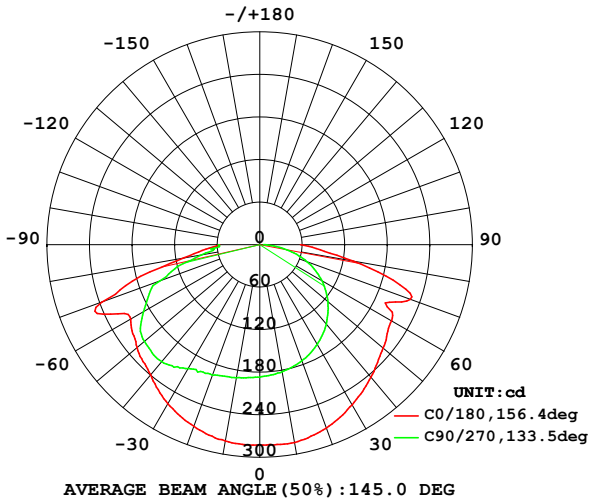
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.00V I:0.6060A P:14.55W PF:1.000 Lamp Flux:1037.93x1 lm		
NAME: HCP-3955143	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

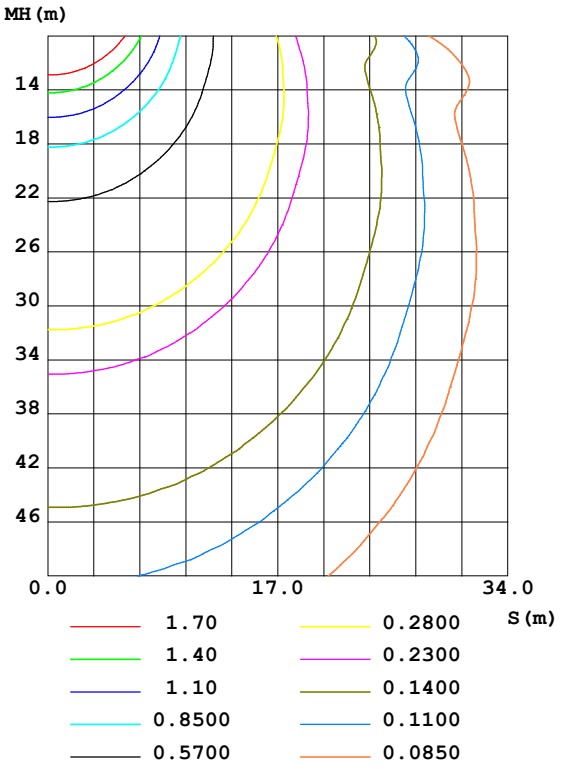
DATA OF LAMP		PHOTOMETRIC DATA		Eff: 71.34 lm/W	
MODEL	3000K	Imax(cd)	283.5	S/MH(C0/180)	1.37
NOMINAL POWER(W)	14.4	LOR(%)	100.0	S/MH(C90/270)	1.73
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	1037.9	η UP,DN(C0-180)	0.0,54.6
NOMINAL FLUX(lm)	1037.93	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,45.4
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	219.8	η down(%)	100.0	CIBSE SHR MAX	1.50

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):145.0 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:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum,lamp
10	281.2	190.7	283.2	181.9					0- 10	22.39	22.39	2.16,2.16
20	272.3	195.9	275.2	174.3					10- 20	65.71	88.10	8.49,8.49
30	259.2	201.9	260.8	162.4					20- 30	104.1	192.2	18.5,18.5
40	239.7	215.1	243.9	146.1					30- 40	136.0	328.2	31.6,31.6
50	225.9	212.3	227.1	125.5					40- 50	158.4	486.6	46.9,46.9
60	210.3	189.4	214.6	101.1					50- 60	169.4	656.0	63.2,63.2
70	237.4	150.7	226.0	71.28					60- 70	173.7	829.7	79.9,79.9
80	108.6	83.59	133.6	35.00					70- 80	140.1	969.8	93.4,93.4
90	56.58	59.02	57.52	5.148					80- 90	68.14	1038	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		

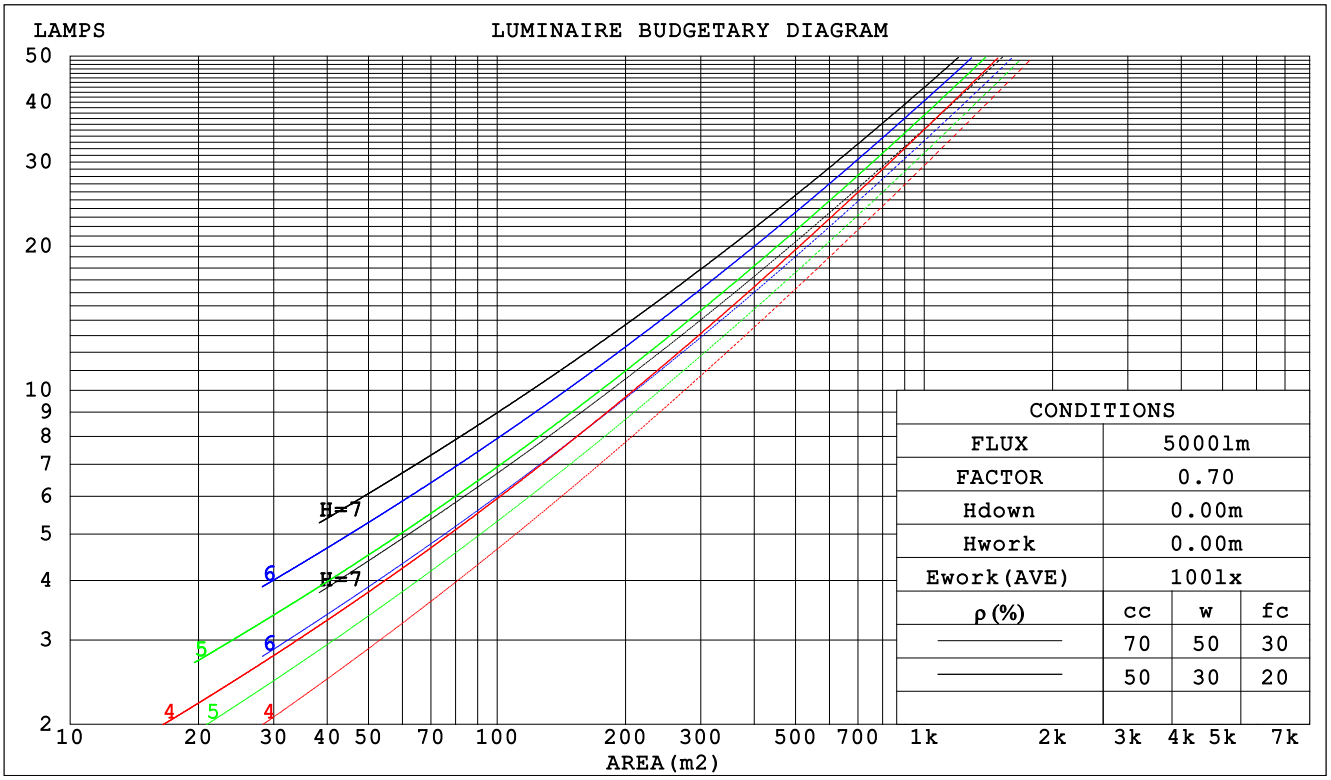
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.00V I:0.6060A P:14.55W PF:1.000 Lamp Flux:1037.93x1 lm		
NAME: HCP-3955143	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	1.00
1.0	.99	.93	.88	.97	.91	.87	.92	.88	.84	.88	.84	.81	.84	.81	.79	.76
2.0	.84	.75	.68	.82	.74	.67	.78	.71	.65	.74	.69	.64	.71	.66	.62	.60
3.0	.72	.62	.54	.70	.61	.54	.67	.59	.53	.64	.57	.52	.61	.56	.51	.48
4.0	.62	.52	.44	.61	.51	.44	.58	.50	.43	.56	.49	.43	.54	.47	.42	.40
5.0	.55	.45	.37	.54	.44	.37	.52	.43	.37	.50	.42	.36	.48	.41	.36	.33
6.0	.49	.39	.32	.48	.39	.32	.46	.38	.31	.44	.37	.31	.43	.36	.31	.29
7.0	.44	.35	.28	.43	.34	.28	.42	.33	.27	.40	.33	.27	.39	.32	.27	.25
8.0	.40	.31	.24	.39	.31	.24	.38	.30	.24	.37	.29	.24	.35	.29	.24	.22
9.0	.37	.28	.22	.36	.28	.22	.35	.27	.22	.34	.27	.21	.33	.26	.21	.19
10.0	.34	.25	.20	.33	.25	.19	.32	.25	.19	.31	.24	.19	.30	.24	.19	.17



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:

WEC AND CCEC

Test:U:24.00V I:0.6060A P:14.55W PF:1.000 Lamp Flux:1037.93x1 lm		
NAME: HCP-3955143	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	.406	.231	.073	.398	.227	.072	.385	.221	.070	.372	.215	.069	.360	.209	.067	
2.0	.358	.196	.060	.352	.194	.060	.339	.189	.059	.328	.184	.058	.318	.180	.057	
3.0	.319	.170	.051	.313	.168	.051	.303	.164	.050	.292	.160	.049	.283	.157	.048	
4.0	.287	.149	.044	.282	.147	.044	.272	.144	.043	.263	.141	.043	.255	.138	.042	
5.0	.260	.132	.038	.255	.131	.038	.247	.128	.038	.239	.126	.037	.231	.124	.037	
6.0	.237	.119	.034	.233	.118	.034	.226	.116	.034	.218	.113	.033	.212	.111	.033	
7.0	.218	.108	.031	.214	.107	.030	.208	.105	.030	.201	.103	.030	.195	.101	.030	
8.0	.202	.099	.028	.198	.098	.028	.192	.096	.027	.187	.095	.027	.181	.093	.027	
9.0	.187	.091	.025	.185	.090	.025	.179	.089	.025	.174	.087	.025	.169	.086	.025	
10.0	.175	.084	.023	.172	.083	.023	.167	.082	.023	.163	.081	.023	.158	.080	.023	

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	.187	.155	.127	.160	.133	.109	.109	.092	.075	.063	.053	.044	.020	.017	.014	
2.0	.181	.132	.090	.155	.113	.078	.106	.078	.054	.061	.046	.032	.020	.015	.010	
3.0	.174	.115	.067	.149	.099	.058	.102	.069	.041	.059	.040	.024	.019	.013	.008	
4.0	.166	.102	.053	.143	.088	.046	.098	.061	.032	.057	.036	.019	.018	.012	.006	
5.0	.158	.092	.043	.136	.079	.037	.094	.055	.026	.054	.033	.016	.017	.011	.005	
6.0	.150	.084	.036	.129	.072	.031	.089	.051	.022	.052	.030	.013	.017	.010	.004	
7.0	.143	.077	.031	.123	.067	.027	.085	.047	.019	.049	.027	.011	.016	.009	.004	
8.0	.136	.071	.027	.117	.062	.023	.081	.043	.016	.047	.026	.010	.015	.008	.003	
9.0	.129	.066	.024	.111	.057	.021	.077	.040	.015	.045	.024	.009	.015	.008	.003	
10.0	.123	.062	.021	.106	.054	.018	.073	.038	.013	.043	.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:

Uncorrected UGR Table

Test:U:24.00V I:0.6060A P:14.55W PF:1.000 Lamp Flux:1037.93x1 lm		
NAME: HCP-3955143	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	27.0	28.8	27.3	29.0	29.2	26.6	28.3	26.9	28.5	28.7
	3H	30.6	32.2	30.9	32.5	32.7	29.1	30.7	29.4	31.0	31.2
	4H	31.9	33.4	32.2	33.7	34.0	30.2	31.7	30.5	32.0	32.2
	6H	32.7	34.2	33.1	34.5	34.8	31.0	32.4	31.3	32.7	33.0
	8H	33.1	34.5	33.4	34.8	35.1	31.3	32.7	31.7	33.0	33.3
	12H	33.5	34.8	33.8	35.1	35.5	31.8	33.2	32.2	33.5	33.8
4H	2H	28.1	29.6	28.4	29.9	30.2	27.8	29.3	28.1	29.6	29.8
	3H	31.6	33.0	32.0	33.3	33.6	30.4	31.8	30.8	32.1	32.4
	4H	33.0	34.3	33.4	34.6	34.9	31.6	32.8	32.0	33.2	33.5
	6H	33.9	35.1	34.3	35.4	35.8	32.5	33.6	32.9	34.0	34.4
	8H	34.4	35.4	34.8	35.8	36.2	32.9	34.0	33.3	34.4	34.7
	12H	34.9	35.9	35.3	36.2	36.7	33.5	34.5	33.9	34.8	35.3
8H	4H	33.3	34.4	33.8	34.8	35.2	32.2	33.2	32.6	33.6	34.0
	6H	34.5	35.4	34.9	35.8	36.2	33.3	34.2	33.7	34.6	35.0
	8H	35.1	35.9	35.5	36.3	36.8	33.8	34.6	34.3	35.1	35.5
	12H	35.7	36.4	36.2	36.9	37.4	34.6	35.3	35.1	35.7	36.2
12H	4H	33.4	34.4	33.8	34.8	35.2	32.2	33.2	32.7	33.6	34.0
	6H	34.6	35.4	35.0	35.8	36.3	33.4	34.3	33.9	34.7	35.2
	8H	35.2	35.9	35.7	36.4	36.9	34.1	34.8	34.6	35.3	35.7

Variations with the observer position at spacings:		
S = 1.0H	+ 0.0 / - 0.1	+ 0.0 / - 0.1
1.5H	+ 0.2 / - 0.2	+ 0.2 / - 0.2
2.0H	+ 0.1 / - 0.2	+ 0.2 / - 0.4

CIE Pub.117 Corrected 1038 lm Total Lamp Luminous Flux.(8log(F/F0) = 0.1)

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:

UTILIZATION FACTORS TABLE

Test:U:24.00V I:0.6060A P:14.55W PF:1.000 Lamp Flux:1037.93x1 lm		
NAME: HCP-3955143	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

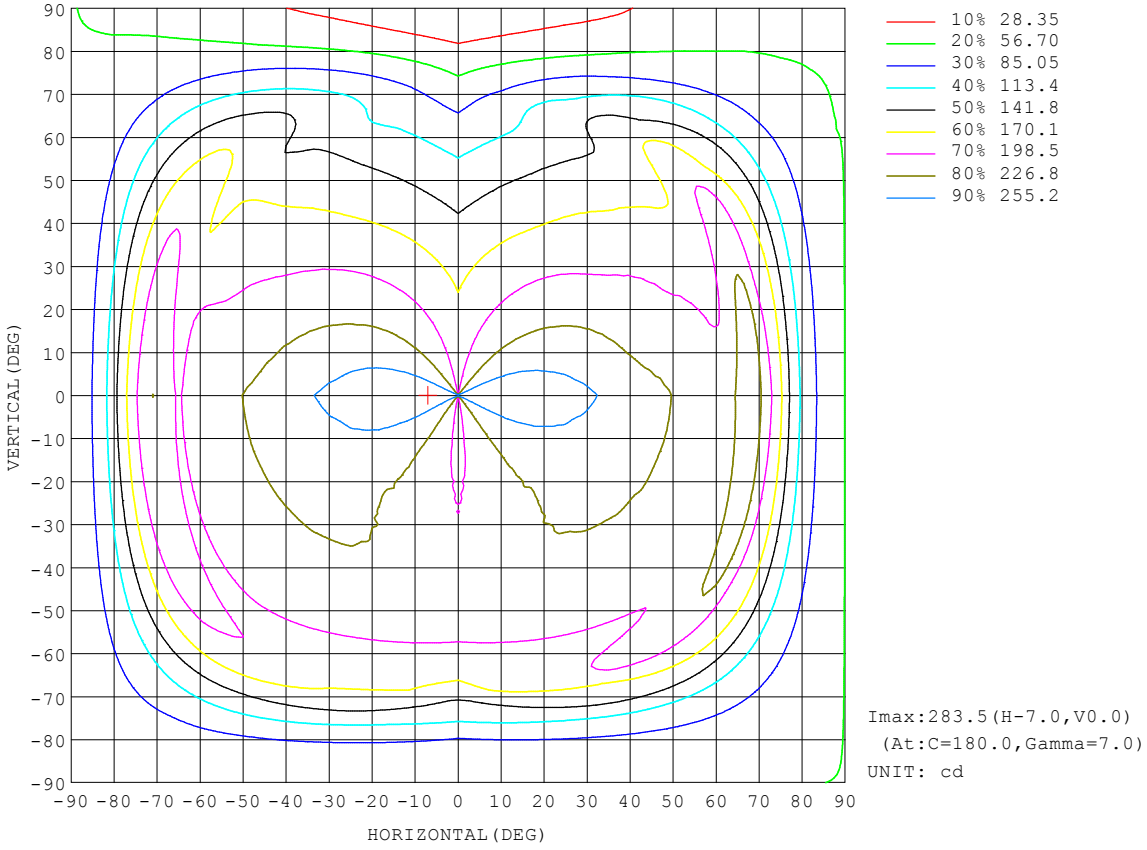
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	51	38	30	50	38	30	49	37	30	23
0.80	60	47	38	59	46	38	57	46	38	30
1.00	68	55	47	67	54	46	64	56	46	37
1.25	75	63	54	74	62	54	71	60	53	44
1.50	81	69	60	79	68	60	75	66	58	50
2.00	88	78	69	86	76	69	82	74	67	58
2.50	93	83	76	91	82	75	87	79	73	63
3.00	97	88	81	95	87	80	90	83	78	68
4.00	102	94	88	99	93	87	95	89	84	74
5.00	105	99	93	102	97	92	97	93	89	79
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:

ISOCANDELA DIAGRAM

Test:U:24.00V I:0.6060A P:14.55W PF:1.000 Lamp Flux:1037.93x1 lm		
NAME: HCP-3955143	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

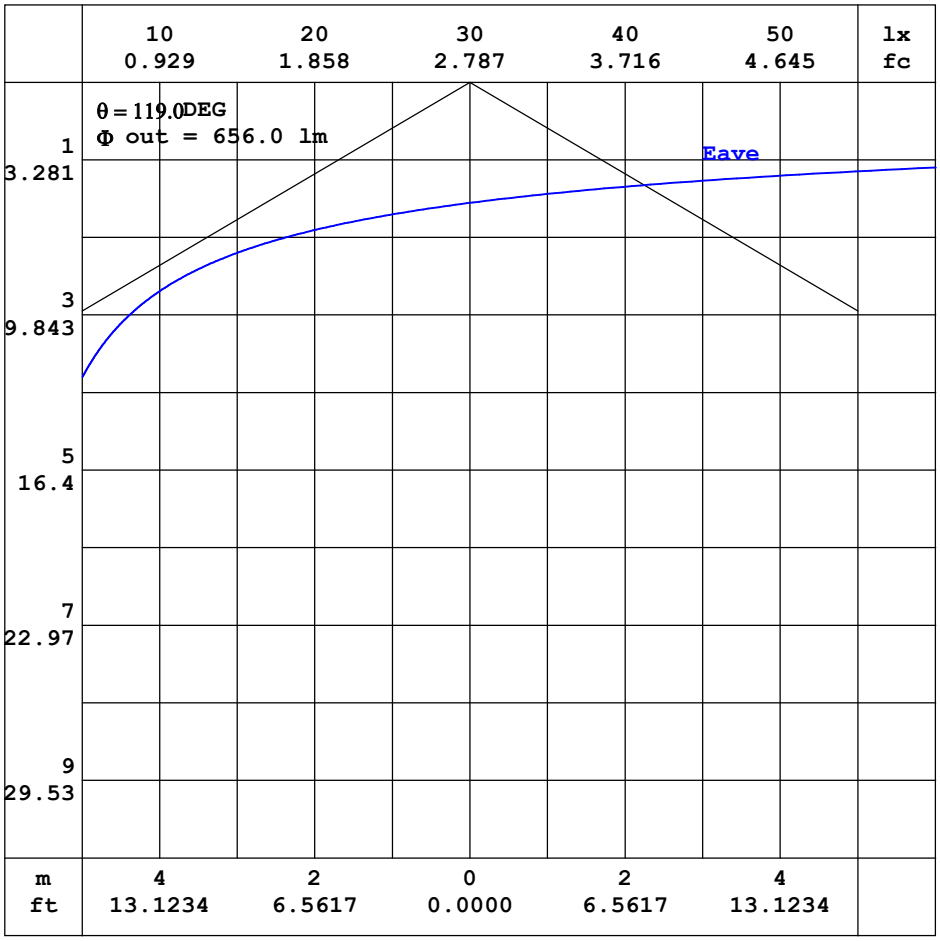


C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-29

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:

AAI CURVES

Test:U:24.00V I:0.6060A P:14.55W PF:1.000 Lamp Flux:1037.93x1 lm		
NAME: HCP-3955143	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:



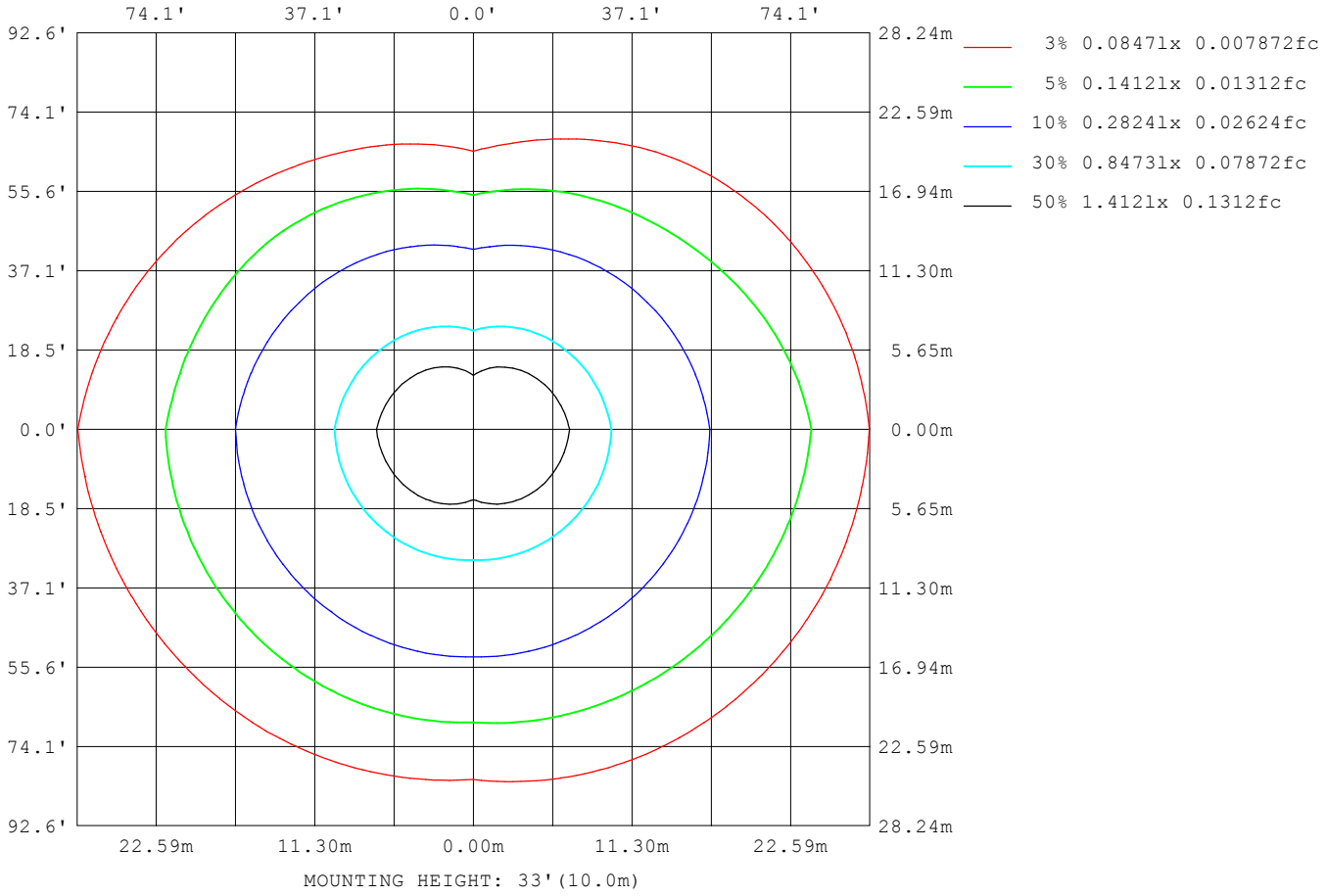
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:

ISOLUX DIAGRAM

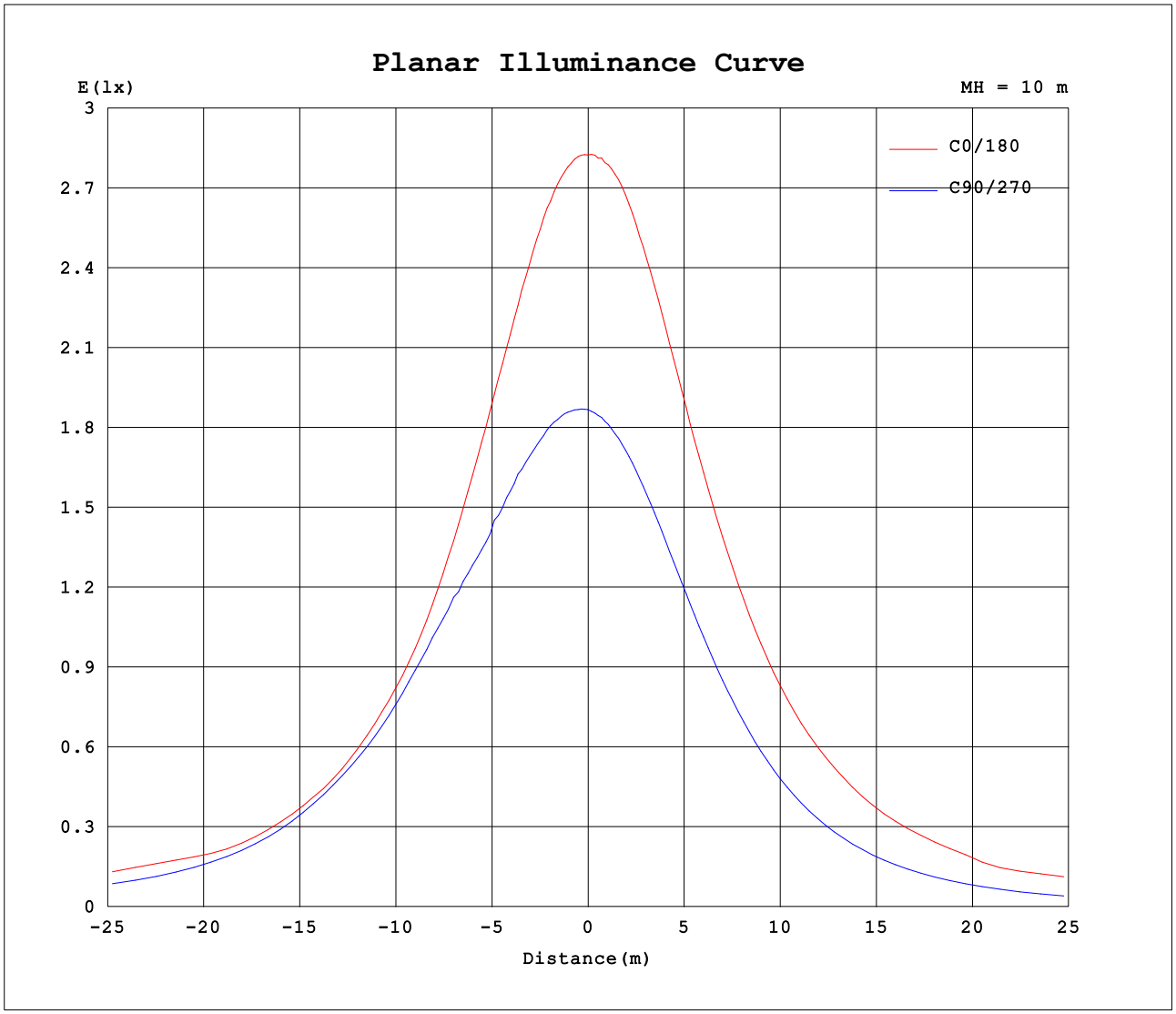
Test:U:24.00V I:0.6060A P:14.55W PF:1.000 Lamp Flux:1037.93x1 lm		
NAME: HCP-3955143	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:



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:

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:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.00V I:0.6060A P:14.55W PF:1.000 Lamp Flux:1037.93x1 lm		
NAME: HCP-3955143	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	282	187	282	187
5	283	188	283	185
10	281	191	283	182
15	278	192	280	179
20	272	196	275	174
25	267	198	269	169
30	259	202	261	162
35	250	211	253	155
40	240	215	244	146
45	233	215	235	136
50	226	212	227	126
55	219	206	219	114
60	210	189	215	101
65	232	174	195	87.0
70	237	151	226	71.3
75	174	120	195	53.8
80	109	83.6	134	35.0
85	76.2	69.6	85.9	16.9
90	56.6	59.0	57.5	5.15

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: