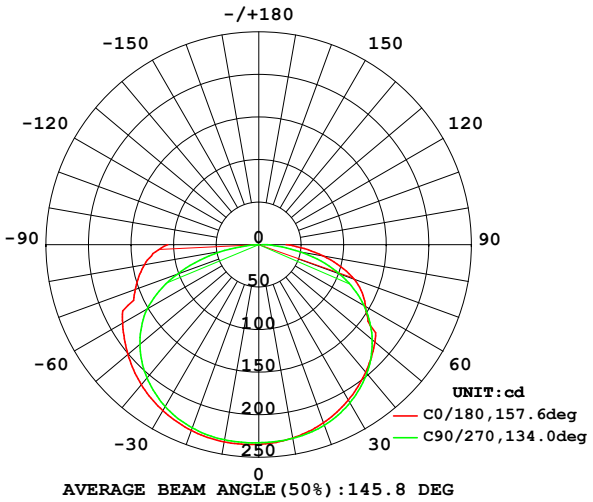
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.00V I:0.5083A P:12.20W PF:1.000 Lamp Flux:924.695x1 lm		
NAME: HCP-3925143	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

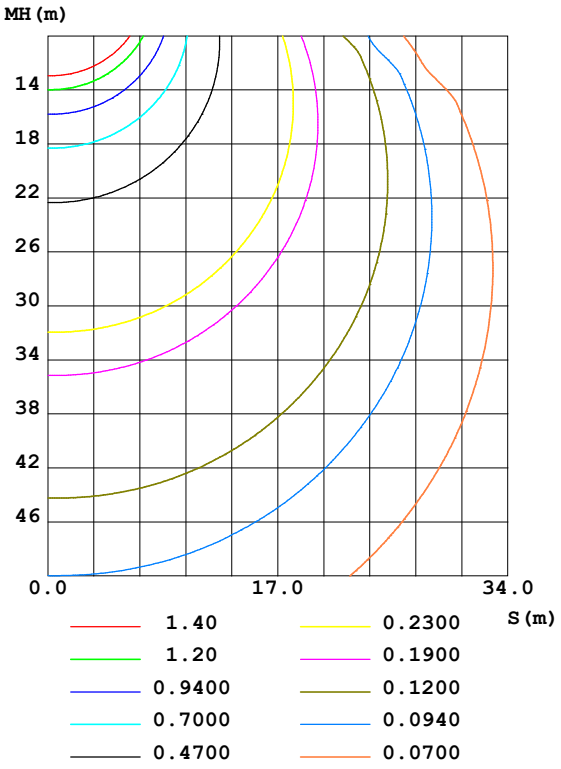
DATA OF LAMP		PHOTOMETRIC DATA		Eff: 75.80 lm/W	
MODEL	3000K	Imax(cd)	235.5	S/MH(C0/180)	1.44
NOMINAL POWER(W)	14.4	LOR(%)	100.0	S/MH(C90/270)	1.41
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	924.70	η UP,DN(C0-180)	0.0,53.2
NOMINAL FLUX(lm)	924.695	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,46.8
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	0.0	η down(%)	100.0	CIBSE SHR MAX	1.55

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):145.8 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:2022-12-28

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	235.4	232.8	230.8	231.2					0- 10	22.26	22.26	2.41,2.41
20	232.3	229.2	222.7	225.8					10- 20	65.23	87.49	9.46,9.46
30	225.3	219.9	210.8	214.5					20- 30	103.1	190.6	20.6,20.6
40	214.9	204.5	195.7	197.6					30- 40	132.2	322.8	34.9,34.9
50	200.8	182.5	178.2	174.1					40- 50	150.0	472.7	51.1,51.1
60	184.7	151.9	144.9	142.8					50- 60	152.3	625.1	67.6,67.6
70	154.6	102.2	119.6	101.2					60- 70	137.3	762.4	82.4,82.4
80	136.5	40.95	76.73	49.19					70- 80	103.8	866.1	93.7,93.7
90	106.8	2.505	32.28	3.577					80- 90	58.55	924.7	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		

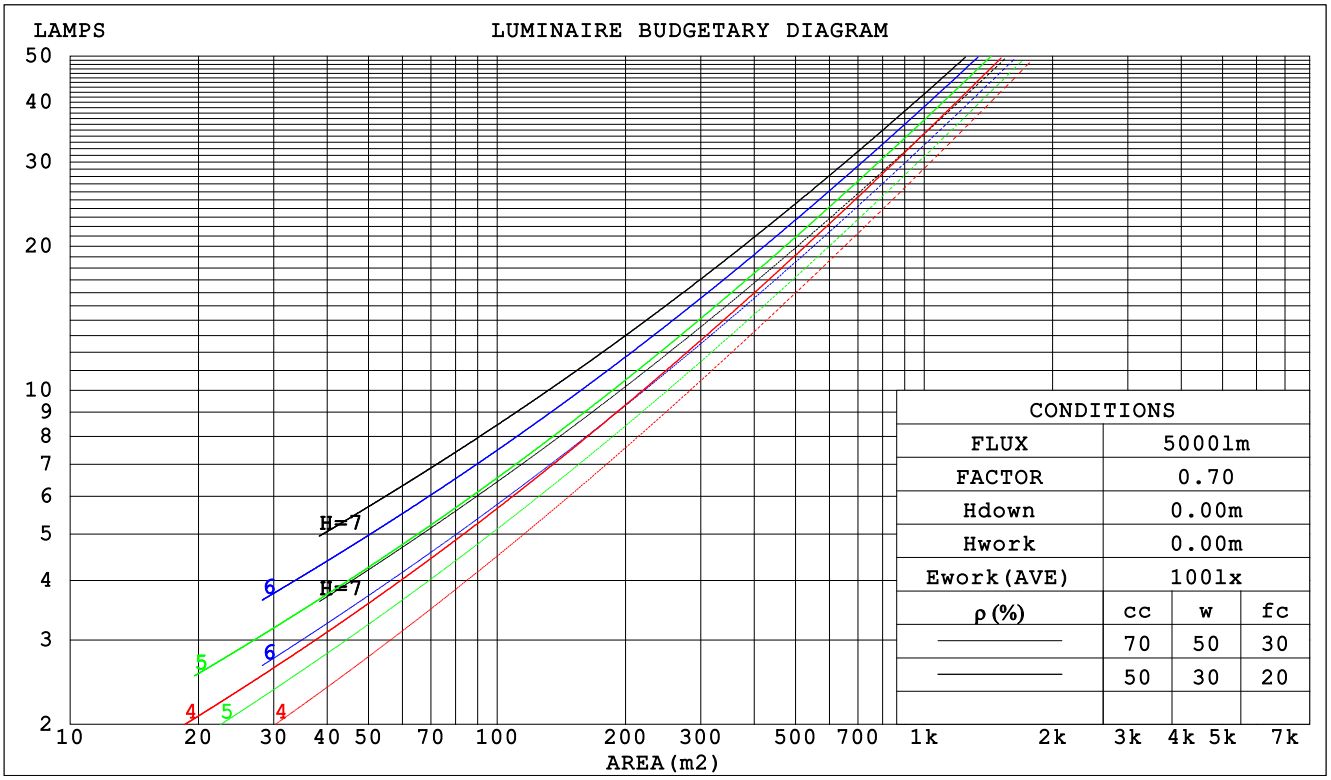
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-28

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:0.5083A P:12.20W PF:1.000 Lamp Flux:924.695x1 lm		
NAME: HCP-3925143	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	.00	.94	.90	.98	.93	.88	.93	.89	.85	.89	.86	.83	.85	.83	.80	.78
2.0	.85	.77	.70	.83	.76	.69	.79	.73	.68	.76	.71	.66	.73	.68	.65	.62
3.0	.74	.64	.57	.72	.63	.56	.69	.61	.55	.66	.60	.54	.63	.58	.53	.51
4.0	.64	.55	.47	.63	.54	.47	.60	.52	.46	.58	.51	.45	.56	.50	.45	.42
5.0	.57	.47	.40	.56	.47	.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	.29	.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:2022-12-28

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:0.5083A P:12.20W PF:1.000 Lamp Flux:924.695x1 lm		
NAME: HCP-3925143	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	.387	.220	.070	.380	.217	.069	.366	.210	.067	.353	.204	.065	.342	.198	.064	
2.0	.343	.188	.058	.336	.185	.057	.324	.180	.056	.313	.176	.055	.303	.171	.054	
3.0	.307	.163	.049	.301	.161	.049	.290	.157	.048	.281	.154	.047	.271	.150	.046	
4.0	.277	.144	.042	.272	.142	.042	.263	.139	.042	.254	.136	.041	.245	.133	.041	
5.0	.252	.129	.037	.248	.127	.037	.239	.125	.037	.231	.122	.036	.224	.120	.036	
6.0	.231	.116	.033	.227	.115	.033	.220	.113	.033	.213	.110	.032	.206	.108	.032	
7.0	.213	.105	.030	.210	.104	.030	.203	.103	.030	.197	.101	.029	.191	.099	.029	
8.0	.198	.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	.083	.023	.170	.082	.023	.165	.081	.023	.160	.080	.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	.186	.155	.128	.159	.133	.110	.109	.092	.076	.063	.053	.044	.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:2022-12-28

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:0.5083A P:12.20W PF:1.000 Lamp Flux:924.695x1 lm		
NAME: HCP-3925143	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	26.4	28.1	26.7	28.3	28.5	25.7	27.4	26.0	27.6	27.8
3H	28.9	30.5	29.2	30.7	30.9	27.6	29.2	27.9	29.4	29.6
4H	30.3	31.8	30.7	32.1	32.4	28.4	29.9	28.7	30.1	30.4
6H	32.0	33.4	32.3	33.7	34.0	28.9	30.3	29.3	30.6	30.9
8H	32.9	34.3	33.3	34.6	34.9	29.0	30.4	29.4	30.7	31.0
12H	34.0	35.3	34.3	35.6	35.9	29.1	30.4	29.4	30.7	31.0
4H 2H	27.2	28.6	27.5	28.9	29.2	26.6	28.1	26.9	28.4	28.6
3H	29.8	31.1	30.2	31.5	31.8	28.7	30.1	29.1	30.4	30.7
4H	31.4	32.6	31.8	33.0	33.3	29.7	30.9	30.1	31.2	31.6
6H	33.3	34.4	33.7	34.7	35.1	30.4	31.5	30.8	31.9	32.2
8H	34.3	35.3	34.7	35.7	36.1	30.6	31.7	31.0	32.0	32.4
12H	35.5	36.4	35.9	36.8	37.2	30.7	31.7	31.2	32.1	32.5
8H 4H	31.8	32.9	32.3	33.2	33.6	30.4	31.4	30.8	31.8	32.2
6H	33.9	34.8	34.4	35.2	35.6	31.4	32.3	31.8	32.7	33.1
8H	35.1	35.9	35.6	36.3	36.8	31.8	32.6	32.2	33.0	33.5
12H	36.6	37.2	37.0	37.7	38.2	32.0	32.7	32.5	33.1	33.6
12H 4H	31.9	32.8	32.3	33.2	33.6	30.6	31.5	31.0	31.9	32.3
6H	34.0	34.8	34.5	35.2	35.7	31.7	32.5	32.2	33.0	33.4
8H	35.3	36.0	35.8	36.5	36.9	32.3	32.9	32.7	33.4	33.9
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.5				

CIE Pub.117 Corrected 924.7 lm Total Lamp Luminous Flux.(8log(F/F0) = -0.3)

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-28

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:0.5083A P:12.20W PF:1.000 Lamp Flux:924.695x1 lm		
NAME: HCP-3925143	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

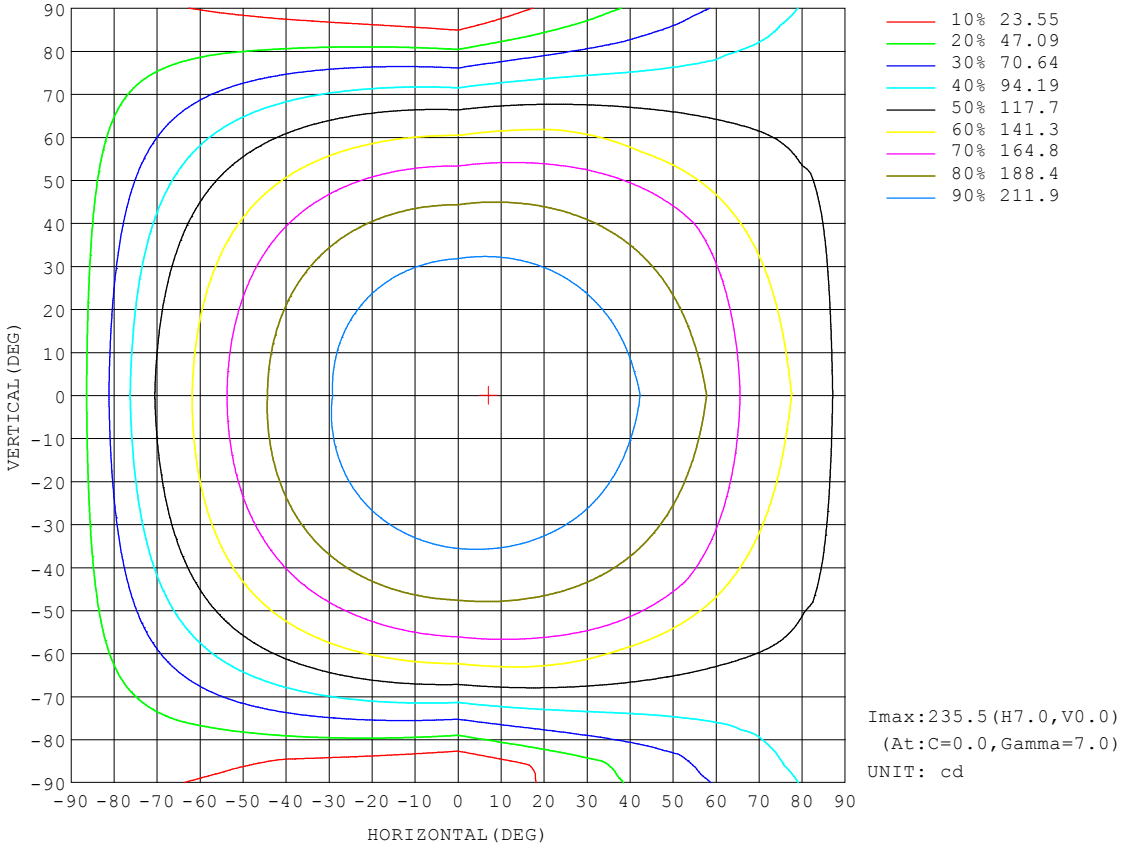
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	52	40	32	52	40	32	50	39	32	25
0.80	62	49	41	61	49	41	59	48	40	33
1.00	70	58	49	69	57	49	66	59	49	41
1.25	77	65	57	76	65	57	73	63	56	48
1.50	83	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	91	85	80	70
4.00	103	96	90	100	94	89	96	90	86	76
5.00	106	100	94	103	98	93	98	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:2022-12-28

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:0.5083A P:12.20W PF:1.000 Lamp Flux:924.695x1 lm		
NAME: HCP-3925143	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:



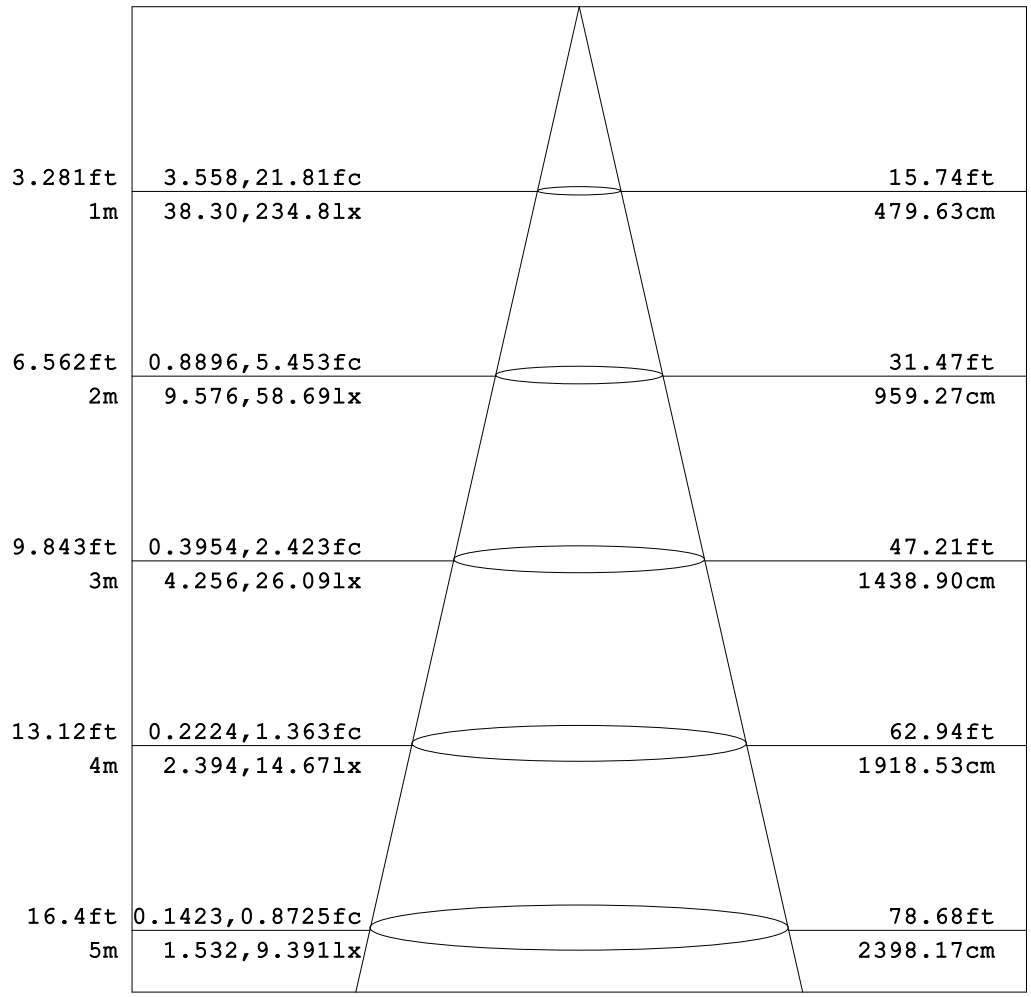
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-28

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 Figure

Test:U:24.00V I:0.5083A P:12.20W PF:1.000 Lamp Flux:924.695x1 lm		
NAME: HCP-3925143	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

Flux out:737.2 lm



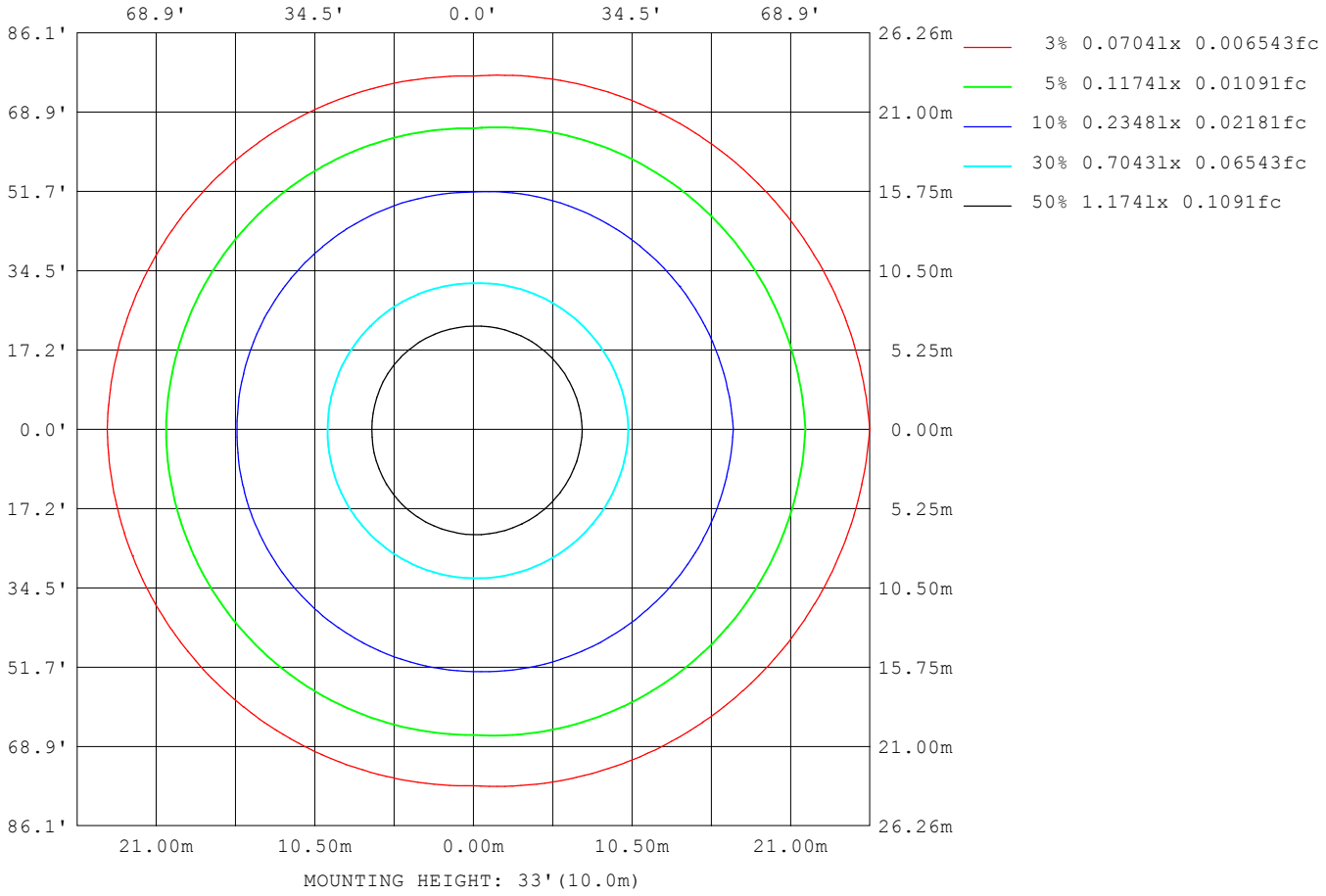
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-28

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

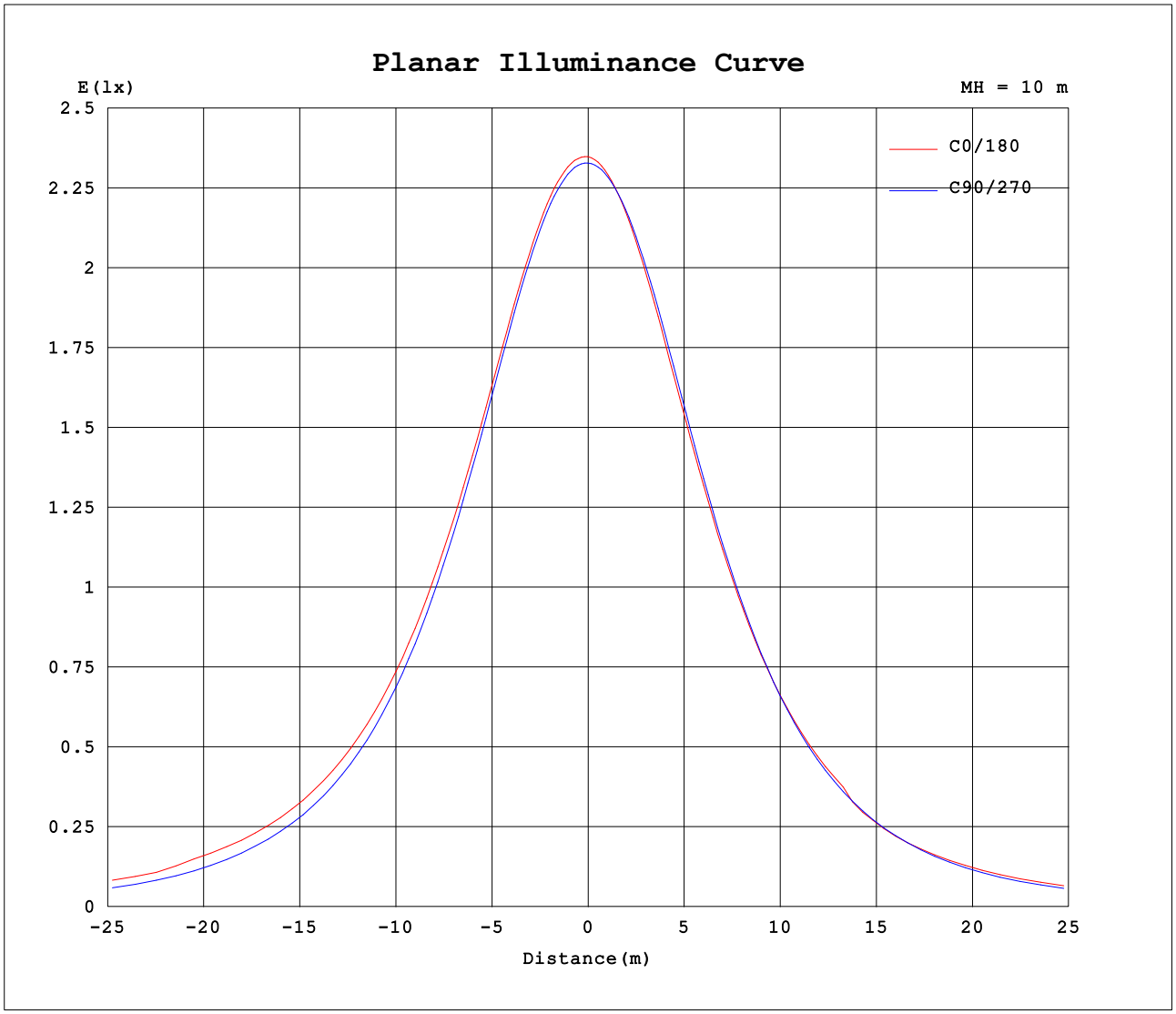
Test:U:24.00V I:0.5083A P:12.20W PF:1.000 Lamp Flux:924.695x1 lm		
NAME: HCP-3925143	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-28

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:2022-12-28

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:0.5083A P:12.20W PF:1.000 Lamp Flux:924.695x1 lm		
NAME: HCP-3925143	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	235	233	235	233
5	235	233	233	232
10	235	233	231	231
15	234	232	227	229
20	232	229	223	226
25	229	225	217	221
30	225	220	211	214
35	221	213	204	207
40	215	204	196	198
45	208	194	187	187
50	201	182	178	174
55	193	168	157	159
60	185	152	145	143
65	170	129	134	123
70	155	102	120	101
75	146	72.4	99.4	76.3
80	137	41.0	76.7	49.2
85	125	8.33	53.8	22.9
90	107	2.50	32.3	3.58

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-28

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: