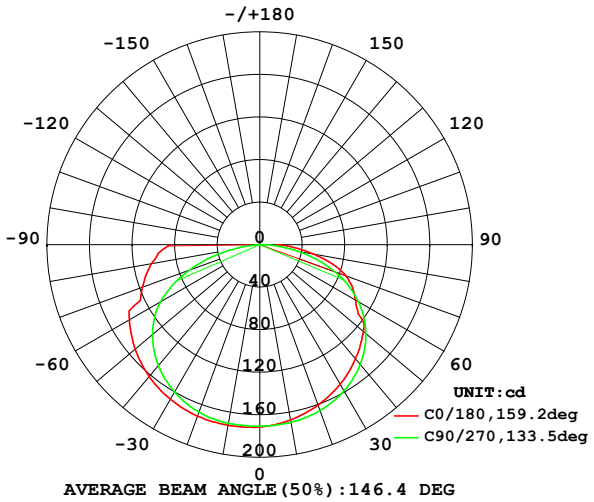
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.00V I:0.3569A P:8.566W PF:1.000 Lamp Flux:677.51x1 lm		
NAME: HCP-3925964	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

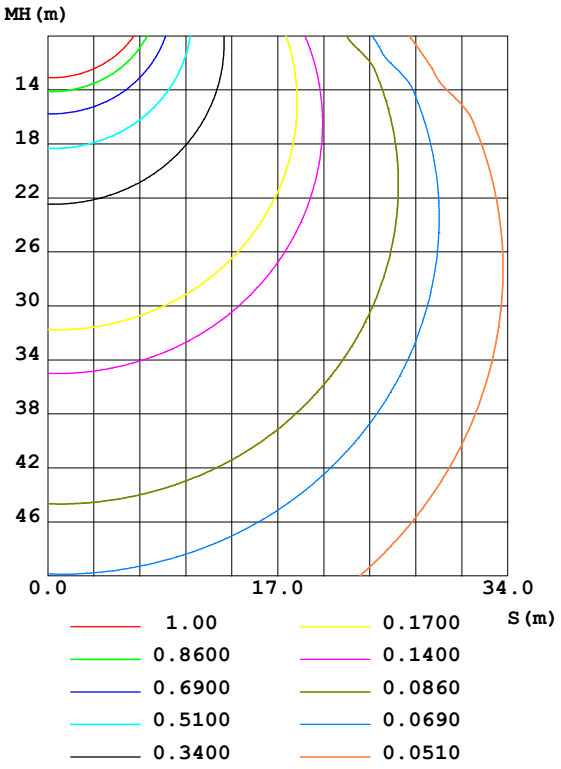
DATA OF LAMP		PHOTOMETRIC DATA Eff: 79.10 lm/W			
MODEL	4000K	Imax(cd)	172.4	S/MH(C0/180)	1.48
NOMINAL POWER(W)	9.6	LOR(%)	100.0	S/MH(C90/270)	1.40
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	677.51	η UP,DN(C0-180)	0.0,53.6
NOMINAL FLUX(lm)	677.51	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,46.4
LAMPS INSIDE	1	η up(%)	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%):146.4 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: 1号

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	%lum,lamp
10	172.4	170.5	167.3	169.6					0- 10	16.28	16.28	2.4,2.4
20	171.6	167.6	160.5	166.0					10- 20	47.70	63.97	9.44,9.44
30	168.0	160.1	151.5	158.7					20- 30	75.47	139.4	20.6,20.6
40	161.8	148.3	140.1	147.0					30- 40	97.07	236.5	34.9,34.9
50	152.9	131.7	127.2	130.3					40- 50	110.4	346.9	51.2,51.2
60	141.5	108.0	103.9	107.1					50- 60	112.6	459.4	67.8,67.8
70	117.5	70.73	86.32	75.47					60- 70	100.7	560.2	82.7,82.7
80	103.3	26.16	51.41	36.58					70- 80	75.47	635.6	93.8,93.8
90	83.04	1.317	15.83	1.993					80- 90	41.88	677.5	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		

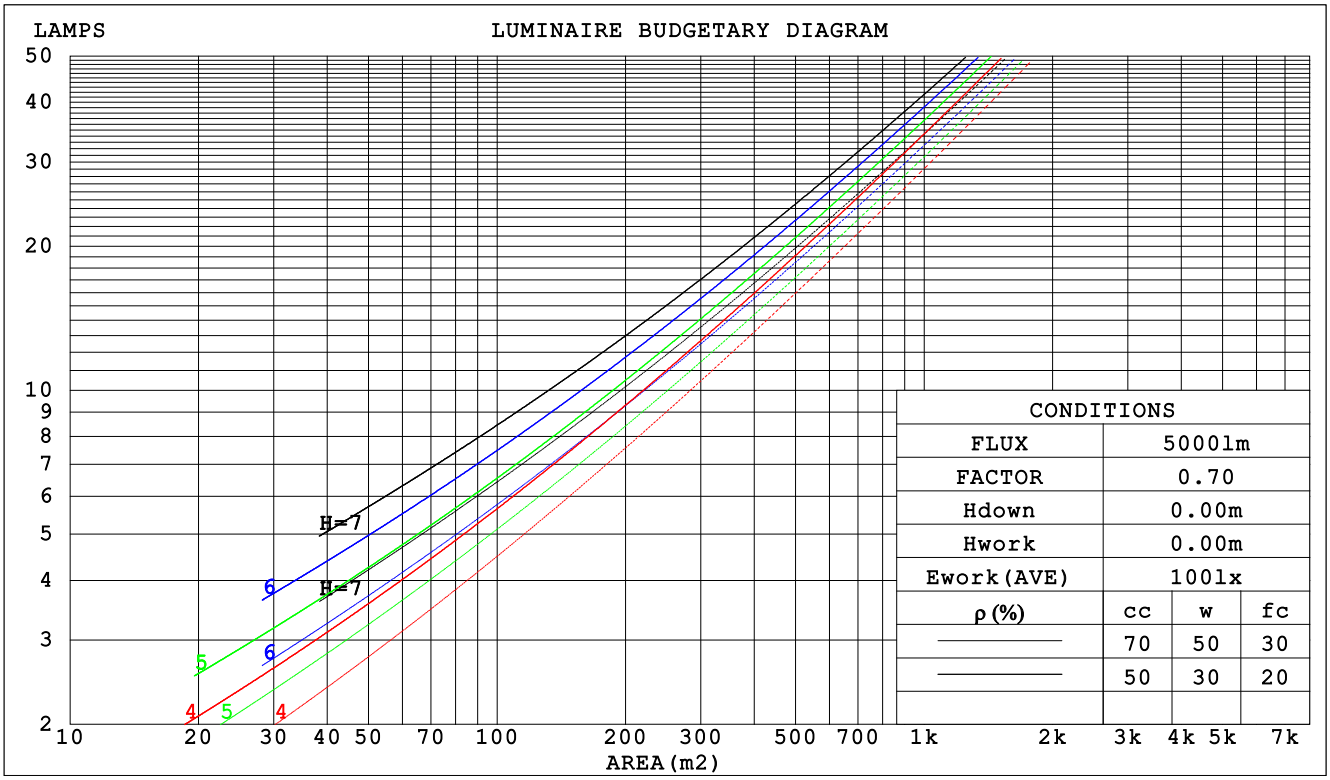
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-28

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: 1号

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.00V I:0.3569A P:8.566W PF:1.000 Lamp Flux:677.51x1 lm		
NAME: HCP-3925964	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	.00	.95	.90	.98	.93	.88	.93	.89	.85	.89	.86	.83	.85	.83	.80	.78
2.0	.85	.77	.70	.83	.76	.70	.80	.73	.68	.76	.71	.66	.73	.69	.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: 1号

WEC AND CCEC

Test:U:24.00V I:0.3569A P:8.566W PF:1.000 Lamp Flux:677.51x1 lm		
NAME: HCP-3925964	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	.385	.219	.069	.378	.216	.068	.364	.209	.067	.352	.203	.065	.340	.197	.064	
2.0	.342	.187	.057	.335	.185	.057	.323	.180	.056	.312	.175	.055	.302	.171	.054	
3.0	.307	.163	.049	.301	.161	.048	.290	.157	.048	.280	.153	.047	.271	.150	.046	
4.0	.277	.144	.042	.272	.142	.042	.262	.139	.042	.253	.136	.041	.245	.133	.041	
5.0	.252	.128	.037	.248	.127	.037	.239	.125	.037	.231	.122	.036	.224	.120	.036	
6.0	.231	.116	.033	.227	.115	.033	.220	.113	.033	.212	.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	.111	.109	.092	.076	.062	.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	.140	.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: 1号

Uncorrected UGR Table

Test:U:24.00V I:0.3569A P:8.566W PF:1.000 Lamp Flux:677.51x1 lm		
NAME: HCP-3925964	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	25.5	27.2	25.8	27.4	27.6	24.5	26.2	24.8	26.4	26.6
3H	28.0	29.6	28.3	29.8	30.1	26.4	27.9	26.7	28.2	28.4
4H	29.5	30.9	29.8	31.2	31.5	27.1	28.6	27.4	28.8	29.1
6H	31.1	32.5	31.5	32.8	33.1	27.6	29.0	27.9	29.2	29.5
8H	32.0	33.4	32.4	33.7	34.0	27.7	29.0	28.0	29.3	29.6
12H	33.1	34.4	33.5	34.7	35.1	27.7	29.0	28.0	29.3	29.6
4H 2H	26.2	27.7	26.5	28.0	28.2	25.5	27.0	25.8	27.2	27.5
3H	28.9	30.2	29.3	30.5	30.8	27.5	28.9	27.9	29.2	29.5
4H	30.5	31.7	30.9	32.1	32.4	28.4	29.6	28.8	30.0	30.3
6H	32.3	33.4	32.8	33.8	34.2	29.1	30.2	29.5	30.5	30.9
8H	33.4	34.4	33.8	34.8	35.2	29.3	30.3	29.7	30.7	31.1
12H	34.6	35.6	35.1	36.0	36.4	29.3	30.3	29.8	30.7	31.1
8H 4H	30.9	31.9	31.3	32.3	32.7	29.2	30.2	29.6	30.6	31.0
6H	33.0	33.8	33.4	34.2	34.7	30.1	31.0	30.6	31.4	31.8
8H	34.2	35.0	34.7	35.4	35.9	30.5	31.2	30.9	31.7	32.1
12H	35.7	36.4	36.1	36.8	37.3	30.7	31.4	31.2	31.8	32.3
12H 4H	30.9	31.9	31.4	32.3	32.7	29.4	30.3	29.8	30.7	31.1
6H	33.1	33.9	33.5	34.3	34.7	30.5	31.3	31.0	31.7	32.2
8H	34.4	35.1	34.9	35.5	36.0	31.0	31.7	31.5	32.1	32.6
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	+ 0.2 / - 0.3					+ 0.2 / - 0.5				

CIE Pub.117 Corrected 677.5 lm Total Lamp Luminous Flux.(8log(F/F0) = -1.4)

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: 1号

UTILIZATION FACTORS TABLE

Test:U:24.00V I:0.3569A P:8.566W PF:1.000 Lamp Flux:677.51x1 lm		
NAME: HCP-3925964	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

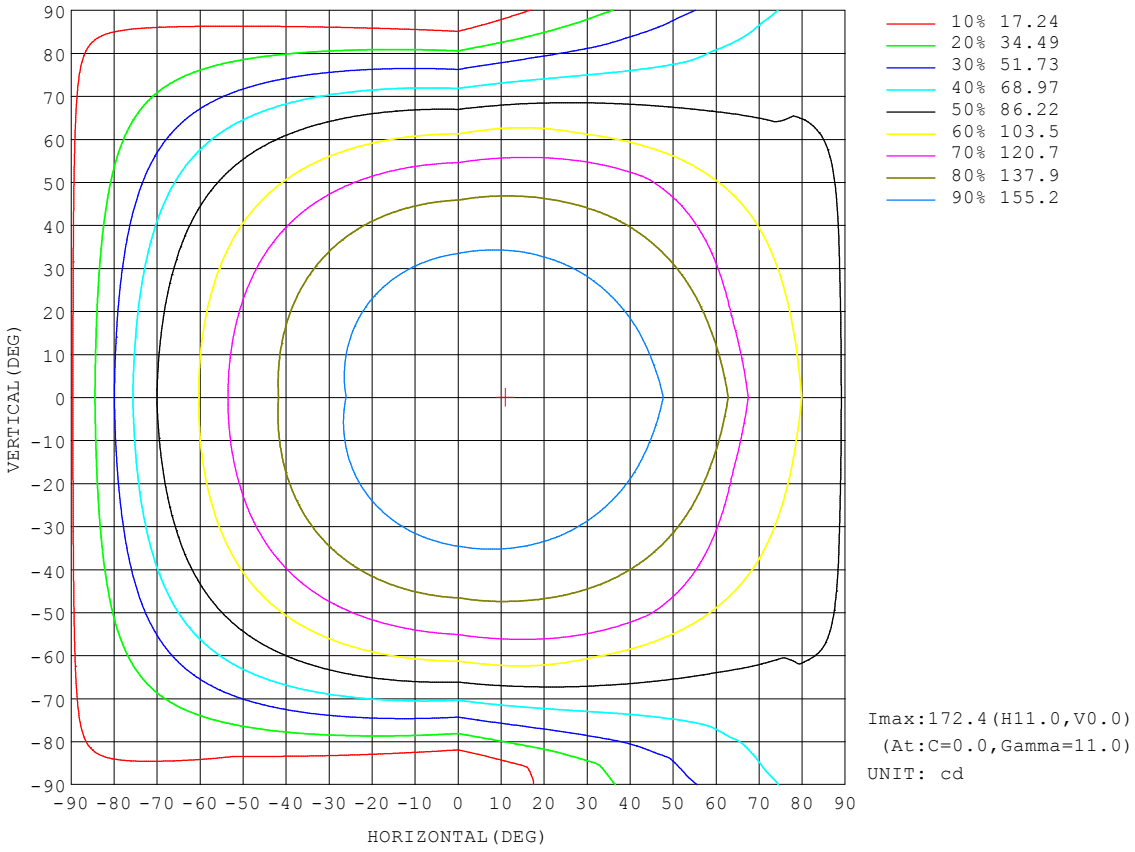
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	52	40	32	51	39	32	50	39	32	25
0.80	62	49	41	61	49	41	59	48	40	33
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	78	68	61	53
2.00	90	80	72	88	79	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	90	86	76
5.00	106	100	95	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: 1号

ISOCANDELA DIAGRAM

Test:U:24.00V I:0.3569A P:8.566W PF:1.000 Lamp Flux:677.51x1 lm		
NAME: HCP-3925964	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:



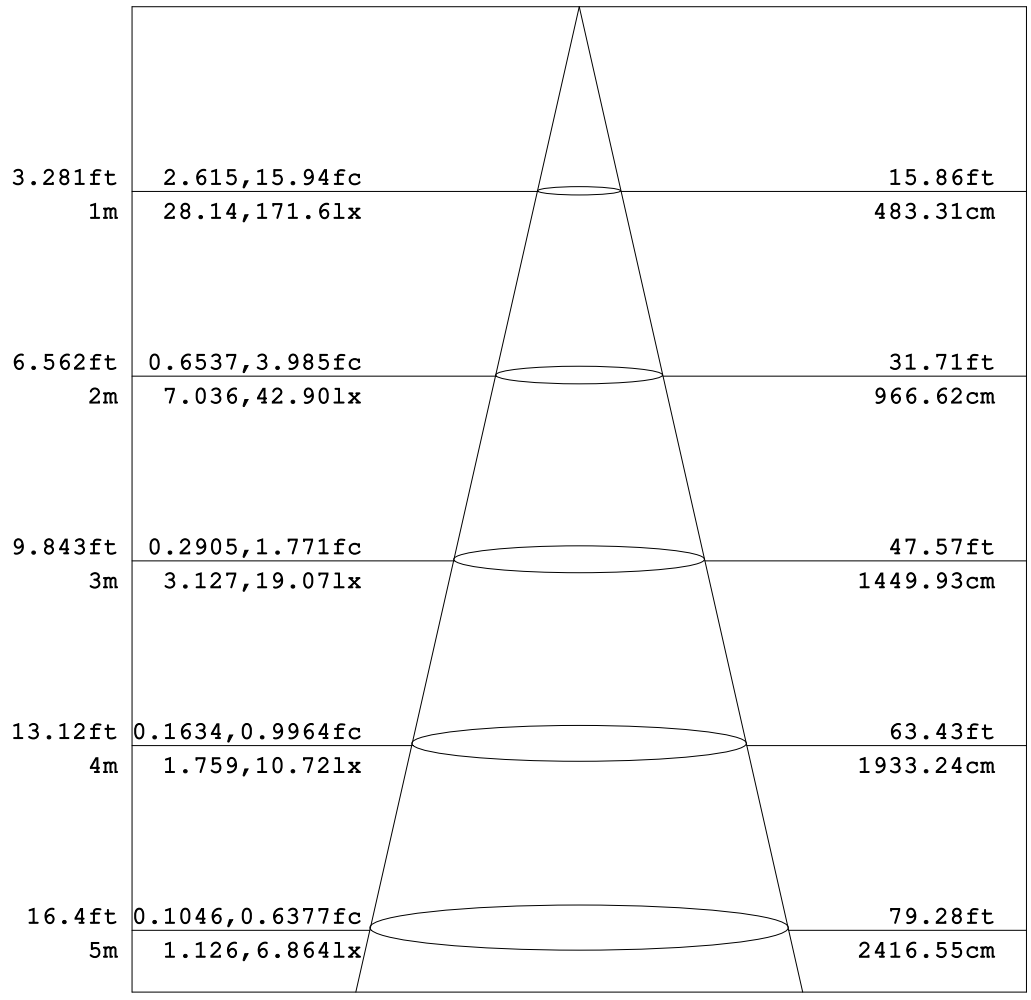
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-28

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: 1号

AAI Figure

Test:U:24.00V I:0.3569A P:8.566W PF:1.000 Lamp Flux:677.51x1 lm		
NAME: HCP-3925964	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

Flux out:541.7 lm



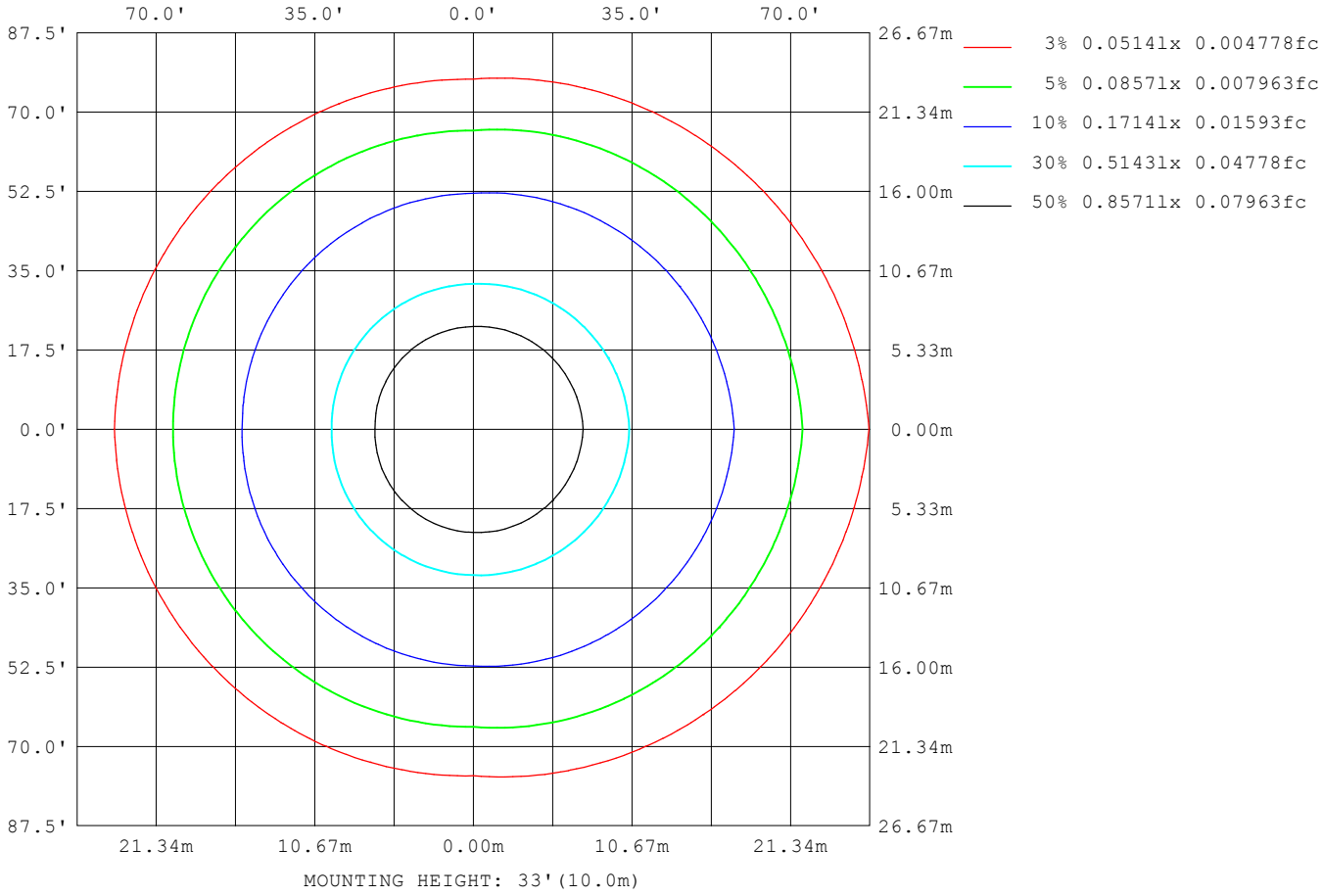
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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: 1号

ISOLUX DIAGRAM

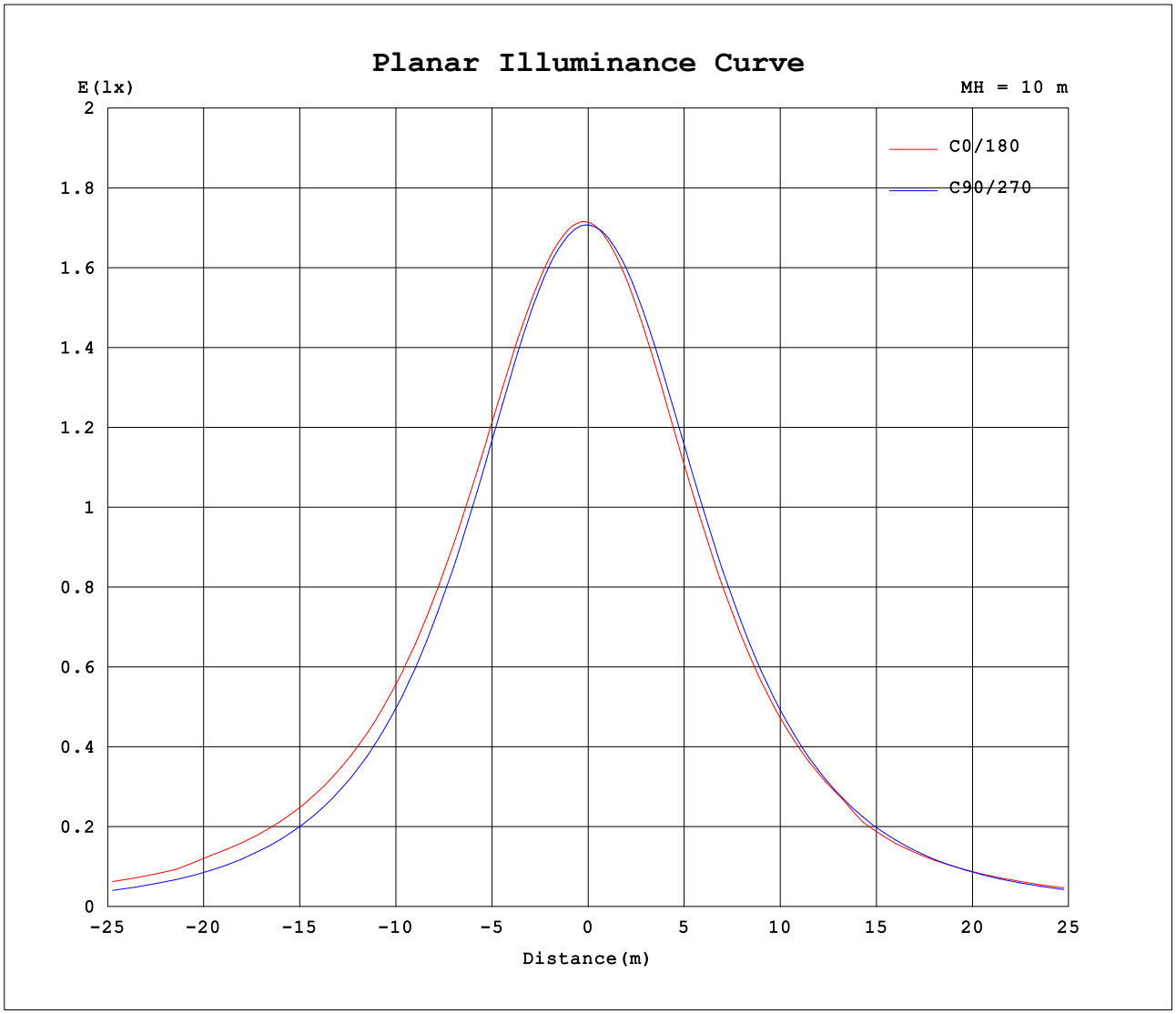
Test:U:24.00V I:0.3569A P:8.566W PF:1.000 Lamp Flux:677.51x1 lm		
NAME: HCP-3925964	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:



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: 1号

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: 1号

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:24.00V I:0.3569A P:8.566W PF:1.000 Lamp Flux:677.51x1 lm		
NAME: HCP-3925964	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	171	171	171	171
5	172	171	170	170
10	172	171	167	170
15	172	170	164	168
20	172	168	161	166
25	170	164	156	163
30	168	160	151	159
35	165	155	146	153
40	162	148	140	147
45	158	141	134	139
50	153	132	127	130
55	148	121	113	120
60	142	108	104	107
65	124	90.7	96.3	92.4
70	117	70.7	86.3	75.5
75	111	48.7	71.3	56.5
80	103	26.2	51.4	36.6
85	95.8	4.81	32.5	17.4
90	83.0	1.32	15.8	1.99

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]
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