

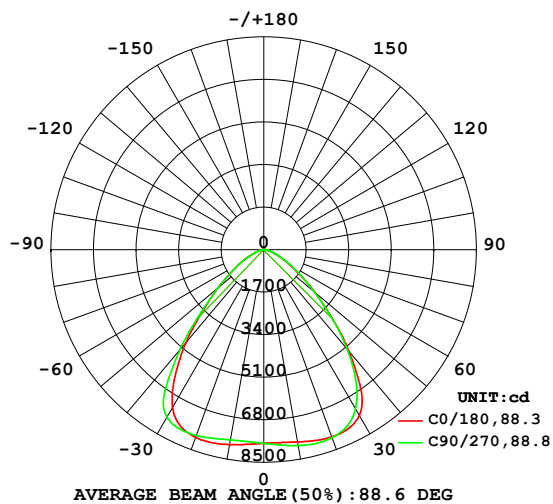
EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

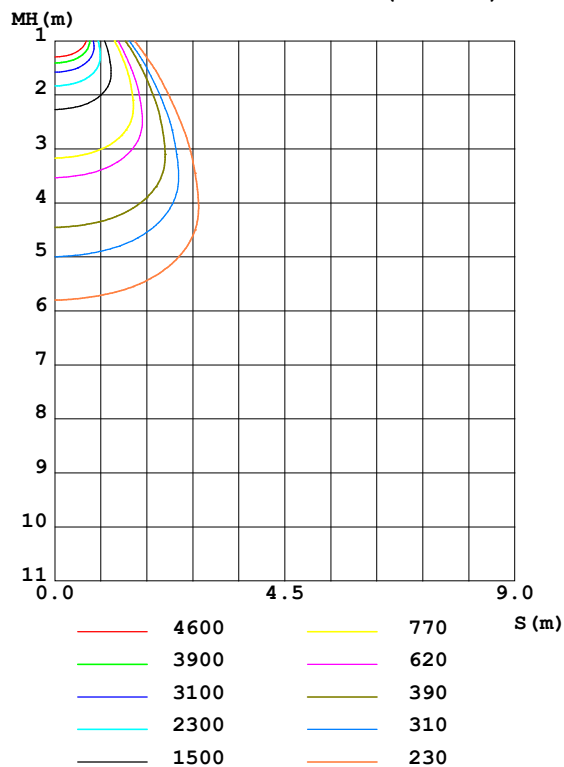
Test:U:230.0V I:0.5318A P:119.9W PF:0.9803 Lamp Flux:16065.3x1 lm		
NAME: HB38-120-5070-H00123	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:φ0.246	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 133.99 lm/W			
MODEL	RF303	Imax(cd)	8048	S/MH(C0/180)	1.23
NOMINAL POWER(W)	120	LOR(%)	100.0	S/MH(C90/270)	1.26
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	16065	η UP,DN(C0-180)	0.0,50.3
NOMINAL FLUX(lm)	16065.3	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.7
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	1.30

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-07

Checker: LI

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Assessor:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
5	7738	7792	7837	7847	7808	7746	7696	7693	0- 5	185.4	185.4	1.15,1.15
10	7802	7882	7946	7964	7908	7801	7719	7727	5- 10	558.6	744.1	4.63,4.63
15	7899	7970	8019	8042	7989	7880	7805	7829	10- 15	936.1	1680	10.5,10.5
20	7962	7995	7995	8014	7983	7932	7901	7934	15- 20	1311	2991	18.6,18.6
25	7918	7905	7814	7788	7814	7882	7922	7953	20- 25	1664	4655	29,29
30	7644	7588	7336	7199	7294	7593	7738	7753	25- 30	1955	6610	41.1,41.1
35	6749	6808	6420	6115	6190	6636	6886	6856	30- 35	2093	8702	54.2,54.2
40	5282	5427	5179	4758	4825	4962	5203	5158	35- 40	1947	10649	66.3,66.3
45	3853	3946	3825	3367	3453	3415	3571	3622	40- 45	1607	12257	76.3,76.3
50	2682	2669	2647	2346	2436	2308	2441	2442	45- 50	1217	13474	83.9,83.9
55	1772	1799	1816	1587	1618	1528	1638	1614	50- 55	898.1	14372	89.5,89.5
60	1159	1177	1234	1149	1082	1035	1101	1142	55- 60	643.4	15015	93.5,93.5
65	753.3	788.5	794.2	738.5	657.8	638.4	659.1	739.8	60- 65	443.0	15458	96.2,96.2
70	462.7	491.9	476.7	431.3	391.2	383.8	388.0	441.6	65- 70	287.3	15745	98,98
75	260.2	283.9	273.8	247.8	218.6	207.4	215.4	248.2	70- 75	173.8	15919	99.1,99.1
80	137.2	148.3	142.6	125.4	114.0	101.8	108.6	126.8	75- 80	97.02	16016	99.7,99.7
85	41.50	49.94	45.48	34.98	27.16	21.51	24.45	34.45	80- 85	41.25	16057	99.9,99.9
90	6.542	5.871	5.965	7.808	8.830	5.866	7.913	7.743	85- 90	8.026	16065	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 12257 lm

%lum = 76.3%

%lamp = 76.3%

Conical surface Flux(120deg): 15015 lm

%lum = 93.5%

%lamp = 93.5%

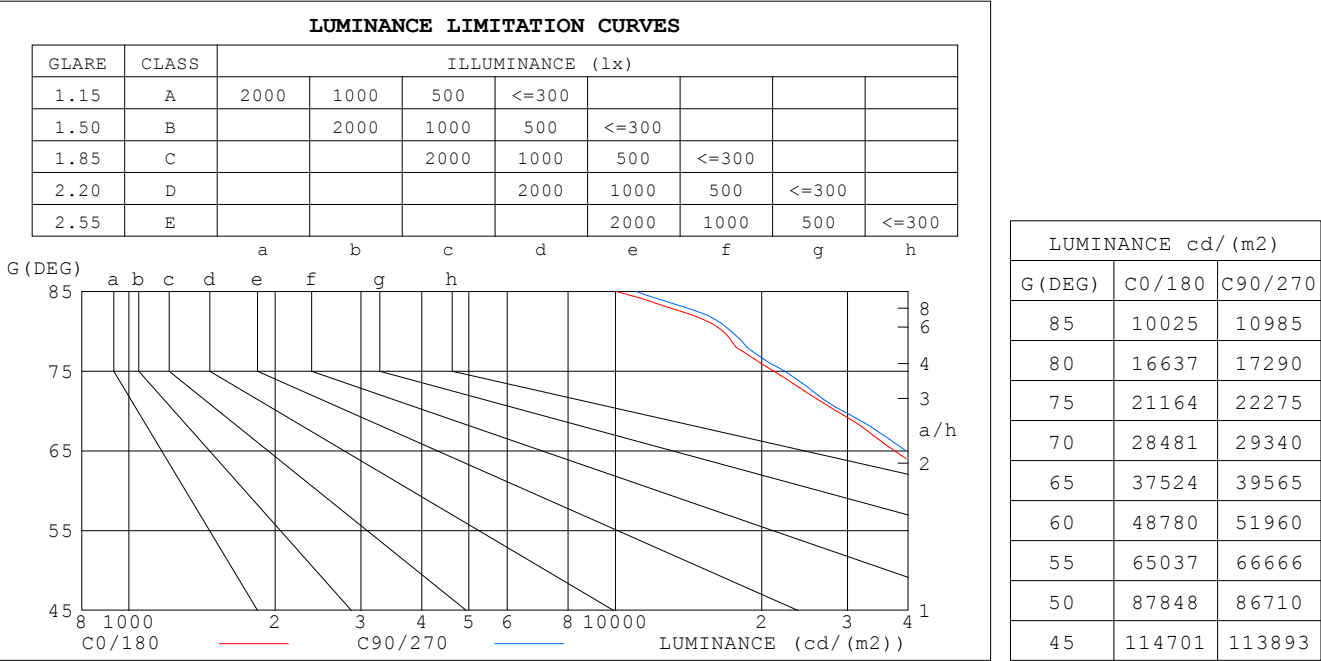
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-07

Checker: LI

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Assessor:

LUMINANCE LIMITATION CURVES



C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-07

Checker: LI

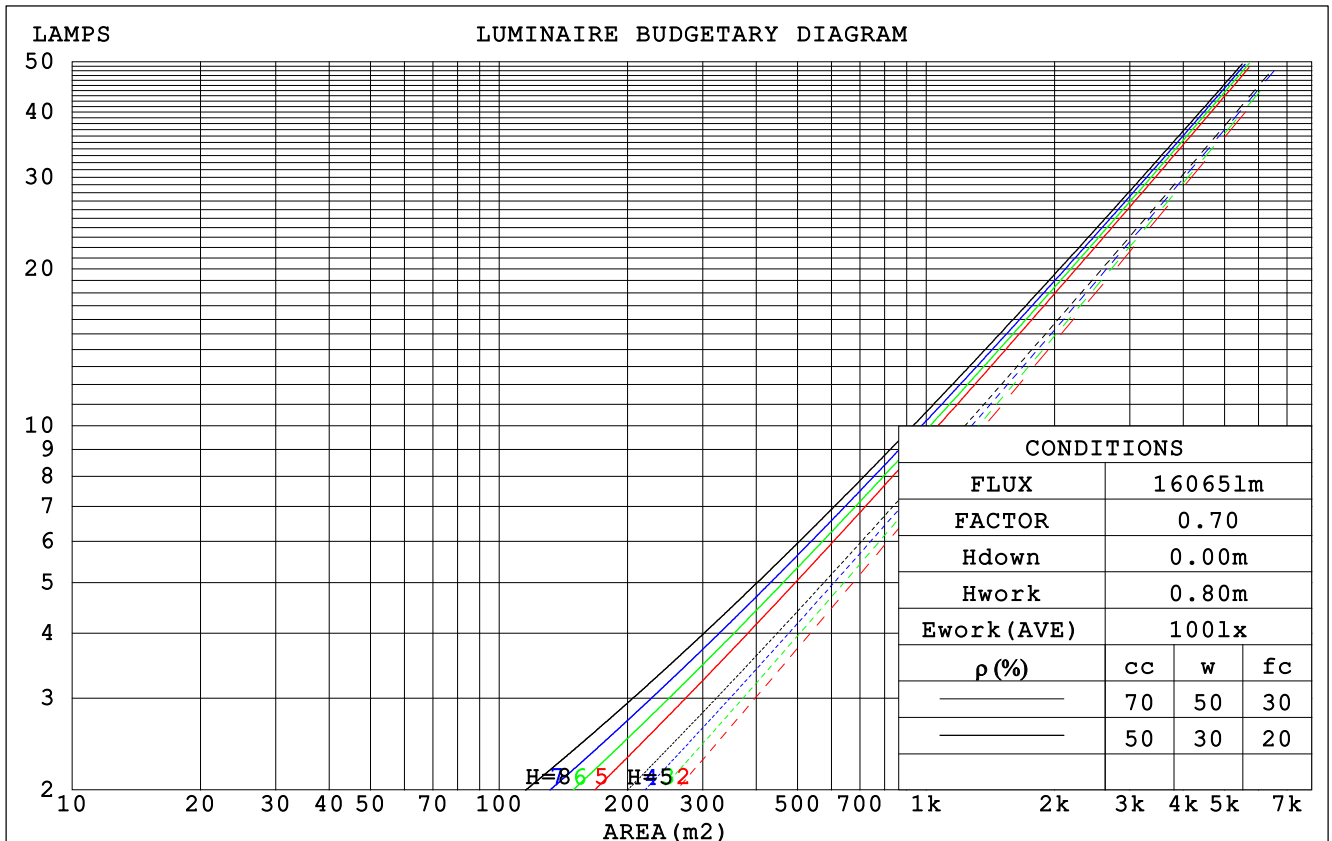
γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Assessor:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	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	1.08	1.05	1.02	1.06	1.03	1.00	1.02	.99	.97	.98	.96	.94	.94	.93	.91	.89
2.0	.97	.92	.87	.95	.90	.86	.92	.88	.84	.89	.85	.83	.86	.83	.81	.79
3.0	.88	.81	.76	.86	.80	.75	.83	.78	.74	.81	.76	.73	.78	.75	.72	.70
4.0	.80	.72	.67	.78	.71	.66	.76	.70	.65	.74	.69	.65	.72	.67	.64	.62
5.0	.72	.65	.59	.71	.64	.59	.69	.63	.58	.67	.62	.58	.66	.61	.57	.55
6.0	.66	.58	.53	.65	.58	.53	.64	.57	.52	.62	.56	.52	.60	.55	.51	.50
7.0	.61	.53	.48	.60	.53	.47	.58	.52	.47	.57	.51	.47	.56	.51	.47	.45
8.0	.56	.48	.43	.55	.48	.43	.54	.47	.43	.53	.47	.43	.52	.46	.42	.41
9.0	.52	.44	.39	.51	.44	.39	.50	.44	.39	.49	.43	.39	.48	.43	.39	.37
10.0	.48	.41	.36	.47	.41	.36	.46	.40	.36	.46	.40	.36	.45	.39	.35	.34



C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-12-07

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.470m [K=1.0000]
 Remarks:

Checker: LI

Assessor:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

WEC AND CCEC

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	.234	.133	.042	.227	.129	.041	.214	.123	.039	.202	.117	.037	.191	.111	.036	
2.0	.227	.124	.038	.221	.122	.038	.210	.117	.036	.200	.112	.035	.190	.108	.034	
3.0	.216	.115	.034	.211	.113	.034	.201	.109	.033	.192	.105	.032	.184	.102	.032	
4.0	.205	.106	.031	.200	.105	.031	.192	.102	.030	.184	.099	.030	.176	.096	.029	
5.0	.193	.099	.029	.189	.097	.028	.182	.095	.028	.175	.092	.027	.168	.090	.027	
6.0	.183	.092	.026	.179	.090	.026	.172	.088	.026	.166	.086	.025	.160	.084	.025	
7.0	.173	.085	.024	.170	.084	.024	.164	.083	.024	.158	.081	.024	.153	.079	.023	
8.0	.164	.080	.022	.161	.079	.022	.155	.078	.022	.150	.076	.022	.146	.075	.022	
9.0	.155	.075	.021	.153	.074	.021	.148	.073	.021	.143	.072	.021	.139	.071	.020	
10.0	.147	.071	.020	.145	.070	.020	.141	.069	.019	.137	.068	.019	.133	.067	.019	

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.175	.157	.140	.150	.135	.121	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.164	.132	.106	.140	.114	.091	.096	.079	.064	.055	.046	.037	.018	.015	.012	
3.0	.154	.114	.082	.132	.098	.071	.091	.068	.050	.052	.040	.029	.017	.013	.010	
4.0	.146	.100	.065	.125	.086	.056	.086	.060	.040	.050	.035	.024	.016	.011	.008	
5.0	.138	.089	.053	.119	.077	.046	.082	.054	.032	.047	.032	.019	.015	.010	.006	
6.0	.132	.080	.044	.113	.070	.038	.078	.049	.027	.045	.029	.016	.015	.009	.005	
7.0	.126	.073	.037	.108	.064	.032	.075	.045	.023	.043	.026	.014	.014	.009	.004	
8.0	.120	.067	.032	.103	.059	.027	.071	.041	.019	.042	.024	.012	.013	.008	.004	
9.0	.115	.063	.027	.099	.054	.024	.068	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.110	.058	.024	.094	.051	.021	.066	.036	.015	.038	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-07

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

UGR(Unified Glare Rating) Table

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	28.3	27.3	28.5	28.7	27.0	28.2	27.2	28.4	28.6
3H	27.3	28.4	27.6	28.7	28.9	27.2	28.4	27.5	28.6	28.9
4H	27.3	28.4	27.6	28.7	28.9	27.3	28.4	27.6	28.6	28.9
6H	27.3	28.3	27.6	28.6	28.9	27.3	28.3	27.6	28.6	28.8
8H	27.3	28.3	27.6	28.6	28.8	27.3	28.3	27.6	28.5	28.8
12H	27.3	28.2	27.6	28.5	28.8	27.2	28.2	27.6	28.5	28.8
4H 2H	27.1	28.2	27.4	28.4	28.7	27.0	28.1	27.3	28.4	28.6
3H	27.5	28.4	27.8	28.7	29.0	27.4	28.4	27.8	28.7	29.0
4H	27.6	28.4	27.9	28.7	29.1	27.5	28.4	27.9	28.7	29.0
6H	27.6	28.4	28.0	28.7	29.1	27.6	28.4	28.0	28.7	29.1
8H	27.6	28.3	28.0	28.7	29.0	27.6	28.3	28.0	28.7	29.0
12H	27.6	28.2	28.0	28.6	29.0	27.6	28.2	28.0	28.6	29.0
8H 4H	27.5	28.2	27.9	28.6	29.0	27.5	28.2	27.9	28.6	29.0
6H	27.6	28.2	28.1	28.6	29.0	27.6	28.2	28.1	28.6	29.0
8H	27.6	28.2	28.1	28.6	29.0	27.7	28.2	28.1	28.6	29.0
12H	27.6	28.1	28.1	28.5	29.0	27.7	28.1	28.1	28.5	29.0
12H 4H	27.5	28.1	27.9	28.5	28.9	27.5	28.1	27.9	28.5	28.9
6H	27.6	28.1	28.1	28.5	29.0	27.6	28.1	28.1	28.5	29.0
8H	27.6	28.1	28.1	28.5	29.0	27.6	28.1	28.1	28.5	29.0
Variations with the observer position at spacings:										
S = 1.0H	+ 1.0 / - 1.5					+ 1.1 / - 1.5				
1.5H	+ 1.0 / - 0.9					+ 1.0 / - 0.9				
2.0H	+ 2.1 / - 1.7					+ 2.1 / - 1.9				

CIE Pub.117 Corrected 16065 lm Total Lamp Luminous Flux.(8log(F/F0) = 9.6)

C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-07

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	70	61	55	70	61	55	69	60	55	50
0.80	80	71	65	79	70	65	77	70	65	59
1.00	87	79	73	86	78	73	84	79	73	67
1.25	93	86	80	92	85	80	90	84	79	73
1.50	97	90	85	96	89	85	93	88	84	78
2.00	102	96	92	101	95	91	98	93	89	83
2.50	105	100	95	103	98	94	100	96	92	85
3.00	108	103	99	106	101	98	102	98	95	88
4.00	110	106	103	108	105	102	104	101	99	91
5.00	112	109	106	110	107	104	106	103	101	93
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
 C Interval: 2.5DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators:
 Test Date: 2019-12-07

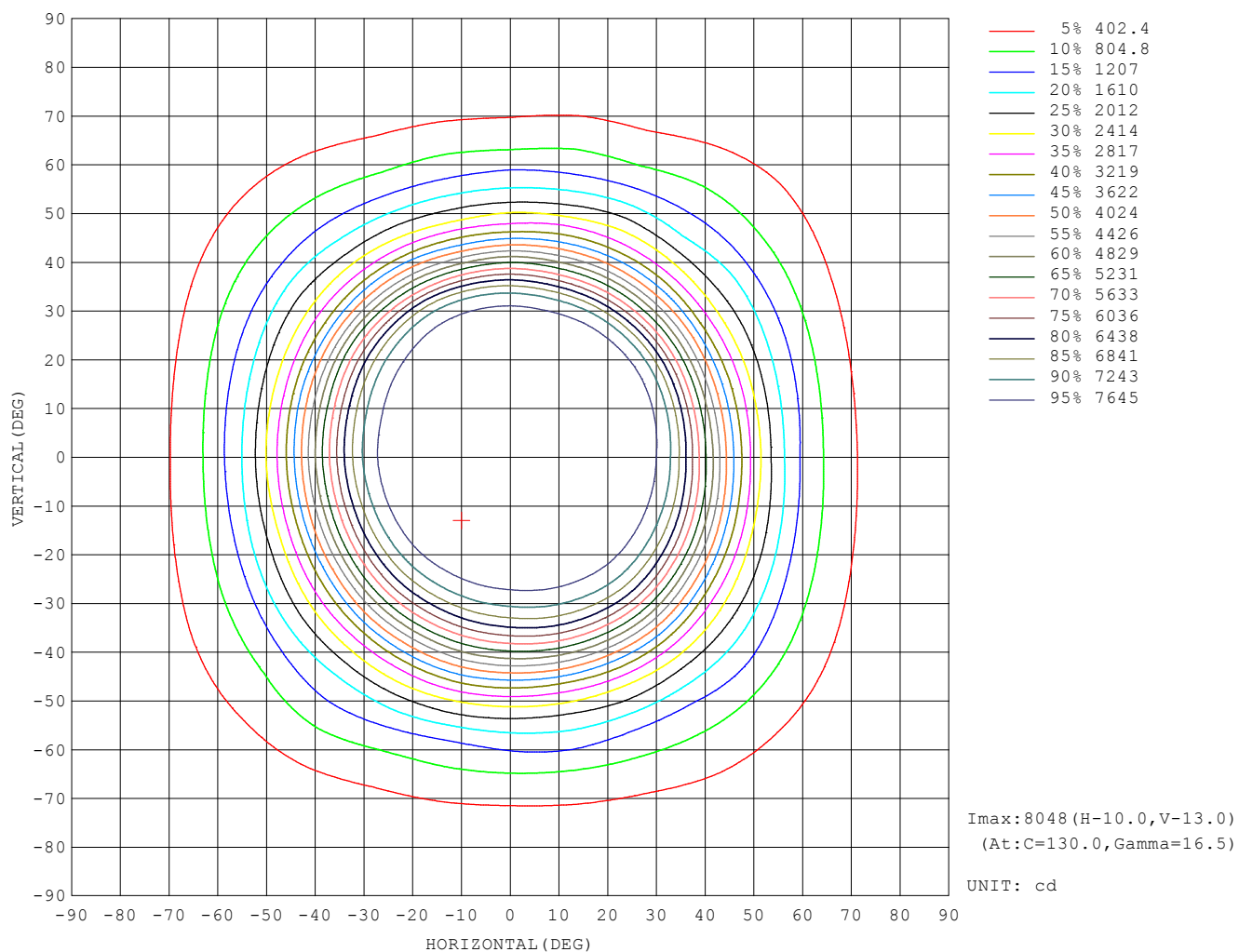
Checker: LI

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
 Humidity: 65.0%
 Test Distance: 9.470m [K=1.0000]
 Remarks:

Assessor:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM



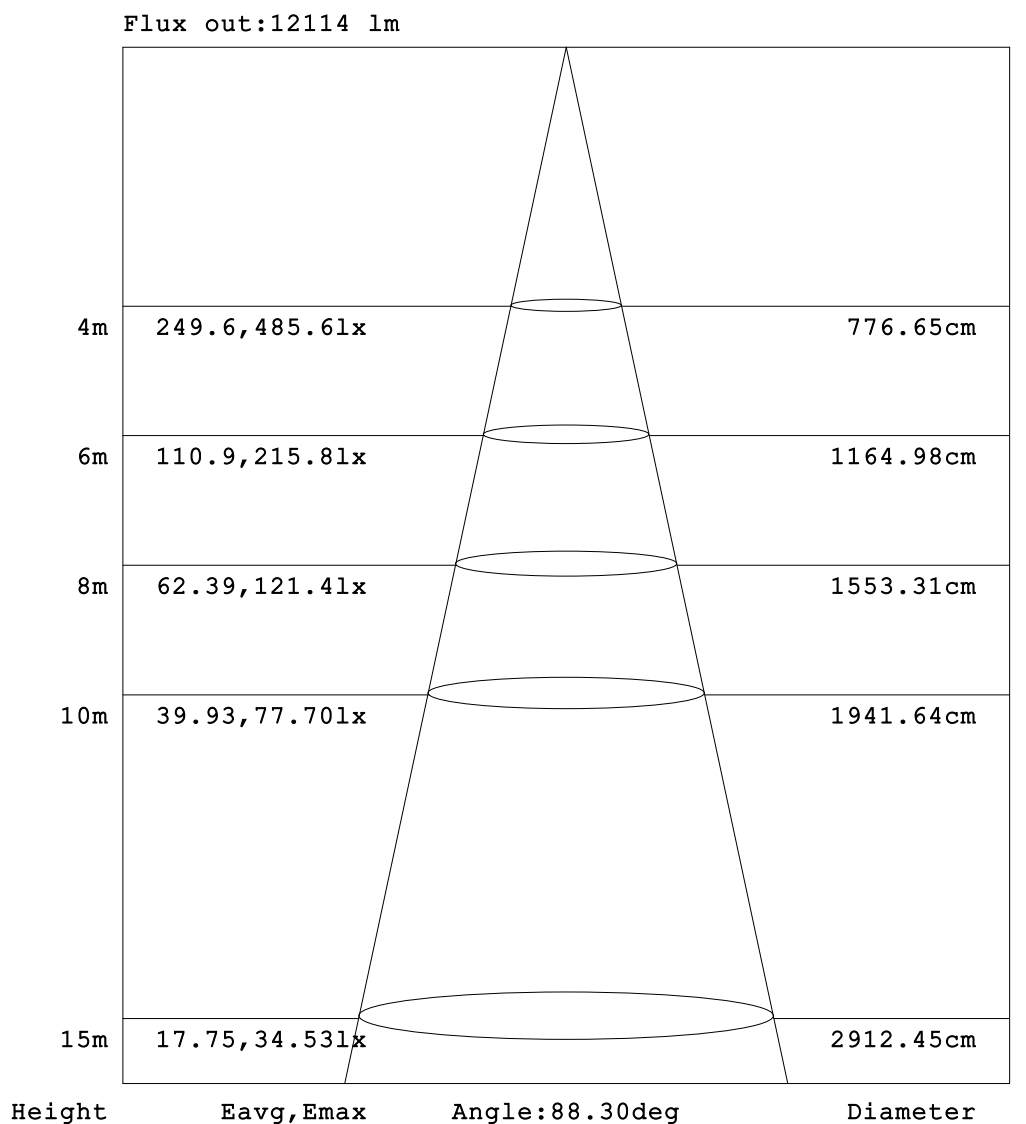
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-12-07

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

AAI Figure



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

C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-12-07

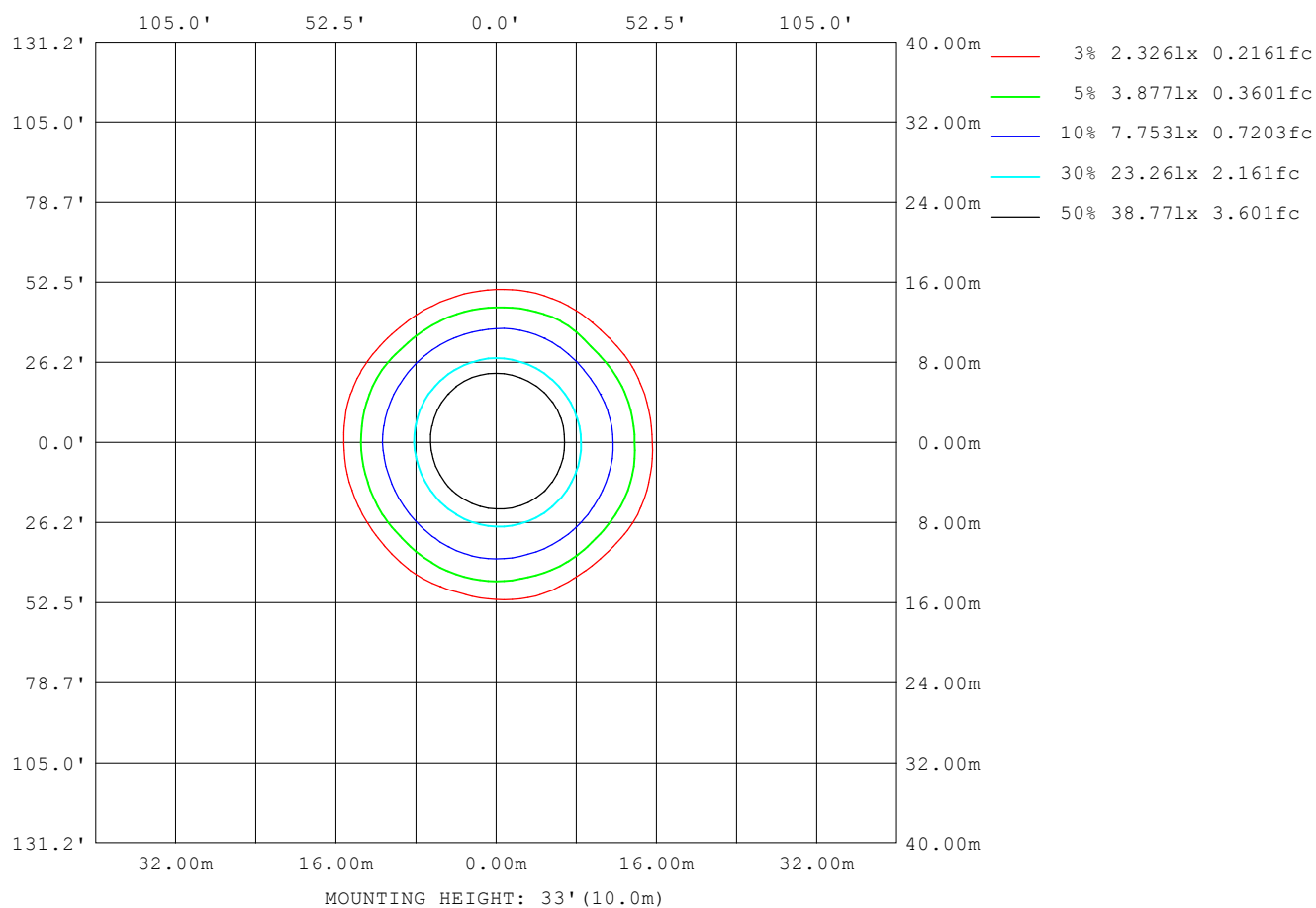
γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM



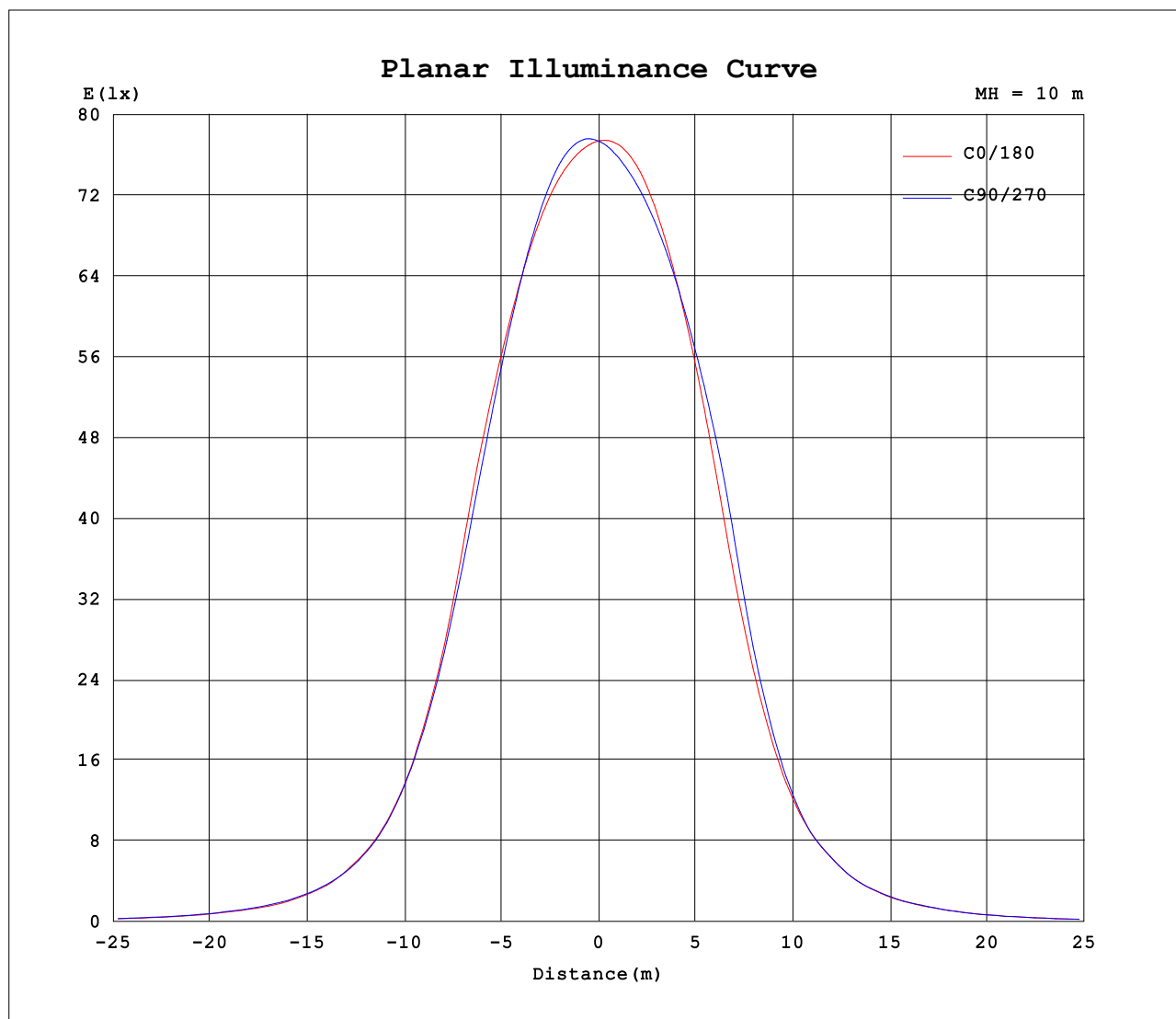
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-12-07

Checker: LI

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Assessor:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-12-07

Checker: LI

γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Assessor: