

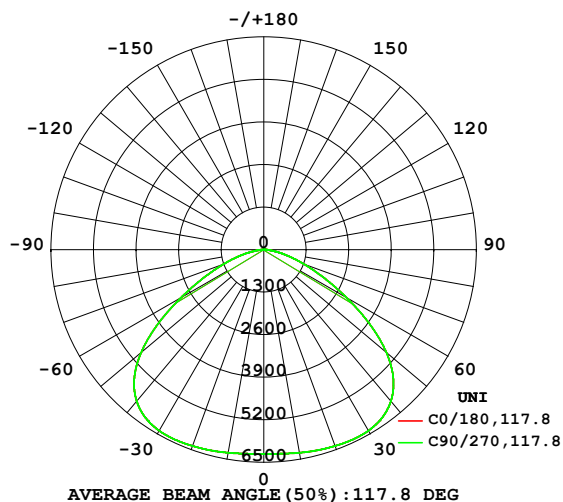
EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

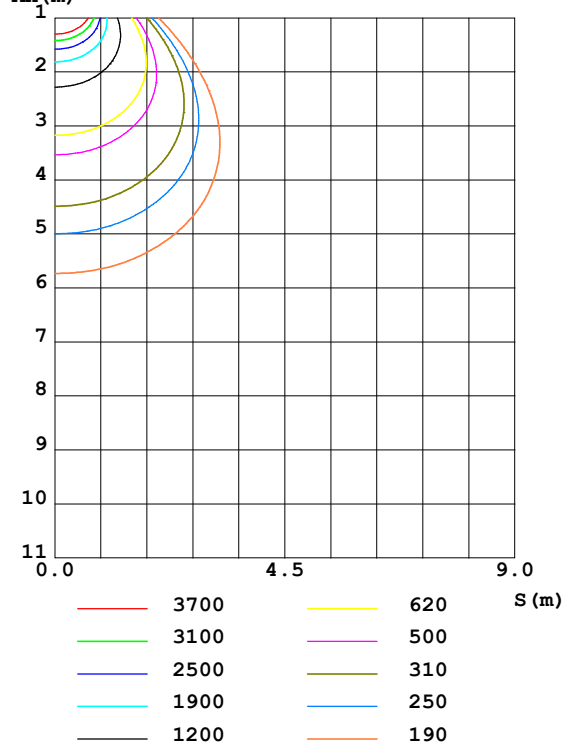
Test:U:230.0V I:0.6637A P:150.6W PF:0.9865 Freq:50.00Hz UTHDi:0% ITHDi:0% Lamp Flux:20085.2x1 lm		
NAME: HB39-150-5080-H00128	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 133.38 lm/W			
MODEL	/	I _{max} (cd)	6409	S/MH (C0/180)	1.52
NOMINAL POWER (W)	/	LOR (%)	100.0	S/MH (C90/270)	1.52
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	20085	η UP, DN (C0-180)	0.0, 50.0
NOMINAL FLUX (lm)	20085.2	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 50.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	230	η down (%)	100.0	CIBSE SHR MAX	1.55

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT: lx)



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LI
Test Date: 2020-05-12

γ Range: 0 - 90DEG
γ Interval: 0.1DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.426
Humidity: 65.0%
Test Distance: 26.000m [K=0.4589]
Remarks:

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
10	6301	6301	6301	6301	6301	6301	6301	6301	0- 10	598.8	598.8	2.98,2.98
20	6382	6382	6382	6382	6382	6382	6382	6382	10- 20	1800	2399	11.9,11.9
30	6391	6391	6391	6391	6391	6391	6391	6391	20- 30	2963	5361	26.7,26.7
40	6044	6044	6044	6044	6044	6044	6044	6044	30- 40	3930	9292	46.3,46.3
50	4893	4893	4893	4893	4893	4893	4893	4893	40- 50	4291	13583	67.6,67.6
60	2900	2900	2900	2900	2900	2900	2900	2900	50- 60	3500	17082	85,85
70	1321	1321	1321	1321	1321	1321	1321	1321	60- 70	2017	19099	95.1,95.1
80	380.8	380.8	380.8	380.8	380.8	380.8	380.8	380.8	70- 80	854.7	19954	99.3,99.3
90	1.128	1.128	1.128	1.128	1.128	1.128	1.128	1.128	80- 90	131.3	20085	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		

Conical surface Flux(90deg): 11454 lm

%lum = 57.0%

%lamp = 57.0%

Conical surface Flux(120deg): 17082 lm

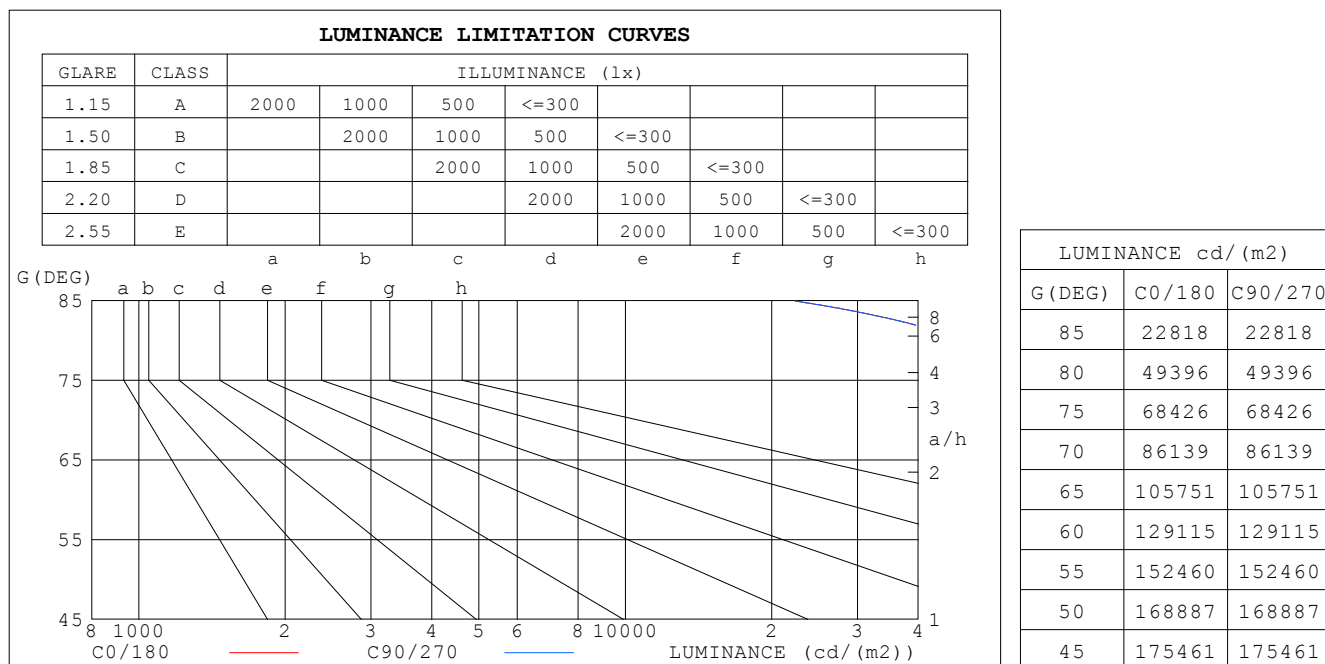
%lum = 85.0%

%lamp = 85.0%

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:LI
Test Date:2020-05-12

γ Range: 0 - 90DEG
 γ Interval: 0.1DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.426
Humidity:65.0%
Test Distance:26.000m [K=0.4589]
Remarks:

LUMINANCE LIMITATION CURVES



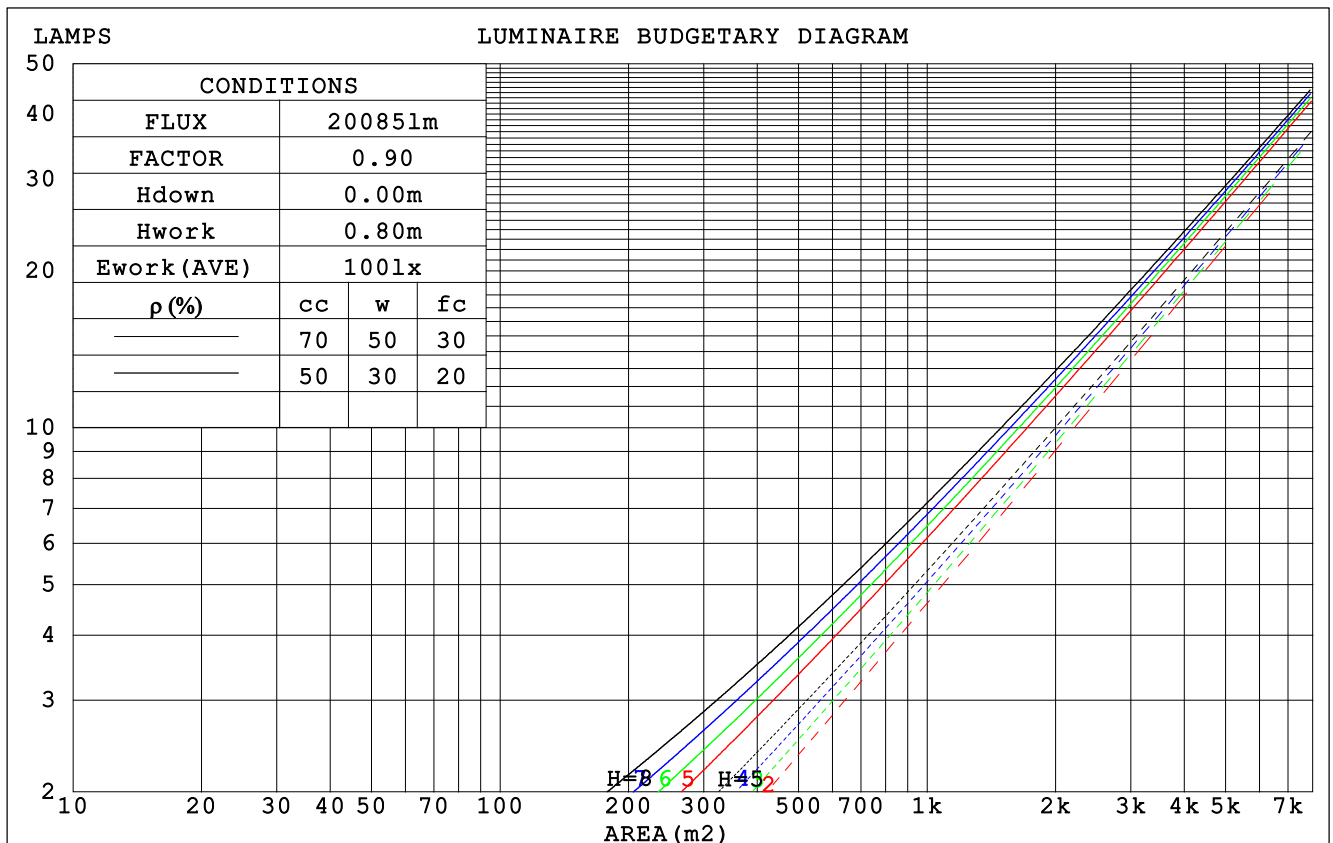
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C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LI
Test Date: 2020-05-12

γ Range: 0 - 90DEG
 γ Interval: 0.1DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.426
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Test Distance: 26.000m [K=0.4589]
Remarks:

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	1.00
1.0	1.05	1.01	.98	1.03	.90	.96	.99	.96	.93	.95	.93	.90	.91	.90	.88	.86
2.0	.92	.86	.81	.91	.85	.80	.87	.82	.78	.84	.80	.76	.81	.77	.74	.72
3.0	.81	.74	.67	.80	.73	.67	.77	.71	.66	.74	.69	.64	.72	.67	.63	.61
4.0	.72	.64	.57	.71	.63	.57	.68	.61	.56	.66	.60	.55	.64	.59	.54	.52
5.0	.64	.56	.49	.63	.55	.49	.61	.54	.48	.59	.53	.48	.57	.52	.47	.45
6.0	.58	.49	.43	.57	.49	.42	.55	.48	.42	.53	.47	.42	.52	.46	.41	.39
7.0	.52	.44	.38	.51	.43	.37	.50	.42	.37	.48	.42	.37	.47	.41	.37	.35
8.0	.48	.39	.33	.47	.39	.33	.46	.38	.33	.44	.38	.33	.43	.37	.33	.31
9.0	.43	.35	.30	.43	.35	.30	.42	.35	.30	.41	.34	.29	.40	.34	.29	.27
10.0	.40	.32	.27	.39	.32	.27	.38	.31	.27	.38	.31	.26	.37	.31	.26	.25



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Test Date: 2020-05-12

γ Range: 0 - 90DEG
 γ Interval: 0.1DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.426
Humidity: 65.0%
Test Distance: 26.000m [K=0.4589]
Remarks:

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	.281	.160	.051	.274	.156	.050	.261	.150	.048	.249	.144	.046	.238	.138	.044															
2.0	.272	.149	.046	.266	.147	.045	.255	.142	.044	.244	.137	.043	.234	.133	.042															
3.0	.257	.137	.041	.251	.135	.041	.241	.131	.040	.232	.127	.039	.223	.123	.038															
4.0	.240	.125	.037	.235	.123	.036	.226	.120	.036	.218	.117	.035	.210	.114	.035															
5.0	.224	.114	.033	.220	.113	.033	.212	.110	.032	.204	.108	.032	.197	.105	.032															
6.0	.209	.105	.030	.205	.104	.030	.198	.102	.030	.192	.100	.029	.185	.098	.029															
7.0	.196	.097	.027	.192	.096	.027	.186	.094	.027	.180	.092	.027	.174	.091	.027															
8.0	.184	.090	.025	.181	.089	.025	.175	.087	.025	.169	.086	.025	.164	.084	.025															
9.0	.173	.084	.023	.170	.083	.023	.165	.081	.023	.160	.080	.023	.155	.079	.023															
10.0	.163	.078	.022	.160	.077	.022	.156	.076	.021	.151	.075	.021	.147	.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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020		
1.0	.178	.156	.137	.153	.134	.118	.104	.092	.081	.060	.053	.047	.019	.017	.015		
2.0	.170	.132	.100	.145	.114	.087	.100	.079	.061	.057	.046	.035	.018	.015	.012		
3.0	.162	.114	.076	.139	.099	.066	.095	.068	.046	.055	.040	.027	.018	.013	.009		
4.0	.155	.101	.060	.133	.087	.052	.091	.061	.037	.053	.036	.022	.017	.012	.007		
5.0	.148	.090	.048	.127	.078	.042	.087	.055	.030	.051	.032	.018	.016	.010	.006		
6.0	.141	.082	.040	.121	.071	.035	.083	.050	.025	.048	.029	.015	.016	.010	.005		
7.0	.134	.075	.034	.116	.065	.029	.080	.046	.021	.046	.027	.012	.015	.009	.004		
8.0	.128	.069	.029	.110	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004		
9.0	.122	.064	.025	.105	.056	.022	.073	.039	.016	.043	.023	.009	.014	.008	.003		
10.0	.117	.060	.023	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003		

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:LI
 Test Date:2020-05-12

γ Range: 0 - 90DEG
 γ Interval: 0.1DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.426
 Humidity:65.0%
 Test Distance:26.000m [K=0.4589]
 Remarks:

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	30.3	31.8	30.6	32.0	32.2	30.3	31.8	30.6	32.0	32.2
3H	31.1	32.4	31.4	32.7	32.9	31.1	32.4	31.4	32.7	32.9
4H	31.3	32.6	31.6	32.8	33.1	31.3	32.6	31.6	32.8	33.1
6H	31.4	32.6	31.7	32.9	33.1	31.4	32.6	31.7	32.9	33.1
8H	31.4	32.5	31.7	32.8	33.1	31.4	32.5	31.7	32.8	33.1
12H	31.3	32.5	31.7	32.8	33.1	31.3	32.5	31.7	32.8	33.1
4H 2H	30.7	32.0	31.0	32.2	32.5	30.7	32.0	31.0	32.2	32.5
3H	31.6	32.7	31.9	33.0	33.3	31.6	32.7	31.9	33.0	33.3
4H	31.9	32.9	32.2	33.2	33.5	31.9	32.9	32.2	33.2	33.5
6H	32.0	32.9	32.4	33.3	33.7	32.0	32.9	32.4	33.3	33.7
8H	32.1	32.9	32.5	33.3	33.6	32.1	32.9	32.5	33.3	33.6
12H	32.0	32.8	32.5	33.2	33.6	32.0	32.8	32.5	33.2	33.6
8H 4H	31.9	32.8	32.4	33.1	33.5	31.9	32.8	32.4	33.1	33.5
6H	32.2	32.9	32.6	33.3	33.7	32.2	32.9	32.6	33.3	33.7
8H	32.2	32.8	32.7	33.3	33.7	32.2	32.8	32.7	33.3	33.7
12H	32.2	32.8	32.7	33.2	33.7	32.2	32.8	32.7	33.2	33.7
12H 4H	31.9	32.7	32.3	33.1	33.5	31.9	32.7	32.3	33.1	33.5
6H	32.2	32.8	32.6	33.2	33.7	32.2	32.8	32.6	33.2	33.7
8H	32.2	32.8	32.7	33.2	33.7	32.2	32.8	32.7	33.2	33.7
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.3 / - 0.4					+ 0.3 / - 0.4				
1.5H	+ 0.3 / - 0.7					+ 0.3 / - 0.7				
2.0H	+ 0.8 / - 0.8					+ 0.8 / - 0.8				

CIE Pub.117, 20085 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 10.4$)
Area: 0.04524 m²

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γ Range: 0 - 90DEG
 γ Interval: 0.1DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.00.426
Humidity:65.0%
Test Distance:26.000m [K=0.4589]
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

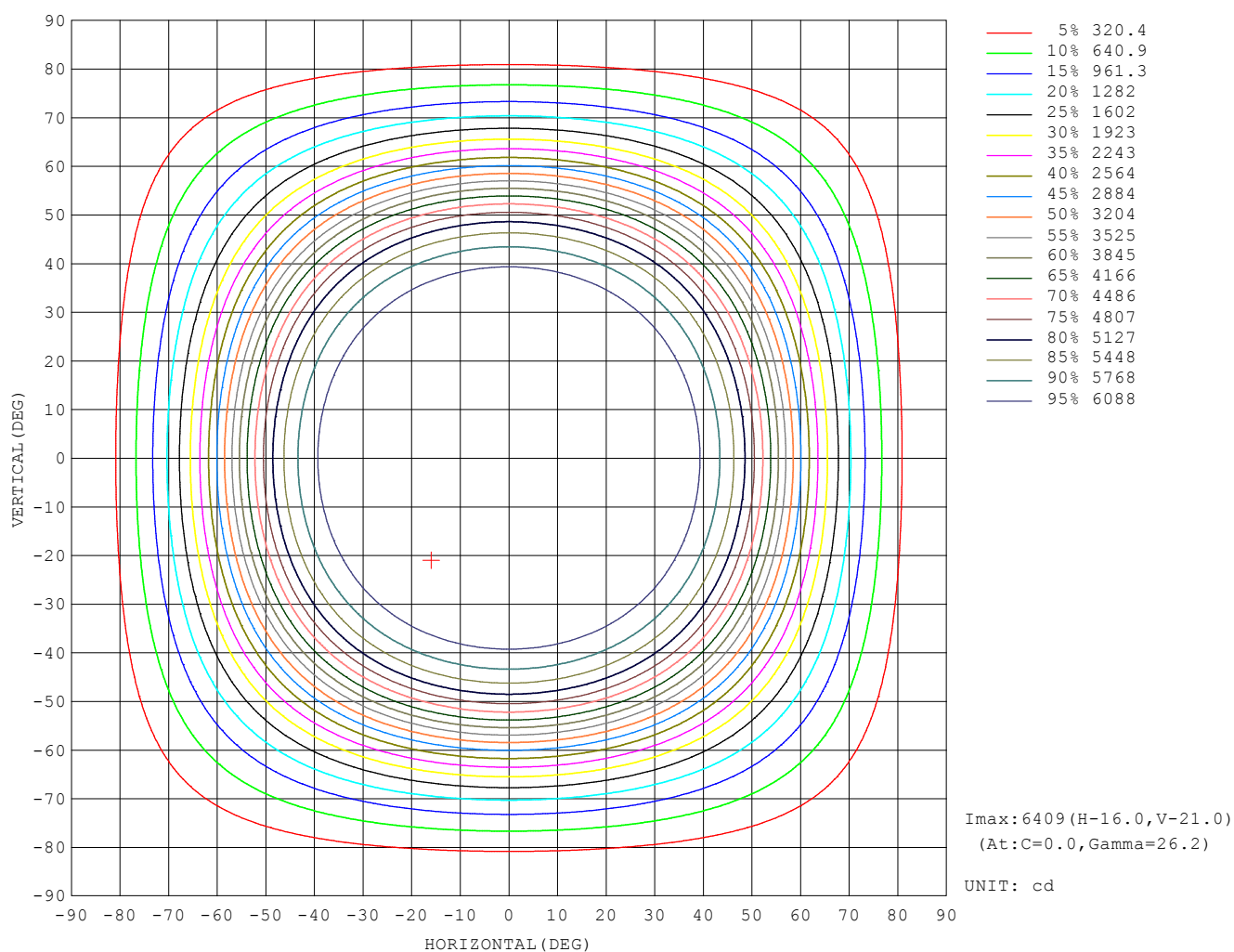
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	58	46	39	57	46	39	56	45	39	33
0.80	69	57	50	68	57	50	66	56	49	42
1.00	78	67	60	76	66	60	74	68	59	52
1.25	85	75	68	84	74	68	81	73	67	60
1.50	90	81	74	88	80	74	85	78	73	65
2.00	97	89	83	95	88	82	92	86	81	73
2.50	100	93	88	99	92	87	95	89	85	77
3.00	104	97	92	102	96	91	98	93	89	81
4.00	107	102	98	105	100	96	101	97	94	85
5.00	110	105	101	107	103	100	103	100	97	88
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

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 Operators: LI
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 γ Interval: 0.1DEG
 Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.426
 Humidity: 65.0%
 Test Distance: 26.000m [K=0.4589]
 Remarks:

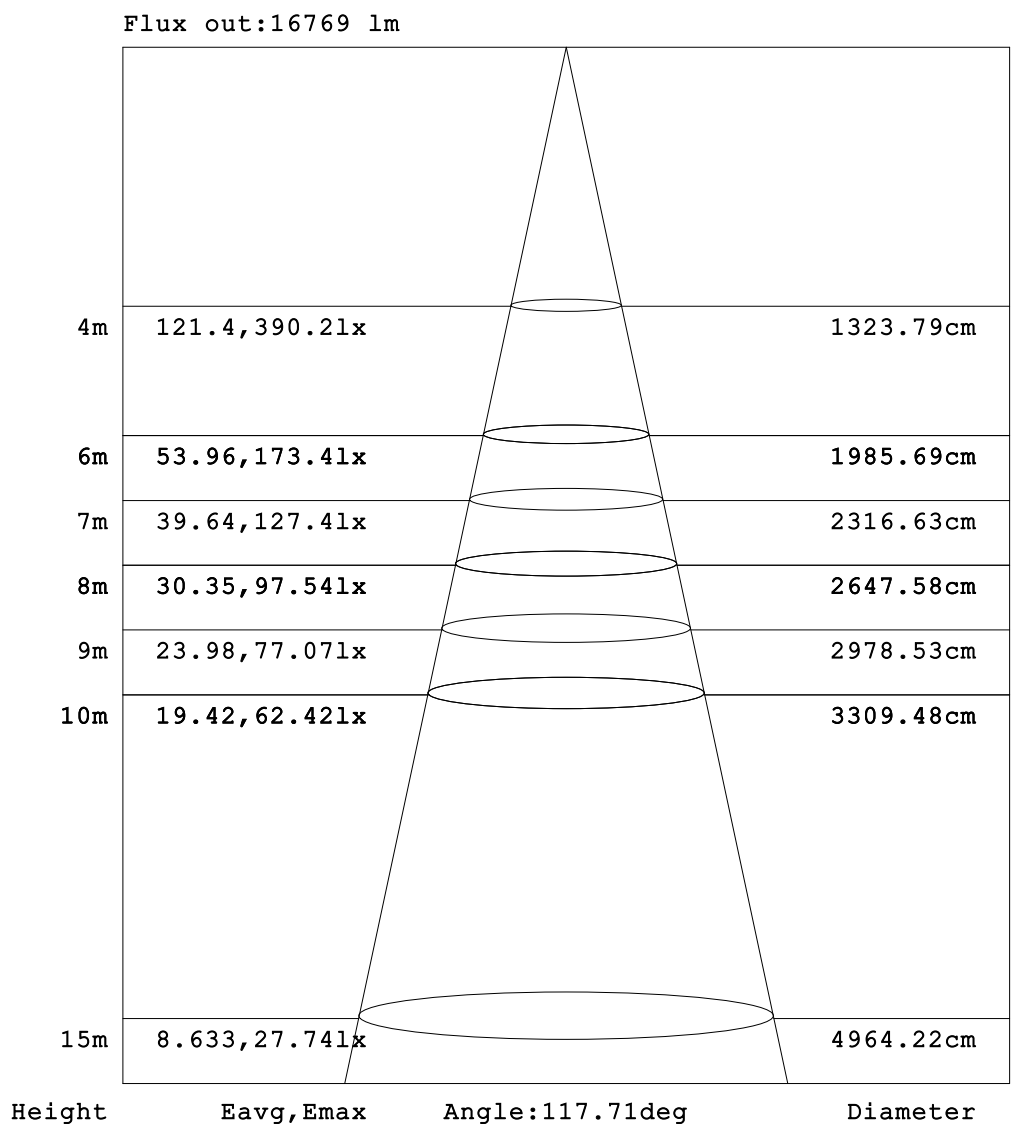
ISOCANDELA DIAGRAM



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LI
Test Date: 2020-05-12

γ Range: 0 - 90DEG
 γ Interval: 0.1DEG
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Humidity: 65.0%
Test Distance: 26.000m [K=0.4589]
Remarks:

AAI Figure



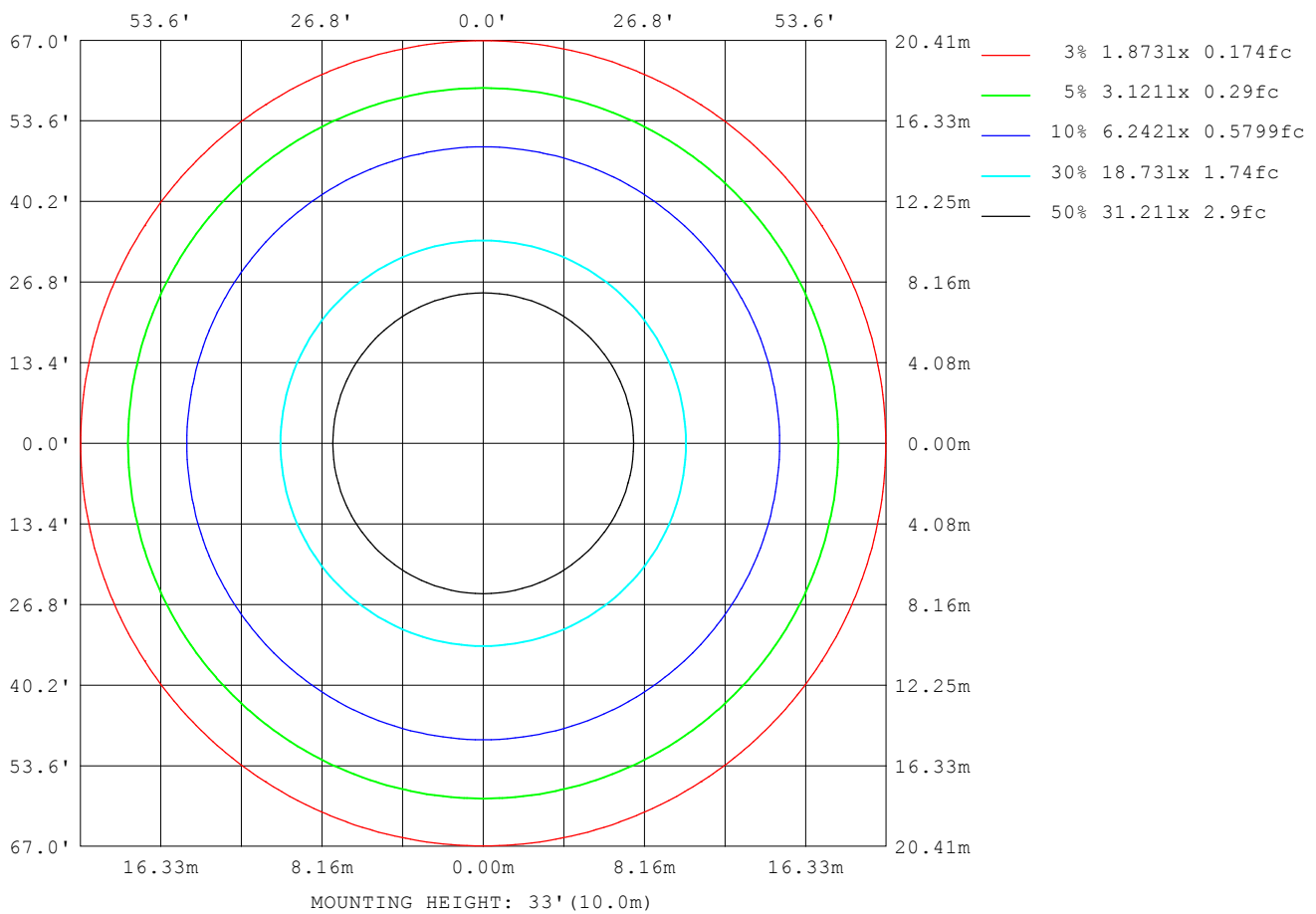
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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γ Range: 0 - 90DEG
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Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

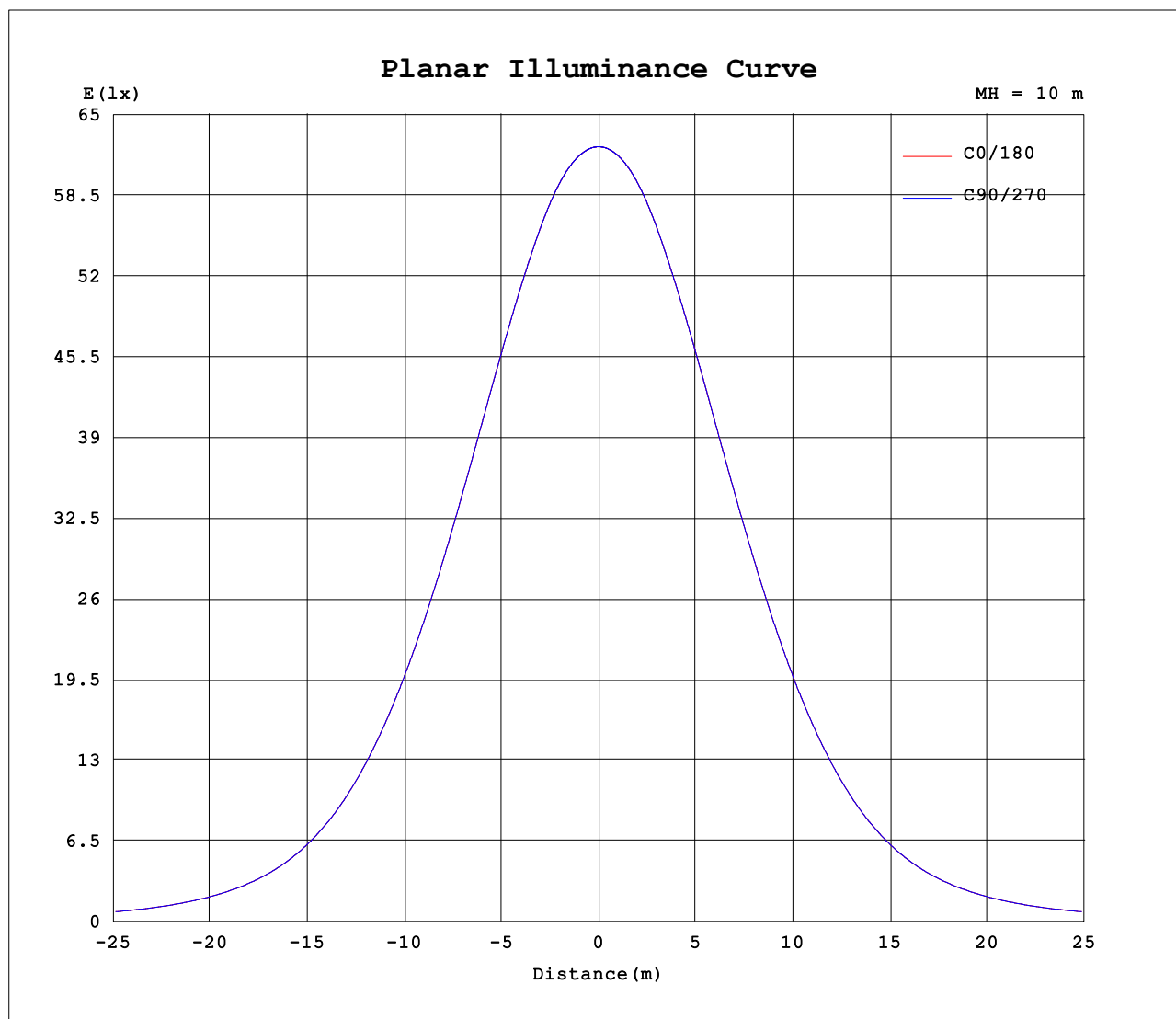
ISOLUX DIAGRAM



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: LI
Test Date: 2020-05-12

γ Range: 0 - 90DEG
 γ Interval: 0.1DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.426
Humidity: 65.0%
Test Distance: 26.000m [K=0.4589]
Remarks:

Planar Illuminance Curve



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Temperature: 25.3DEG
Operators: LI
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γ Range: 0 - 90DEG
 γ Interval: 0.1DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.00.426
Humidity: 65.0%
Test Distance: 26.000m [K=0.4589]
Remarks: