

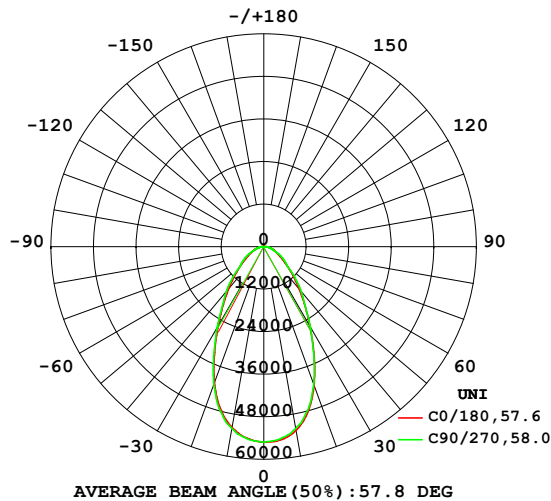
# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## LUMINAIRE PHOTOMETRIC TEST REPORT

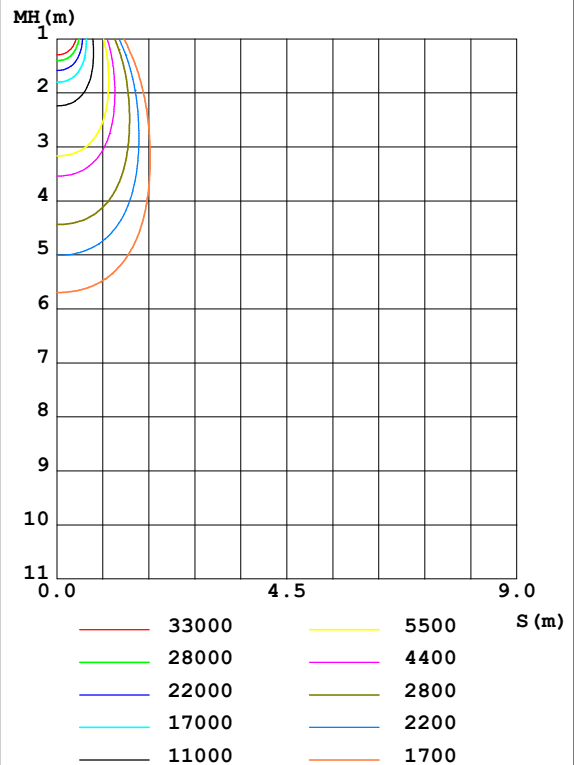
Test:U:230.0V I:2.089A P:475.6W PF:0.9900 Freq:50.00Hz Lamp Flux:69648.9x1 lm					
NAME: LHB09-480-5070-L04501			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:		Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 146.44 lm/W
MODEL	/	I <sub>max</sub> (cd)	55150	S/MH (C0/180)	0.86	
NOMINAL POWER (W)	480	LOR (%)	100.0	S/MH (C90/270)	0.87	
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	69649	η UP, DN (C0-180)	0.0, 50.0	
NOMINAL FLUX (lm)	69648.9	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 50.0	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75	
TEST VOLTAGE (V)	230	η down (%)	100.0	CIBSE SHR MAX	0.95	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 90DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2019-12-26

γ Range: -90 - 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:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum,lamp
10	5264	5238	5206	5179	5179	5179	5206	5238	0- 10	5121	5121	7.35,7.35
20	4156	4129	4127	4075	4074	4075	4127	4129	10- 20	13240	18361	26.4,26.4
30	2619	2657	2636	2631	2571	2631	2636	2657	20- 30	15280	33640	48.3,48.3
40	1554	1631	1639	1627	1538	1627	1639	1631	30- 40	12900	46540	66.8,66.8
50	888.6	971.8	882.5	970.0	882.8	970.0	882.5	971.8	40- 50	9619	56159	80.6,80.6
60	515.5	537.4	581.6	535.3	507.6	535.3	581.6	537.4	50- 60	6404	62563	89.8,89.8
70	304.6	312.0	280.7	306.8	292.3	306.8	280.7	312.0	60- 70	4126	66689	95.7,95.7
80	145.0	140.0	142.0	134.8	134.6	134.8	142.0	140.0	70- 80	2230	68918	99,99
90	1.524	3.620	3.232	2.823	1.987	2.823	3.232	3.620	80- 90	730.9	69649	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:×10cd									UNIT:lm		

Conical surface Flux(90deg): 51795 lm

%lum = 74.4%

%lamp = 74.4%

Conical surface Flux(120deg): 62563 lm

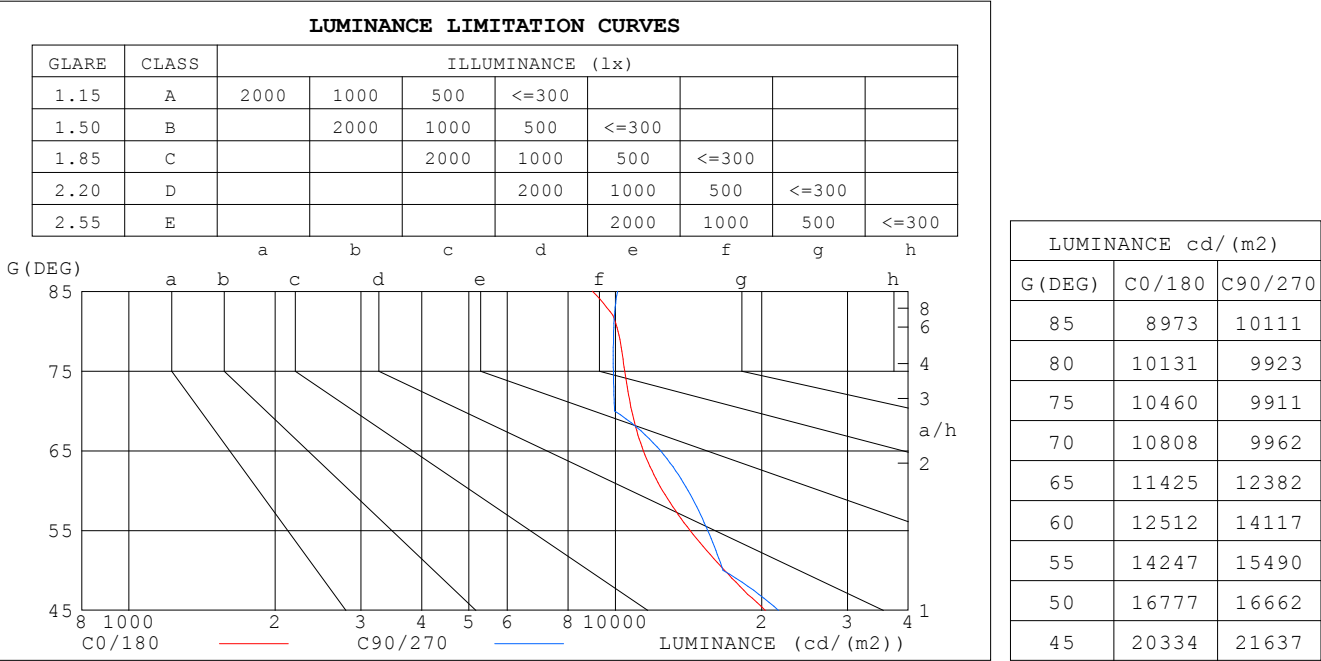
%lum = 89.8%

%lamp = 89.8%

C Range: 0 - 90DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2019-12-26

$\gamma$  Range:-90 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:9.470m [K=1.0000]  
Remarks:

LUMINANCE LIMITATION CURVES



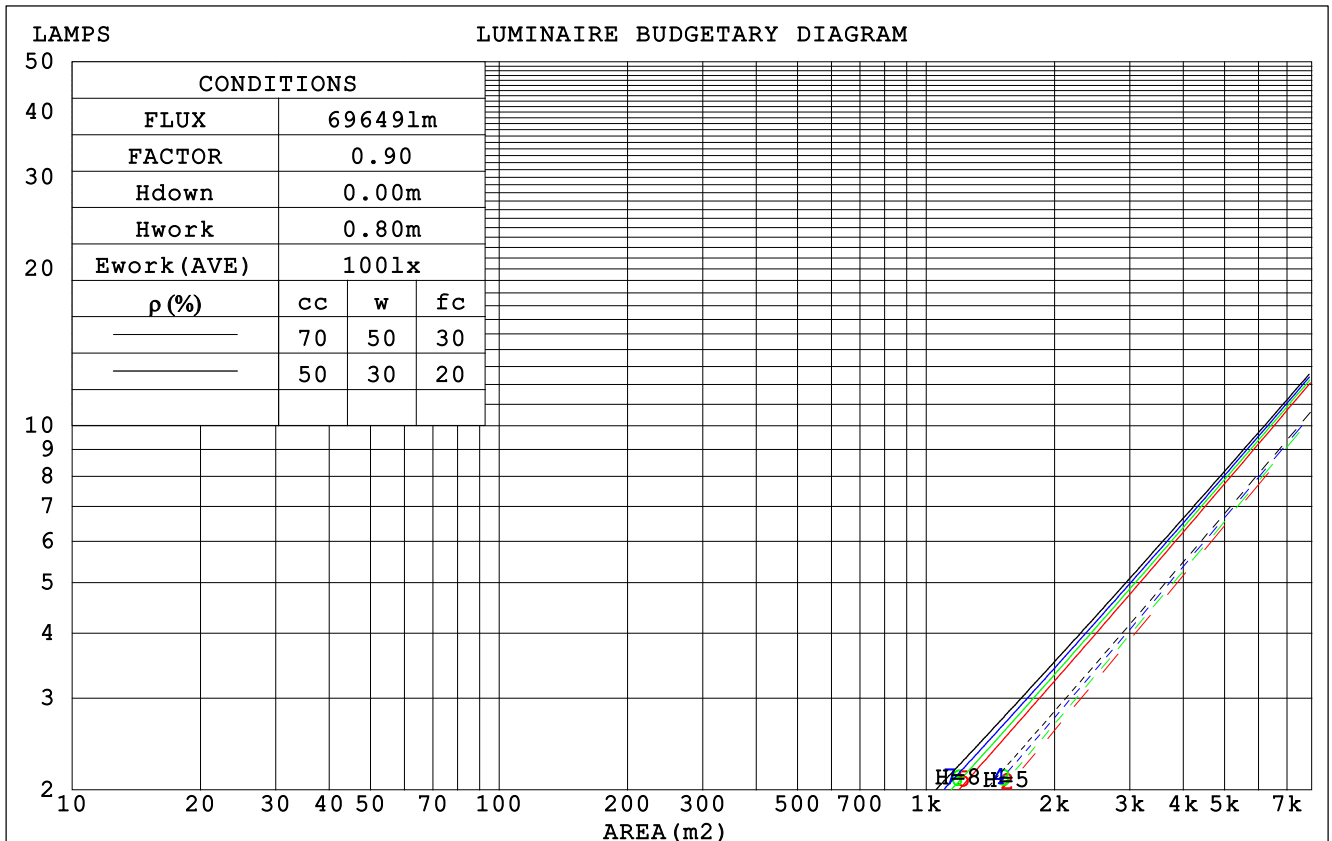
C Range: 0 - 90DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2019-12-26

$\gamma$  Range:-90 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:9.470m [K=1.0000]  
Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

pcc	80%			70%			50%			30%			10%			0
p <sub>w</sub>	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p <sub>fc</sub>	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	1.07	1.04	1.01	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.94	.92	.91	.89
2.0	.97	.91	.87	.95	.90	.86	.92	.87	.84	.88	.85	.82	.86	.83	.80	.78
3.0	.88	.81	.76	.86	.80	.75	.83	.78	.74	.81	.76	.73	.78	.75	.72	.70
4.0	.80	.73	.67	.79	.72	.67	.76	.71	.66	.74	.69	.65	.72	.68	.64	.63
5.0	.73	.66	.60	.72	.65	.60	.70	.64	.60	.69	.63	.59	.67	.62	.58	.57
6.0	.68	.60	.55	.67	.60	.55	.65	.59	.54	.64	.58	.54	.62	.57	.53	.52
7.0	.63	.55	.50	.62	.55	.50	.60	.54	.50	.59	.53	.49	.58	.53	.49	.47
8.0	.58	.51	.46	.58	.51	.46	.56	.50	.46	.55	.50	.45	.54	.49	.45	.43
9.0	.54	.47	.42	.54	.47	.42	.53	.47	.42	.52	.46	.42	.51	.46	.42	.40
10.0	.51	.44	.39	.50	.44	.39	.49	.43	.39	.49	.43	.39	.48	.43	.39	.37



C Range: 0 - 90DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2019-12-26

γ Range:-90 - 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:

# 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	.243	.138	.044	.236	.135	.043	.223	.128	.041	.212	.122	.039	.201	.116	.037															
2.0	.231	.126	.039	.225	.124	.038	.214	.119	.037	.203	.114	.036	.194	.110	.035															
3.0	.216	.115	.034	.211	.113	.034	.201	.109	.033	.192	.105	.032	.184	.102	.032															
4.0	.202	.105	.031	.198	.103	.031	.189	.100	.030	.181	.097	.029	.174	.095	.029															
5.0	.189	.097	.028	.185	.095	.028	.178	.093	.027	.171	.090	.027	.164	.088	.026															
6.0	.178	.089	.026	.174	.088	.025	.168	.086	.025	.161	.084	.025	.156	.082	.024															
7.0	.167	.083	.023	.164	.082	.023	.158	.080	.023	.153	.078	.023	.148	.077	.023															
8.0	.158	.077	.022	.155	.076	.022	.150	.075	.021	.145	.073	.021	.140	.072	.021															
9.0	.149	.072	.020	.147	.072	.020	.142	.070	.020	.138	.069	.020	.133	.068	.020															
10.0	.142	.068	.019	.139	.067	.019	.135	.066	.019	.131	.065	.018	.127	.064	.018															

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	.176	.157	.140	.150	.135	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016	
2.0	.164	.132	.105	.141	.114	.091	.096	.079	.064	.056	.046	.037	.018	.015	.012	
3.0	.154	.114	.082	.132	.098	.071	.091	.068	.050	.052	.040	.029	.017	.013	.010	
4.0	.145	.100	.065	.125	.086	.057	.086	.060	.040	.050	.035	.024	.016	.011	.008	
5.0	.137	.089	.053	.118	.077	.046	.081	.054	.033	.047	.032	.019	.015	.010	.006	
6.0	.130	.080	.044	.112	.069	.039	.077	.049	.027	.045	.029	.016	.014	.009	.005	
7.0	.124	.073	.038	.106	.063	.033	.073	.044	.023	.043	.026	.014	.014	.009	.005	
8.0	.117	.067	.032	.101	.058	.028	.070	.041	.020	.041	.024	.012	.013	.008	.004	
9.0	.112	.062	.028	.096	.054	.025	.067	.038	.017	.039	.022	.010	.013	.007	.003	
10.0	.107	.058	.025	.092	.050	.022	.064	.035	.015	.037	.021	.009	.012	.007	.003	

C Range: 0 - 90DEG  
 C Interval: 5.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:  
 Test Date:2019-12-26

γ Range:-90 - 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:

# 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	19.3	20.6	19.6	20.9	21.3	19.9	21.2	20.2	21.5	21.9
3H	20.8	22.0	21.1	22.3	22.7	21.1	22.3	21.5	22.6	23.0
4H	21.4	22.5	21.8	22.8	23.2	21.6	22.7	22.0	23.1	23.5
6H	21.9	22.9	22.3	23.3	23.7	22.0	23.1	22.5	23.5	23.8
8H	22.1	23.1	22.5	23.4	23.8	22.2	23.2	22.6	23.6	24.0
12H	22.2	23.1	22.6	23.5	23.9	22.4	23.3	22.8	23.7	24.1
4H 2H	19.8	20.9	20.2	21.3	21.7	20.3	21.4	20.7	21.8	22.1
3H	21.5	22.4	21.9	22.8	23.2	21.7	22.7	22.2	23.1	23.5
4H	22.2	23.1	22.7	23.5	23.9	22.4	23.2	22.8	23.6	24.1
6H	22.9	23.6	23.3	24.0	24.5	22.9	23.7	23.4	24.1	24.6
8H	23.1	23.8	23.6	24.2	24.7	23.2	23.9	23.6	24.3	24.8
12H	23.3	23.9	23.7	24.3	24.8	23.4	24.0	23.9	24.5	24.9
8H 4H	22.5	23.1	22.9	23.6	24.1	22.6	23.2	23.0	23.7	24.2
6H	23.2	23.8	23.7	24.3	24.8	23.3	23.9	23.8	24.3	24.8
8H	23.6	24.0	24.1	24.6	25.1	23.6	24.1	24.1	24.6	25.1
12H	23.8	24.2	24.3	24.7	25.3	23.9	24.4	24.4	24.8	25.4
12H 4H	22.5	23.1	23.0	23.6	24.0	22.6	23.2	23.1	23.7	24.1
6H	23.3	23.8	23.8	24.3	24.8	23.3	23.8	23.9	24.3	24.9
8H	23.7	24.1	24.2	24.6	25.2	23.7	24.2	24.2	24.7	25.2
CIE190: 2010										

CIE190: 2010  
Area: 0.3315 m2

C Range: 0 - 90DEG  
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Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2019-12-26

$\gamma$  Range:-90 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:9.470m [K=1.0000]  
Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

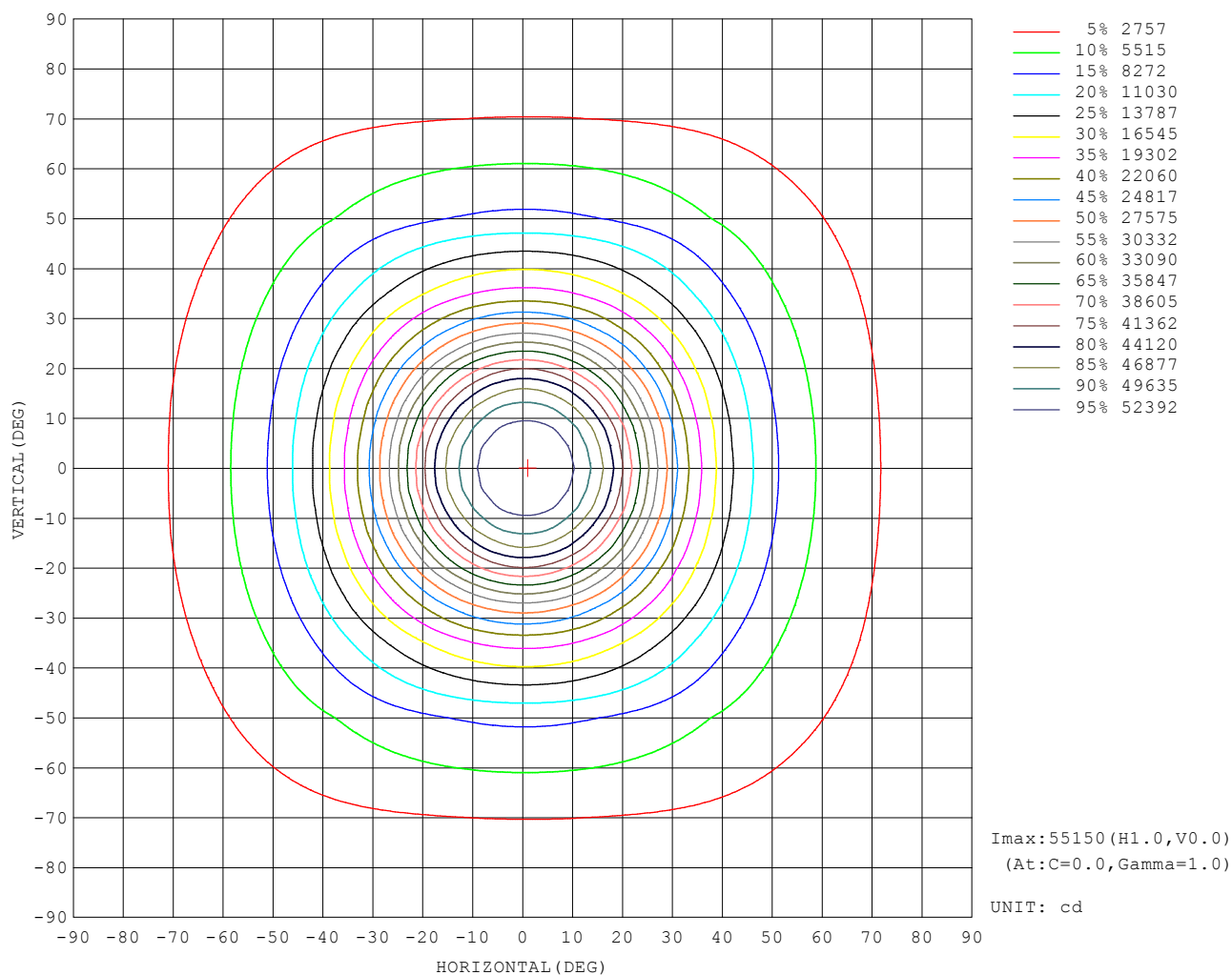
## UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	71	62	56	70	61	56	69	61	56	51
0.80	80	71	65	79	71	65	78	70	65	59
1.00	87	78	73	86	78	73	84	79	72	66
1.25	93	85	79	91	84	79	89	83	78	72
1.50	97	89	84	95	88	83	93	87	82	76
2.00	102	95	90	100	94	90	97	92	88	81
2.50	104	99	94	103	97	93	99	95	91	84
3.00	107	102	98	105	100	96	101	97	94	87
4.00	110	106	102	108	104	101	104	101	98	90
5.00	112	108	105	109	106	103	105	103	100	92
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 90DEG  
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$\gamma$  Range: -90 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
 Humidity: 65.0%  
 Test Distance: 9.470m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

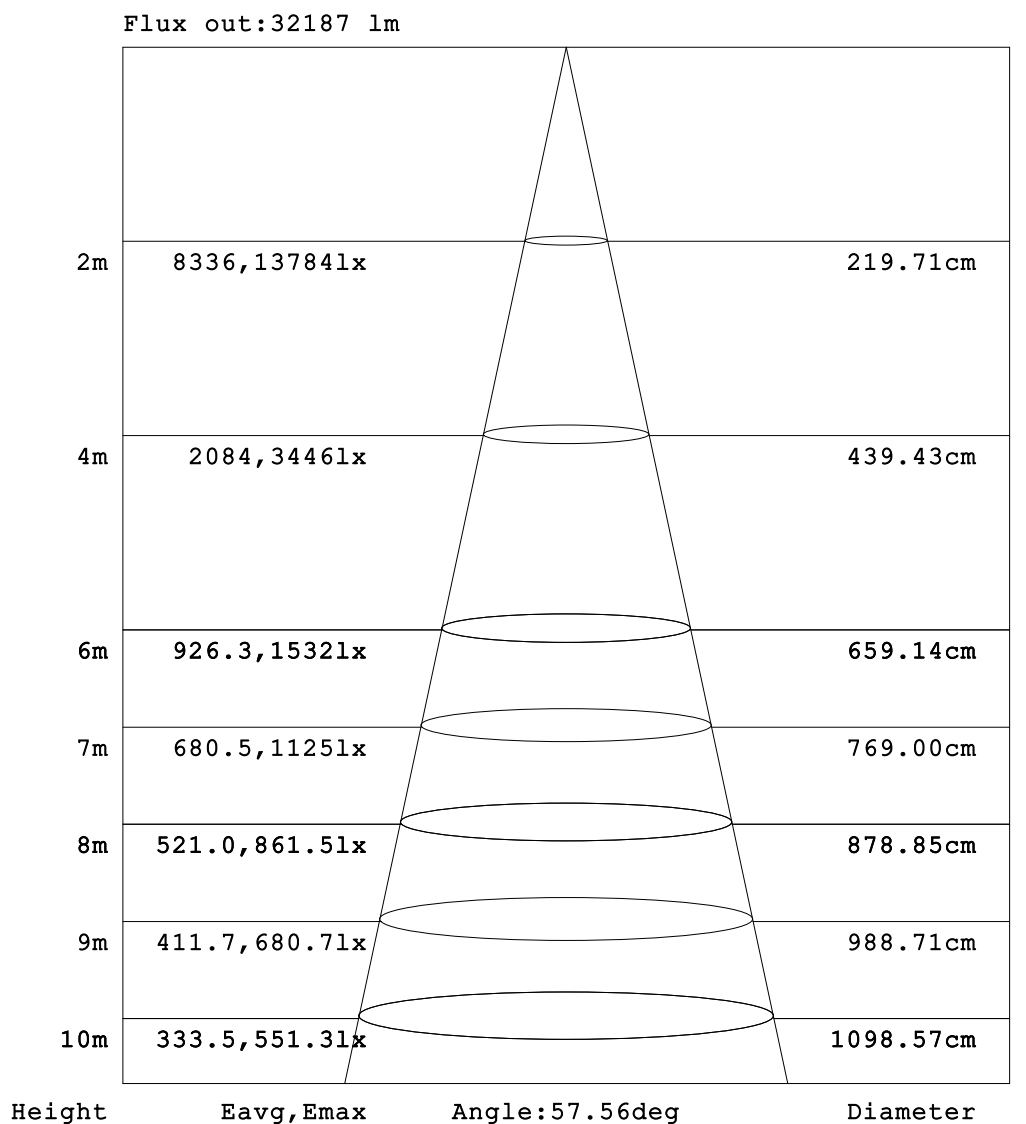


C Range: 0 - 90DEG  
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Test Speed: HIGH  
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Humidity: 65.0%  
Test Distance: 9.470m [K=1.0000]  
Remarks:



## AAI Figure



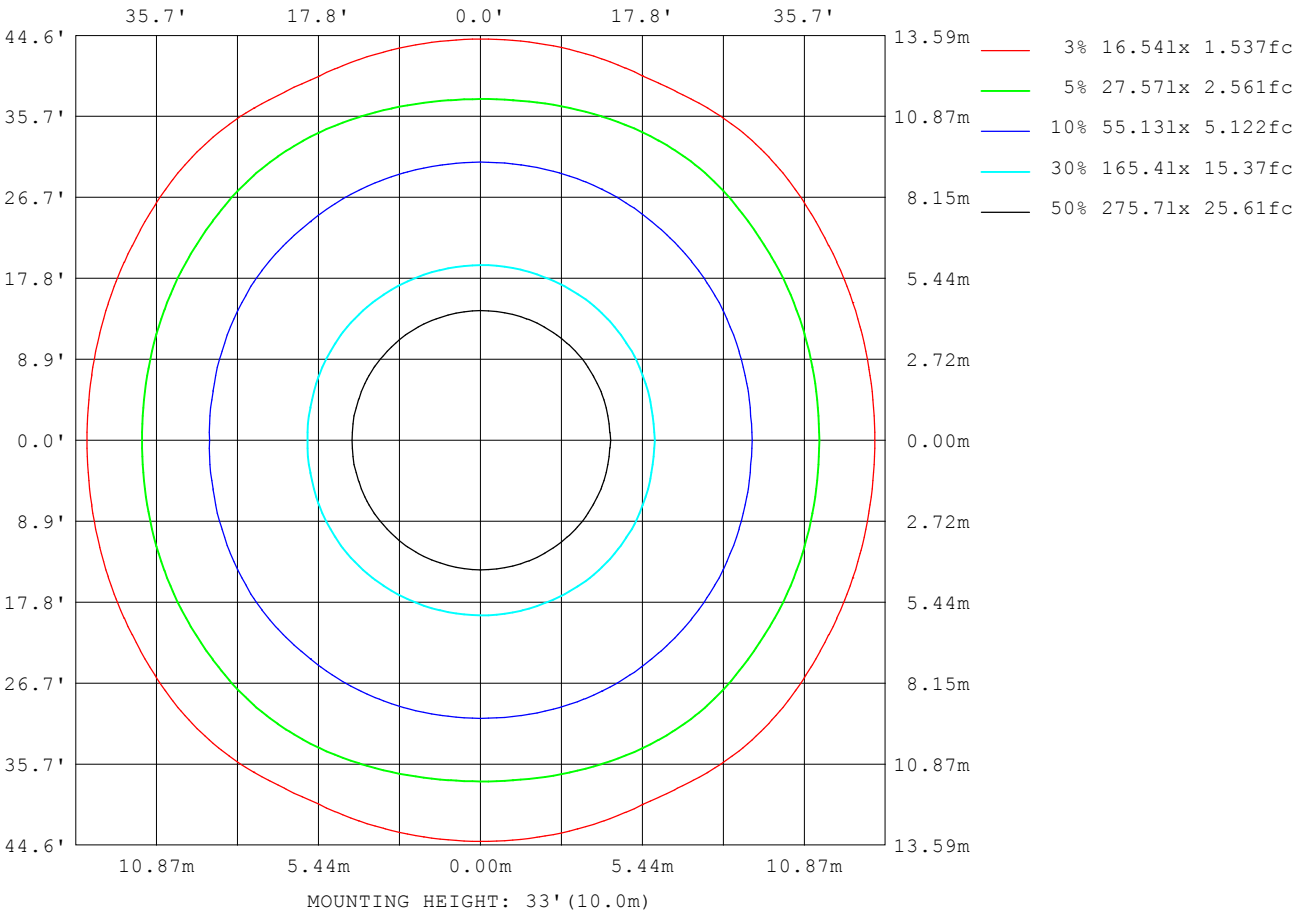
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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C Interval: 5.0DEG  
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Temperature:25.3DEG  
Operators:  
Test Date:2019-12-26

$\gamma$  Range:-90 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity:65.0%  
Test Distance:9.470m [K=1.0000]  
Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

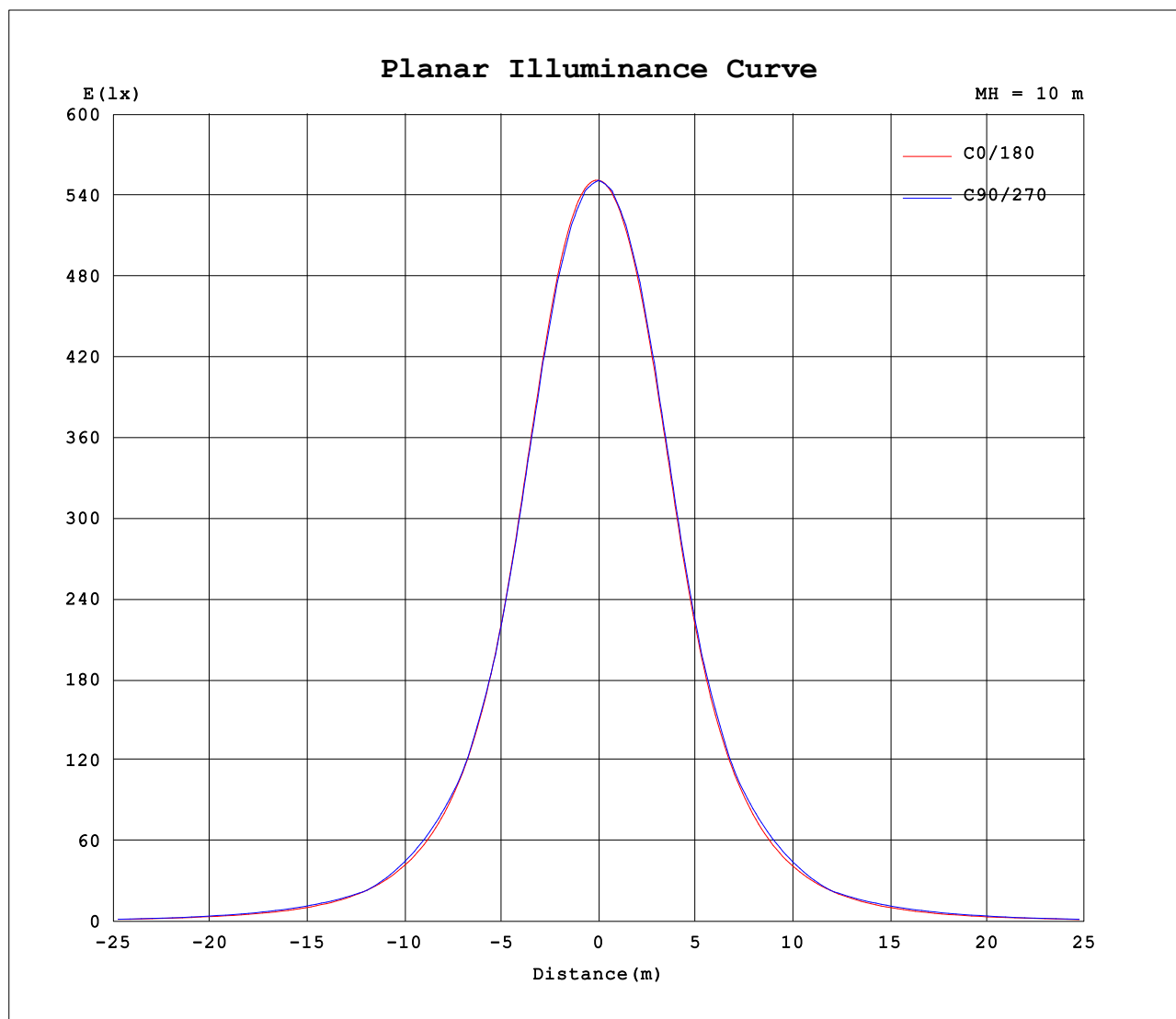
ISOLUX DIAGRAM



C Range: 0 - 90DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:  
Test Date:2019-12-26

γ Range:-90 - 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:

## Planar Illuminance Curve



C Range: 0 - 90DEG  
C Interval: 5.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators:  
Test Date: 2019-12-26

$\gamma$  Range: -90 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.295  
Humidity: 65.0%  
Test Distance: 9.470m [K=1.0000]  
Remarks: