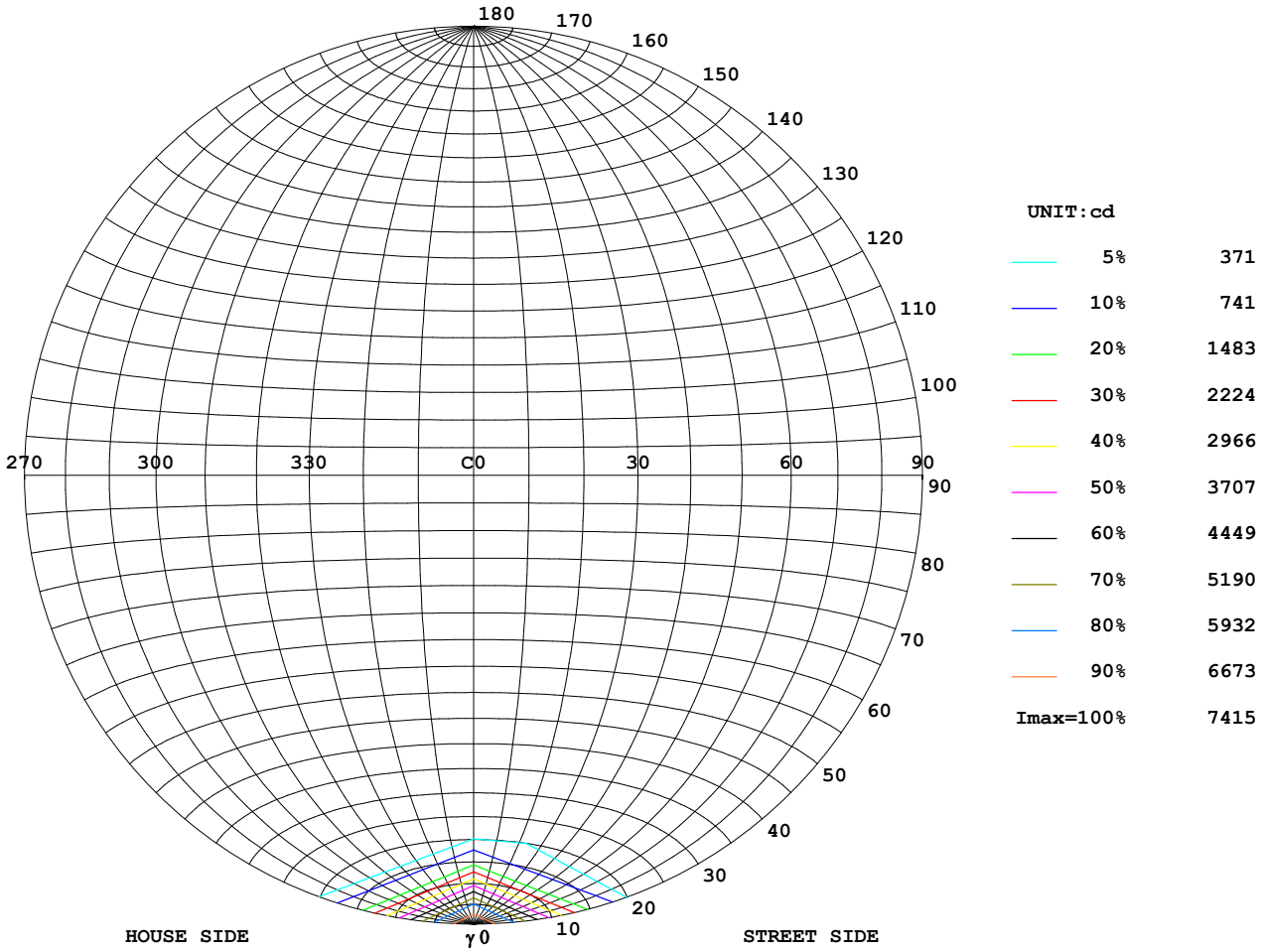
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	90	84	81	90	84	81	89	84	81	77
0.80	97	92	89	97	92	89	96	91	88	85
1.00	101	96	93	100	96	93	99	95	92	88
1.25	105	100	97	104	100	97	102	98	96	92
1.50	107	103	100	106	102	100	104	101	98	94
2.00	110	106	103	108	105	102	106	103	101	96
2.50	111	108	105	110	106	104	107	104	102	96
3.00	113	109	107	111	108	106	107	105	104	97
4.00	114	112	110	112	110	108	109	107	106	99
5.00	116	114	112	113	112	110	110	108	107	100
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004				Suspended					SHRNOM = 1.25	

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.:



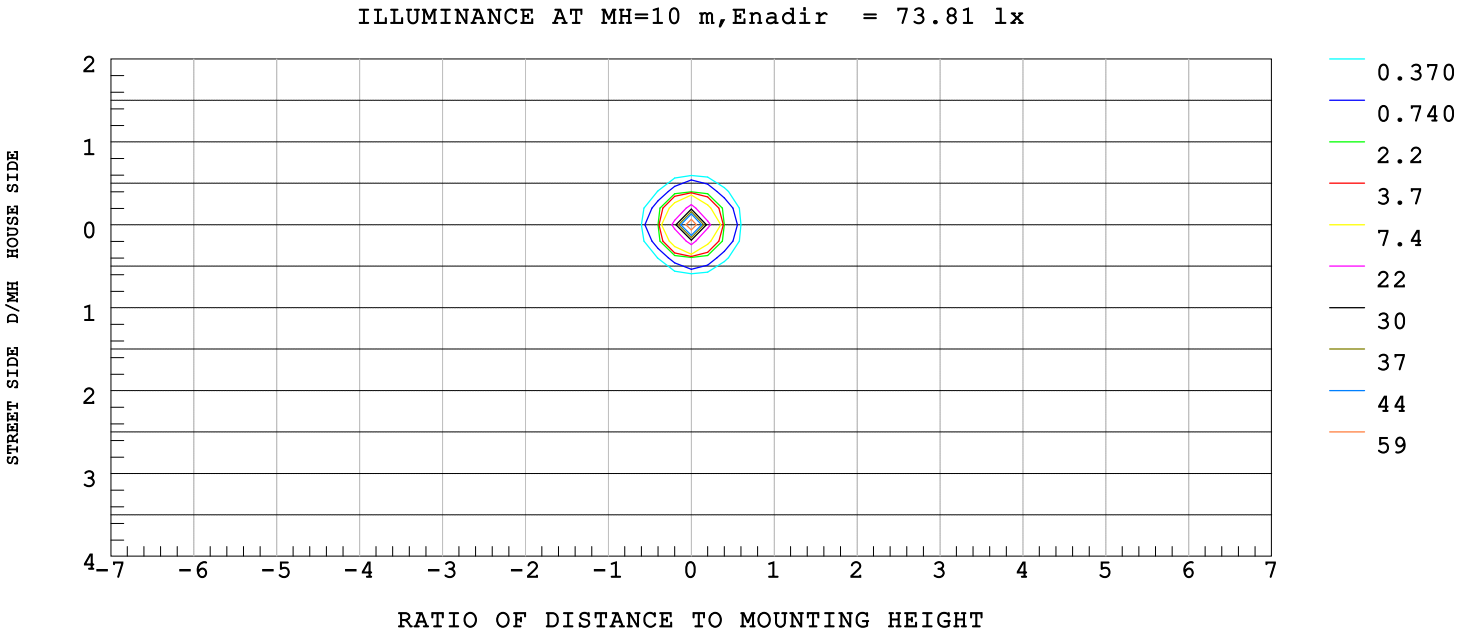
Test System:HopooColor HPG1800
Temperature:25.3DEG
Operators:
Test Date:09-08-2026

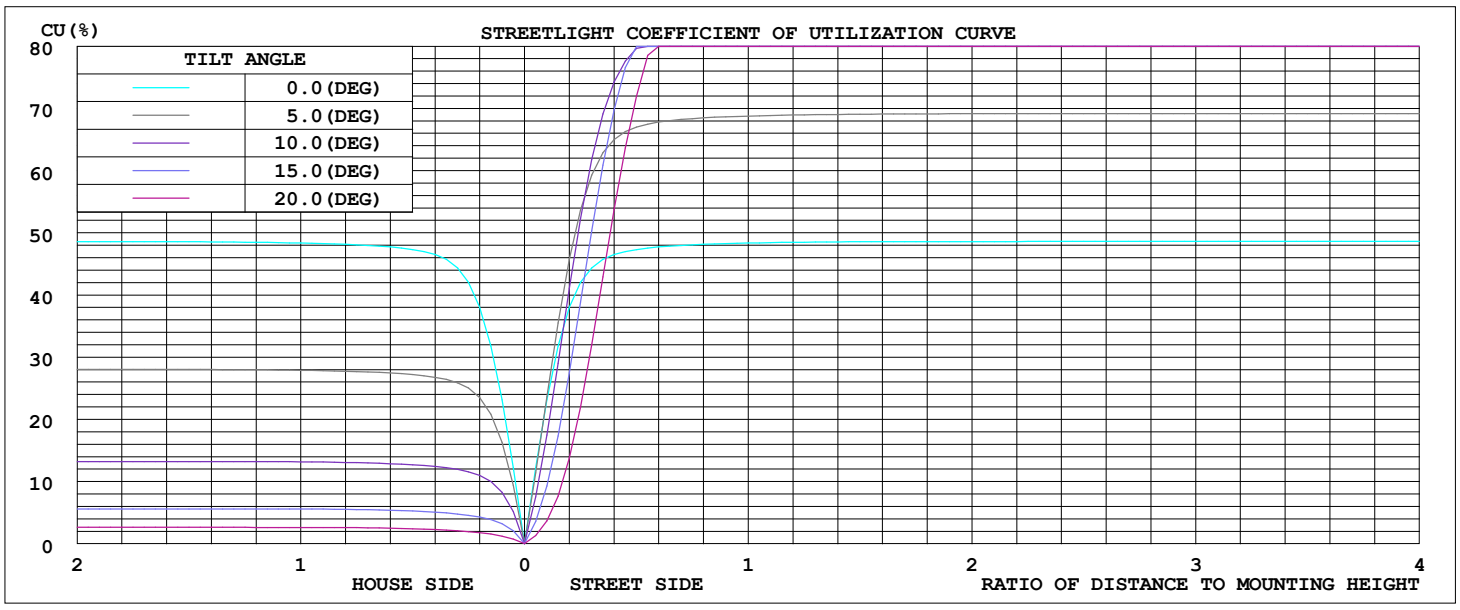
Test Set: 5.0deg/s C-Gamma (TYPE C)
Humidity:65.0%
Test Distance:8.300 m
Remarks:

ISOLUX DIAGRAM

Report number:

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



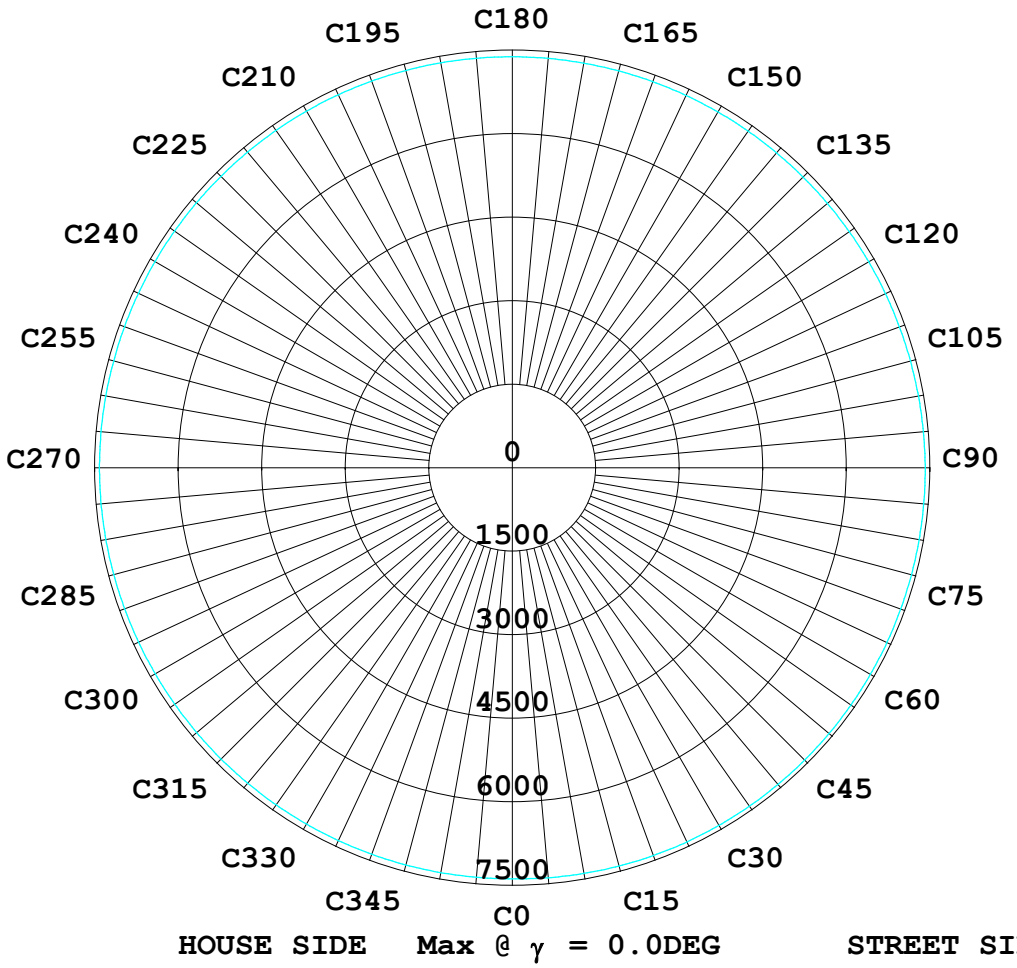


Test System:HopooColor HPG1800 Test Set: 5.0deg/s C-Gamma (TYPE C)
Temperature:25.3DEG Humidity:65.0%
Operators: Test Distance:8.300 m
Test Date:09-08-2026 Remarks:

ISOCANDELA DIAGRAM

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:

LUMINOUS DISTRIBUTION INTENSITY DATA

Report number:

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

UNIT: cd

γ (DEG) \ C(DEG)	0	90	180	270
0.0	7381	7415	7381	7415
5.0	5962	6027	5962	6027
10.0	3460	3539	3460	3539
15.0	1159	1350	1159	1350
20.0	376	355	376	355
25.0	135	118	135	118
30.0	64.4	55.6	64.4	55.6
35.0	35.5	29.4	35.5	29.4
40.0	23.0	17.7	23.0	17.7
45.0	17.2	12.6	17.2	12.6
50.0	13.4	9.78	13.4	9.78
55.0	9.43	6.33	9.43	6.33
60.0	5.02	2.27	5.02	2.27
65.0	2.13	0.00	2.13	0.00
70.0	1.10	0.00	1.10	0.00
75.0	0.48	0.00	0.48	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 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: