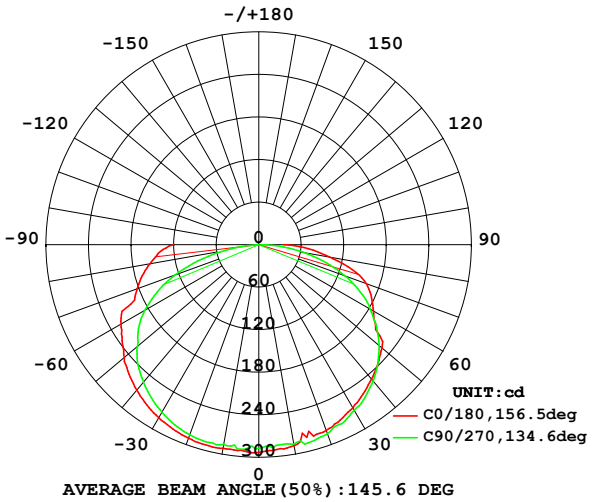
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.00V I:0.6254A P:15.01W PF:1.000 Lamp Flux:1152.5x1 lm		
NAME: HCP-3925193	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

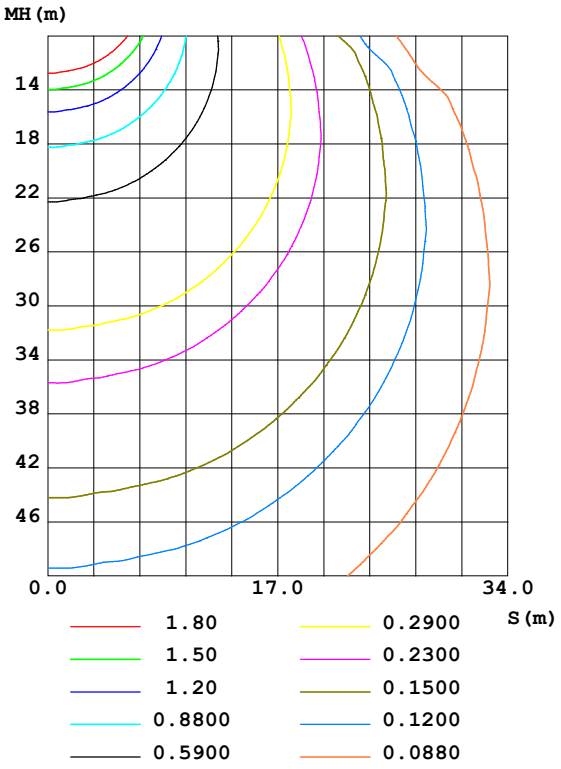
DATA OF LAMP		PHOTOMETRIC DATA		Eff: 76.78 lm/W	
MODEL	3000K	Imax(cd)	293.5	S/MH(C0/180)	1.45
NOMINAL POWER(W)	19.2	LOR(%)	100.0	S/MH(C90/270)	1.42
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	1152.5	η UP,DN(C0-180)	0.0,52.1
NOMINAL FLUX(lm)	1152.5	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,47.9
LAMPS INSIDE	1	η up(%)	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%):145.6 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	291.8	286.2	288.0	285.5					0- 10	27.52	27.52	2.39,2.39
20	290.3	285.6	278.6	283.7					10- 20	81.10	108.6	9.42,9.42
30	282.2	273.1	266.1	269.5					20- 30	129.0	237.6	20.6,20.6
40	267.8	252.8	247.4	251.1					30- 40	165.8	403.4	35,35
50	247.8	223.2	227.1	221.6					40- 50	188.0	591.5	51.3,51.3
60	224.5	185.7	186.7	180.9					50- 60	189.9	781.4	67.8,67.8
70	182.5	125.8	161.5	129.6					60- 70	171.6	952.9	82.7,82.7
80	156.0	48.12	100.9	64.30					70- 80	129.4	1082	93.9,93.9
90	120.3	2.106	35.10	3.587					80- 90	70.16	1153	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		

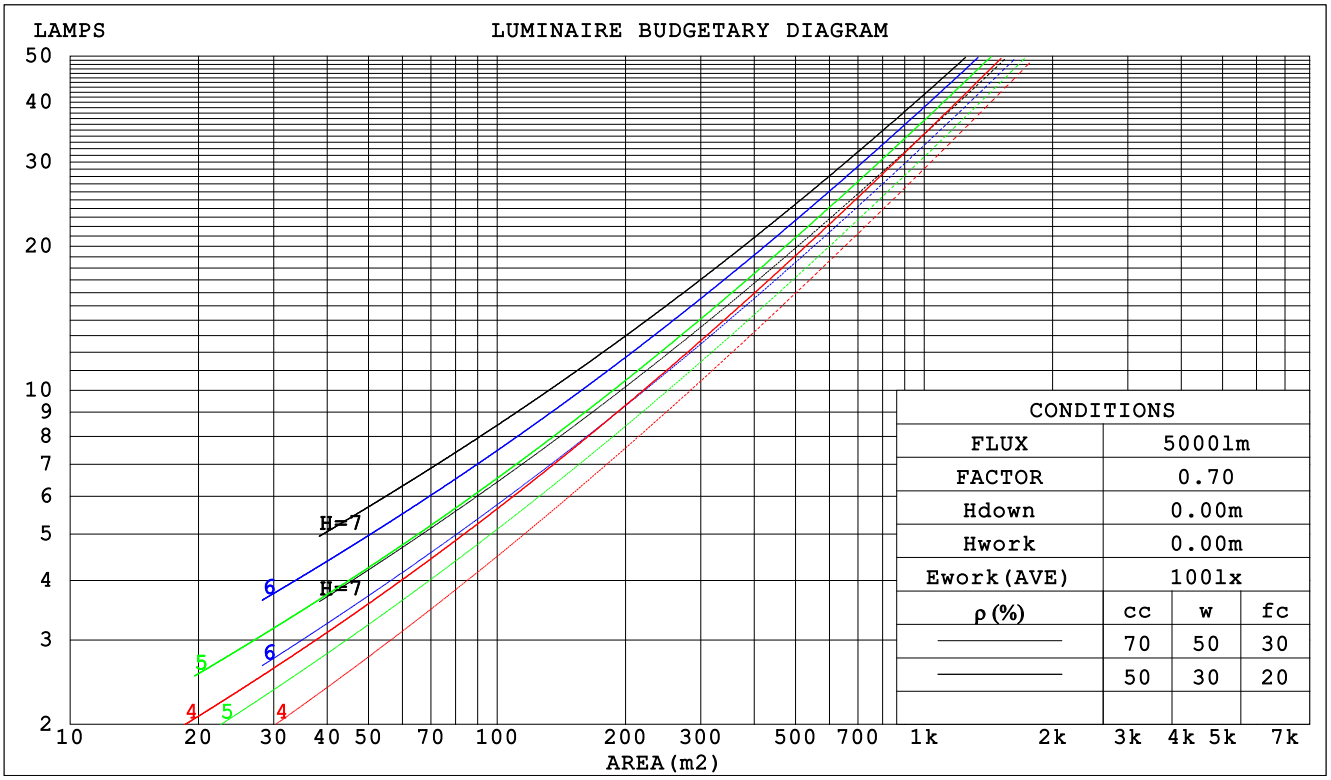
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-28

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:0.6254A P:15.01W PF:1.000 Lamp Flux:1152.5x1 lm		
NAME: HCP-3925193	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	.95	.90	.98	.93	.88	.93	.89	.85	.89	.86	.83	.86	.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	.65	.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	.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:2022-12-28

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:0.6254A P:15.01W PF:1.000 Lamp Flux:1152.5x1 lm		
NAME: HCP-3925193	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	.377	.215	.068	.364	.209	.067	.351	.202	.065	.339	.197	.063	
2.0	.342	.187	.057	.335	.185	.057	.323	.180	.056	.312	.175	.055	.301	.170	.054	
3.0	.306	.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	.124	.037	.231	.122	.036	.224	.120	.036	
6.0	.231	.116	.033	.227	.115	.033	.219	.112	.033	.212	.110	.032	.206	.108	.032	
7.0	.213	.105	.030	.209	.104	.030	.203	.103	.030	.196	.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	.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	.185	.155	.128	.159	.133	.111	.109	.092	.076	.062	.053	.044	.020	.017	.014	
2.0	.179	.132	.092	.153	.113	.080	.105	.078	.055	.061	.046	.033	.019	.015	.011	
3.0	.171	.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:

Uncorrected UGR Table

Test:U:24.00V I:0.6254A P:15.01W PF:1.000 Lamp Flux:1152.5x1 lm		
NAME: HCP-3925193	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	28.7	27.3	28.9	29.1	26.3	28.0	26.6	28.2	28.4
3H	29.4	31.0	29.7	31.2	31.5	28.2	29.8	28.5	30.0	30.3
4H	30.8	32.3	31.1	32.5	32.8	29.0	30.5	29.3	30.7	31.0
6H	32.3	33.8	32.7	34.0	34.3	29.5	30.9	29.8	31.2	31.5
8H	33.2	34.6	33.6	34.9	35.2	29.6	31.0	30.0	31.3	31.6
12H	34.2	35.6	34.6	35.9	36.2	29.6	31.0	30.0	31.3	31.6
4H 2H	27.8	29.2	28.1	29.5	29.8	27.2	28.7	27.6	29.0	29.3
3H	30.3	31.7	30.7	32.0	32.3	29.3	30.7	29.7	31.0	31.3
4H	31.9	33.1	32.3	33.4	33.8	30.3	31.5	30.7	31.8	32.2
6H	33.6	34.7	34.0	35.1	35.4	31.0	32.1	31.4	32.4	32.8
8H	34.6	35.6	35.0	36.0	36.4	31.1	32.2	31.6	32.5	32.9
12H	35.7	36.7	36.2	37.1	37.5	31.2	32.2	31.7	32.6	33.0
8H 4H	32.3	33.3	32.7	33.7	34.1	30.9	32.0	31.3	32.3	32.7
6H	34.2	35.1	34.7	35.5	35.9	31.9	32.8	32.3	33.2	33.6
8H	35.4	36.2	35.9	36.6	37.1	32.2	33.0	32.7	33.4	33.9
12H	36.8	37.5	37.3	37.9	38.4	32.4	33.1	32.9	33.6	34.1
12H 4H	32.3	33.3	32.7	33.6	34.1	31.1	32.1	31.5	32.4	32.9
6H	34.3	35.1	34.8	35.6	36.0	32.2	33.0	32.7	33.4	33.9
8H	35.6	36.3	36.1	36.7	37.2	32.7	33.3	33.1	33.8	34.3
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 1153 lm Total Lamp Luminous Flux.(8log(F/F0) = 0.5)

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:0.6254A P:15.01W PF:1.000 Lamp Flux:1152.5x1 lm		
NAME: HCP-3925193	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

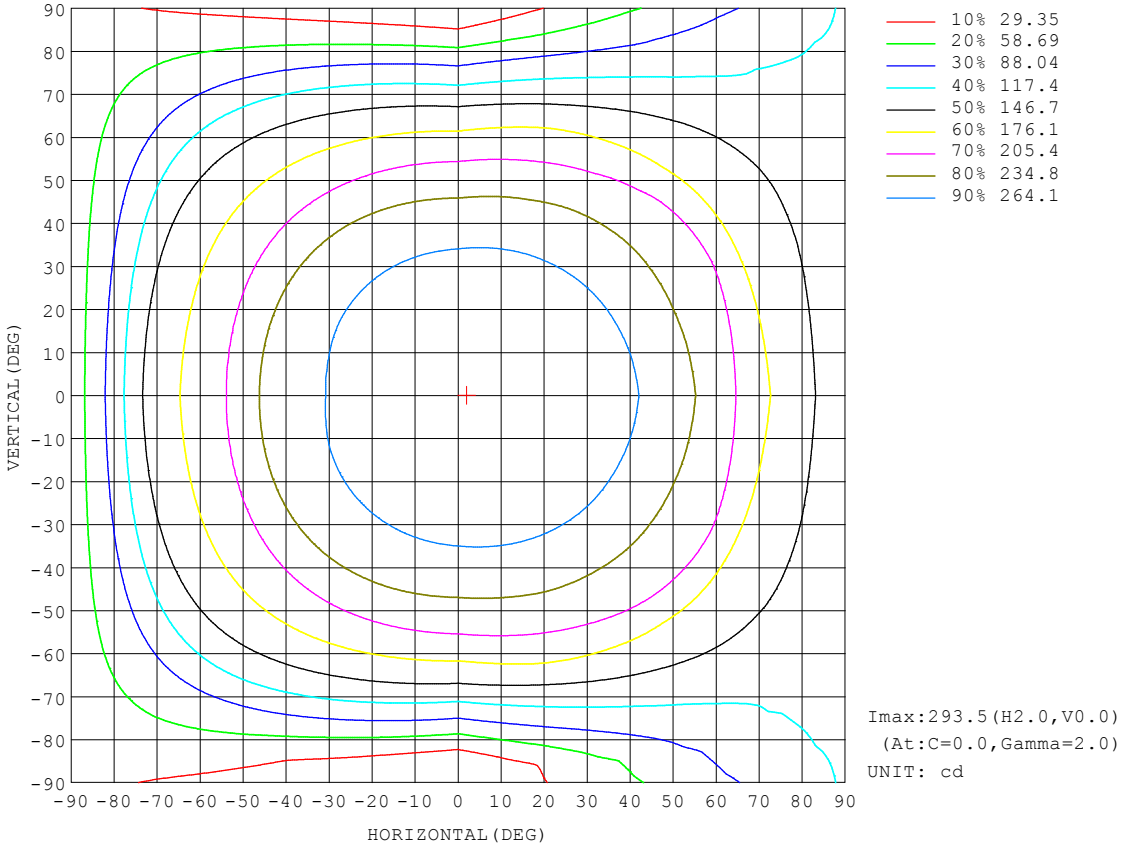
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	52	40	32	52	40	32	50	39	32	25
0.80	62	49	41	61	49	41	59	48	40	33
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	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	91	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:

ISOCANDELA DIAGRAM

Test:U:24.00V I:0.6254A P:15.01W PF:1.000 Lamp Flux:1152.5x1 lm		
NAME: HCP-3925193	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:



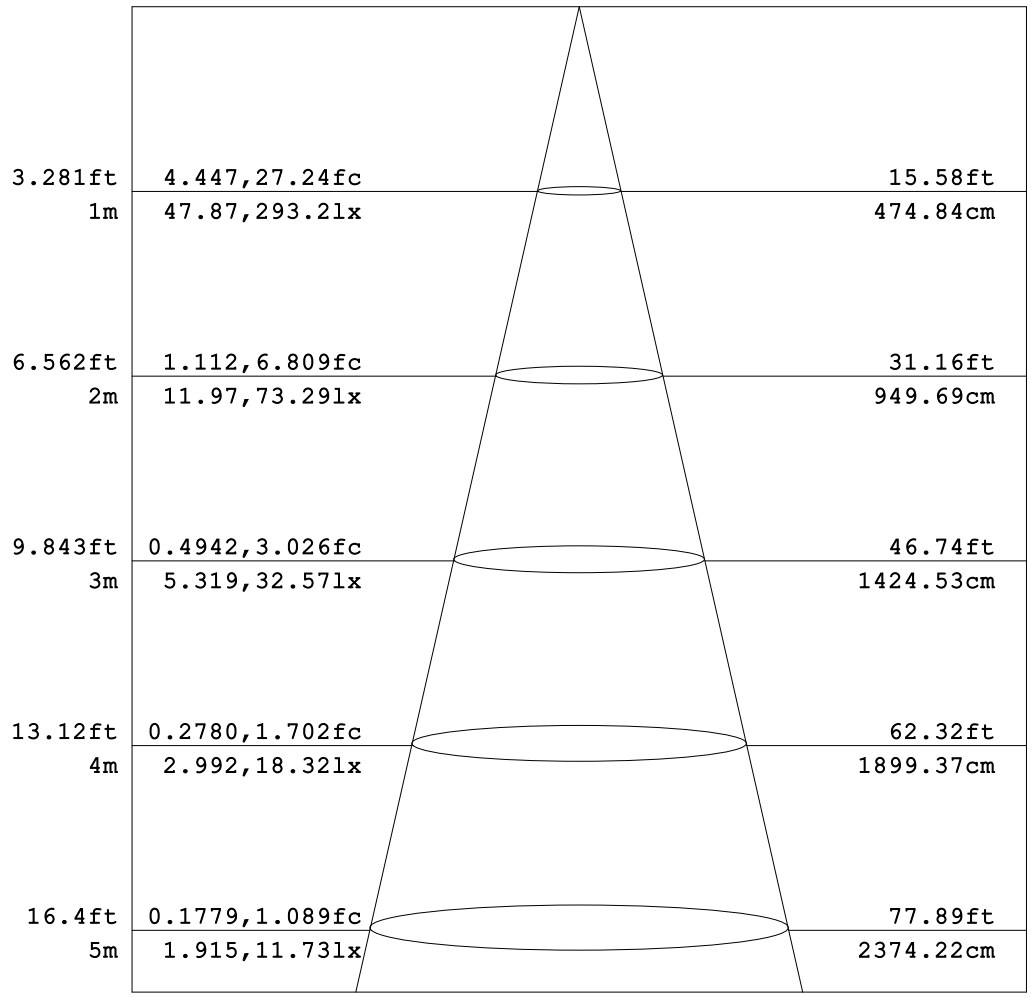
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:QUAN
Test Date:2022-12-28

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:0.6254A P:15.01W PF:1.000 Lamp Flux:1152.5x1 lm		
NAME: HCP-3925193	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:

Flux out:921.3 lm



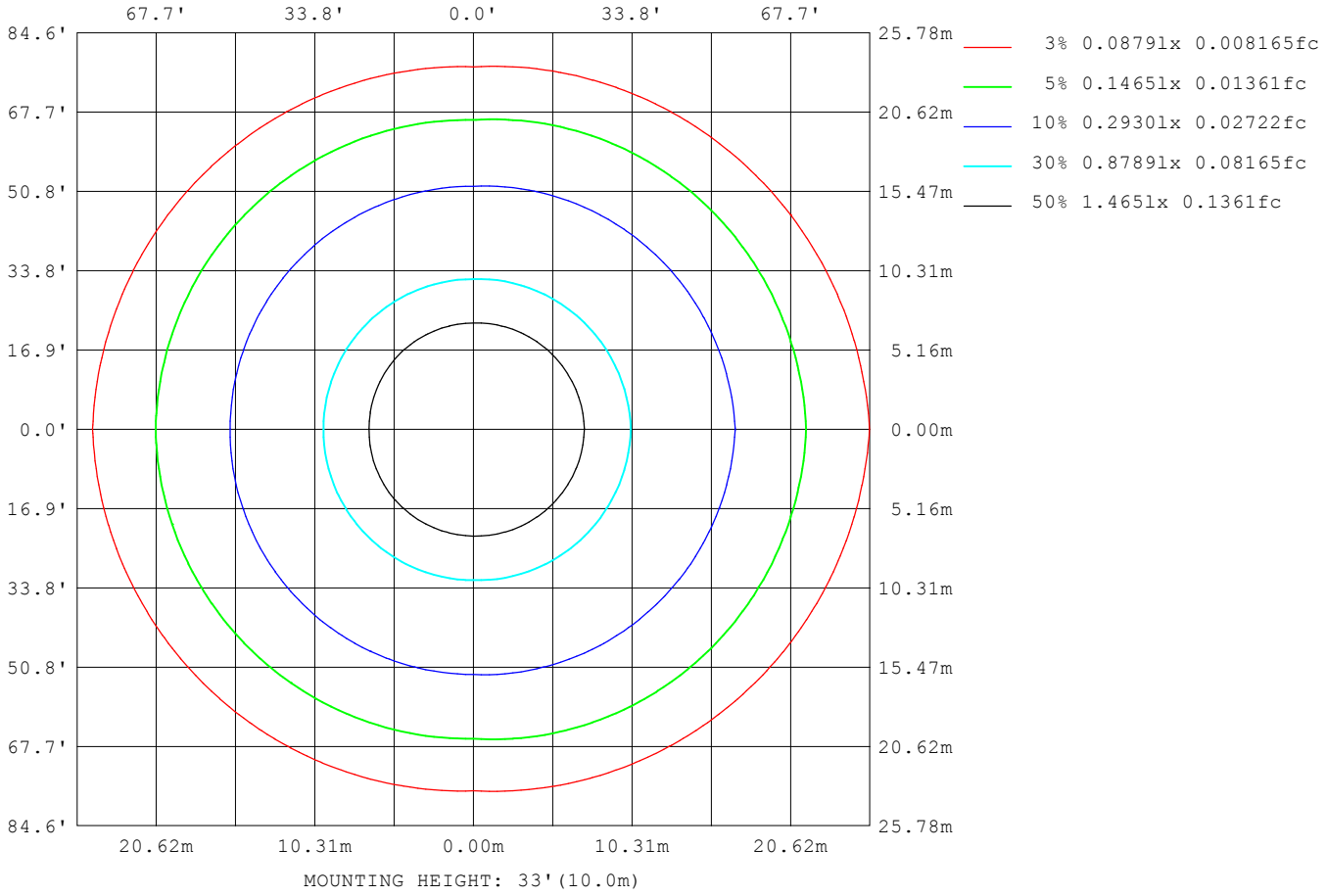
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

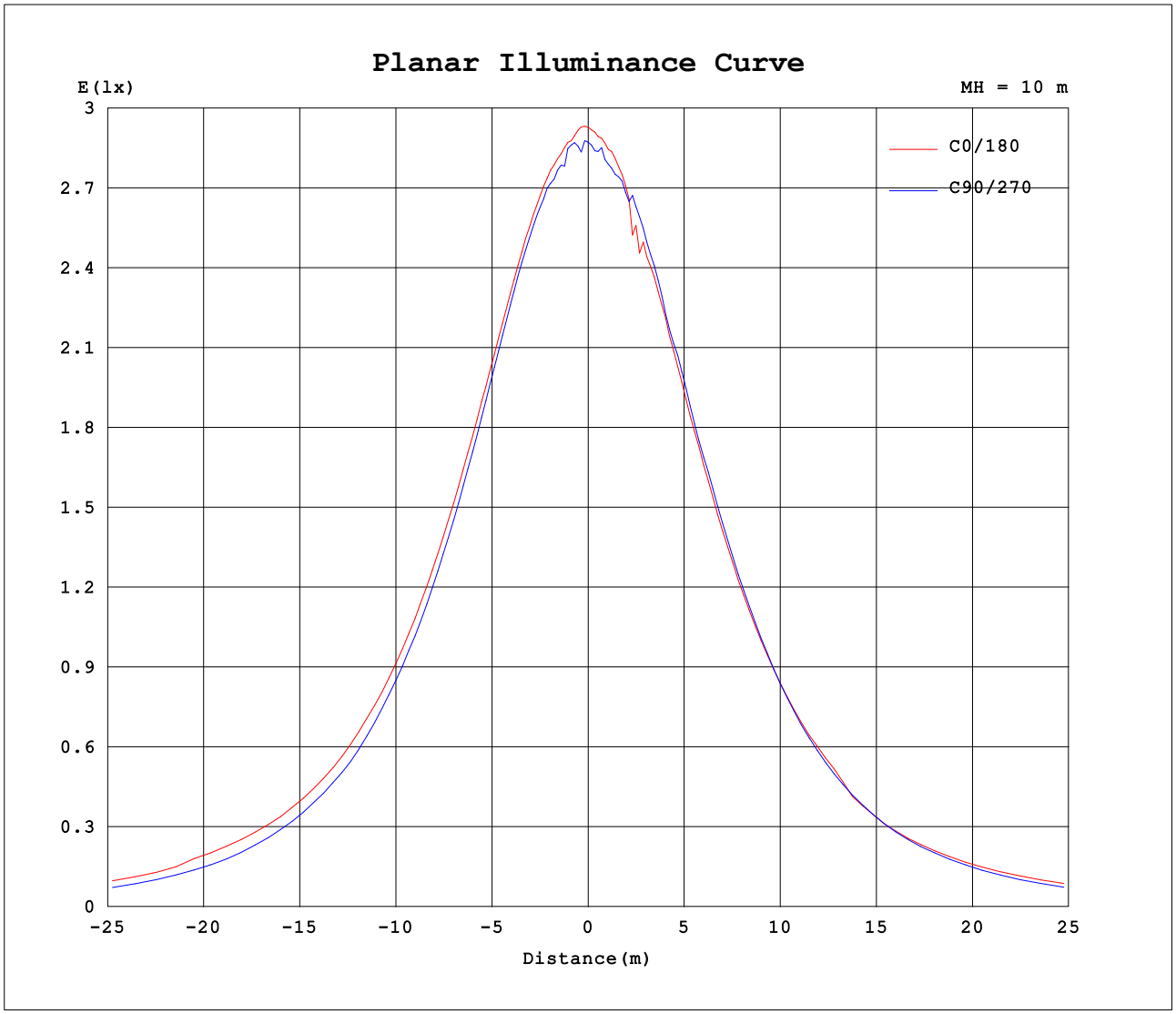
Test:U:24.00V I:0.6254A P:15.01W PF:1.000 Lamp Flux:1152.5x1 lm		
NAME: HCP-3925193	TYPE:	WEIGHT:
DIM.:	SPEC.:	SERIAL No.:1
MFR.: HAVIT COMMERCIAL	SUR.:0.008	PROTECTION ANGLE:



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:0.6254A P:15.01W PF:1.000 Lamp Flux:1152.5x1 lm		
NAME: HCP-3925193	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	293	287	293	287
5	291	289	290	284
10	292	286	288	285
15	292	288	272	288
20	290	286	279	284
25	287	280	273	278
30	282	273	266	270
35	276	264	257	262
40	268	253	247	251
45	259	241	238	237
50	248	223	227	222
55	235	207	201	203
60	224	186	187	181
65	199	158	175	158
70	183	126	162	130
75	170	88.4	137	98.3
80	156	48.1	101	64.3
85	143	10.5	71.0	30.1
90	120	2.11	35.1	3.59

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: