

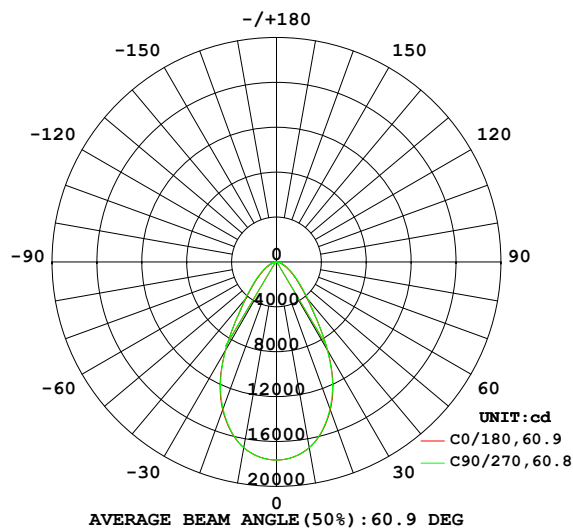
## EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## LUMINAIRE PHOTOMETRIC TEST REPORT

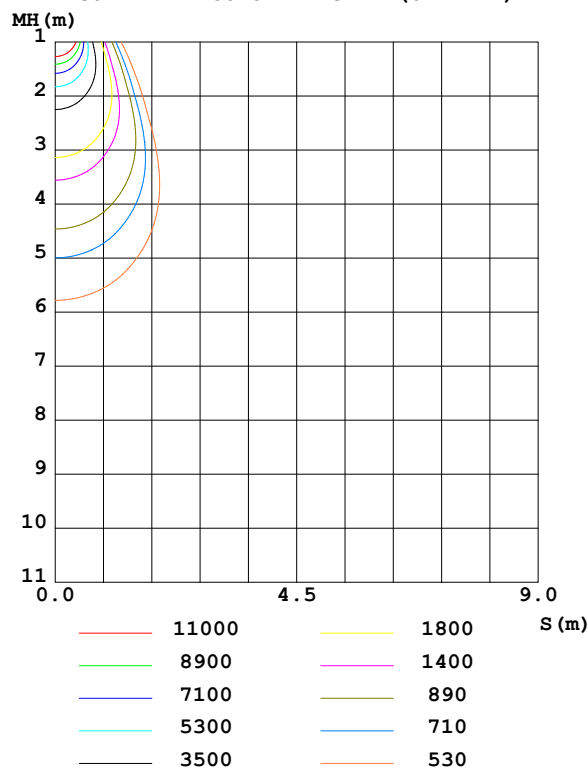
Test:U:229.8V I:0.451A P:100.8W PF:0.973 Freq:50.01Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:20450.4x1 lm		
NAME: HB68-100H-5070-H00196	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 202.97 lm/W			
MODEL	/	Imax (cd)	17649	S/MH (C0/180)	0.91
NOMINAL POWER (W)	/	LOR (%)	100.0	S/MH (C90/270)	0.91
RATED VOLTAGE (V)	/	TOTAL FLUX (lm)	20450	$\eta$ UP, DN (C0-180)	0.0, 50.0
NOMINAL FLUX (lm)	20450.4	CIE CLASS	DIRECT	$\eta$ UP, DN (C180-360)	0.0, 50.0
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE (V)	/	$\eta$ down (%)	100.0	CIBSE SHR MAX	0.95

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: ZZX  
Test Date: 2023-06-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 26.000m [K=0.4556]  
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	1680	1680	1680	1680	1680	1680	1680	1680	0- 10	1645	1645	8.04,8.04
20	1401	1395	1393	1395	1401	1395	1393	1395	10- 20	4360	6005	29.4,29.4
30	910.7	901.3	906.5	901.3	910.7	901.3	906.5	901.3	20- 30	5349	11355	55.5,55.5
40	426.6	414.3	441.6	414.3	426.6	414.3	441.6	414.3	30- 40	3929	15283	74.7,74.7
50	220.5	217.1	231.3	217.1	220.5	217.1	231.3	217.1	40- 50	2359	17642	86.3,86.3
60	111.6	110.7	117.8	110.7	111.6	110.7	117.8	110.7	50- 60	1434	19076	93.3,93.3
70	54.45	53.77	56.07	53.77	54.45	53.77	56.07	53.77	60- 70	796.5	19872	97.2,97.2
80	28.58	28.46	29.14	28.46	28.58	28.46	29.14	28.46	70- 80	429.8	20302	99.3,99.3
90	0.3458	0.8824	1.371	0.8824	0.3458	0.8824	1.371	0.8824	80- 90	148.1	20450	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:X10cd									UNIT:lm		

Conical surface Flux(90deg): 16603 lm

%lum = 81.2%

%lamp = 81.2%

Conical surface Flux(120deg): 19076 lm

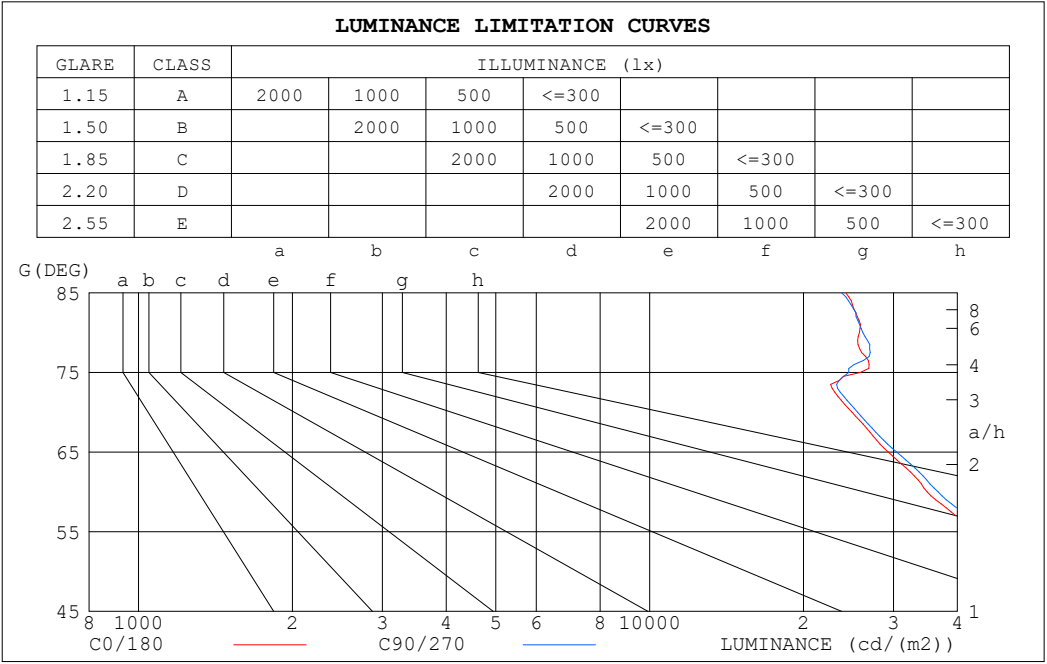
%lum = 93.3%

%lamp = 93.3%

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:ZZX  
Test Date:2023-06-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity:65.0%  
Test Distance:26.000m [K=0.4556]  
Remarks:

LUMINANCE LIMITATION CURVES



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	24200	23746
80	25729	26130
75	25839	24519
70	24890	25523
65	29304	30426
60	34906	36681
55	43111	45220
50	53621	56026
45	66606	69129

C Range: 0 - 360DEG

C Interval: 10.0DEG

Test Speed: HIGH

Temperature:25.3℃

Operators:ZZX

Test Date:2023-06-21

γ Range: 0 - 90DEG

γ Interval: 0.5DEG

Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465

Humidity:65.0%

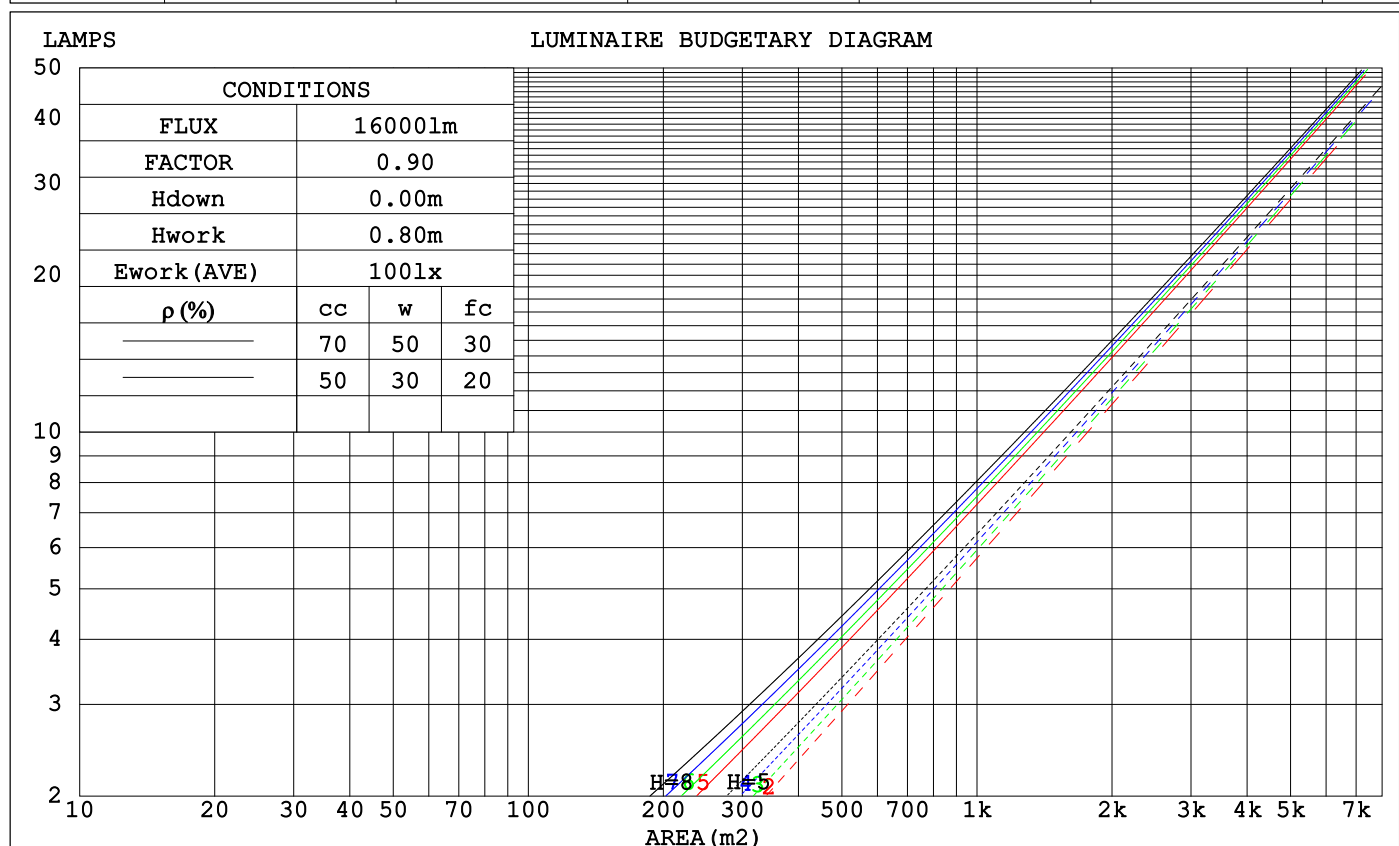
Test Distance:26.000m [K=0.4556]

Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	1.08	1.05	1.03	1.06	1.03	1.01	1.02	.00	.98	.98	.97	.95	.95	.93	.92	.90
2.0	.99	.94	.90	.97	.92	.89	.94	.90	.87	.91	.87	.85	.88	.85	.83	.81
3.0	.90	.84	.79	.89	.83	.79	.86	.81	.77	.84	.80	.76	.81	.78	.75	.73
4.0	.83	.76	.71	.82	.76	.71	.80	.74	.70	.77	.73	.69	.75	.72	.68	.67
5.0	.77	.70	.65	.76	.69	.64	.74	.68	.64	.72	.67	.63	.70	.66	.62	.61
6.0	.71	.64	.59	.70	.64	.59	.69	.63	.58	.67	.62	.58	.66	.61	.57	.56
7.0	.66	.59	.54	.65	.59	.54	.64	.58	.54	.63	.57	.53	.61	.57	.53	.51
8.0	.62	.55	.50	.61	.55	.50	.60	.54	.50	.59	.53	.49	.58	.53	.49	.48
9.0	.58	.51	.46	.57	.51	.46	.56	.50	.46	.55	.50	.46	.54	.49	.46	.44
10.0	.54	.48	.43	.54	.48	.43	.53	.47	.43	.52	.47	.43	.51	.46	.43	.41



C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:ZZX  
 Test Date:2023-06-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
 Humidity:65.0%  
 Test Distance:26.000m [K=0.4556]  
 Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

## WEC AND CCEC

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients (WEC)									
0.0																
1.0	.222	.126	.040	.215	.123	.039	.203	.116	.037	.191	.110	.035	.180	.104	.034	
2.0	.212	.116	.036	.206	.113	.035	.195	.108	.034	.185	.104	.032	.175	.099	.031	
3.0	.199	.106	.032	.194	.104	.031	.185	.100	.030	.176	.096	.030	.168	.093	.029	
4.0	.188	.098	.029	.183	.096	.028	.175	.093	.028	.167	.090	.027	.160	.087	.026	
5.0	.177	.090	.026	.173	.089	.026	.166	.086	.025	.159	.084	.025	.152	.081	.024	
6.0	.167	.084	.024	.163	.083	.024	.157	.080	.023	.151	.078	.023	.145	.076	.023	
7.0	.158	.078	.022	.155	.077	.022	.149	.075	.022	.144	.074	.021	.139	.072	.021	
8.0	.149	.073	.021	.147	.072	.020	.142	.071	.020	.137	.069	.020	.132	.068	.020	
9.0	.142	.069	.019	.139	.068	.019	.135	.067	.019	.131	.065	.019	.126	.064	.019	
10.0	.135	.065	.018	.133	.064	.018	.129	.063	.018	.125	.062	.018	.121	.061	.017	

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	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	.174	.157	.141	.149	.135	.122	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.162	.132	.108	.138	.114	.093	.095	.079	.065	.055	.046	.038	.018	.015	.012	
3.0	.151	.114	.084	.129	.098	.073	.089	.068	.051	.051	.040	.030	.016	.013	.010	
4.0	.142	.100	.067	.122	.086	.059	.084	.060	.041	.048	.035	.024	.016	.011	.008	
5.0	.134	.088	.055	.115	.077	.048	.079	.053	.034	.046	.031	.020	.015	.010	.007	
6.0	.126	.080	.046	.109	.069	.040	.075	.048	.028	.043	.028	.017	.014	.009	.006	
7.0	.120	.072	.039	.103	.063	.034	.071	.044	.024	.041	.026	.014	.013	.008	.005	
8.0	.114	.066	.033	.098	.057	.029	.068	.040	.021	.040	.024	.012	.013	.008	.004	
9.0	.109	.061	.029	.094	.053	.025	.065	.037	.018	.038	.022	.011	.012	.007	.004	
10.0	.104	.057	.026	.089	.049	.022	.062	.035	.016	.036	.021	.009	.012	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:ZZX  
 Test Date:2023-06-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
 Humidity:65.0%  
 Test Distance:26.000m [K=0.4556]  
 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	22.3	23.5	22.7	23.8	24.2	22.0	23.3	22.4	23.6	23.9
3H	23.3	24.4	23.7	24.7	25.1	23.1	24.2	23.5	24.5	24.9
4H	23.7	24.7	24.1	25.1	25.4	23.5	24.6	23.9	24.9	25.3
6H	24.1	25.1	24.5	25.4	25.8	24.0	25.0	24.5	25.4	25.8
8H	24.3	25.2	24.7	25.6	26.0	24.2	25.1	24.6	25.5	25.9
12H	24.4	25.3	24.8	25.6	26.1	24.3	25.2	24.8	25.6	26.0
4H 2H	22.6	23.6	23.0	23.9	24.3	22.4	23.4	22.8	23.7	24.1
3H	23.7	24.6	24.2	25.0	25.4	23.6	24.4	24.0	24.9	25.3
4H	24.3	25.1	24.7	25.5	25.9	24.2	24.9	24.6	25.4	25.8
6H	24.9	25.6	25.4	26.0	26.5	24.9	25.5	25.3	26.0	26.4
8H	25.1	25.8	25.6	26.2	26.7	25.1	25.7	25.6	26.2	26.6
12H	25.3	25.9	25.8	26.3	26.8	25.3	25.8	25.8	26.3	26.8
8H 4H	24.5	25.1	25.0	25.6	26.0	24.4	25.0	24.9	25.5	25.9
6H	25.3	25.8	25.8	26.3	26.7	25.2	25.7	25.7	26.2	26.7
8H	25.6	26.0	26.1	26.5	27.0	25.6	26.0	26.1	26.5	27.0
12H	25.8	26.2	26.4	26.7	27.3	25.8	26.2	26.3	26.7	27.3
12H 4H	24.5	25.1	25.0	25.5	26.0	24.4	25.0	24.9	25.4	25.9
6H	25.3	25.8	25.9	26.2	26.8	25.3	25.7	25.8	26.2	26.7
8H	25.7	26.1	26.2	26.6	27.2	25.7	26.1	26.2	26.6	27.1
CIE190: 2010										

CIE190: 2010  
Area: 0.0642 m2

C Range: 0 - 360DEG  
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Test Speed: HIGH  
Temperature:25.3°C  
Operators:ZZX  
Test Date:2023-06-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity:65.0%  
Test Distance:26.000m [K=0.4556]  
Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

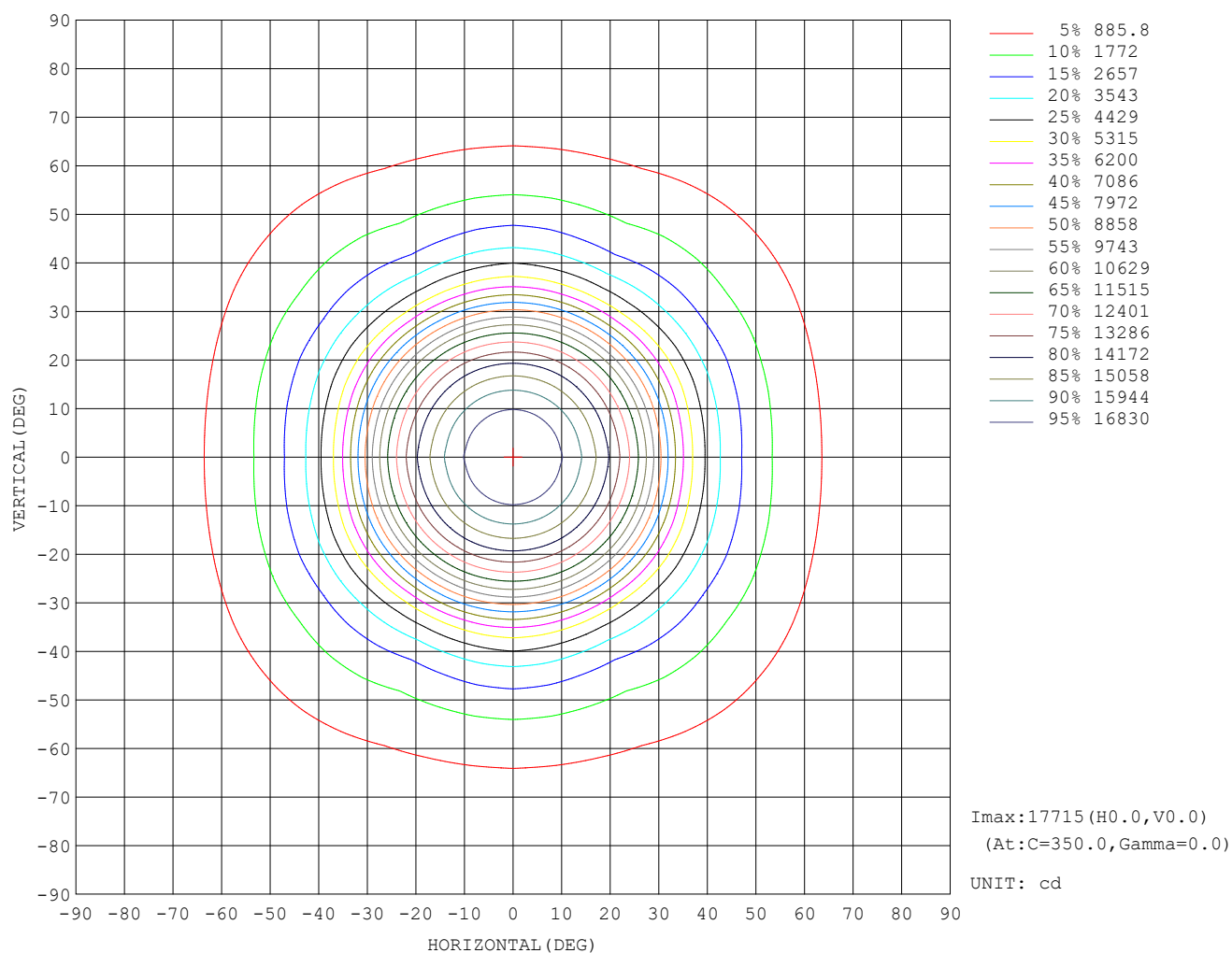
## UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	76	67	62	75	67	62	74	67	62	57
0.80	84	76	71	84	76	71	82	75	71	66
1.00	91	83	78	90	83	78	88	83	77	72
1.25	96	89	84	95	88	84	93	87	83	78
1.50	100	93	88	98	92	88	96	91	87	81
2.00	104	98	94	102	97	93	99	95	92	85
2.50	106	101	97	104	100	96	101	97	94	87
3.00	108	104	100	107	102	99	103	100	97	90
4.00	111	107	104	109	106	103	105	102	100	92
5.00	113	109	107	110	108	105	106	104	102	94
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004						Suspended			SHRNOM = 1.25	

C Range: 0 - 360DEG  
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 Test Date: 2023-06-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 26.000m [K=0.4556]  
 Remarks:

## ISOCANDELA DIAGRAM

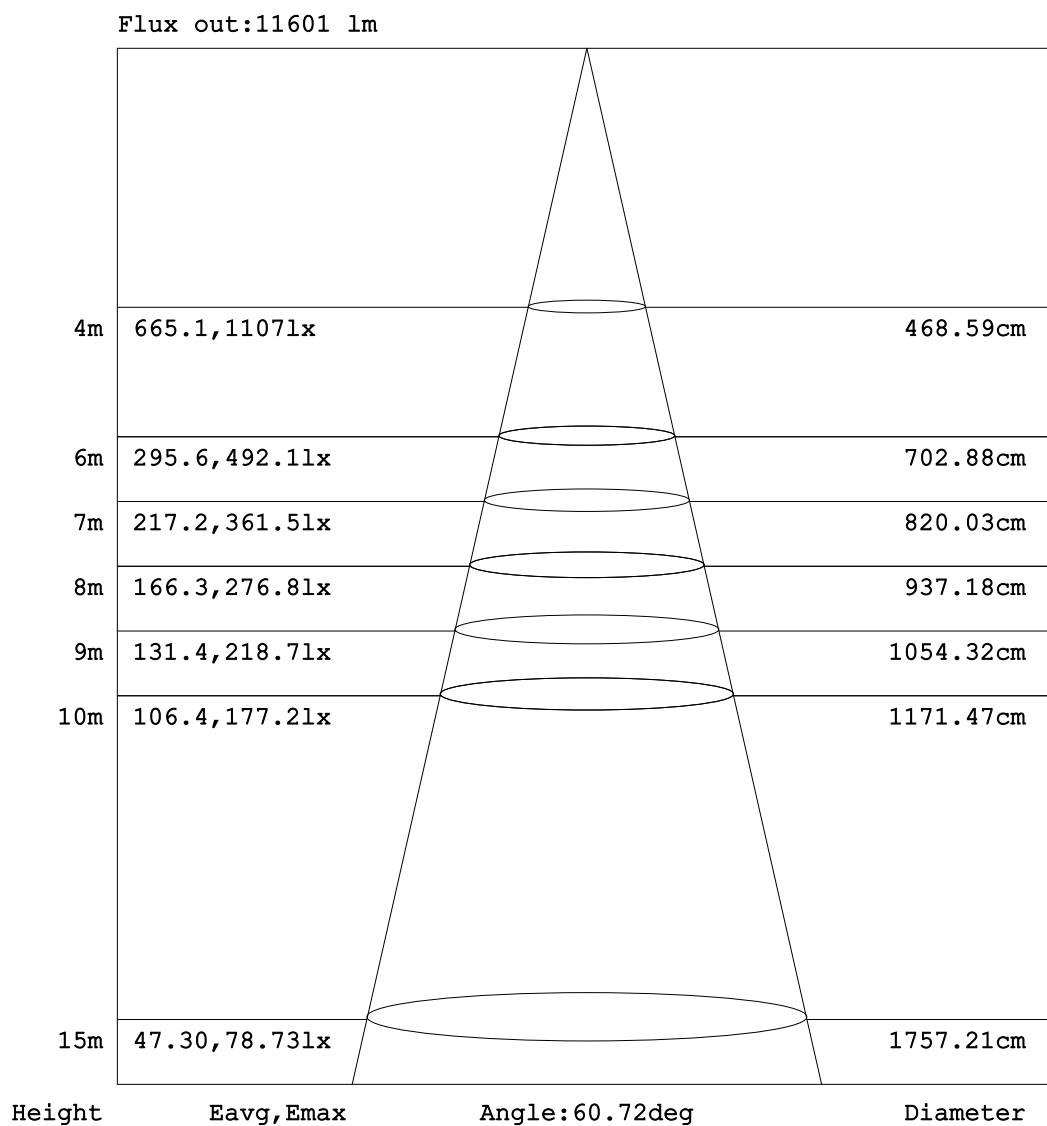


C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:ZZX  
Test Date:2023-06-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity:65.0%  
Test Distance:26.000m [K=0.4556]  
Remarks:



## AAI Figure



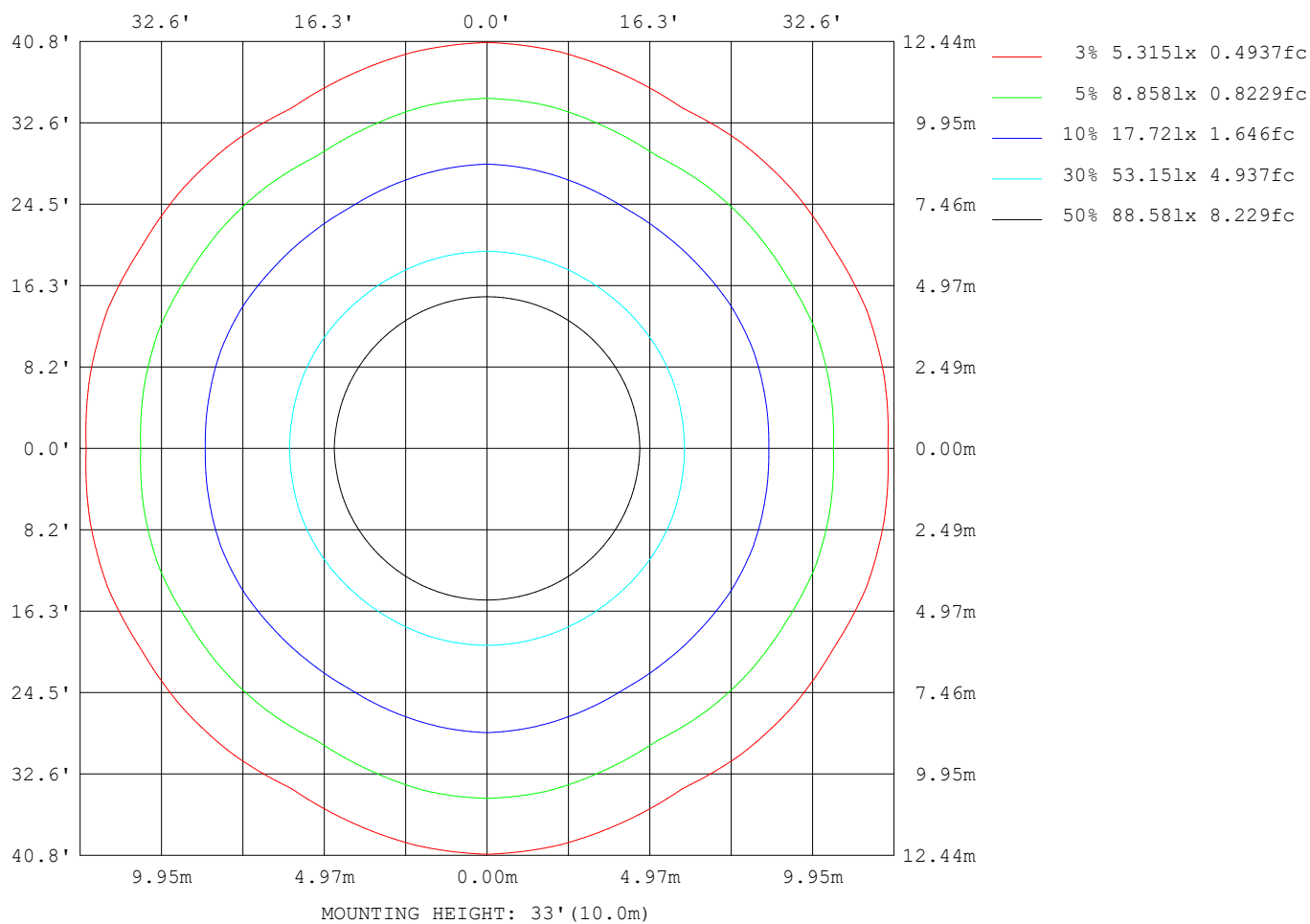
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: ZZX  
Test Date: 2023-06-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 26.000m [K=0.4556]  
Remarks:

# EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

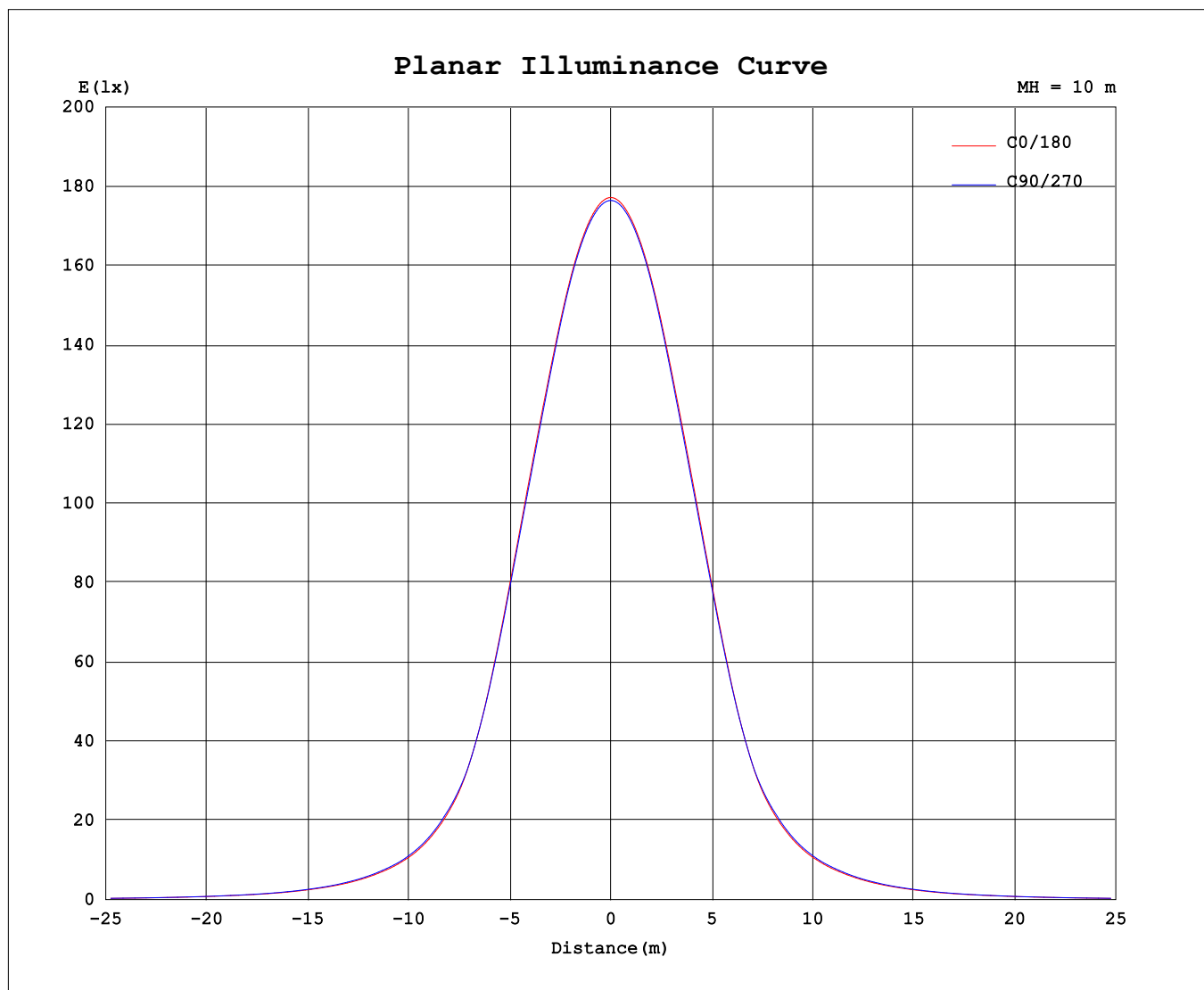
## ISOLUX DIAGRAM



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: ZZX  
Test Date: 2023-06-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 26.000m [K=0.4556]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: ZZX  
Test Date: 2023-06-21

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-R5000\_V2 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 26.000m [K=0.4556]  
Remarks: