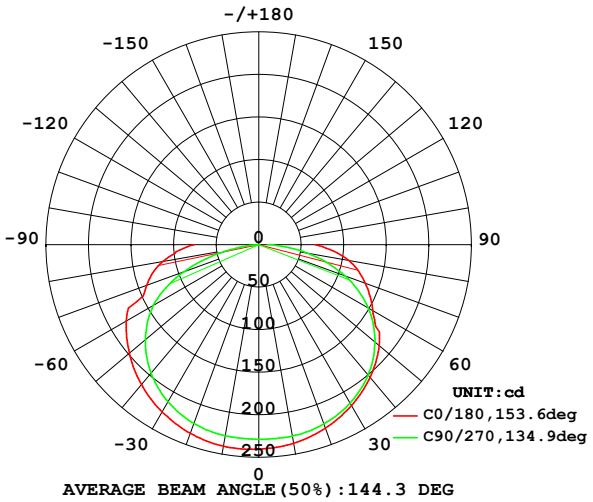
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.00V I:0.5426A P:13.02W PF:0 Lamp Flux:930.763x1 lm		
NAME: HCP-3925145	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

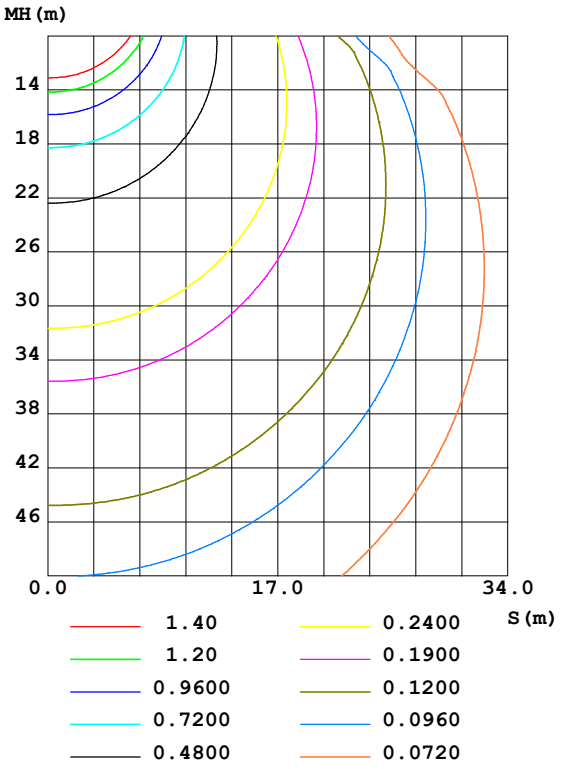
DATA OF LAMP		PHOTOMETRIC DATA		Eff: 71.47 lm/W	
MODEL	5000K	Imax(cd)	240.9	S/MH(C0/180)	1.42
NOMINAL POWER(W)	14.4	LOR(%)	100.0	S/MH(C90/270)	1.39
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	930.76	η UP,DN(C0-180)	0.0,50.1
NOMINAL FLUX(lm)	930.763	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	0.0	η down(%)	100.0	CIBSE SHR MAX	1.55

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):144.3 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	240.5	228.1	237.0	228.4					0- 10	22.34	22.34	2.4,2.4
20	236.0	223.5	229.4	224.1					10- 20	65.48	87.82	9.44,9.44
30	227.2	213.3	218.3	214.9					20- 30	103.4	191.2	20.5,20.5
40	214.6	196.9	203.6	200.1					30- 40	132.7	323.9	34.8,34.8
50	198.6	174.0	184.6	178.2					40- 50	150.3	474.2	50.9,50.9
60	179.7	143.3	154.8	148.8					50- 60	152.9	627.1	67.4,67.4
70	140.2	94.01	133.3	108.1					60- 70	137.1	764.2	82.1,82.1
80	114.5	33.08	107.3	57.96					70- 80	104.9	869.1	93.4,93.4
90	75.93	1.733	65.97	10.39					80- 90	61.65	930.8	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		

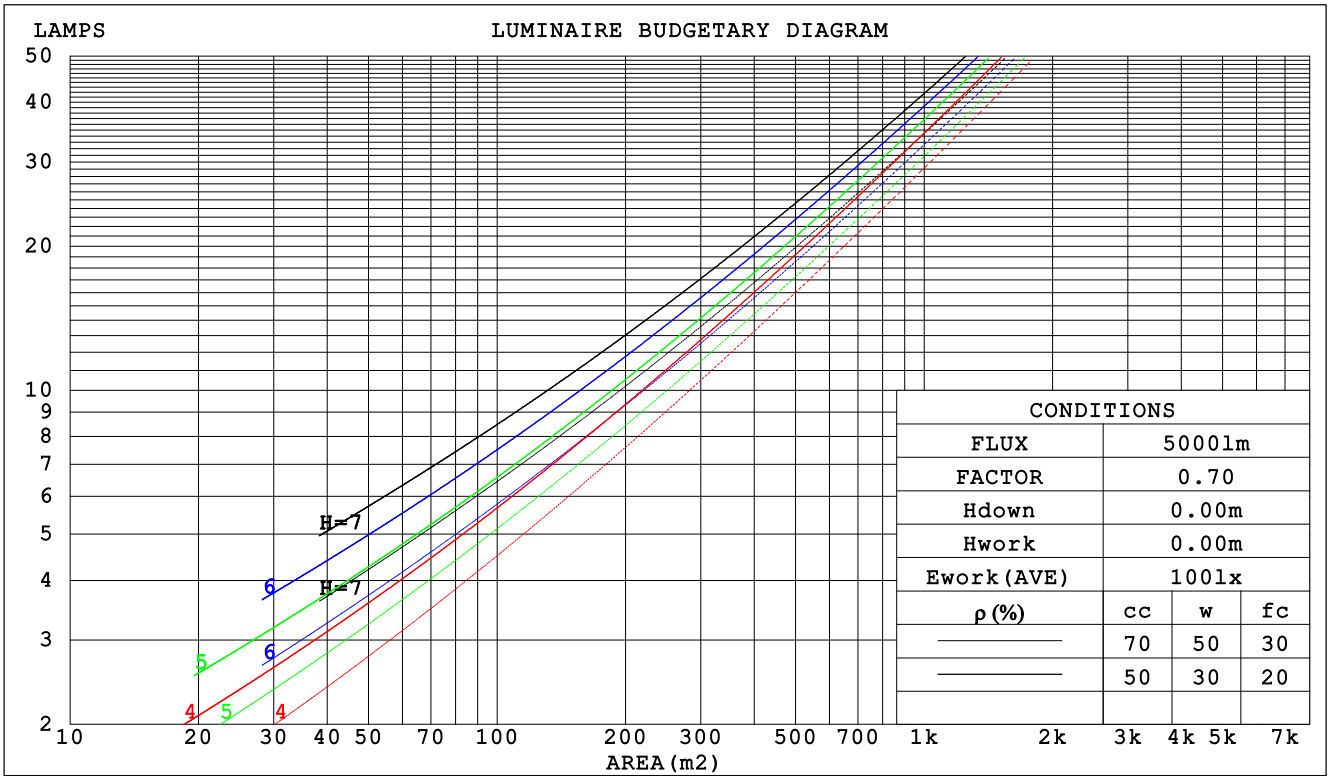
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-28

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:0.5426A P:13.02W PF:0 Lamp Flux:930.763x1 lm		
NAME: HCP-3925145	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	.89	.97	.92	.88	.93	.89	.85	.89	.86	.82	.85	.82	.80	.78
2.0	.85	.77	.70	.83	.76	.69	.79	.73	.67	.76	.71	.66	.73	.68	.64	.62
3.0	.73	.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	.44	.42
5.0	.57	.47	.40	.56	.46	.39	.54	.45	.39	.51	.44	.38	.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	.36	.30	.45	.36	.30	.43	.35	.29	.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	.23	.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:0.5426A P:13.02W PF:0 Lamp Flux:930.763x1 lm		
NAME: HCP-3925145	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	.390	.222	.070	.383	.218	.069	.369	.212	.068	.356	.206	.066	.345	.200	.064	
2.0	.344	.189	.058	.338	.186	.057	.326	.181	.056	.314	.176	.055	.304	.172	.054	
3.0	.308	.164	.049	.302	.162	.049	.291	.158	.048	.281	.154	.047	.272	.151	.047	
4.0	.278	.144	.042	.273	.143	.042	.263	.140	.042	.254	.137	.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	.033	.206	.109	.032	
7.0	.213	.105	.030	.210	.105	.030	.203	.103	.030	.197	.101	.029	.191	.099	.029	
8.0	.198	.097	.027	.195	.096	.027	.189	.094	.027	.183	.093	.027	.178	.091	.027	
9.0	.184	.089	.025	.181	.088	.025	.176	.087	.025	.171	.086	.025	.166	.084	.024	
10.0	.172	.083	.023	.170	.082	.023	.165	.081	.023	.160	.080	.023	.156	.078	.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	.186	.155	.128	.159	.133	.110	.109	.092	.076	.063	.053	.044	.020	.017	.014	
2.0	.179	.132	.092	.154	.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	.021	.105	.053	.019	.073	.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:0.5426A P:13.02W PF:0 Lamp Flux:930.763x1 lm										
NAME: HCP-3925145					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	26.2	27.9	26.5	28.1	28.3	25.4	27.0	25.6	27.2	27.5
3H	28.5	30.0	28.8	30.3	30.5	27.2	28.7	27.5	29.0	29.2
4H	29.8	31.3	30.1	31.5	31.8	27.8	29.3	28.2	29.6	29.9
6H	31.2	32.6	31.5	32.9	33.2	28.3	29.7	28.6	30.0	30.3
8H	32.0	33.3	32.3	33.6	33.9	28.4	29.7	28.7	30.0	30.3
12H	32.8	34.2	33.2	34.5	34.8	28.3	29.7	28.7	30.0	30.3
4H 2H	26.9	28.4	27.2	28.6	28.9	26.3	27.7	26.6	28.0	28.3
3H	29.3	30.7	29.7	31.0	31.3	28.3	29.6	28.6	29.9	30.2
4H	30.8	32.0	31.2	32.3	32.7	29.1	30.3	29.5	30.7	31.0
6H	32.4	33.5	32.8	33.9	34.2	29.7	30.8	30.1	31.2	31.5
8H	33.3	34.3	33.7	34.7	35.1	29.8	30.9	30.3	31.3	31.6
12H	34.3	35.3	34.7	35.6	36.1	29.9	30.8	30.3	31.2	31.6
8H 4H	31.2	32.2	31.6	32.6	33.0	29.7	30.8	30.2	31.1	31.5
6H	33.0	33.9	33.5	34.3	34.7	30.6	31.5	31.0	31.9	32.3
8H	34.0	34.8	34.5	35.3	35.7	30.9	31.7	31.3	32.1	32.5
12H	35.3	36.0	35.7	36.4	36.9	31.0	31.7	31.5	32.2	32.6
12H 4H	31.2	32.1	31.6	32.5	32.9	29.9	30.8	30.3	31.2	31.7
6H	33.1	33.9	33.6	34.3	34.8	30.9	31.7	31.3	32.1	32.5
8H	34.2	34.9	34.7	35.4	35.8	31.3	31.9	31.7	32.4	32.9
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					+ 0.3 / - 0.5				

CIE Pub.117 Corrected 930.8 lm Total Lamp Luminous Flux.(8log(F/F0) = -0.2)

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:0.5426A P:13.02W PF:0 Lamp Flux:930.763x1 lm		
NAME: HCP-3925145	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

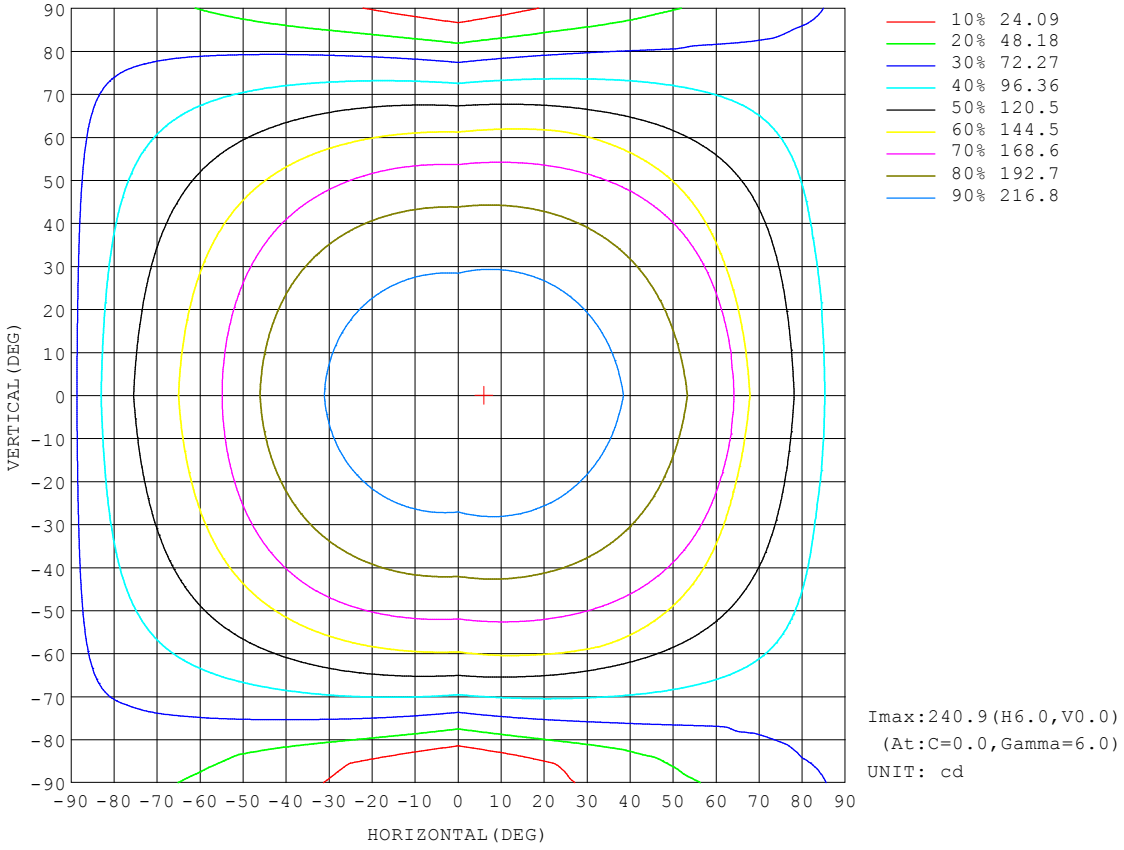
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	52	40	32	51	39	32	50	39	32	25
0.80	62	49	41	61	49	41	59	48	40	33
1.00	70	58	49	69	57	49	66	59	48	40
1.25	77	65	57	76	64	56	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	83	77	88	81	75	66
3.00	98	90	83	96	88	82	91	85	80	70
4.00	103	96	90	100	94	88	96	90	86	76
5.00	105	99	94	103	97	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:0.5426A P:13.02W PF:0 Lamp Flux:930.763x1 lm		
NAME: HCP-3925145	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

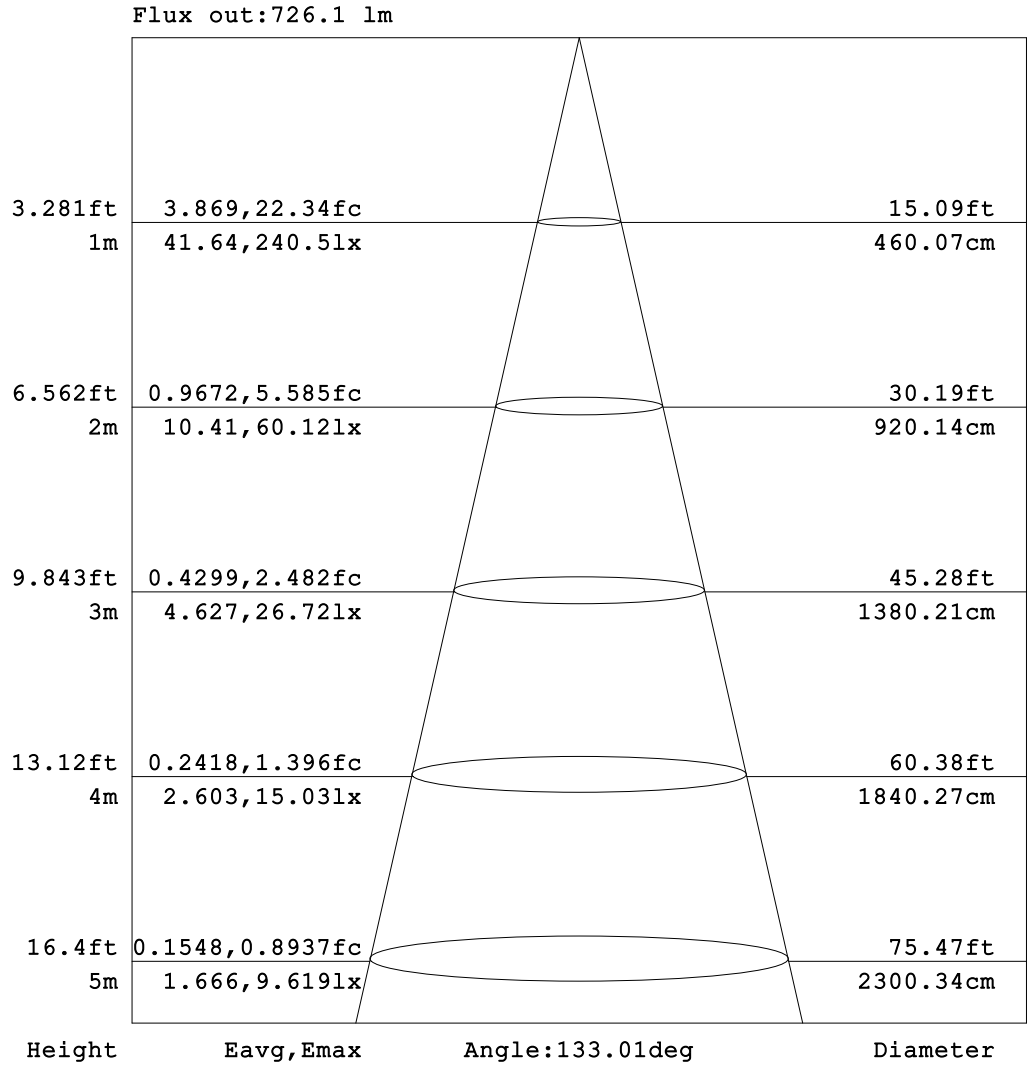


C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-28

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:0.5426A P:13.02W PF:0 Lamp Flux:930.763x1 lm		
NAME: HCP-3925145	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:



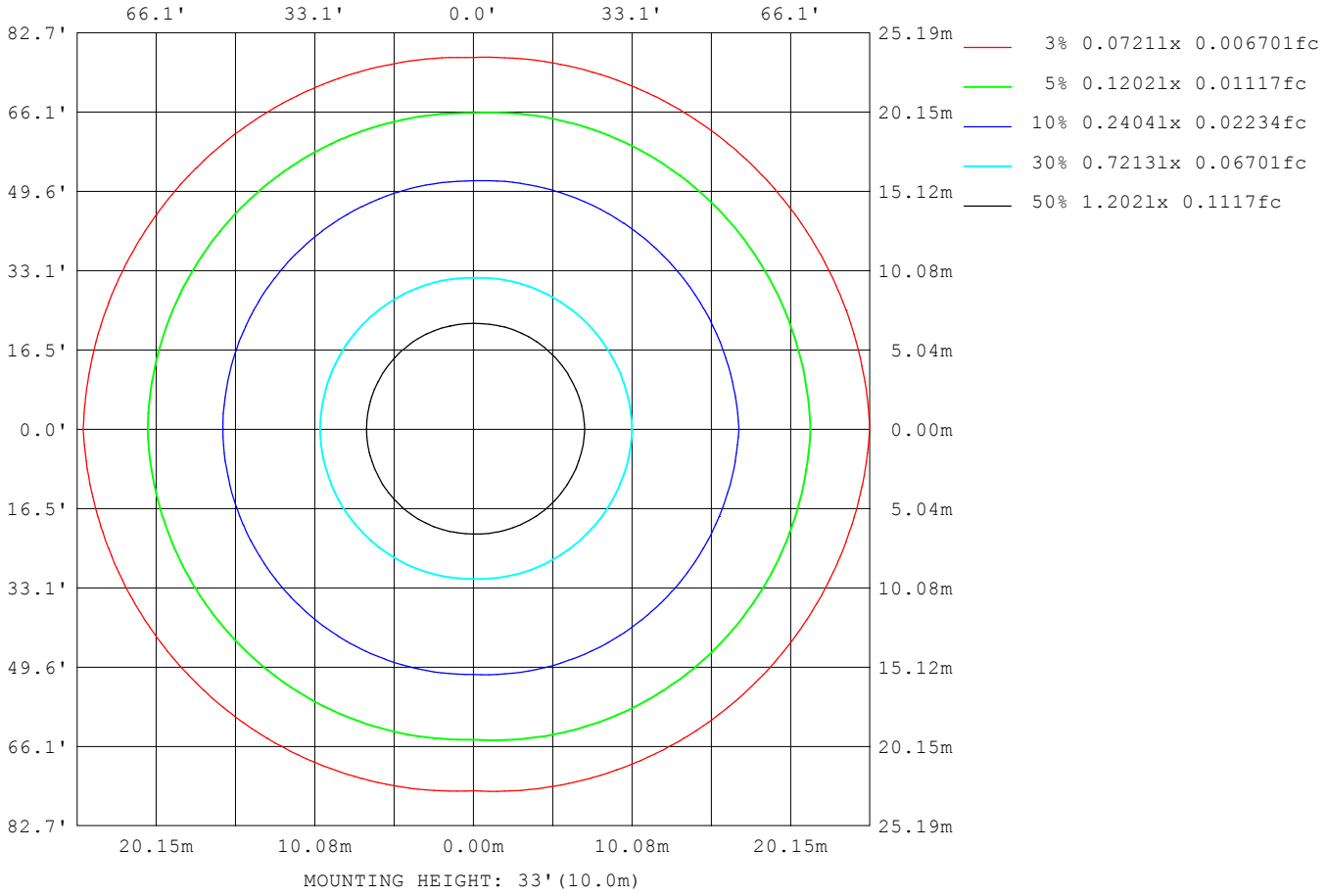
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

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

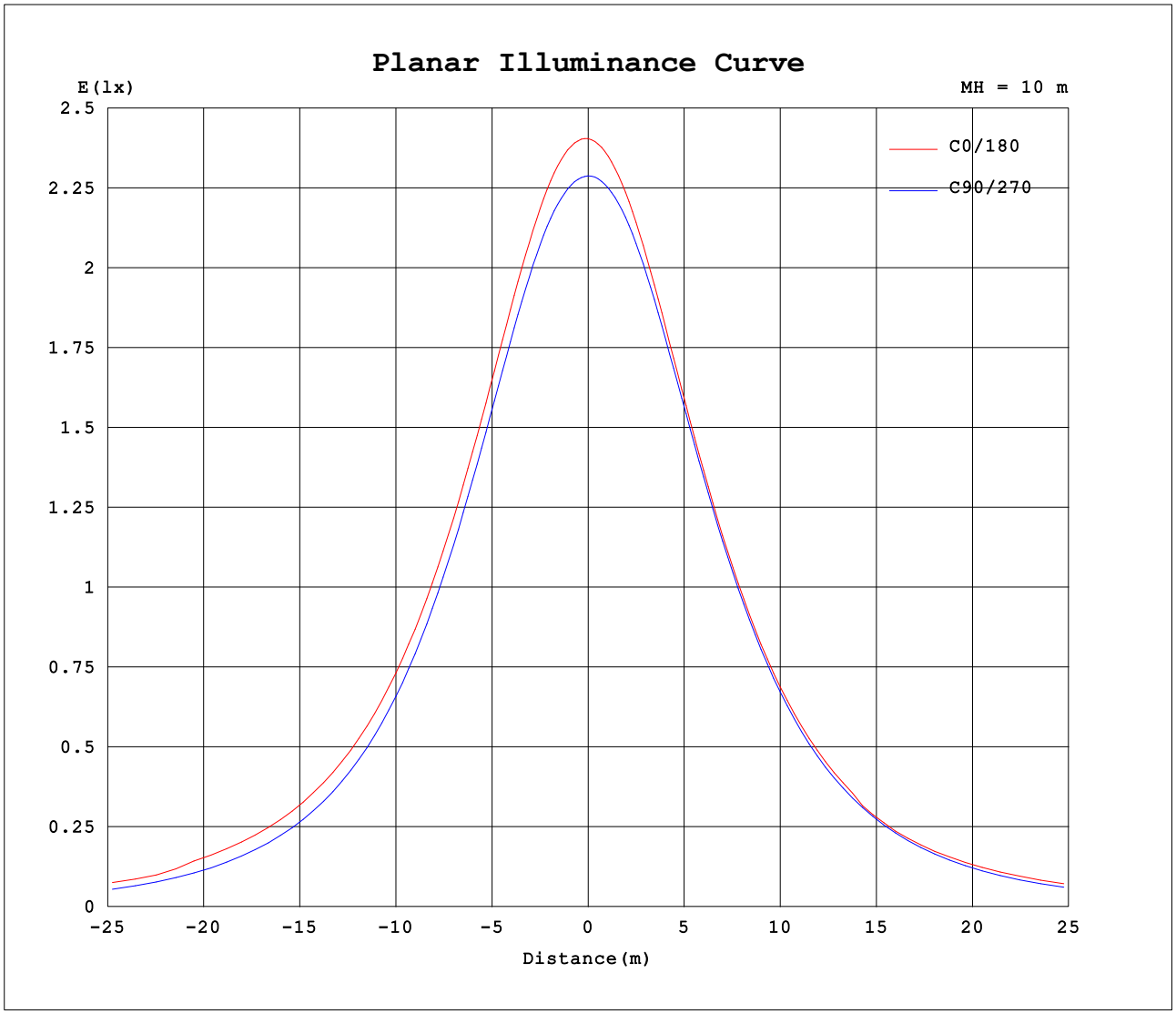
Test:U:24.00V I:0.5426A P:13.02W PF:0 Lamp Flux:930.763x1 lm		
NAME: HCP-3925145	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:



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:0.5426A P:13.02W PF:0 Lamp Flux:930.763x1 lm		
NAME: HCP-3925145	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	240	229	240	229
5	241	229	239	229
10	240	228	237	228
15	239	226	234	227
20	236	224	229	224
25	232	219	224	220
30	227	213	218	215
35	221	206	211	208
40	215	197	204	200
45	207	186	195	190
50	199	174	185	178
55	190	160	168	165
60	180	143	155	149
65	158	121	145	130
70	140	94.0	133	108
75	129	64.2	122	84.0
80	114	33.1	107	58.0
85	97.6	4.91	88.1	32.0
90	75.9	1.73	66.0	10.4

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: