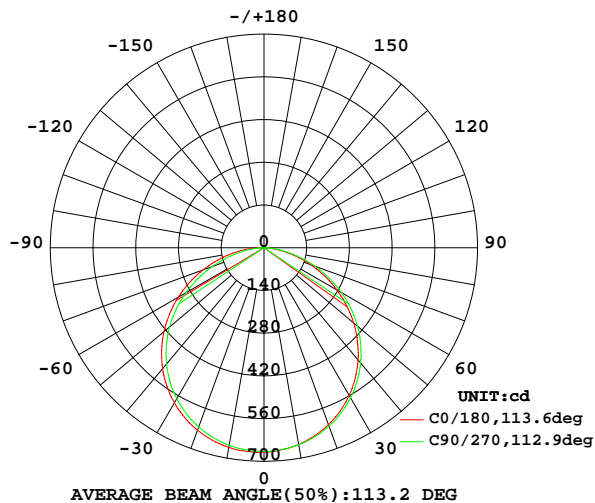


LUMINAIRE PHOTOMETRIC TEST REPORT

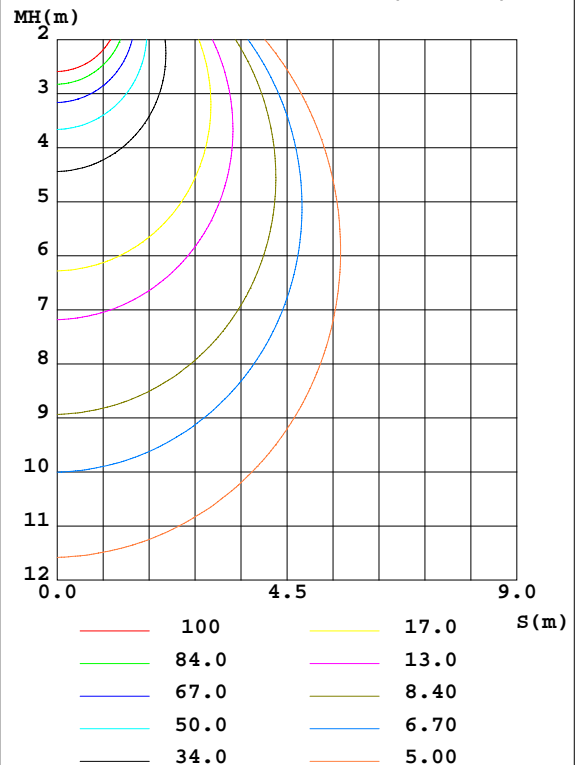
Test:U:120.3V I:0.2190A P:23.40W PF:0.8880 Lamp Flux:1938.74x1 lm		
NAME: panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:15W 1#3000K
MFR.: Homi	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 82.85 lm/W			
MODEL HM04-PR11-24W120-3CCT		I _{max} (cd)	670.9	S/MH(C0/180)	1.30
NOMINAL POWER(W)	24	LOR(%)	100.0	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	120	TOTAL FLUX(lm)	1938.7	η UP,DN(C0-180)	0.2,48.1
NOMINAL FLUX(lm)	1938.74	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.2,51.5
LAMPS INSIDE	1	η up(%)	0.4	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	120	η down(%)	99.6	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-05-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:8.200m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C90	C180	C270					γ	Φ zone	Φ total	Φlum,lamp
10	654.6	655.6	664.1	657.3					0- 10	63.31	63.31	3.27,3.27
20	616.9	622.5	636.3	625.1					10- 20	181.9	245.2	12.6,12.6
30	558.6	567.6	587.1	571.3					20- 30	276.9	522.1	26.9,26.9
40	479.6	492.6	517.1	496.8					30- 40	335.4	857.6	44.2,44.2
50	383.6	400.3	427.9	403.9					40- 50	348.7	1206	62.2,62.2
60	275.7	292.7	324.6	295.9					50- 60	314.4	1521	78.4,78.4
70	163.6	177.8	212.9	180.2					60- 70	237.9	1759	90.7,90.7
80	59.99	70.40	104.1	72.79					70- 80	135.9	1895	97.7,97.7
90	0.1736	0.3105	13.12	0.2541					80- 90	37.29	1932	99.6,99.6
100	0.3515	0.3610	0.3977	0.3789					90-100	0.6409	1933	99.7,99.7
110	0.5984	0.6715	0.6943	0.7810					100-110	0.5509	1933	99.7,99.7
120	0.9044	1.001	1.023	1.109					110-120	0.8460	1934	99.8,99.8
130	1.183	1.220	1.338	1.374					120-130	1.030	1935	99.8,99.8
140	1.439	1.466	1.608	1.607					130-140	1.088	1936	99.9,99.9
150	1.703	1.718	1.864	1.831					140-150	1.036	1937	99.9,99.9
160	1.986	1.978	2.069	2.019					150-160	0.8737	1938	100,100
170	2.210	2.170	2.229	2.156					160-170	0.5959	1939	100,100
180	2.284	2.220	2.293	2.211					170-180	0.2121	1939	100,100
DEG	LUMINOUS INTENSITY:cd								UNIT:lm			

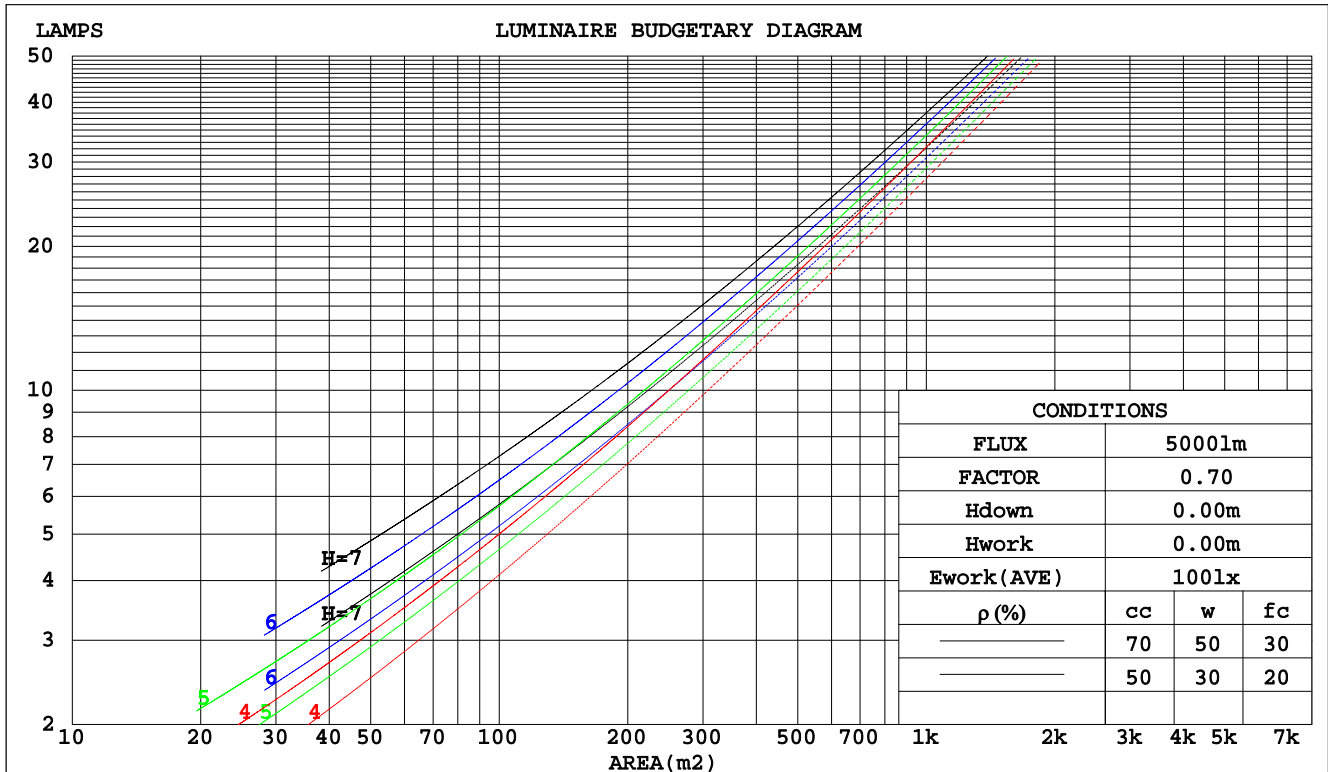
C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-05-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:8.200m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:120.3V I:0.2190A P:23.40W PF:0.8880 Lamp Flux:1938.74x1 lm		
NAME: panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:15W 1#3000K
MFR.: Homi	SUR.:	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	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	1.04	.99	.96	1.01	.98	.94	.97	.94	.91	.93	.90	.88	.89	.87	.85	.83
2.0	.90	.83	.78	.88	.82	.77	.85	.79	.75	.81	.77	.73	.78	.75	.71	.69
3.0	.79	.71	.64	.78	.70	.64	.75	.68	.63	.72	.66	.61	.69	.64	.60	.58
4.0	.70	.61	.54	.69	.60	.54	.66	.59	.53	.64	.58	.53	.62	.56	.52	.50
5.0	.63	.54	.47	.61	.53	.47	.59	.52	.46	.57	.51	.45	.55	.50	.45	.43
6.0	.56	.47	.41	.55	.47	.41	.53	.46	.40	.52	.45	.40	.50	.44	.39	.37
7.0	.51	.42	.36	.50	.42	.36	.49	.41	.36	.47	.40	.35	.46	.40	.35	.33
8.0	.47	.38	.32	.46	.38	.32	.44	.37	.32	.43	.36	.32	.42	.36	.31	.29
9.0	.43	.34	.29	.42	.34	.29	.41	.34	.29	.40	.33	.28	.39	.33	.28	.26
10.0	.39	.31	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.26	.24



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-05-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:8.200m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:120.3V I:0.2190A P:23.40W PF:0.8880 Lamp Flux:1938.74x1 lm		
NAME: panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:15W 1#3000K
MFR.: Homi	SUR.:	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0	
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
pfc	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.311	.177	.056	.303	.173	.055	.290	.166	.053	.277	.160	.051	.266	.154	.050		
2.0	.292	.160	.049	.286	.157	.049	.274	.152	.047	.263	.148	.046	.253	.143	.045		
3.0	.270	.144	.043	.265	.142	.043	.254	.138	.042	.245	.134	.041	.235	.130	.040		
4.0	.250	.130	.038	.245	.128	.038	.235	.125	.037	.227	.122	.037	.218	.119	.036		
5.0	.231	.118	.034	.226	.116	.034	.218	.113	.033	.210	.111	.033	.203	.108	.033		
6.0	.214	.107	.031	.210	.106	.031	.203	.104	.030	.196	.102	.030	.189	.100	.030		
7.0	.199	.098	.028	.196	.097	.028	.189	.096	.028	.183	.094	.027	.177	.092	.027		
8.0	.186	.091	.026	.183	.090	.025	.177	.088	.025	.171	.087	.025	.166	.085	.025		
9.0	.174	.084	.024	.171	.084	.023	.166	.082	.023	.161	.081	.023	.156	.079	.023		
10.0	.164	.079	.022	.161	.078	.022	.156	.077	.022	.152	.075	.021	.148	.074	.021		

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.193	.193	.193	.165	.165	.165	.113	.113	.113	.065	.065	.065	.021	.021	.021	
1.0	.183	.159	.137	.157	.136	.118	.107	.094	.082	.062	.054	.047	.020	.017	.015	
2.0	.175	.135	.101	.150	.116	.087	.103	.080	.061	.059	.047	.036	.019	.015	.012	
3.0	.167	.117	.077	.143	.101	.067	.098	.070	.047	.057	.041	.028	.018	.013	.009	
4.0	.160	.104	.061	.137	.090	.053	.094	.062	.037	.055	.037	.022	.018	.012	.007	
5.0	.152	.093	.050	.131	.081	.043	.090	.056	.031	.052	.033	.018	.017	.011	.006	
6.0	.145	.085	.042	.125	.074	.036	.086	.052	.026	.050	.030	.015	.016	.010	.005	
7.0	.138	.078	.036	.119	.068	.031	.082	.047	.022	.048	.028	.013	.015	.009	.004	
8.0	.132	.072	.031	.113	.063	.027	.079	.044	.019	.046	.026	.012	.015	.009	.004	
9.0	.126	.067	.028	.108	.058	.024	.075	.041	.017	.044	.024	.010	.014	.008	.003	
10.0	.120	.063	.025	.103	.055	.022	.072	.039	.016	.042	.023	.009	.014	.007	.003	

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-05-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:8.200m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:120.3V I:0.2190A P:23.40W PF:0.8880 Lamp Flux:1938.74x1 lm										
NAME: panel light						TYPE:LED			WEIGHT:	
SPEC.:						DIM.:			SERIAL No.:15W 1#3000K	
MFR.: Homi						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	18.8	20.3	19.1	20.5	20.7	19.0	20.5	19.3	20.7	20.9
3H	20.2	21.6	20.5	21.8	22.1	20.5	21.9	20.8	22.1	22.4
4H	20.7	22.0	21.0	22.3	22.5	21.0	22.4	21.3	22.6	22.9
6H	21.0	22.3	21.3	22.5	22.8	21.4	22.6	21.7	22.9	23.2
8H	21.1	22.3	21.4	22.6	22.9	21.5	22.7	21.8	23.0	23.3
12H	21.1	22.2	21.4	22.5	22.9	21.5	22.7	21.9	23.0	23.3
4H 2H	19.4	20.7	19.7	21.0	21.3	19.6	20.9	19.9	21.2	21.4
3H	21.0	22.1	21.3	22.4	22.7	21.2	22.4	21.5	22.7	23.0
4H	21.6	22.6	22.0	23.0	23.3	21.9	22.9	22.2	23.3	23.6
6H	22.0	23.0	22.4	23.3	23.7	22.4	23.3	22.8	23.7	24.0
8H	22.1	23.0	22.5	23.4	23.8	22.5	23.4	22.9	23.8	24.2
12H	22.1	23.0	22.6	23.3	23.8	22.6	23.4	23.0	23.8	24.2
8H 4H	21.8	22.7	22.2	23.1	23.5	22.1	23.0	22.5	23.3	23.7
6H	22.4	23.1	22.8	23.5	24.0	22.7	23.4	23.1	23.8	24.3
8H	22.5	23.2	23.0	23.6	24.1	22.9	23.6	23.4	24.0	24.5
12H	22.6	23.2	23.1	23.6	24.1	23.1	23.6	23.5	24.1	24.5
12H 4H	21.8	22.6	22.3	23.0	23.4	22.1	22.9	22.5	23.3	23.7
6H	22.4	23.1	22.9	23.5	24.0	22.7	23.4	23.2	23.8	24.3
8H	22.6	23.2	23.1	23.6	24.1	23.0	23.5	23.5	24.0	24.5
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117 Corrected 1939 lm Total Lamp Luminous Flux.(8log(F/F0) = 2.3)

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-05-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:8.200m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:120.3V I:0.2190A P:23.40W PF:0.8880 Lamp Flux:1938.74x1 lm		
NAME: panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:15W 1#3000K
MFR.: Homi	SUR.:	Shielding Angle:

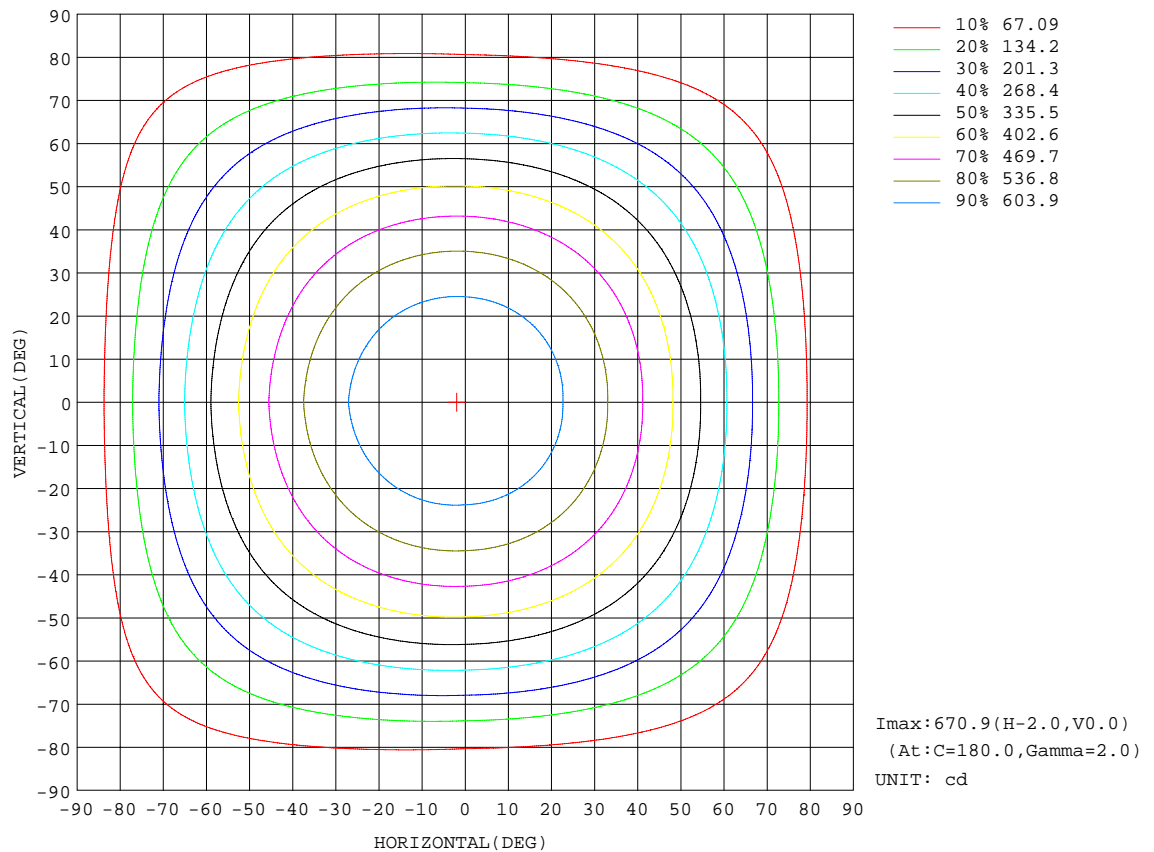
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	57	46	39	57	45	39	55	45	38	32
0.80	67	56	48	66	55	48	64	54	48	41
1.00	76	65	57	75	64	57	72	65	56	49
1.25	83	72	65	81	72	65	79	70	64	57
1.50	88	78	71	86	77	70	83	75	69	62
2.00	95	86	80	93	85	79	89	83	77	69
2.50	99	91	85	97	89	84	93	87	82	74
3.00	102	95	90	100	94	89	96	91	86	78
4.00	106	100	96	104	99	94	99	95	92	83
5.00	109	104	100	106	102	98	101	98	95	86
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:
 Test Date:2020-05-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:8.200m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:120.3V I:0.2190A P:23.40W PF:0.8880 Lamp Flux:1938.74x1 lm		
NAME: panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:15W 1#3000K
MFR.: Homi	SUR.:	Shielding Angle:

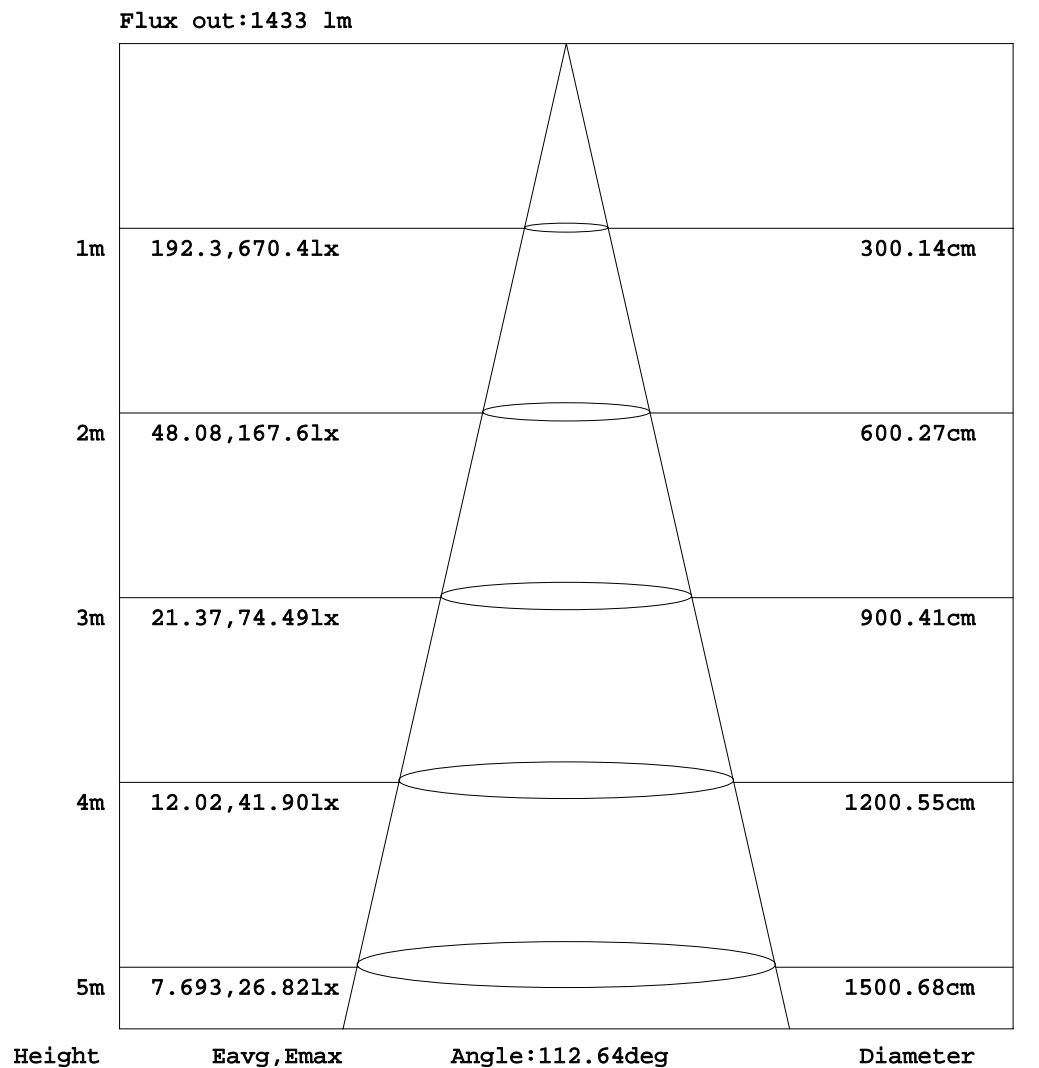


C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-05-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:8.200m [K=1.0000]
Remarks:

AAI Figure

Test:U:120.3V I:0.2190A P:23.40W PF:0.8880 Lamp Flux:1938.74x1 lm		
NAME: panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:15W 1#3000K
MFR.: Homi	SUR.:	Shielding Angle:



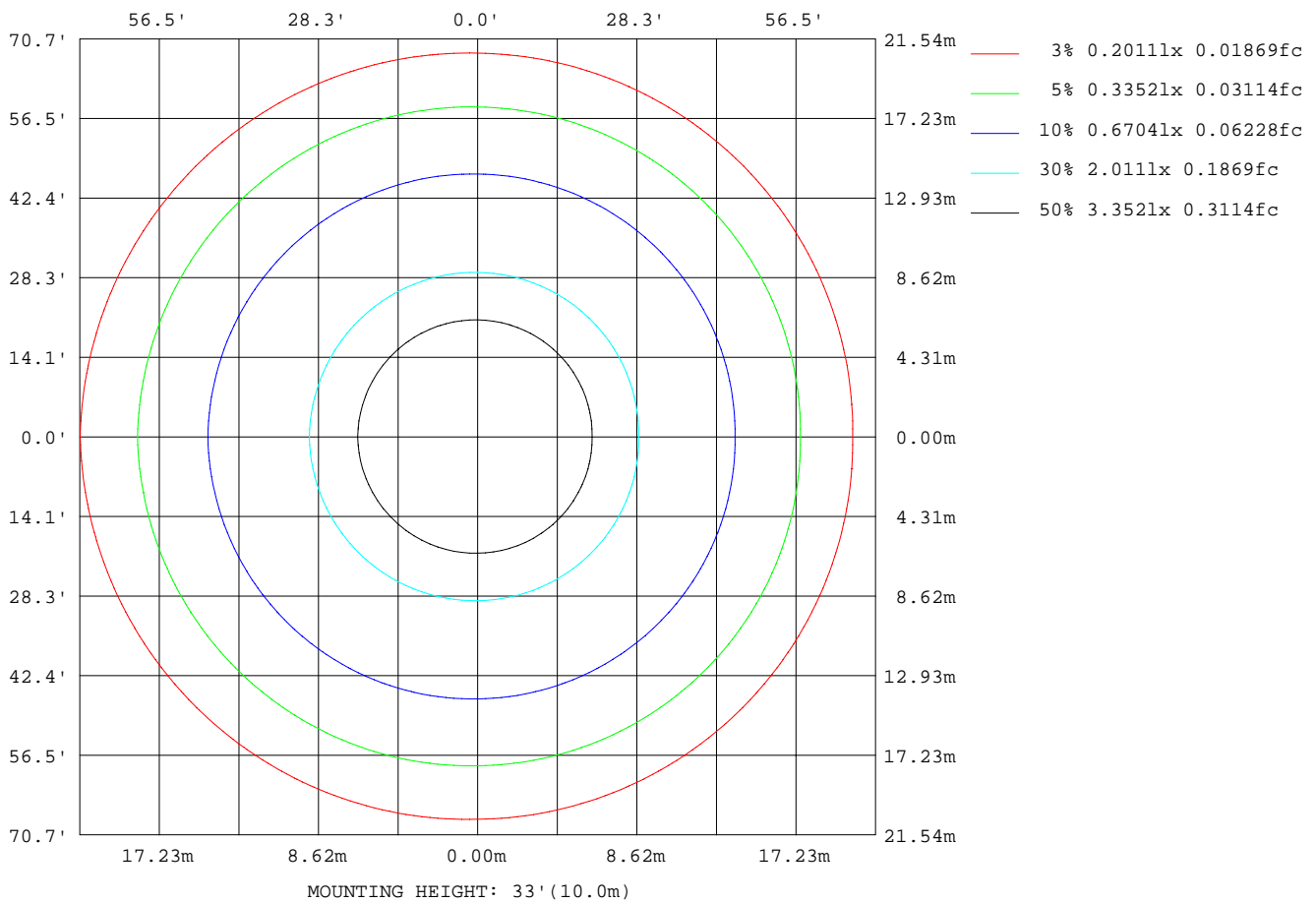
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-05-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:8.200m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:120.3V I:0.2190A P:23.40W PF:0.8880 Lamp Flux:1938.74x1 lm		
NAME: panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:15W 1#3000K
MFR.: Homi	SUR.:	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2020-05-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 8.200m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:120.3V I:0.2190A P:23.40W PF:0.8880 Lamp Flux:1938.74x1 lm		
NAME: panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:15W 1#3000K
MFR.: Homi	SUR.:	Shielding Angle:

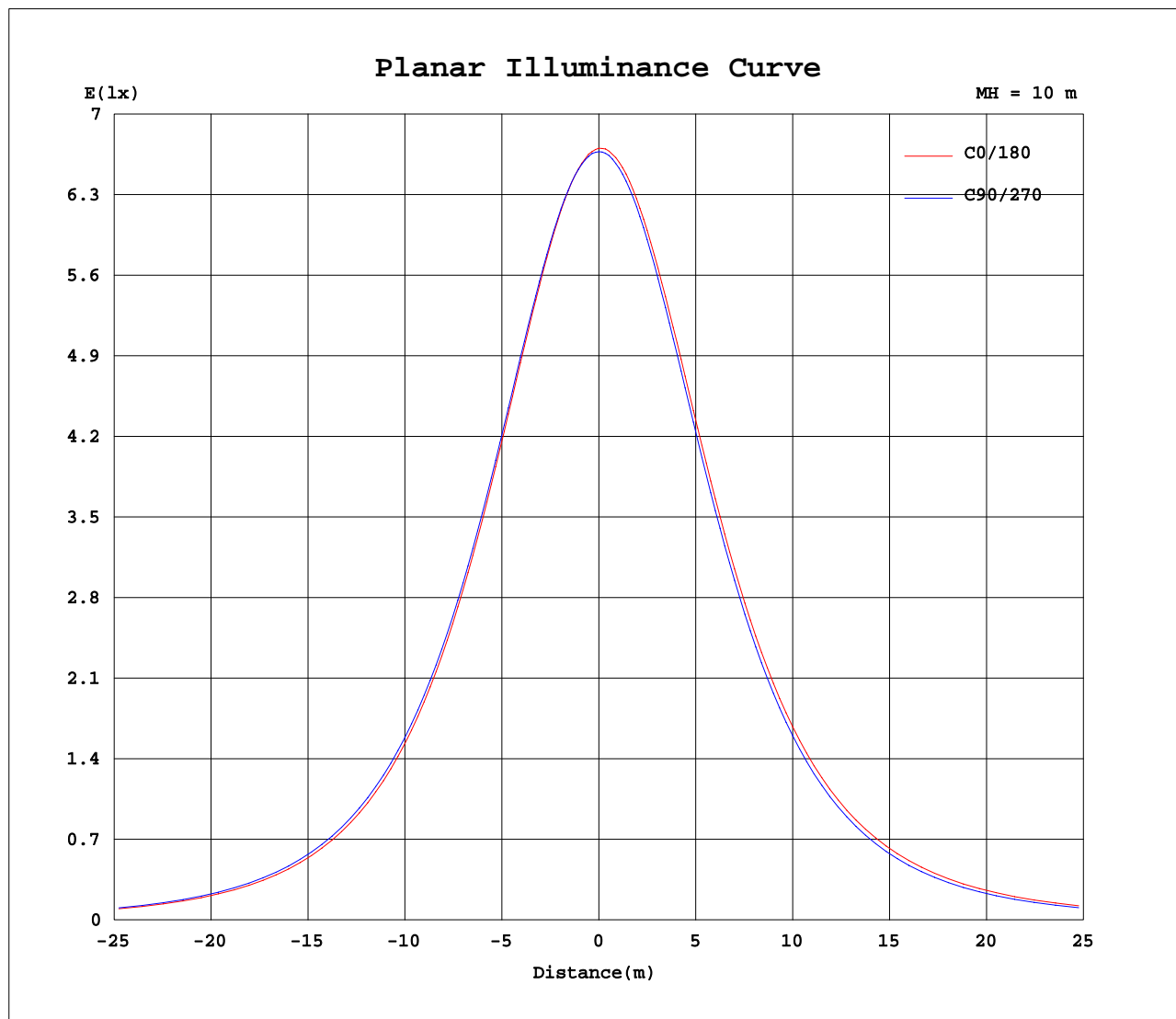
AvgL	cd/m2
L_0~180(65)av	5783
L_0~180(75)av	5153
L_0~180(85)av	4133
L_90~270(65)av	5601
L_90~270(75)av	4753
L_90~270(85)av	3121
L_45(65)av	5706
L_45(75)av	4960
L_45(85)av	3639

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2020-05-20

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:8.200m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2020-05-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 8.200m [K=1.0000]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:120.3V I:0.2190A P:23.40W PF:0.8880 Lamp Flux:1938.74x1 lm		
NAME: panel light	TYPE:LED	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:15W 1#3000K
MFR.: Homi	SUR.:	Shielding Angle:

Table--1

UNIT: cd

C(DEC) γ (DEC)	0	90	180	270														
0	670	667	670	667														
5	665	664	670	665														
10	655	656	664	657														
15	639	642	653	644														
20	617	622	636	625														
25	591	597	614	601														
30	559	568	587	571														
35	522	532	555	537														
40	480	493	517	497														
45	433	448	474	452														
50	384	400	428	404														
55	331	348	378	351														
60	276	293	325	296														
65	219	235	269	238														
70	164	178	213	180														
75	110	122	157	124														
80	60.0	70.4	104	72.8														
85	16.7	26.2	55.3	28.2														
90	0.17	0.31	13.1	0.25														
95	0.24	0.26	0.27	0.25														
100	0.35	0.36	0.40	0.38														
105	0.47	0.52	0.54	0.54														
110	0.60	0.67	0.69	0.78														
115	0.75	0.84	0.85	0.99														
120	0.90	1.00	1.02	1.11														
125	1.05	1.11	1.19	1.26														
130	1.18	1.22	1.34	1.37														
135	1.32	1.35	1.49	1.49														
140	1.44	1.47	1.61	1.61														
145	1.57	1.58	1.74	1.72														
150	1.70	1.72	1.86	1.83														
155	1.84	1.84	1.97	1.94														
160	1.99	1.98	2.07	2.02														
165	2.13	2.10	2.16	2.09														
170	2.21	2.17	2.23	2.16														
175	2.26	2.21	2.27	2.20														
180	2.28	2.22	2.29	2.21														

C Range: 0 - 360DEG
 C Interval: 90.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:
 Test Date:2020-05-20

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity:65.0%
 Test Distance:8.200m [K=1.0000]
 Remarks: