

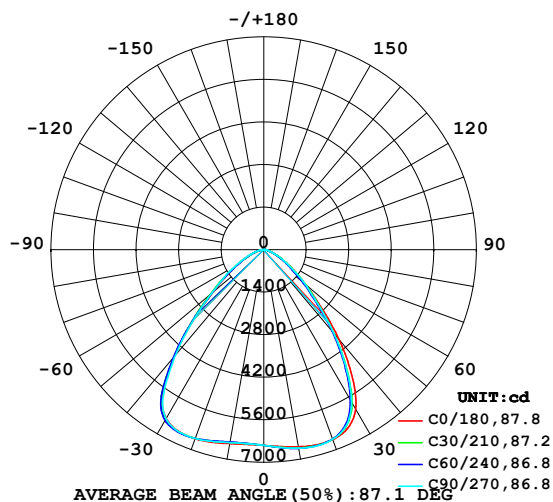
EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

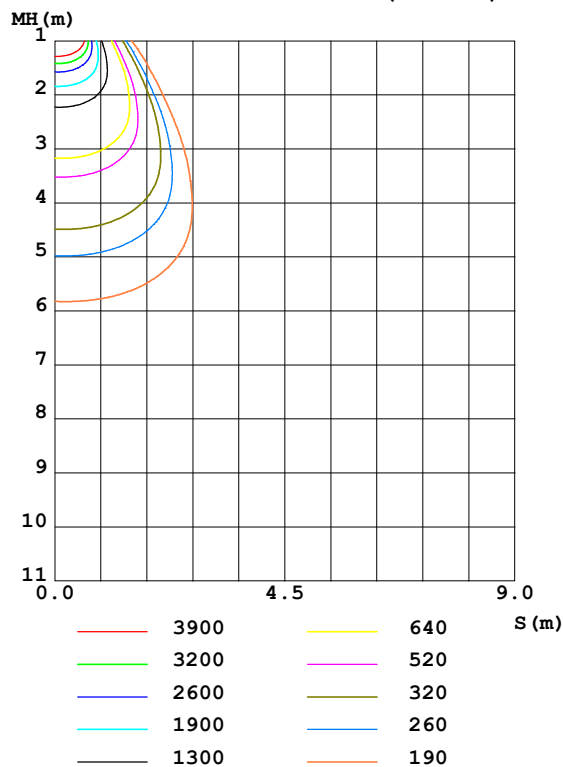
Test:U:230.1V I:0.4522A P:101.2W PF:0.9722 Lamp Flux:13190.2x1 lm		
NAME: HB38-100-5070-H00123	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:φ0.246	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 130.39 lm/W			
MODEL	RF303	I _{max} (cd)	6690	S/MH(C0/180)	1.29
NOMINAL POWER(W)	100	LOR(%)	100.0	S/MH(C90/270)	1.29
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	13190	η UP,DN(C0-180)	0.0,47.8
NOMINAL FLUX(lm)	13190.2	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,52.2
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	6505	6539	6533	6489	6432	6401	6408	6451	0- 5	154.4	154.4	1.17,1.17
10	6586	6635	6632	6572	6480	6429	6446	6512	5- 10	465.4	619.8	4.7,4.7
15	6652	6681	6689	6642	6562	6515	6534	6594	10- 15	780.2	1400	10.6,10.6
20	6650	6629	6641	6647	6621	6604	6612	6647	15- 20	1092	2492	18.9,18.9
25	6503	6381	6404	6526	6606	6629	6614	6601	20- 25	1383	3876	29.4,29.4
30	6047	5733	5773	6120	6424	6492	6429	6344	25- 30	1614	5490	41.6,41.6
35	5061	4670	4719	5197	5797	5895	5744	5591	30- 35	1705	7195	54.5,54.5
40	3847	3520	3582	4008	4560	4616	4511	4346	35- 40	1577	8772	66.5,66.5
45	2646	2462	2510	2816	3277	3340	3264	3075	40- 45	1299	10070	76.3,76.3
50	1806	1736	1796	1958	2194	2280	2246	2105	45- 50	985.4	11056	83.8,83.8
55	1251	1169	1218	1346	1493	1546	1601	1430	50- 55	730.2	11786	89.4,89.4
60	812.4	789.0	822.7	918.6	1012	1020	1077	959.8	55- 60	525.8	12312	93.3,93.3
65	539.7	507.1	534.0	575.2	647.3	650.6	697.4	615.5	60- 65	365.3	12677	96.1,96.1
70	324.2	309.1	321.3	345.1	387.7	401.2	439.0	381.1	65- 70	238.7	12916	97.9,97.9
75	186.5	174.8	183.5	199.0	229.0	237.5	253.6	220.9	70- 75	146.9	13063	99,99
80	90.39	85.49	88.60	101.3	120.3	128.9	131.1	116.2	75- 80	83.70	13146	99.7,99.7
85	22.48	17.66	18.21	26.28	40.92	47.99	45.02	37.52	80- 85	36.59	13183	99.9,99.9
90	5.669	7.046	6.678	6.012	4.825	4.713	4.990	4.182	85- 90	7.256	13190	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): 10070 lm

%lum = 76.3%

%lamp = 76.3%

Conical surface Flux(120deg): 12312 lm

%lum = 93.3%

%lamp = 93.3%

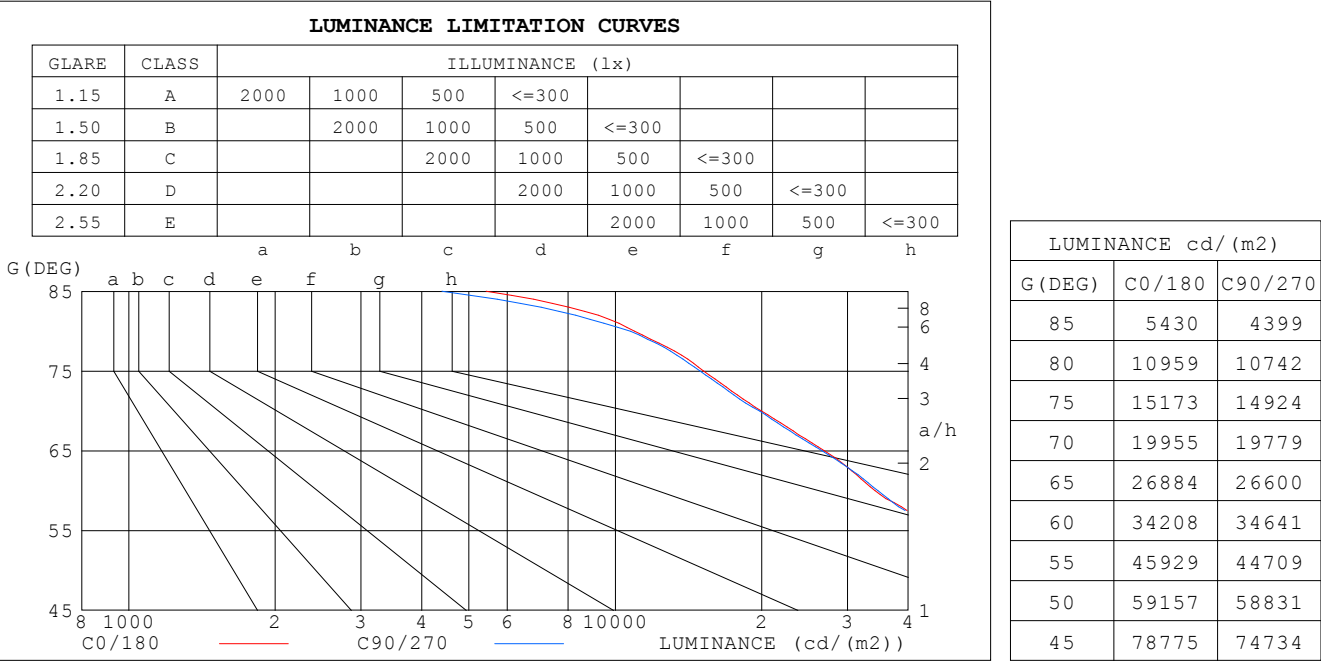
C Range: 0 - 360DEG
C Interval: 2.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-07

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:

LUMINANCE LIMITATION CURVES



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Test Speed: HIGH
Temperature:25.3DEG
Operators:
Test Date:2019-12-07

Checker: LI

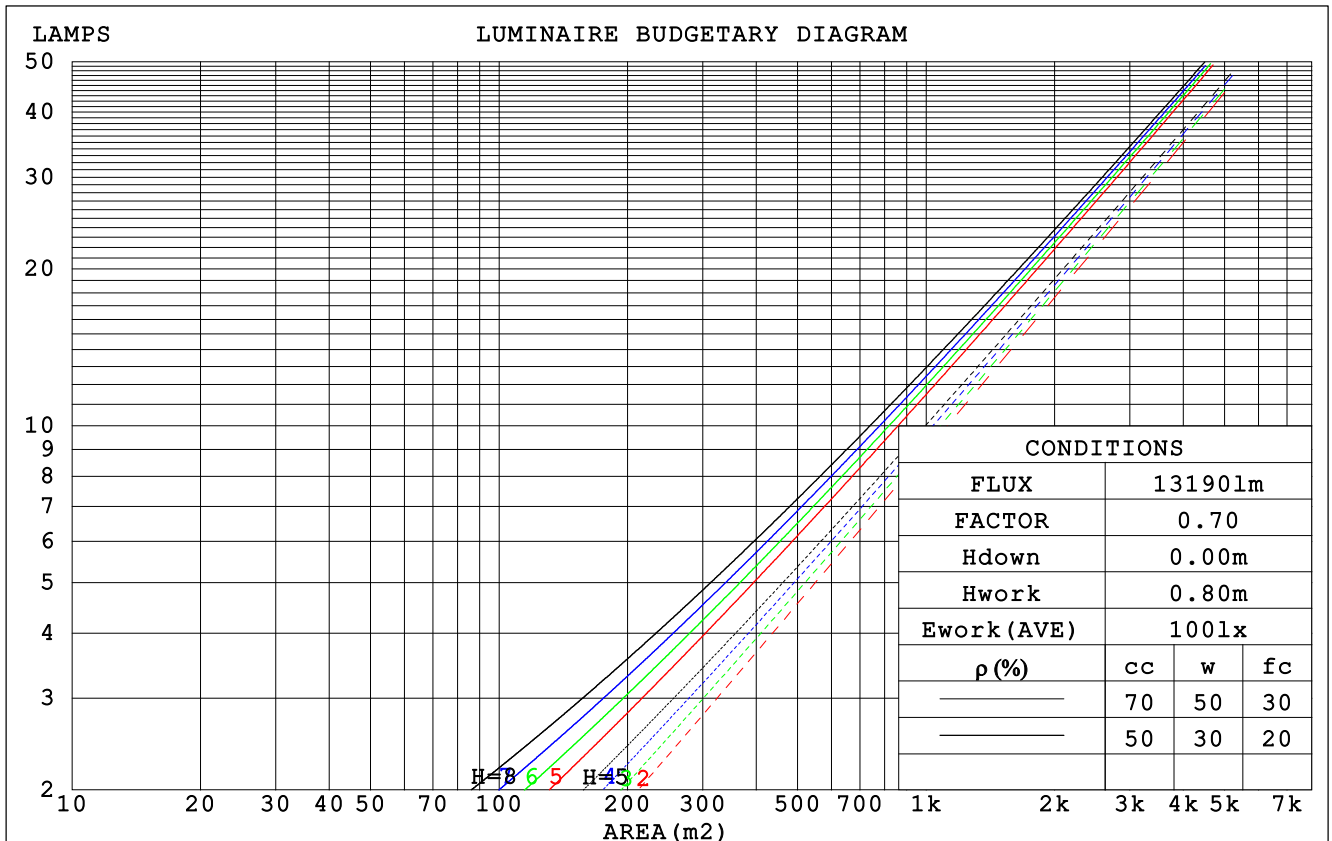
γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity:65.0%
Test Distance:9.470m [K=1.0000]
Remarks:

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	1.01	.99	.97	.98	.96	.94	.94	.93	.91	.89
2.0	.97	.92	.87	.95	.90	.86	.92	.88	.84	.89	.86	.83	.86	.83	.81	.79
3.0	.88	.81	.76	.86	.80	.75	.83	.78	.74	.81	.77	.73	.78	.75	.72	.70
4.0	.80	.72	.67	.78	.72	.66	.76	.70	.65	.74	.69	.65	.72	.67	.64	.62
5.0	.72	.65	.59	.71	.64	.59	.69	.63	.58	.68	.62	.58	.66	.61	.57	.55
6.0	.66	.59	.53	.65	.58	.53	.64	.57	.52	.62	.56	.52	.61	.56	.52	.50
7.0	.61	.53	.48	.60	.53	.48	.59	.52	.47	.57	.51	.47	.56	.51	.47	.45
8.0	.56	.48	.43	.55	.48	.43	.54	.48	.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	.48	.41	.36	.47	.40	.36	.46	.40	.36	.45	.40	.36	.34



C Range: 0 - 360DEG
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 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	.204	.106	.031	.200	.105	.031	.191	.101	.030	.183	.098	.030	.176	.096	.029	
5.0	.193	.098	.028	.189	.097	.028	.181	.094	.028	.174	.092	.027	.168	.090	.027	
6.0	.182	.091	.026	.179	.090	.026	.172	.088	.026	.166	.086	.025	.160	.084	.025	
7.0	.172	.085	.024	.169	.084	.024	.163	.083	.024	.158	.081	.024	.152	.079	.023	
8.0	.163	.080	.022	.160	.079	.022	.155	.077	.022	.150	.076	.022	.145	.075	.022	
9.0	.155	.075	.021	.152	.074	.021	.147	.073	.021	.143	.072	.021	.139	.070	.020	
10.0	.147	.071	.020	.145	.070	.020	.140	.069	.019	.136	.068	.019	.132	.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	.092	.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	.125	.073	.037	.108	.064	.032	.075	.045	.023	.043	.026	.014	.014	.009	.004	
8.0	.120	.067	.032	.103	.059	.028	.071	.041	.020	.041	.024	.012	.013	.008	.004	
9.0	.114	.062	.027	.099	.054	.024	.068	.038	.017	.040	.023	.010	.013	.007	.003	
10.0	.109	.058	.024	.094	.051	.021	.065	.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	25.0	26.3	25.3	26.5	26.7	24.7	25.9	24.9	26.1	26.3
3H	25.3	26.5	25.6	26.7	26.9	24.9	26.1	25.2	26.3	26.5
4H	25.3	26.4	25.6	26.7	26.9	25.0	26.1	25.3	26.3	26.6
6H	25.3	26.4	25.6	26.6	26.9	25.0	26.0	25.3	26.3	26.5
8H	25.3	26.3	25.6	26.6	26.8	24.9	25.9	25.3	26.2	26.5
12H	25.3	26.2	25.6	26.5	26.8	24.9	25.9	25.2	26.1	26.4
4H 2H	25.1	26.2	25.4	26.4	26.6	24.7	25.8	25.0	26.1	26.3
3H	25.4	26.4	25.8	26.7	27.0	25.1	26.0	25.4	26.3	26.6
4H	25.5	26.4	25.9	26.7	27.0	25.2	26.1	25.6	26.4	26.7
6H	25.6	26.3	26.0	26.7	27.0	25.3	26.0	25.6	26.3	26.7
8H	25.6	26.3	26.0	26.6	27.0	25.2	25.9	25.6	26.3	26.7
12H	25.5	26.2	26.0	26.6	27.0	25.2	25.8	25.6	26.2	26.6
8H 4H	25.5	26.2	25.9	26.6	26.9	25.2	25.9	25.6	26.2	26.6
6H	25.6	26.2	26.0	26.5	27.0	25.3	25.8	25.7	26.2	26.7
8H	25.6	26.1	26.0	26.5	27.0	25.3	25.8	25.7	26.2	26.6
12H	25.6	26.0	26.0	26.4	26.9	25.2	25.7	25.7	26.1	26.6
12H 4H	25.5	26.1	25.9	26.5	26.9	25.1	25.8	25.6	26.2	26.6
6H	25.5	26.1	26.0	26.5	26.9	25.2	25.7	25.7	26.2	26.6
8H	25.6	26.0	26.0	26.4	26.9	25.2	25.7	25.7	26.1	26.6
Variations with the observer position at spacings:										
S = 1.0H	+ 1.0 / - 1.5					+ 1.1 / - 1.5				
1.5H	+ 1.3 / - 1.0					+ 1.3 / - 1.2				
2.0H	+ 2.1 / - 1.8					+ 2.2 / - 2.0				

CIE Pub.117 Corrected 13190 lm Total Lamp Luminous Flux.(8log(F/F0) = 9.0)

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	71	65	78	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		

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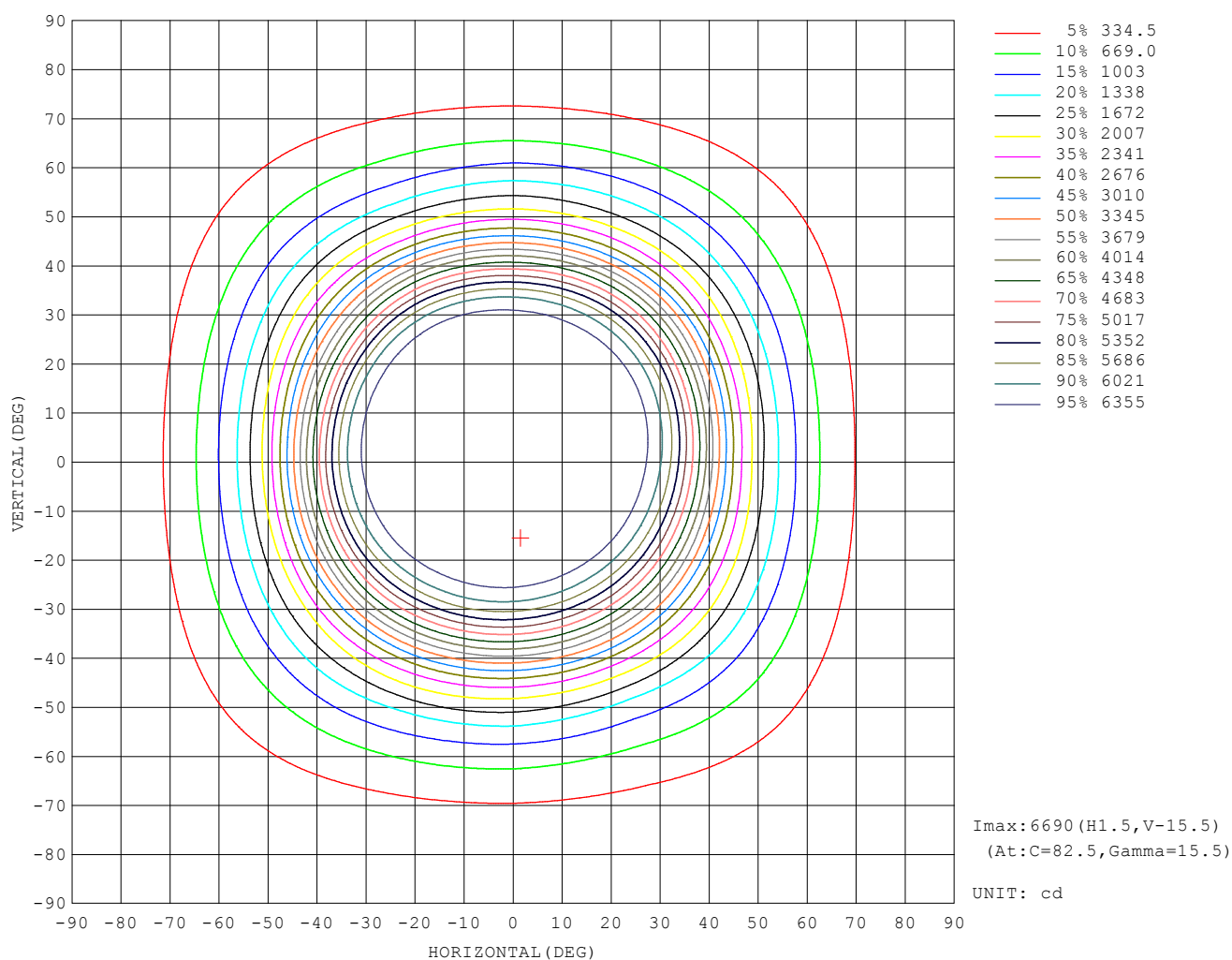
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EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOCANDELA DIAGRAM



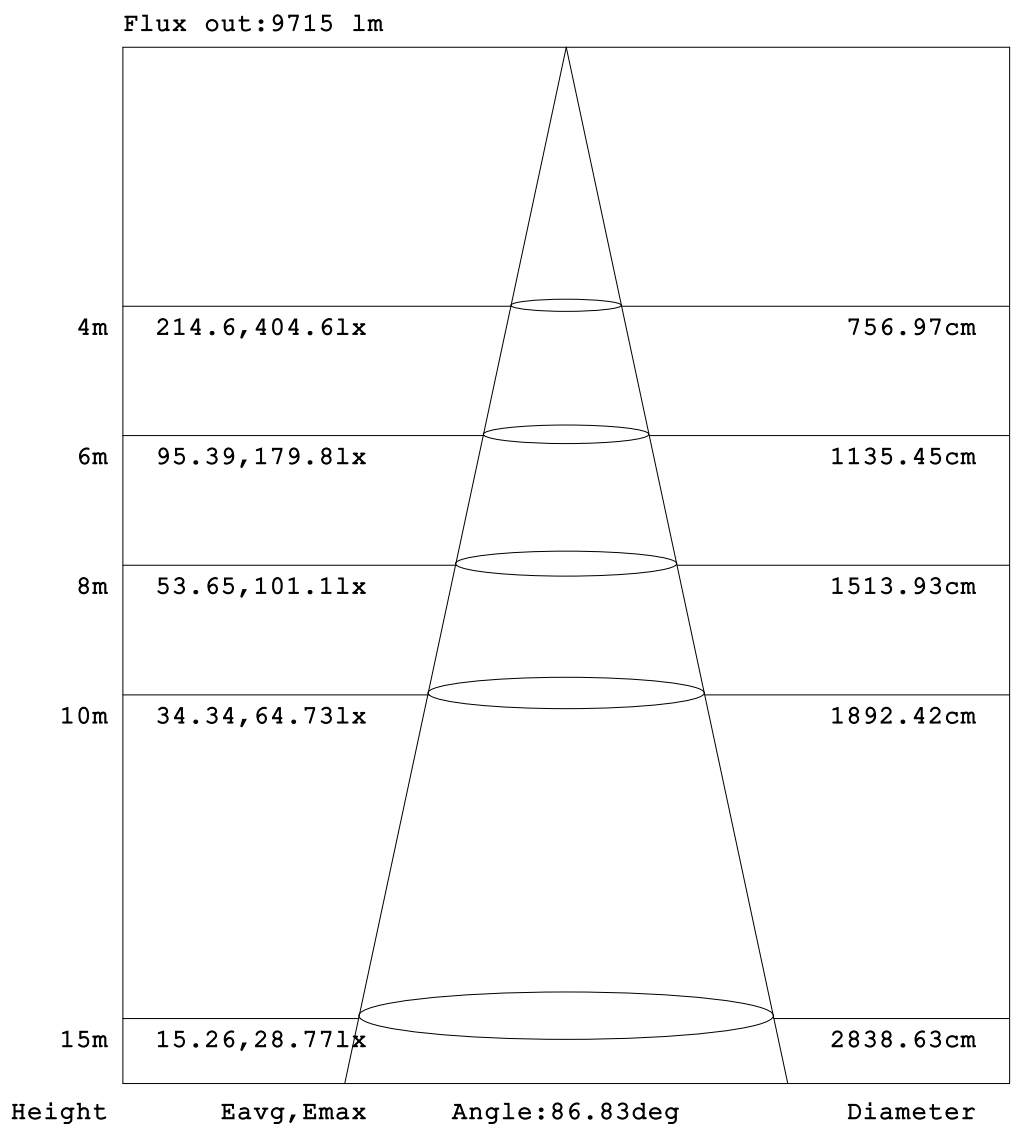
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C Interval: 2.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators:
Test Date: 2019-12-07

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
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Operators:
Test Date: 2019-12-07

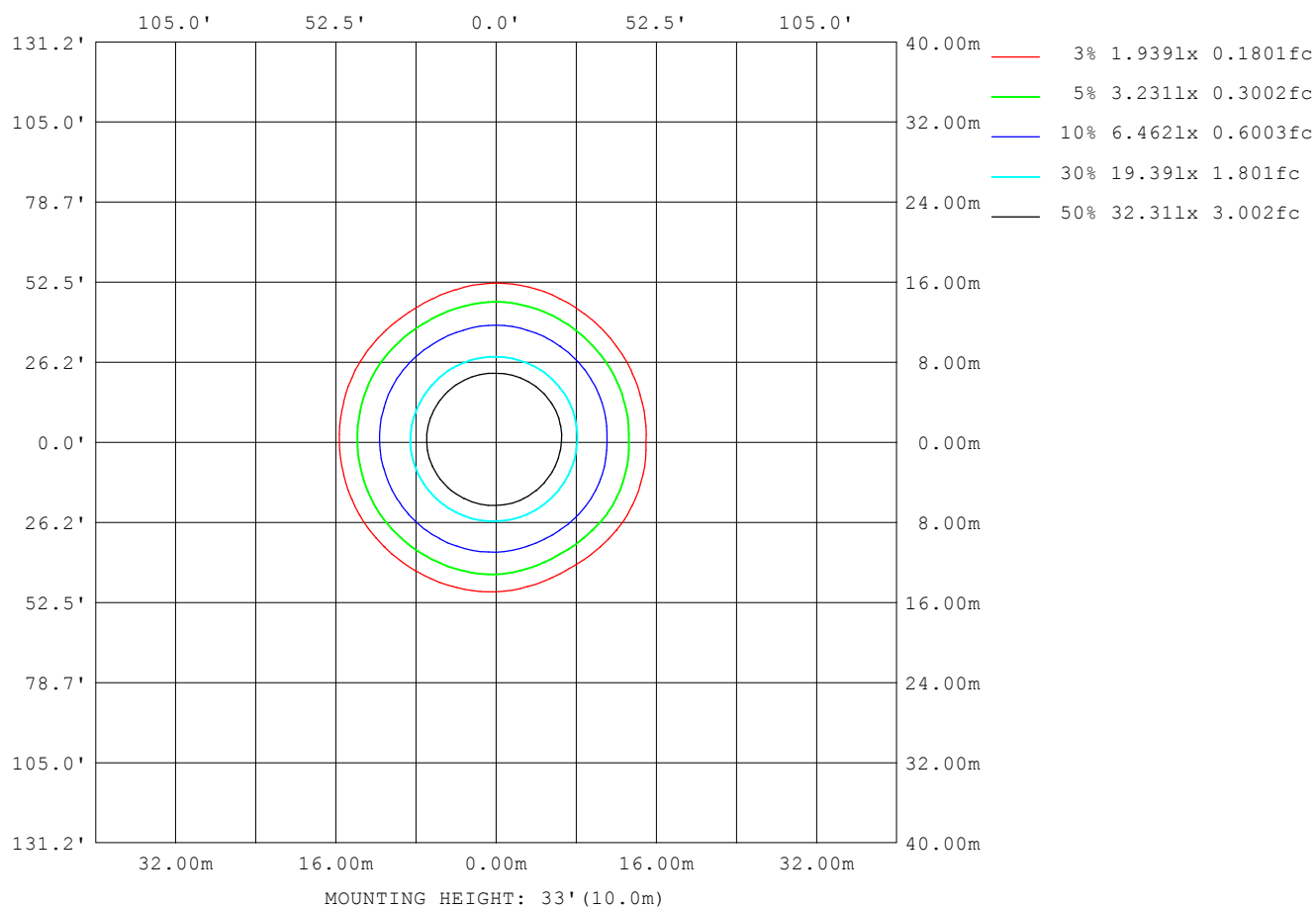
γ Range: 0 - 90DEG
 γ Interval: 0.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.295
Humidity: 65.0%
Test Distance: 9.470m [K=1.0000]
Remarks:

Checker: LI

Assessor:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

ISOLUX DIAGRAM



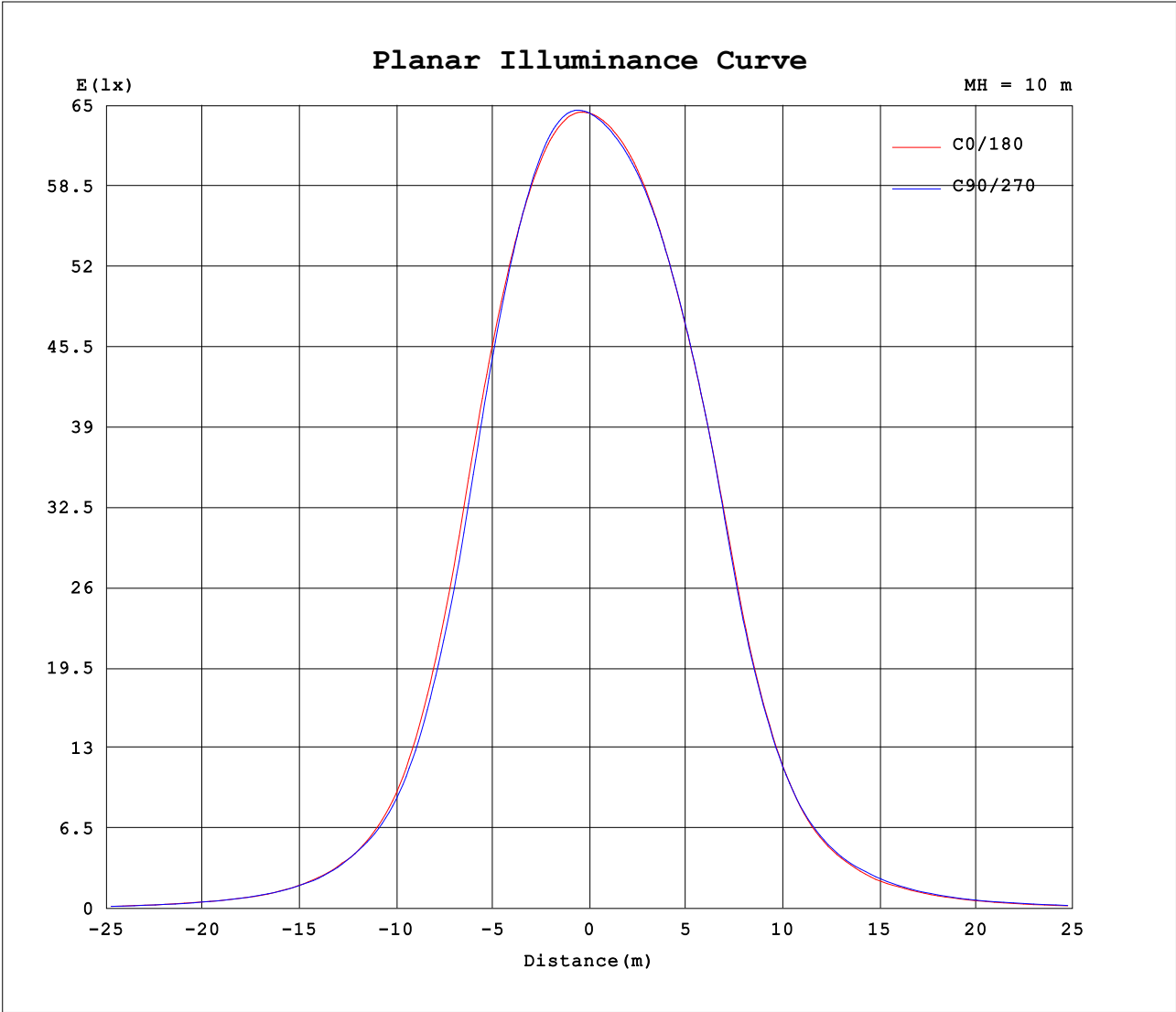
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Humidity: 65.0%
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Remarks:

Assessor:

Planar Illuminance Curve



C Range: 0 - 360DEG
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Test Speed: HIGH
Temperature:25.3DEG
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Remarks:

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