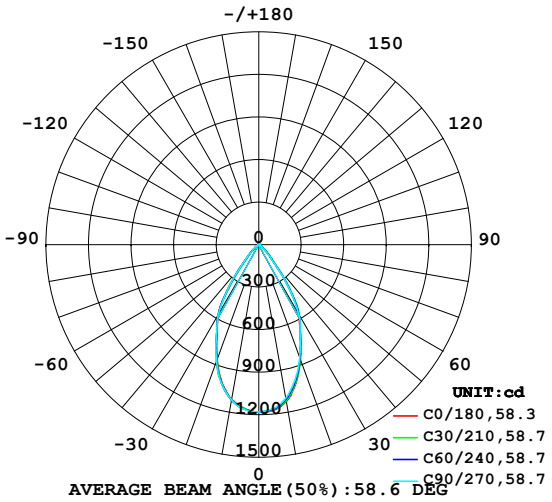
IES TEST REPORT
Photometric Filename: HCP-81X22112 5500K.IES

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:219.56V I:0.0597A P:13.021W PF:0.9939 Freq:0Hz Lamp Flux:1054.58x1 lm		
Name: HCP-81X22112 5500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: HAVIT COMMERCIAL	SUR.:	Shielding Angle:

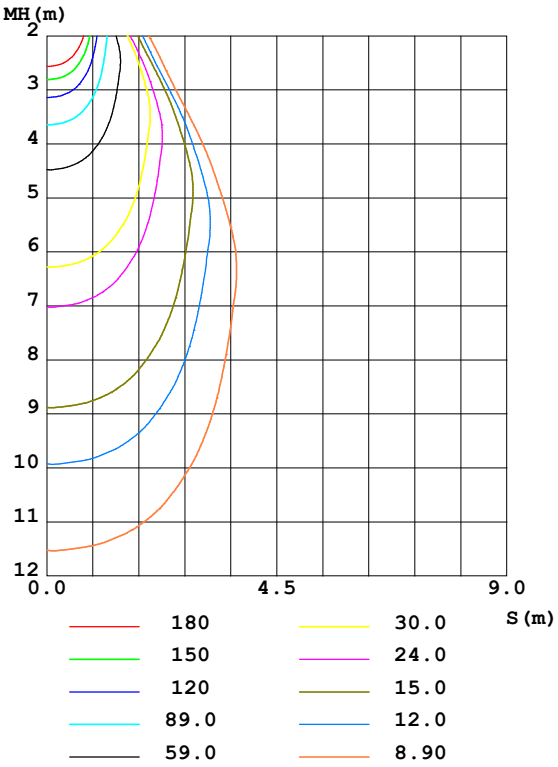
DATA OF LAMP		PHOTOMETRIC DATA Eff: 80.99 lm/W			
MODEL	HCP-81322112	Imax(cd)	1184	S/MH(C0/180)	0.86
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	0.87
RATED VOLTAGE(V)	220	TOTAL FLUX(lm)	1054.6	η UP,DN(C0-180)	0.6,49.3
NOMINAL FLUX(lm)	1054.58	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.5,49.6
LAMPS INSIDE	1	η up(%)	1.1	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	220	η down(%)	98.9	CIBSE SHR MAX	0.95

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



AVERAGE BEAM ANGLE(50%):58.6 DEG

C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-03-06

γ Range: 0 - 180DEG
γInterval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

IES TEST REPORT
Photometric Filename: HCP-81X22112 5500K.IES

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	1123	1116	1099	1103	1107	1110	1112	1112	0- 10	109.4	109.4	10.4,10.4
20	858.6	860.6	848.1	858.5	862.6	860.8	875.4	858.8	10- 20	279.4	388.8	36.9,36.9
30	566.0	575.7	562.4	572.4	574.5	572.6	573.4	565.7	20- 30	323.0	711.8	67.5,67.5
40	180.0	182.8	177.0	180.2	168.8	171.1	184.8	185.3	30- 40	230.6	942.4	89.4,89.4
50	49.50	45.95	37.38	37.79	39.81	40.72	43.60	48.47	40- 50	74.14	1017	96.4,96.4
60	10.91	10.34	8.302	9.308	9.439	9.368	9.040	10.02	50- 60	18.70	1035	98.2,98.2
70	3.912	3.644	2.755	3.487	3.981	3.487	2.822	3.300	60- 70	5.801	1041	98.7,98.7
80	0.7009	0.3687	0.3307	0.3341	0.5849	0.4005	0.3253	0.3872	70- 80	1.620	1043	98.9,98.9
90	0.0522	0.0478	0.0478	0.0478	0.0608	0.0565	0.0565	0.0608	80- 90	0.1752	1043	98.9,98.9
100	0.0564	0.1043	0.0607	0.1086	0.1087	0.0565	0.0956	0.0521	90-100	0.0684	1043	98.9,98.9
110	0.3077	0.3348	0.3124	0.3565	0.3088	0.2562	0.2741	0.2476	100-110	0.1805	1043	98.9,98.9
120	0.9802	0.9996	1.006	1.026	0.9129	0.8636	0.8608	0.8507	110-120	0.5709	1044	99,99
130	2.109	2.134	2.183	2.160	1.960	1.906	1.895	1.892	120-130	1.287	1045	99.1,99.1
140	3.568	3.563	3.620	3.611	3.363	3.295	3.285	3.234	130-140	2.092	1047	99.3,99.3
150	4.949	4.931	5.006	5.000	4.749	4.672	4.653	4.538	140-150	2.579	1050	99.5,99.5
160	5.949	6.003	6.105	6.094	5.860	5.806	5.795	5.641	150-160	2.472	1052	99.8,99.8
170	6.905	6.950	6.992	7.015	6.863	6.866	6.859	6.731	160-170	1.801	1054	99.9,99.9
180	7.670	7.739	7.605	7.700	7.674	7.735	7.609	7.692	170-180	0.6891	1055	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-03-06

γ Range: 0 - 180DEG
γInterval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

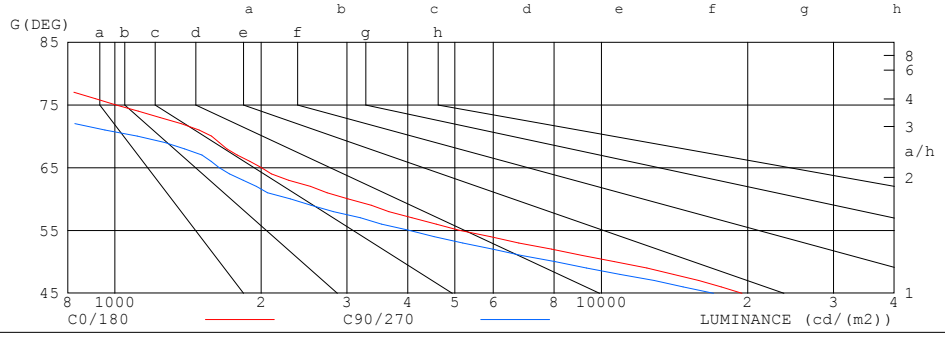
IES TEST REPORT
Photometric Filename: HCP-81X22112 5500K.IES

LUMINANCE LIMITATION CURVES

Test:U:219.56V I:0.0597A P:13.021W PF:0.9939 Freq:0Hz Lamp Flux:1054.58x1 lm		
Name: HCP-81X22112 5500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: HAVIT COMMERCIAL	SUR.:	Shielding Angle:

LUMINANCE LIMITATION CURVES

GLARE	CLASS	ILLUMINANCE (lx)							
1.15	A	2000	1000	500	<=300				
1.50	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.20	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	352	111
80	558	263
75	1001	502
70	1580	1113
65	1998	1636
60	3014	2294
55	5097	4019
50	10640	8034
45	19453	16995

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-03-06

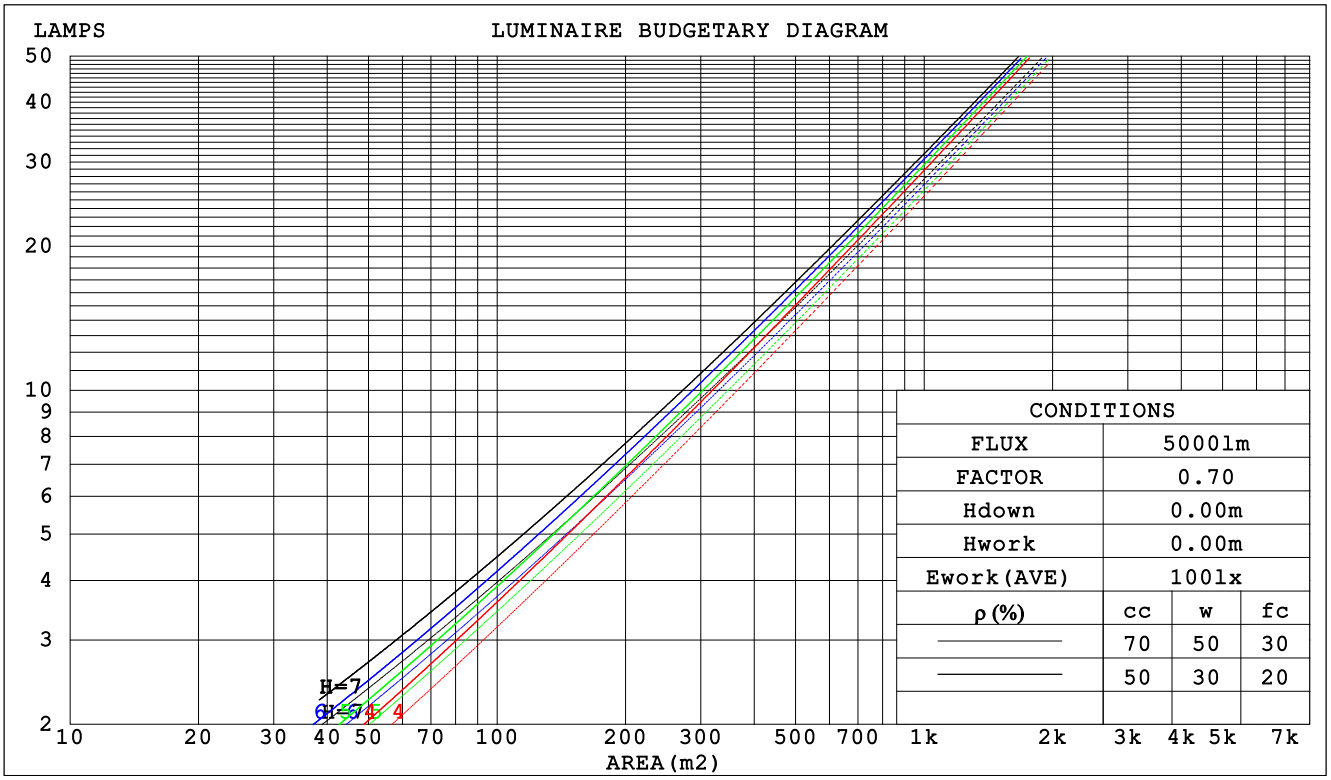
γ Range: 0 - 180DEG
γInterval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

IES TEST REPORT
Photometric Filename: HCP-81X22112 5500K.IES

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:219.56V I:0.0597A P:13.021W PF:0.9939 Freq:0Hz Lamp Flux:1054.58x1 lm		
Name: HCP-81X22112 5500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: HAVIT COMMERCIAL	SUR.:	Shielding 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	1.10	1.10	1.10	1.06	1.06	1.06	1.01	1.01	1.01	.99
1.0	1.10	1.08	1.05	1.08	1.06	1.04	1.04	1.02	1.00	.00	.98	.97	.96	.95	.94	.92
2.0	1.02	.98	.95	1.01	.97	.94	.97	.94	.91	.94	.91	.89	.91	.89	.87	.86
3.0	.95	.90	.86	.94	.89	.85	.91	.87	.84	.88	.85	.82	.86	.83	.81	.79
4.0	.89	.83	.79	.87	.82	.78	.85	.81	.77	.83	.79	.76	.81	.78	.75	.74
5.0	.83	.77	.72	.82	.76	.72	.80	.75	.71	.78	.74	.71	.76	.73	.70	.68
6.0	.78	.71	.67	.77	.71	.67	.75	.70	.66	.74	.69	.66	.72	.68	.65	.64
7.0	.73	.67	.62	.72	.66	.62	.71	.66	.62	.69	.65	.61	.68	.64	.61	.59
8.0	.68	.62	.58	.68	.62	.58	.67	.61	.58	.66	.61	.57	.64	.60	.57	.56
9.0	.65	.59	.54	.64	.58	.54	.63	.58	.54	.62	.57	.54	.61	.57	.54	.52
10.0	.61	.55	.51	.61	.55	.51	.60	.54	.51	.59	.54	.51	.58	.54	.50	.49



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-03-06

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:219.56V I:0.0597A P:13.021W PF:0.9939 Freq:0Hz Lamp Flux:1054.58x1 lm		
Name: HCP-81X22112 5500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: HAVIT COMMERCIAL	SUR.:	Shielding 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	.182	.104	.033	.175	.100	.032	.162	.093	.030	.150	.086	.028	.138	.080	.026	
2.0	.175	.096	.029	.169	.093	.029	.158	.088	.027	.147	.083	.026	.138	.078	.025	
3.0	.167	.089	.027	.162	.087	.026	.152	.082	.025	.143	.079	.024	.135	.075	.023	
4.0	.159	.083	.024	.155	.081	.024	.146	.078	.023	.139	.074	.022	.131	.071	.022	
5.0	.152	.077	.022	.148	.076	.022	.140	.073	.022	.134	.071	.021	.127	.068	.020	
6.0	.145	.073	.021	.141	.071	.021	.135	.069	.020	.129	.067	.020	.123	.065	.019	
7.0	.138	.068	.019	.135	.067	.019	.129	.065	.019	.124	.064	.018	.119	.062	.018	
8.0	.132	.065	.018	.130	.064	.018	.124	.062	.018	.119	.061	.017	.115	.059	.017	
9.0	.127	.061	.017	.124	.061	.017	.119	.059	.017	.115	.058	.017	.111	.056	.016	
10.0	.121	.058	.016	.119	.058	.016	.115	.056	.016	.111	.055	.016	.107	.054	.015	

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	.199	.199	.199	.170	.170	.170	.116	.116	.116	.067	.067	.067	.021	.021	.021	
1.0	.180	.166	.153	.154	.142	.132	.105	.098	.091	.061	.057	.053	.019	.018	.017	
2.0	.165	.141	.121	.142	.121	.104	.097	.084	.073	.056	.049	.043	.018	.016	.014	
3.0	.153	.122	.098	.131	.105	.085	.090	.073	.059	.052	.043	.035	.017	.014	.011	
4.0	.143	.108	.080	.123	.093	.070	.085	.065	.049	.049	.038	.029	.016	.012	.010	
5.0	.135	.096	.068	.116	.083	.059	.080	.058	.042	.046	.034	.025	.015	.011	.008	
6.0	.128	.087	.058	.110	.075	.050	.076	.053	.036	.044	.031	.021	.014	.010	.007	
7.0	.121	.080	.050	.104	.069	.044	.072	.048	.031	.042	.028	.018	.014	.009	.006	
8.0	.116	.073	.044	.100	.064	.039	.069	.045	.027	.040	.026	.016	.013	.009	.005	
9.0	.111	.068	.040	.095	.059	.035	.066	.042	.025	.038	.025	.015	.012	.008	.005	
10.0	.106	.064	.036	.091	.055	.031	.063	.039	.022	.037	.023	.013	.012	.008	.004	

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-03-06

γ Range: 0 - 180DEG
γInterval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:219.56V I:0.0597A P:13.021W PF:0.9939 Freq:0Hz Lamp Flux:1054.58x1 lm		
Name: HCP-81X22112 5500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: HAVIT COMMERCIAL	SUR.:	Shielding 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	18.6	19.5	18.8	19.7	19.9	18.2	19.2	18.5	19.4	19.6
	3H	18.4	19.3	18.7	19.5	19.7	18.1	19.0	18.4	19.2	19.4
	4H	18.3	19.2	18.6	19.4	19.7	18.0	18.8	18.3	19.1	19.3
	6H	18.2	19.0	18.6	19.3	19.6	17.9	18.7	18.2	19.0	19.2
	8H	18.2	18.9	18.5	19.2	19.5	17.9	18.6	18.2	18.9	19.2
	12H	18.1	18.9	18.5	19.2	19.5	17.8	18.5	18.2	18.8	19.1
4H	2H	18.3	19.2	18.6	19.4	19.6	18.0	18.8	18.3	19.1	19.3
	3H	18.2	18.9	18.5	19.2	19.5	17.9	18.6	18.2	18.9	19.2
	4H	18.1	18.7	18.5	19.1	19.4	17.8	18.4	18.1	18.7	19.1
	6H	18.0	18.6	18.4	18.9	19.3	17.7	18.2	18.1	18.6	19.0
	8H	17.9	18.5	18.4	18.9	19.2	17.6	18.1	18.0	18.5	18.9
	12H	17.9	18.4	18.3	18.8	19.2	17.6	18.0	18.0	18.4	18.8
8H	4H	17.9	18.5	18.4	18.8	19.2	17.6	18.1	18.0	18.5	18.9
	6H	17.9	18.3	18.3	18.7	19.1	17.5	17.9	18.0	18.4	18.8
	8H	17.8	18.2	18.3	18.6	19.1	17.5	17.8	17.9	18.3	18.7
	12H	17.7	18.1	18.2	18.5	19.0	17.4	17.7	17.9	18.2	18.7
12H	4H	17.9	18.4	18.3	18.8	19.2	17.6	18.0	18.0	18.4	18.9
	6H	17.8	18.2	18.3	18.6	19.1	17.5	17.8	17.9	18.3	18.7
	8H	17.7	18.1	18.2	18.5	19.0	17.4	17.7	17.9	18.2	18.7

Variations with the observer position at spacings:		
S = 1.0H	+ 3.2 / - 8.5	+ 3.1 / - 9.8
1.5H	+ 4.9 / - 7.1	+ 5.0 / - 7.8
2.0H	+ 5.6 / - 6.7	+ 5.7 / - 6.6

CIE Pub.117, 1055 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.2)

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-03-06

γ Range: 0 - 180DEG
γInterval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

IES TEST REPORT
Photometric Filename: HCP-81X22112 5500K.IES

UTILIZATION FACTORS TABLE

Test:U:219.56V I:0.0597A P:13.021W PF:0.9939 Freq:0Hz Lamp Flux:1054.58x1 lm		
Name: HCP-81X22112 5500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: HAVIT COMMERCIAL	SUR.:	Shielding 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	85	78	74	84	78	74	83	77	74	70
0.80	93	86	82	92	86	82	91	85	82	78
1.00	98	92	88	97	91	87	95	91	87	83
1.25	102	96	93	101	96	92	99	94	91	87
1.50	105	100	96	103	99	96	101	97	94	90
2.00	108	103	100	106	102	99	103	100	98	92
2.50	109	105	102	108	104	101	104	102	99	93
3.00	111	108	105	109	106	103	106	103	101	94
4.00	113	110	108	111	109	106	107	105	104	96
5.00	114	112	110	112	110	108	108	106	105	97
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004				Suspended					SHRNOM = 1.25	

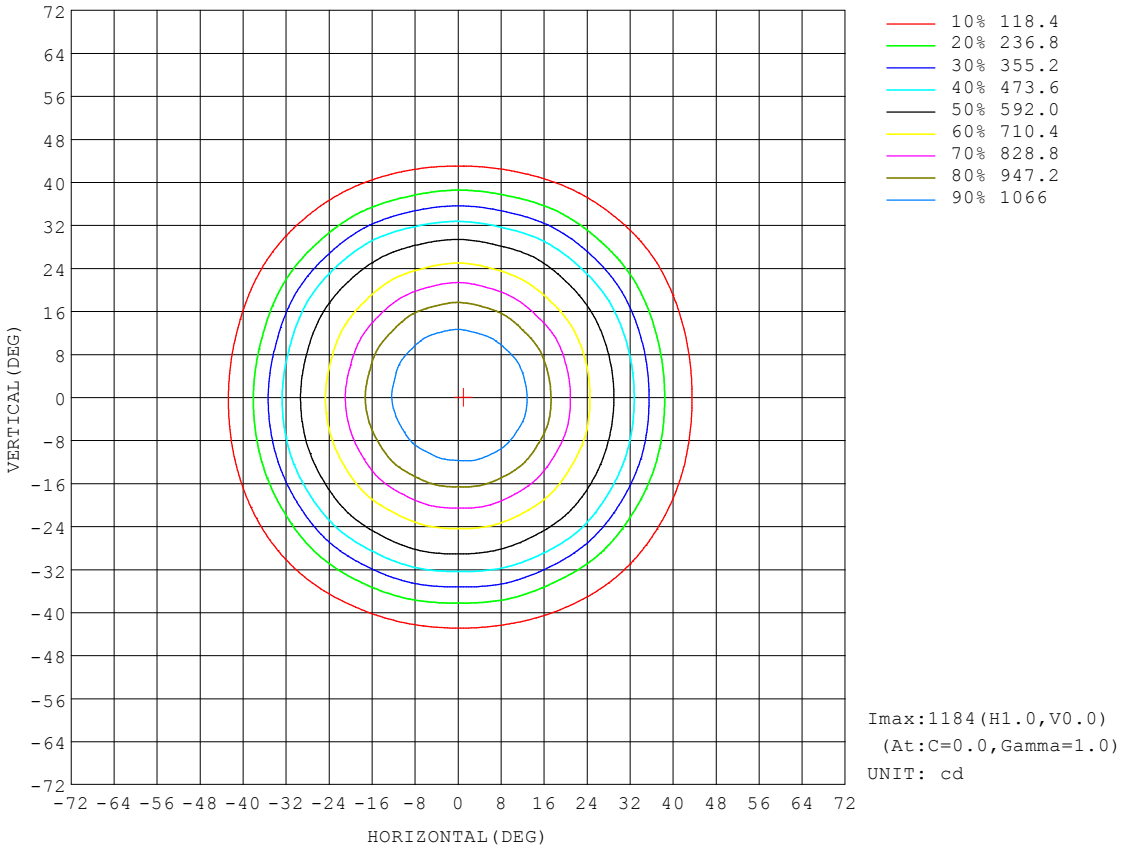
C Range: 0 - 360DEG
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Test Date:2023-03-06

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γInterval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

IES TEST REPORT
Photometric Filename: HCP-81X22112 5500K.IES

ISOCANDELA DIAGRAM

Test:U:219.56V I:0.0597A P:13.021W PF:0.9939 Freq:0Hz Lamp Flux:1054.58x1 lm		
Name: HCP-81X22112 5500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: HAVIT COMMERCIAL	SUR.:	Shielding Angle:

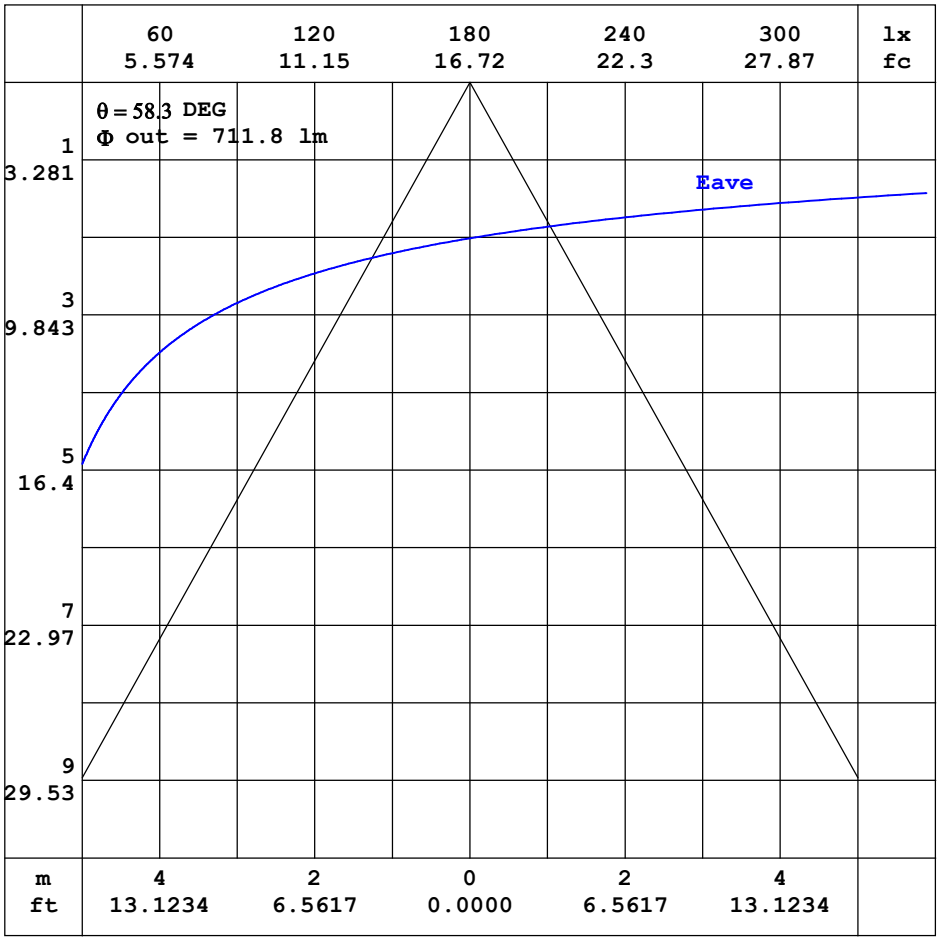


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
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γ Range: 0 - 180DEG
γInterval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

AAI CURVES

Test:U:219.56V I:0.0597A P:13.021W PF:0.9939 Freq:0Hz Lamp Flux:1054.58x1 lm		
Name: HCP-81X22112 5500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: HAVIT COMMERCIAL	SUR.:	Shielding Angle:



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

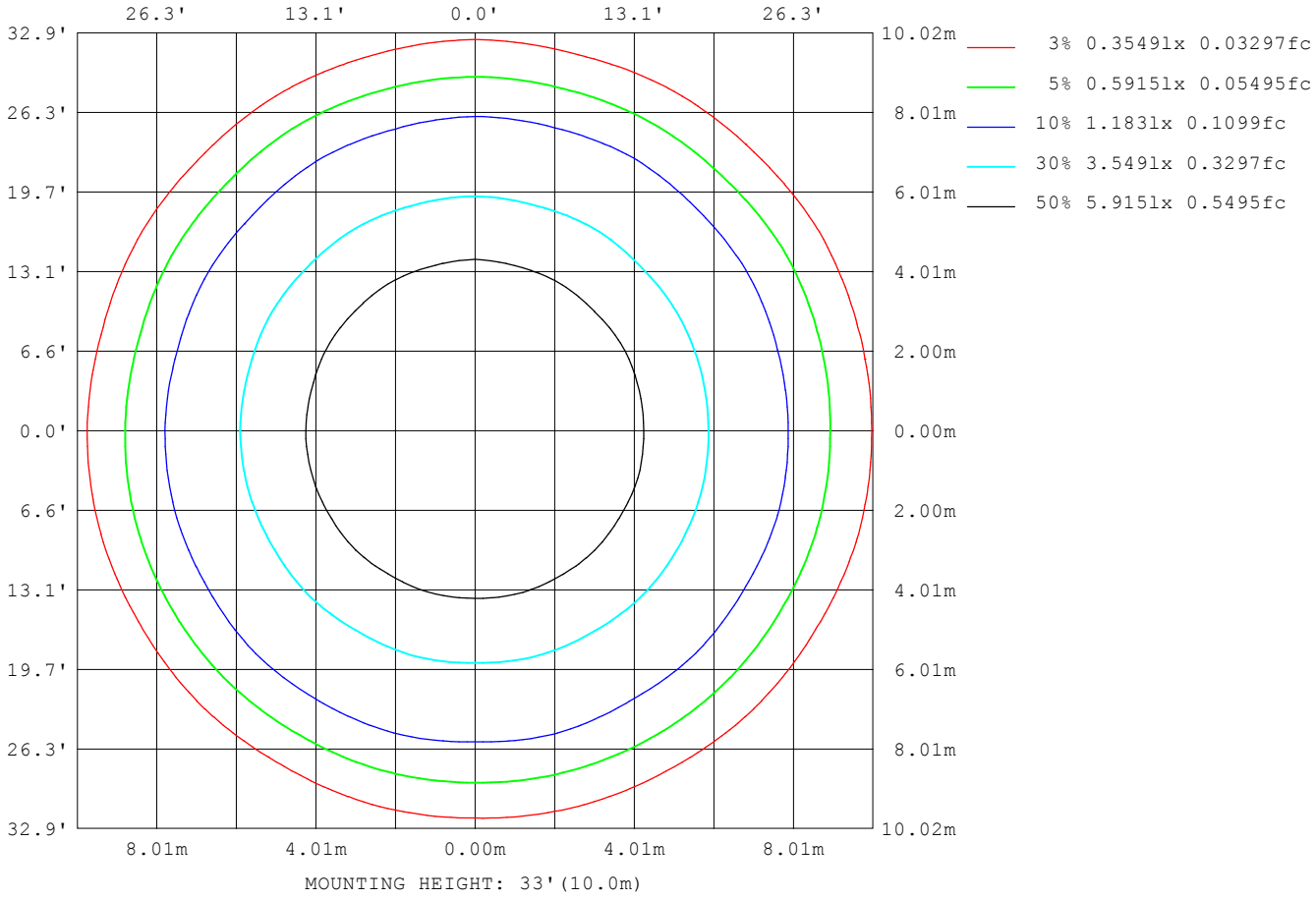
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-03-06

γ Range: 0 - 180DEG
γInterval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

IES TEST REPORT
Photometric Filename: HCP-81X22112 5500K.IES

ISOLUX DIAGRAM

Test:U:219.56V I:0.0597A P:13.021W PF:0.9939 Freq:0Hz Lamp Flux:1054.58x1 lm		
Name: HCP-81X22112 5500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: HAVIT COMMERCIAL	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-03-06

γ Range: 0 - 180DEG
γInterval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:219.56V I:0.0597A P:13.021W PF:0.9939 Freq:0Hz Lamp Flux:1054.58x1 lm		
Name: HCP-81X22112 5500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: HAVIT COMMERCIAL	SUR.:	Shielding Angle:

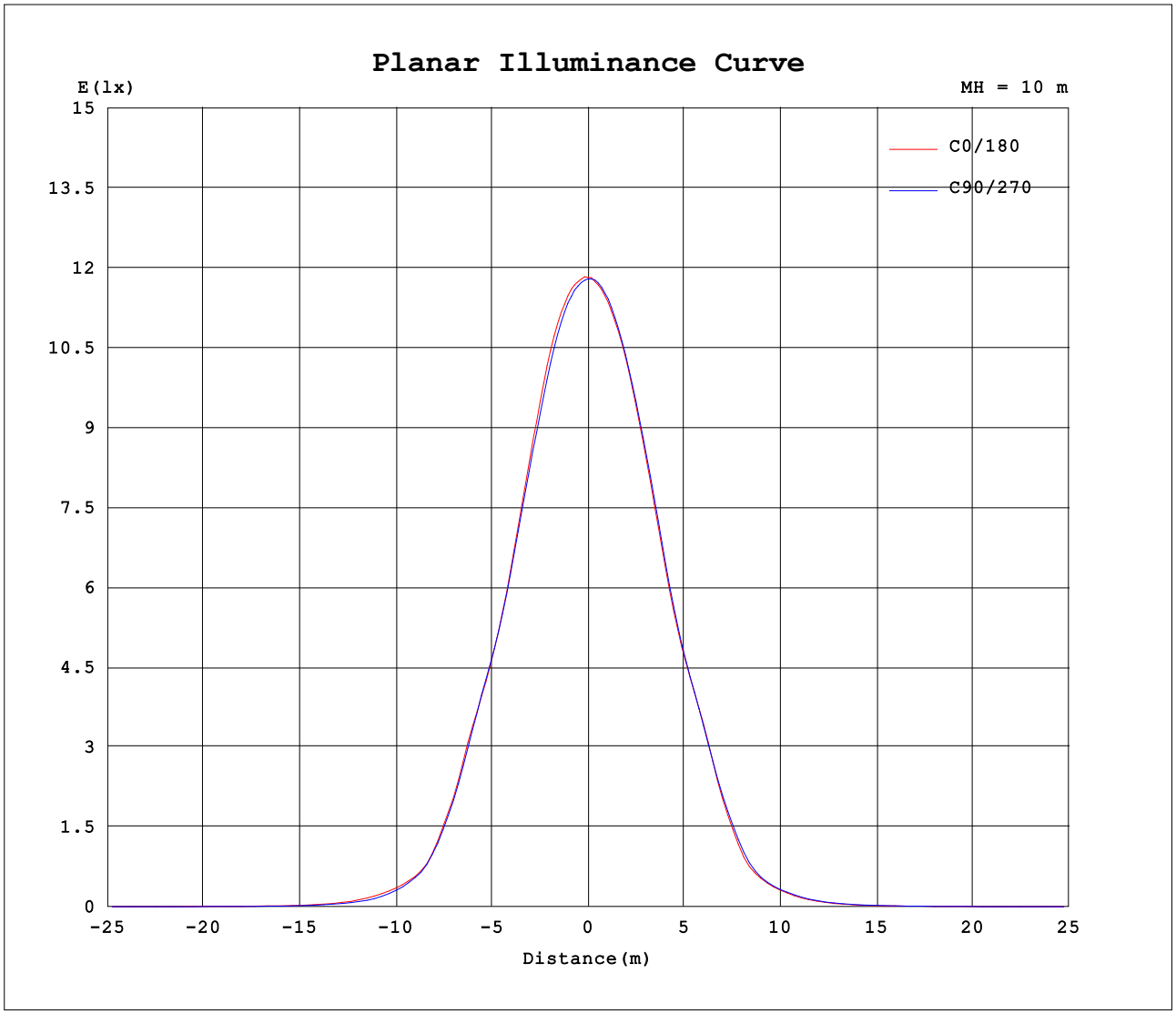
AvgL	cd/m2
L_0~180(65)av	1966
L_0~180(75)av	972
L_0~180(85)av	306
L_90~270(65)av	1663
L_90~270(75)av	523
L_90~270(85)av	107
L_45(65)av	1859
L_45(75)av	678
L_45(85)av	143

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-03-06

γ Range: 0 - 180DEG
γInterval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-03-06

γ Range: 0 - 180DEG
γInterval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

IES TEST REPORT
Photometric Filename: HCP-81X22112 5500K.IES

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:219.56V I:0.0597A P:13.021W PF:0.9939 Freq:0Hz Lamp Flux:1054.58x1 lm		
Name: HCP-81X22112 5500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: HAVIT COMMERCIAL	SUR.:	Shielding Angle:

Table--1 UNIT: cd

γ (DEG) \ C(DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	1182	1182	1181	1181	1180	1181	1180	1180	1178	1180	1178	1179	1182	1182	1181	1181	1180	1181	1180
5	1173	1172	1169	1168	1165	1163	1159	1159	1157	1157	1156	1157	1161	1159	1161	1160	1164	1164	1166
10	1123	1124	1117	1116	1107	1108	1099	1099	1098	1103	1100	1102	1107	1106	1112	1110	1114	1110	1112
15	1011	1015	1007	1007	999	998	989	993	991	999	996	1003	1008	1004	1012	1008	1014	1012	1016
20	859	863	856	861	853	856	848	854	850	859	854	861	863	857	864	861	873	868	875
25	695	700	695	701	697	700	694	698	694	702	697	701	701	697	705	701	709	704	710
30	566	570	570	576	567	570	562	571	564	572	568	574	574	571	577	573	576	569	573
35	375	378	375	383	375	377	365	373	369	375	366	371	370	360	371	369	383	375	381
40	180	181	178	183	180	182	177	181	178	180	174	172	169	165	169	171	181	179	185
45	99.6	100	96.6	95.8	91.7	89.9	87.0	87.6	85.9	88.5	87.7	89.0	88.8	85.9	88.5	88.7	90.8	90.5	92.5
50	49.5	49.9	47.1	46.0	41.5	40.0	37.4	37.4	36.4	37.8	37.5	38.8	39.8	39.1	41.0	40.7	42.3	42.2	43.6
55	21.2	21.3	20.3	19.7	18.0	17.4	16.7	16.7	16.4	17.1	16.5	16.9	17.2	17.2	18.1	18.1	18.4	18.0	18.9
60	10.9	11.1	10.6	10.3	9.32	8.87	8.30	8.55	8.81	9.31	9.18	9.30	9.44	9.28	9.56	9.37	9.43	8.88	9.04
65	6.11	6.19	6.01	5.84	5.35	5.14	5.00	5.14	5.29	5.69	5.75	5.83	5.91	5.82	5.83	5.59	5.50	5.29	5.17
70	3.91	3.99	3.84	3.64	3.06	2.86	2.75	2.79	2.89	3.49	3.74	3.89	3.98	3.89	3.92	3.49	3.15	2.81	2.82
75	1.88	1.97	1.74	1.36	1.10	0.98	0.94	0.98	1.00	1.21	1.39	1.60	1.76	1.67	1.61	1.26	1.10	0.98	1.02
80	0.70	0.71	0.55	0.37	0.36	0.31	0.33	0.31	0.35	0.33	0.41	0.52	0.58	0.60	0.51	0.40	0.34	0.36	0.33
85	0.22	0.17	0.14	0.07	0.08	0.05	0.07	0.04	0.07	0.05	0.13	0.14	0.16	0.19	0.11	0.12	0.06	0.10	0.07
90	0.05	0.06	0.04	0.05	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.06	0.06	0.07	0.06	0.06	0.06	0.06
95	0.05	0.07	0.04	0.07	0.05	0.07	0.04	0.07	0.05	0.07	0.05	0.07	0.07	0.06	0.07	0.06	0.07	0.05	0.07
100	0.06	0.10	0.06	0.10	0.06	0.10	0.06	0.10	0.06	0.11	0.08	0.11	0.11	0.07	0.11	0.06	0.10	0.05	0.10
105	0.16	0.17	0.16	0.18	0.16	0.19	0.17	0.19	0.16	0.20	0.17	0.20	0.18	0.16	0.18	0.13	0.17	0.11	0.15
110	0.31	0.33	0.31	0.33	0.31	0.34	0.31	0.35	0.31	0.36	0.32	0.37	0.31	0.29	0.30	0.26	0.29	0.25	0.27
115	0.58	0.60	0.59	0.61	0.59	0.62	0.59	0.63	0.60	0.63	0.60	0.64	0.55	0.52	0.54	0.52	0.53	0.53	0.51
120	0.98	0.99	0.98	1.00	0.99	1.01	1.01	1.02	1.01	1.03	1.01	1.03	0.91	0.88	0.90	0.86	0.88	0.85	0.86
125	1.49	1.50	1.49	1.51	1.50	1.53	1.51	1.54	1.52	1.54	1.52	1.55	1.39	1.36	1.38	1.35	1.34	1.35	1.33
130	2.11	2.12	2.11	2.13	2.15	2.16	2.18	2.16	2.17	2.16	2.19	2.16	1.96	1.95	1.94	1.91	1.91	1.89	1.90
135	2.81	2.83	2.82	2.84	2.84	2.86	2.86	2.88	2.86	2.87	2.86	2.88	2.64	2.61	2.61	2.59	2.59	2.56	2.58
140	3.57	3.56	3.57	3.56	3.57	3.59	3.62	3.61	3.62	3.61	3.62	3.63	3.36	3.35	3.33	3.29	3.30	3.28	3.29
145	4.25	4.27	4.26	4.27	4.26	4.30	4.33	4.33	4.32	4.33	4.34	4.35	4.08	4.04	4.02	3.99	3.99	3.97	3.98
150	4.95	4.92	4.94	4.93	4.97	4.99	5.01	5.01	5.00	5.00	5.02	5.02	4.75	4.71	4.71	4.67	4.66	4.63	4.65
155	5.52	5.49	5.45	5.50	5.53	5.57	5.60	5.62	5.58	5.59	5.58	5.62	5.35	5.30	5.30	5.24	5.23	5.24	5.27
160	5.95	5.97	5.94	6.00	6.01	6.09	6.11	6.12	6.09	6.09	6.07	6.11	5.86	5.84	5.83	5.81	5.77	5.79	5.79
165	6.45	6.45	6.39	6.46	6.53	6.62	6.64	6.65	6.57	6.54	6.53	6.59	6.38	6.36	6.36	6.31	6.34	6.35	6.37
170	6.90	6.92	6.90	6.95	6.99	7.03	6.99	7.02	6.98	7.01	7.01	7.06	6.86	6.90	6.92	6.87	6.85	6.84	6.86
175	7.34	7.38	7.39	7.47	7.46	7.44	7.39	7.44	7.41	7.49	7.47	7.47	7.37	7.34	7.45	7.41	7.38	7.31	7.32
180	7.67	7.68	7.69	7.74	7.69	7.63	7.60	7.61	7.61	7.70	7.65	7.62	7.67	7.67	7.69	7.74	7.70	7.60	7.61

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-03-06

γ Range: 0 - 180DEG
γInterval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks:

IES TEST REPORT
Photometric Filename: HCP-81X22112 5500K.IES

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:219.56V I:0.0597A P:13.021W PF:0.9939 Freq:0Hz Lamp Flux:1054.58x1 lm		
Name: HCP-81X22112 5500K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: HAVIT COMMERCIAL	SUR.:	Shielding Angle:

Table--2 UNIT: cd

γ (DEG) \ C (DEG)	285	300	315	330	345														
0	1180	1178	1180	1178	1179														
5	1166	1168	1166	1169	1168														
10	1109	1112	1112	1118	1117														
15	1010	1014	1010	1015	1011														
20	865	868	859	868	859														
25	702	704	698	703	699														
30	567	575	566	569	567														
35	374	386	380	387	380														
40	180	189	185	191	184														
45	90.6	95.4	96.6	101	99.3														
50	43.8	46.8	48.5	50.5	49.7														
55	18.6	19.9	20.1	20.8	20.9														
60	8.88	9.61	10.0	10.8	10.8														
65	4.96	5.23	5.62	5.99	6.01														
70	2.67	2.91	3.30	3.71	3.70														
75	0.99	1.11	1.25	1.51	1.67														
80	0.36	0.33	0.39	0.43	0.57														
85	0.10	0.06	0.12	0.12	0.20														
90	0.06	0.06	0.06	0.06	0.06														
95	0.05	0.07	0.05	0.07	0.06														
100	0.05	0.09	0.05	0.10	0.06														
105	0.10	0.16	0.11	0.15	0.10														
110	0.26	0.27	0.25	0.28	0.25														
115	0.52	0.51	0.52	0.51	0.52														
120	0.85	0.86	0.85	0.86	0.84														
125	1.32	1.33	1.33	1.33	1.34														
130	1.90	1.89	1.89	1.89	1.90														
135	2.55	2.56	2.54	2.56	2.54														
140	3.27	3.26	3.23	3.25	3.24														
145	3.93	3.93	3.91	3.92	3.93														
150	4.60	4.58	4.54	4.57	4.57														
155	5.24	5.16	5.09	5.13	5.14														
160	5.73	5.70	5.64	5.65	5.65														
165	6.30	6.28	6.19	6.17	6.18														
170	6.82	6.82	6.73	6.73	6.71														
175	7.28	7.36	7.31	7.29	7.25														
180	7.61	7.61	7.69	7.67	7.61														

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2023-03-06

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.366
Humidity:65.0%
Test Distance:8.003m [K=1.0000]
Remarks: