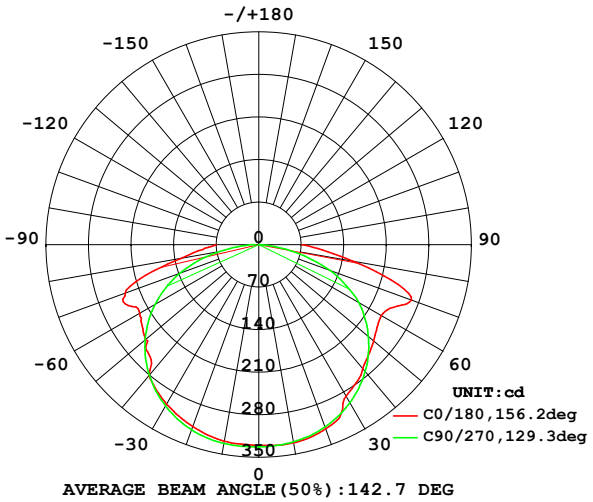
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.00V I:0.7910A P:18.99W PF:1.000 Lamp Flux:1277.29x1 lm		
NAME: HCP-3955195	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

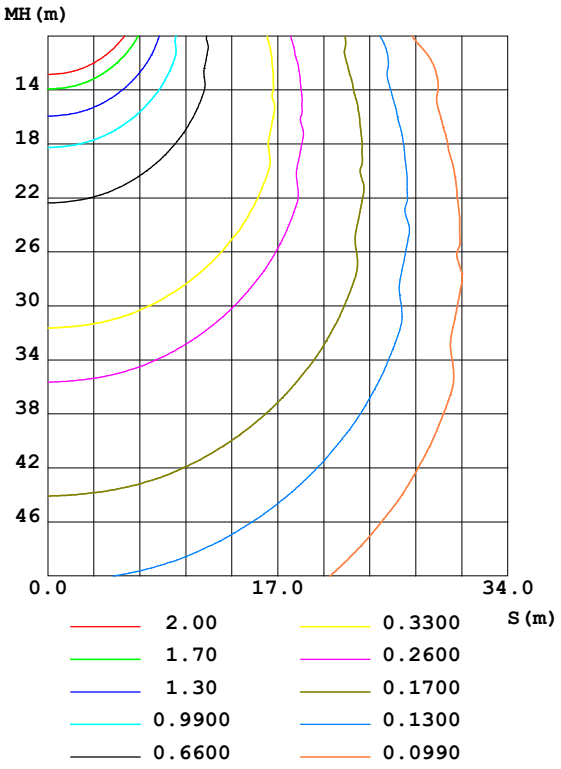
DATA OF LAMP		PHOTOMETRIC DATA		Eff: 67.26 lm/W	
MODEL	5000K	Imax(cd)	332.9	S/MH(C0/180)	1.37
NOMINAL POWER(W)	19.2	LOR(%)	100.0	S/MH(C90/270)	1.37
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	1277.3	η UP,DN(C0-180)	0.0,50.1
NOMINAL FLUX(lm)	1277.29	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	24	η down(%)	100.0	CIBSE SHR MAX	1.55

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):142.7 DEG

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.270
Humidity:65.0%
Test Distance:8.140m [K=1.0000]
Remarks: 1

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum,lamp
10	328.2	332.0	331.2	329.3					0- 10	31.60	31.60	2.47,2.47
20	318.5	324.2	322.6	319.1					10- 20	92.38	124.0	9.71,9.71
30	303.3	306.7	287.8	300.2					20- 30	144.0	268.0	21,21
40	281.0	280.2	266.2	272.6					30- 40	180.7	448.6	35.1,35.1
50	243.2	244.1	246.8	235.6					40- 50	199.3	647.9	50.7,50.7
60	226.2	197.2	233.3	190.1					50- 60	203.4	851.3	66.7,66.7
70	233.9	138.3	267.2	124.5					60- 70	200.4	1052	82.3,82.3
80	130.3	64.92	157.8	45.43					70- 80	157.6	1209	94.7,94.7
90	70.47	5.302	70.55	1.029					80- 90	67.90	1277	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

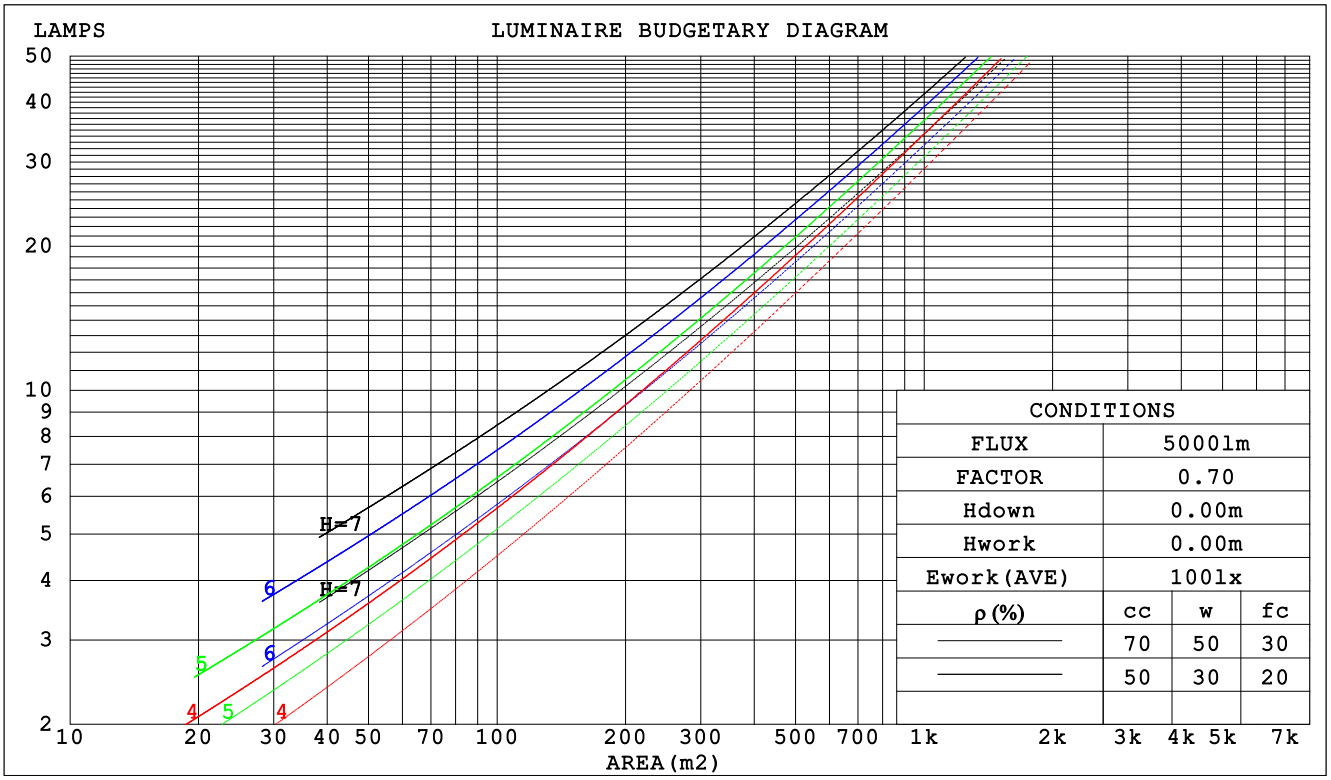
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.270
Humidity:65.0%
Test Distance:8.140m [K=1.0000]
Remarks: 1

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.00V I:0.7910A P:18.99W PF:1.000 Lamp Flux:1277.29x1 lm		
NAME: HCP-3955195	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

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	.00
1.0	1.00	.95	.90	.98	.93	.88	.93	.89	.86	.89	.86	.83	.86	.83	.80	.78
2.0	.85	.77	.70	.83	.76	.69	.79	.73	.68	.76	.71	.66	.73	.69	.65	.62
3.0	.74	.64	.57	.72	.63	.56	.69	.61	.55	.66	.59	.54	.63	.58	.53	.51
4.0	.64	.54	.47	.63	.54	.47	.60	.52	.46	.58	.51	.45	.56	.50	.45	.42
5.0	.57	.47	.40	.56	.46	.40	.54	.45	.39	.52	.44	.39	.50	.43	.38	.36
6.0	.51	.41	.34	.50	.41	.34	.48	.40	.34	.46	.39	.33	.45	.38	.33	.31
7.0	.46	.37	.30	.45	.36	.30	.44	.35	.30	.42	.35	.29	.41	.34	.29	.27
8.0	.42	.33	.26	.41	.32	.26	.40	.32	.26	.38	.31	.26	.37	.31	.26	.24
9.0	.38	.30	.24	.38	.29	.24	.36	.29	.23	.35	.28	.23	.34	.28	.23	.21
10.0	.35	.27	.21	.35	.27	.21	.34	.26	.21	.33	.26	.21	.32	.25	.21	.19



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.270
Humidity:65.0%
Test Distance:8.140m [K=1.0000]
Remarks: 1

WEC AND CCEC

Test:U:24.00V I:0.7910A P:18.99W PF:1.000 Lamp Flux:1277.29x1 lm		
NAME: HCP-3955195	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

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	.383	.218	.069	.375	.214	.068	.362	.208	.066	.349	.201	.065	.338	.196	.063	
2.0	.343	.188	.058	.336	.185	.057	.324	.180	.056	.313	.175	.055	.302	.171	.054	
3.0	.307	.164	.049	.302	.162	.049	.291	.158	.048	.281	.154	.047	.272	.150	.047	
4.0	.278	.144	.042	.273	.143	.042	.263	.139	.042	.254	.136	.041	.246	.134	.041	
5.0	.253	.129	.037	.248	.127	.037	.240	.125	.037	.232	.122	.036	.224	.120	.036	
6.0	.231	.116	.033	.227	.115	.033	.220	.113	.033	.213	.111	.032	.206	.108	.032	
7.0	.213	.105	.030	.210	.104	.030	.203	.103	.030	.197	.101	.029	.191	.099	.029	
8.0	.197	.097	.027	.194	.096	.027	.188	.094	.027	.183	.093	.027	.177	.091	.027	
9.0	.184	.089	.025	.181	.088	.025	.176	.087	.025	.171	.086	.024	.166	.084	.024	
10.0	.172	.082	.023	.169	.082	.023	.165	.081	.023	.160	.079	.023	.156	.078	.022	

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	.185	.155	.129	.159	.133	.111	.108	.092	.077	.062	.053	.045	.020	.017	.014	
2.0	.179	.132	.092	.153	.113	.079	.105	.078	.055	.061	.046	.032	.019	.015	.011	
3.0	.172	.115	.069	.147	.099	.060	.101	.069	.042	.058	.040	.025	.019	.013	.008	
4.0	.164	.102	.054	.141	.088	.047	.097	.061	.033	.056	.036	.020	.018	.012	.006	
5.0	.156	.091	.044	.134	.079	.038	.092	.055	.027	.053	.032	.016	.017	.011	.005	
6.0	.148	.083	.037	.127	.072	.032	.088	.050	.023	.051	.030	.013	.016	.010	.004	
7.0	.141	.076	.031	.121	.066	.027	.084	.046	.019	.049	.027	.011	.016	.009	.004	
8.0	.134	.071	.027	.115	.061	.024	.080	.043	.017	.046	.025	.010	.015	.008	.003	
9.0	.127	.066	.024	.110	.057	.021	.076	.040	.015	.044	.024	.009	.014	.008	.003	
10.0	.121	.061	.022	.104	.053	.019	.072	.037	.013	.042	.022	.008	.014	.007	.003	

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.270
Humidity:65.0%
Test Distance:8.140m [K=1.0000]
Remarks: 1

Uncorrected UGR Table

Test:U:24.00V I:0.7910A P:18.99W PF:1.000 Lamp Flux:1277.29x1 lm		
NAME: HCP-3955195	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

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	26.8	28.5	27.1	28.7	28.9	26.4	28.1	26.7	28.3	28.5
3H	30.0	31.6	30.3	31.8	32.1	28.5	30.0	28.8	30.3	30.5
4H	31.4	32.9	31.8	33.2	33.5	29.3	30.8	29.6	31.1	31.3
6H	32.5	33.9	32.8	34.2	34.5	29.9	31.3	30.3	31.6	31.9
8H	32.9	34.3	33.3	34.6	34.9	30.1	31.5	30.5	31.8	32.1
12H	33.4	34.7	33.8	35.0	35.4	30.3	31.6	30.6	31.9	32.2
4H 2H	27.7	29.2	28.1	29.5	29.7	27.4	28.9	27.7	29.1	29.4
3H	31.0	32.3	31.4	32.6	33.0	29.7	31.0	30.1	31.3	31.6
4H	32.5	33.7	32.9	34.1	34.4	30.7	31.9	31.1	32.2	32.6
6H	33.7	34.8	34.1	35.1	35.5	31.4	32.5	31.9	32.9	33.3
8H	34.2	35.3	34.6	35.6	36.0	31.7	32.7	32.1	33.1	33.5
12H	34.8	35.8	35.2	36.1	36.6	31.9	32.8	32.3	33.2	33.6
8H 4H	32.9	33.9	33.3	34.3	34.7	31.3	32.4	31.8	32.7	33.1
6H	34.2	35.1	34.7	35.5	35.9	32.3	33.2	32.7	33.6	34.0
8H	34.9	35.7	35.4	36.1	36.6	32.7	33.5	33.1	33.9	34.3
12H	35.7	36.3	36.1	36.8	37.3	33.0	33.7	33.5	34.1	34.6
12H 4H	32.9	33.8	33.3	34.2	34.6	31.4	32.4	31.9	32.8	33.2
6H	34.3	35.1	34.8	35.5	36.0	32.5	33.3	33.0	33.7	34.2
8H	35.1	35.7	35.5	36.2	36.7	33.0	33.6	33.4	34.1	34.6
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.2					+ 0.2 / - 0.4				

CIE Pub.117 Corrected 1277 lm Total Lamp Luminous Flux.(8log(F/F0) = 0.9)

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.270
Humidity:65.0%
Test Distance:8.140m [K=1.0000]
Remarks: 1

UTILIZATION FACTORS TABLE

Test:U:24.00V I:0.7910A P:18.99W PF:1.000 Lamp Flux:1277.29x1 lm		
NAME: HCP-3955195	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

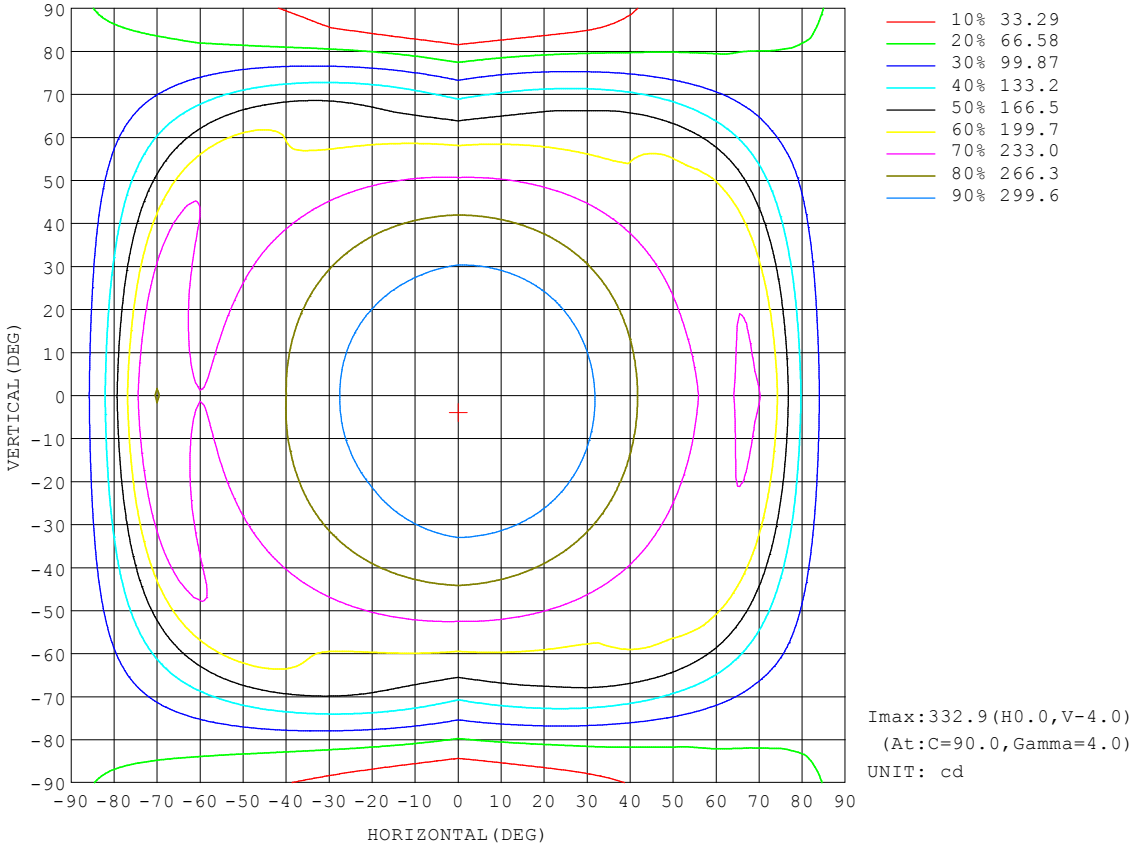
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	53	40	33	52	40	33	51	39	32	26
0.80	62	49	41	61	49	41	59	48	41	33
1.00	70	58	49	69	57	49	66	59	49	41
1.25	77	65	57	76	64	57	73	63	56	47
1.50	82	71	63	81	70	62	77	68	61	53
2.00	90	80	72	88	78	71	84	76	70	61
2.50	94	85	78	92	84	77	88	81	75	66
3.00	98	90	83	96	88	82	92	85	80	71
4.00	103	96	90	100	94	89	96	91	86	77
5.00	106	100	95	103	98	93	99	94	90	80
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004				Suspended					SHRNOM = 1.25	

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.270
Humidity:65.0%
Test Distance:8.140m [K=1.0000]
Remarks: 1

ISOCANDELA DIAGRAM

Test:U:24.00V I:0.7910A P:18.99W PF:1.000 Lamp Flux:1277.29x1 lm		
NAME: HCP-3955195	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

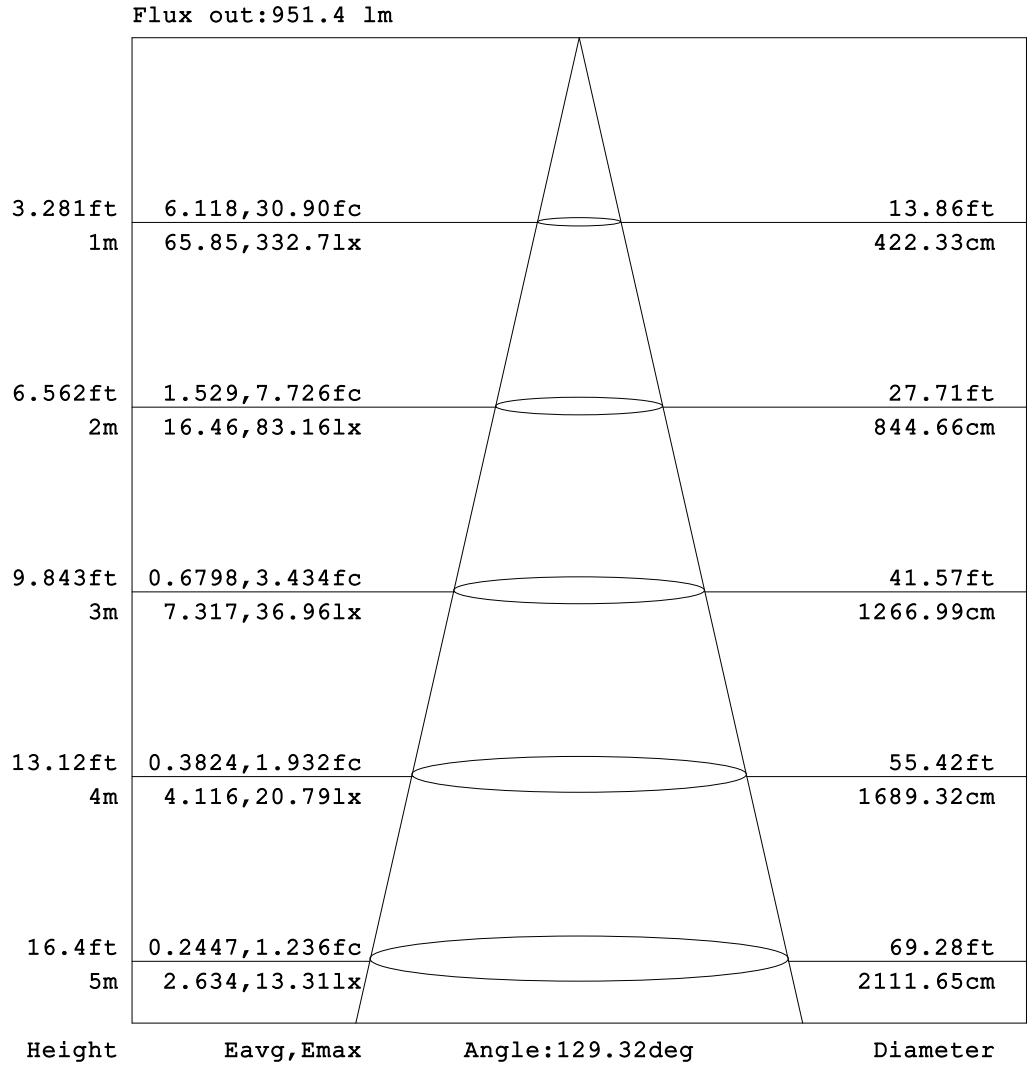


C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.270
Humidity:65.0%
Test Distance:8.140m [K=1.0000]
Remarks: 1

AAI Figure

Test:U:24.00V I:0.7910A P:18.99W PF:1.000 Lamp Flux:1277.29x1 lm		
NAME: HCP-3955195	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:



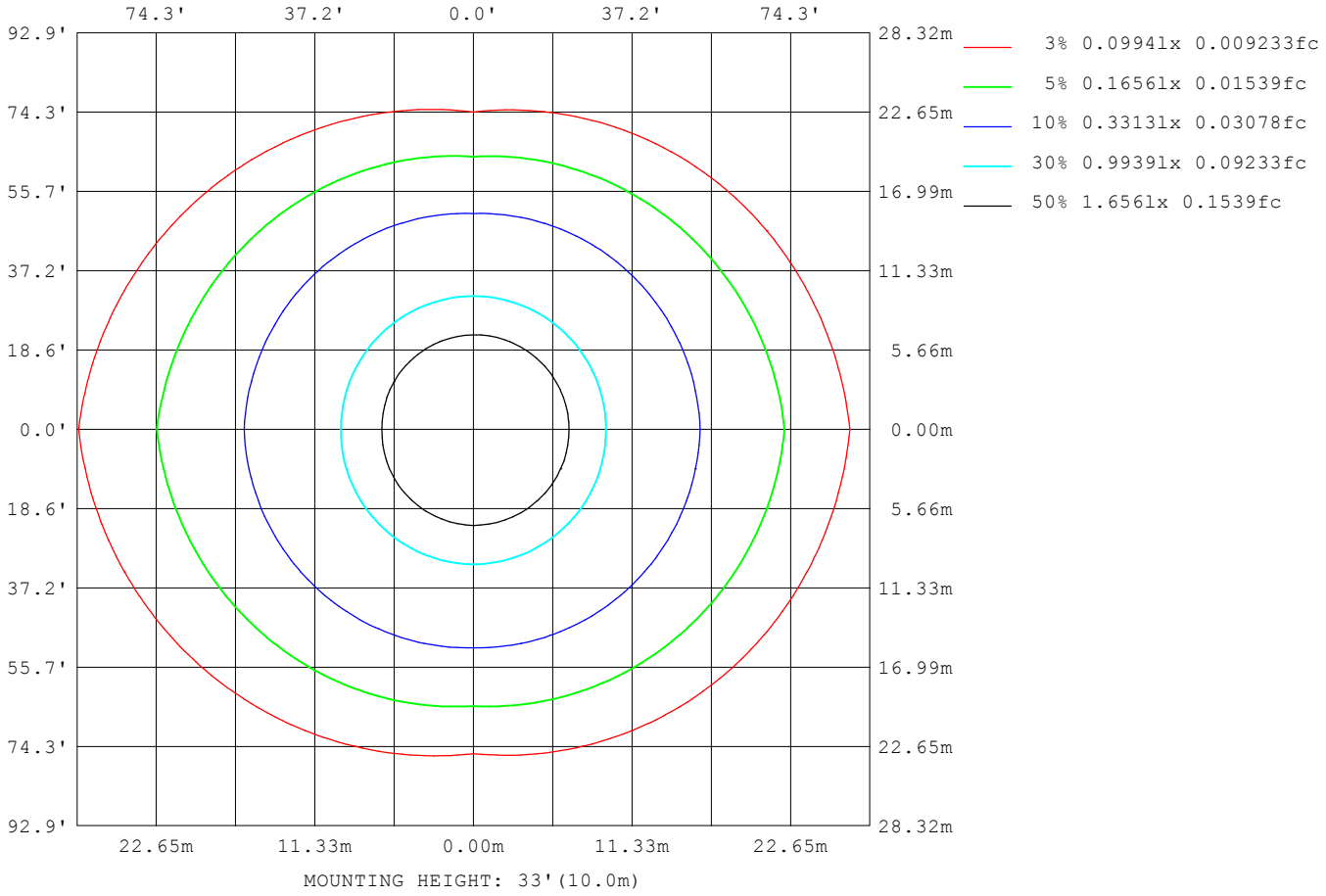
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.270
Humidity:65.0%
Test Distance:8.140m [K=1.0000]
Remarks: 1

ISOLUX DIAGRAM

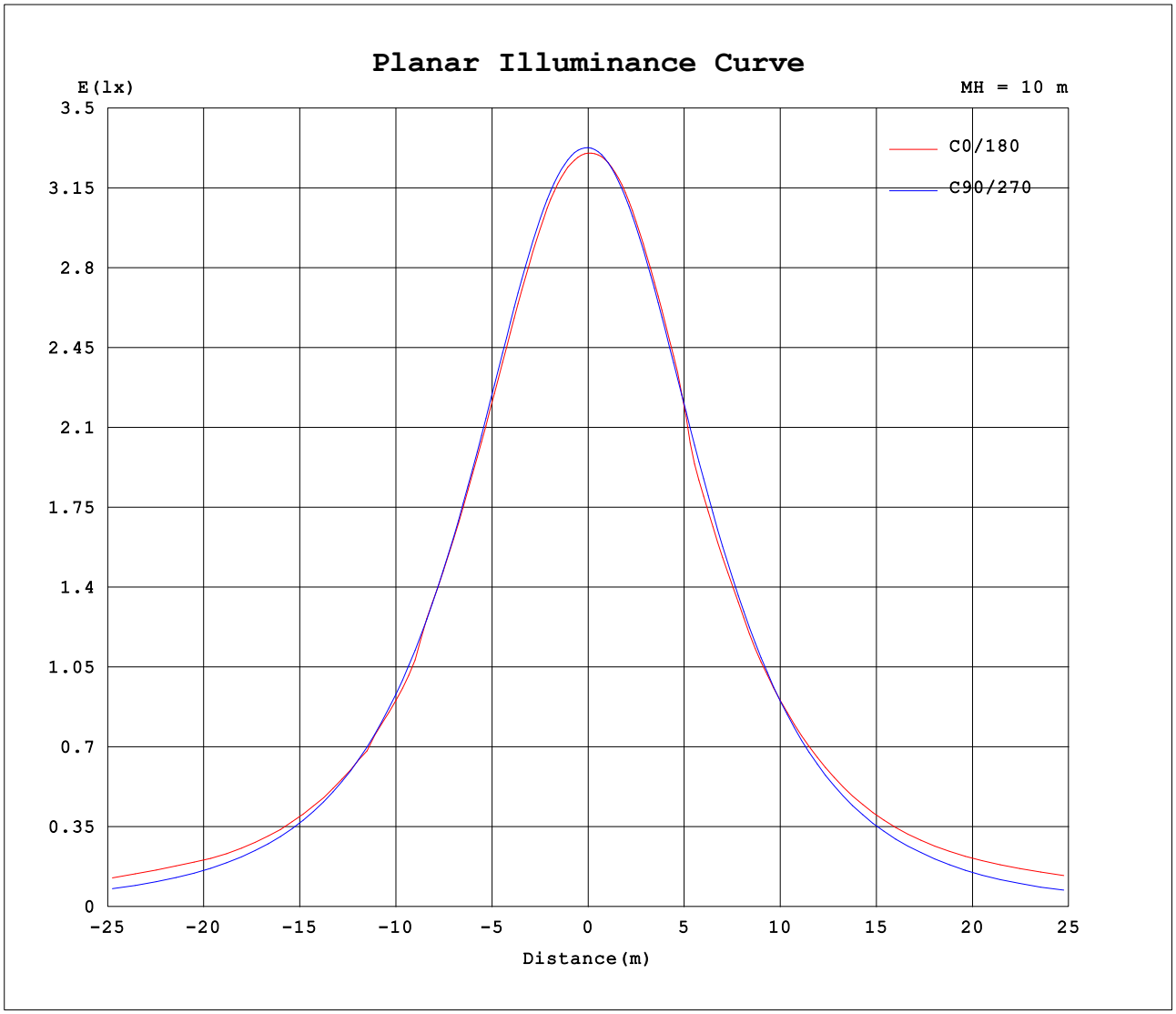
Test:U:24.00V I:0.7910A P:18.99W PF:1.000 Lamp Flux:1277.29x1 lm		
NAME: HCP-3955195	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.270
Humidity:65.0%
Test Distance:8.140m [K=1.0000]
Remarks: 1

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.270
Humidity:65.0%
Test Distance:8.140m [K=1.0000]
Remarks: 1

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.00V I:0.7910A P:18.99W PF:1.000 Lamp Flux:1277.29x1 lm		
NAME: HCP-3955195	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

Table--1 UNIT: cd

γ (DEG) \ C(DEG)	0	90	180	270
0	330	333	330	333
5	330	333	331	332
10	328	332	331	329
15	324	329	328	325
20	318	324	323	319
25	311	317	314	311
30	303	307	288	300
35	293	295	279	287
40	281	280	266	273
45	256	264	256	255
50	243	244	247	236
55	235	222	238	214
60	226	197	233	190
65	237	170	244	158
70	234	138	267	125
75	192	103	226	85.5
80	130	64.9	158	45.4
85	92.4	29.1	106	7.77
90	70.5	5.30	70.6	1.03

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.270
Humidity:65.0%
Test Distance:8.140m [K=1.0000]
Remarks: 1