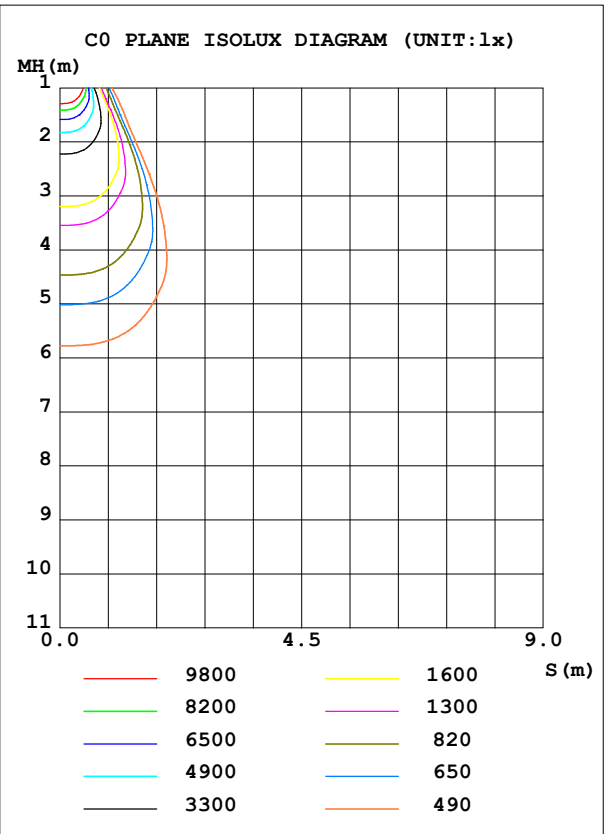
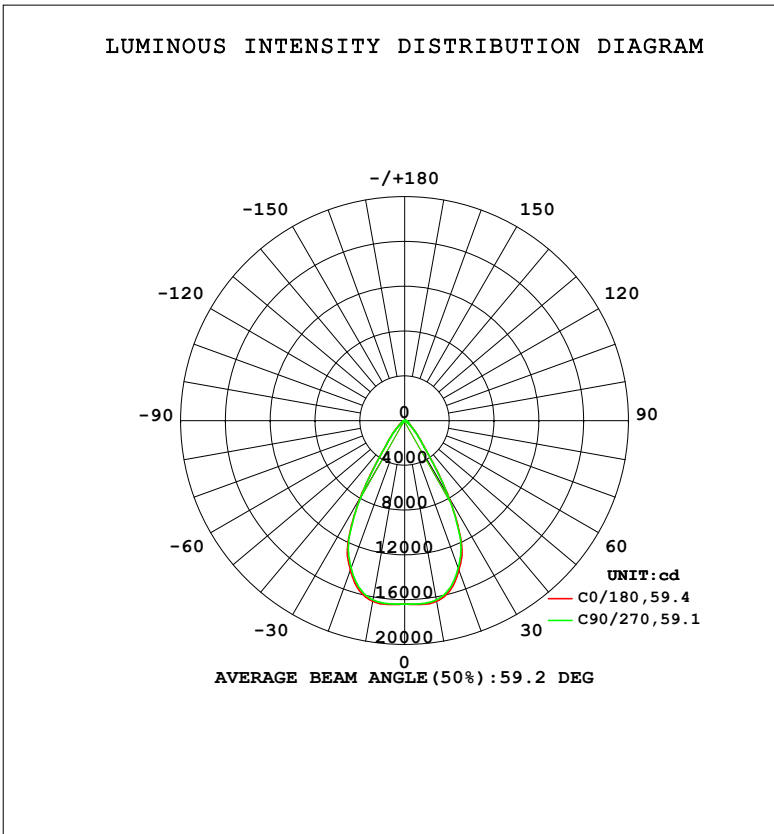


EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:229.9V I:0.4372A P:99.4W PF:0.9890 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:15233.2x1 lm		
NAME: HB45-100-5070-H04801	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	/	I <sub>max</sub> (cd)	16489	S/MH (C0/180)	0.87
NOMINAL POWER (W)	/	LOR (%)	100.0	S/MH (C90/270)	0.86
RATED VOLTAGE (V)	/	TOTAL FLUX (lm)	15233	η UP, DN (C0-180)	0.0,50.0
NOMINAL FLUX (lm)	15233.2	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	0.85



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:LCX  
 Test Date:2023-09-27

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity:65.0%  
 Test Distance:9.350m [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	1639	1631	1627	1631	1639	1631	1627	1631	0- 10	1566	1566	10.3,10.3
20	1421	1412	1401	1412	1421	1412	1401	1412	10- 20	4348	5914	38.8,38.8
30	793.2	786.4	782.3	786.4	793.2	786.4	782.3	786.4	20- 30	5246	11160	73.3,73.3
40	207.1	203.4	202.6	203.4	207.1	203.4	202.6	203.4	30- 40	2550	13710	90,90
50	65.68	61.87	62.37	61.87	65.68	61.87	62.37	61.87	40- 50	922.1	14632	96.1,96.1
60	24.17	23.58	23.16	23.58	24.17	23.58	23.16	23.58	50- 60	341.2	14974	98.3,98.3
70	12.04	12.06	12.20	12.06	12.04	12.06	12.20	12.06	60- 70	172.4	15146	99.4,99.4
80	3.021	3.003	3.055	3.003	3.021	3.003	3.055	3.003	70- 80	76.54	15223	99.9,99.9
90	0.1562	0.1552	0.1519	0.1552	0.1562	0.1552	0.1519	0.1552	80- 90	10.50	15233	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): 14287 lm

%lum = 93.8%

%lamp = 93.8%

Conical surface Flux(120deg): 14974 lm

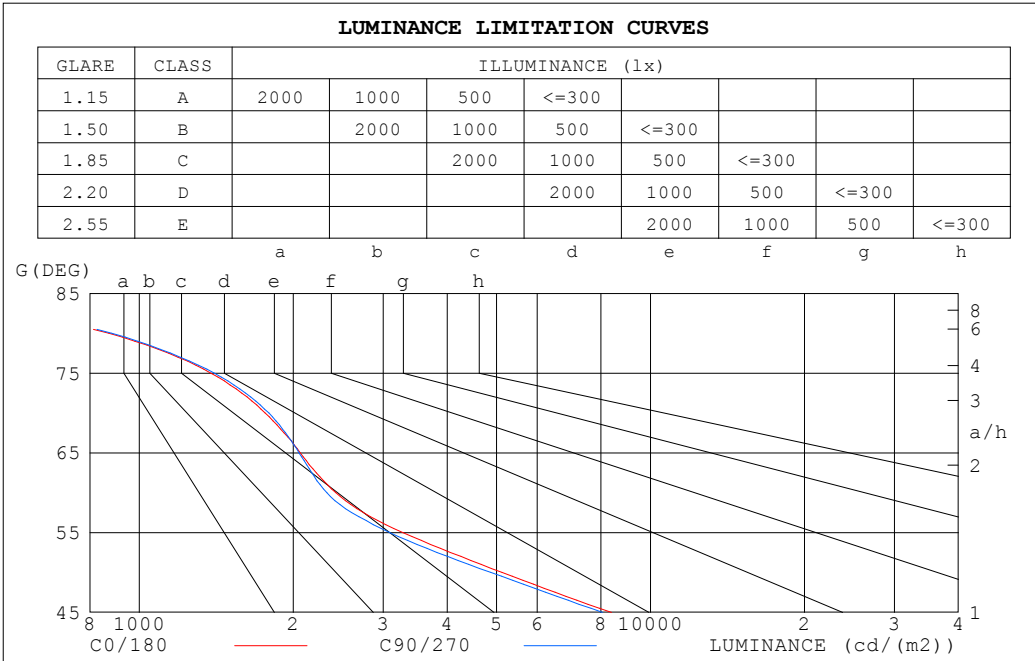
%lum = 98.3%

%lamp = 98.3%

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:LCX  
 Test Date:2023-09-27

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity:65.0%  
 Test Distance:9.350m [K=1.0000]  
 Remarks:

LUMINANCE LIMITATION CURVES



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	362	374
80	871	883
75	1381	1402
70	1763	1791
65	2065	2054
60	2421	2325
55	3281	3090
50	5118	4871
45	8387	8050

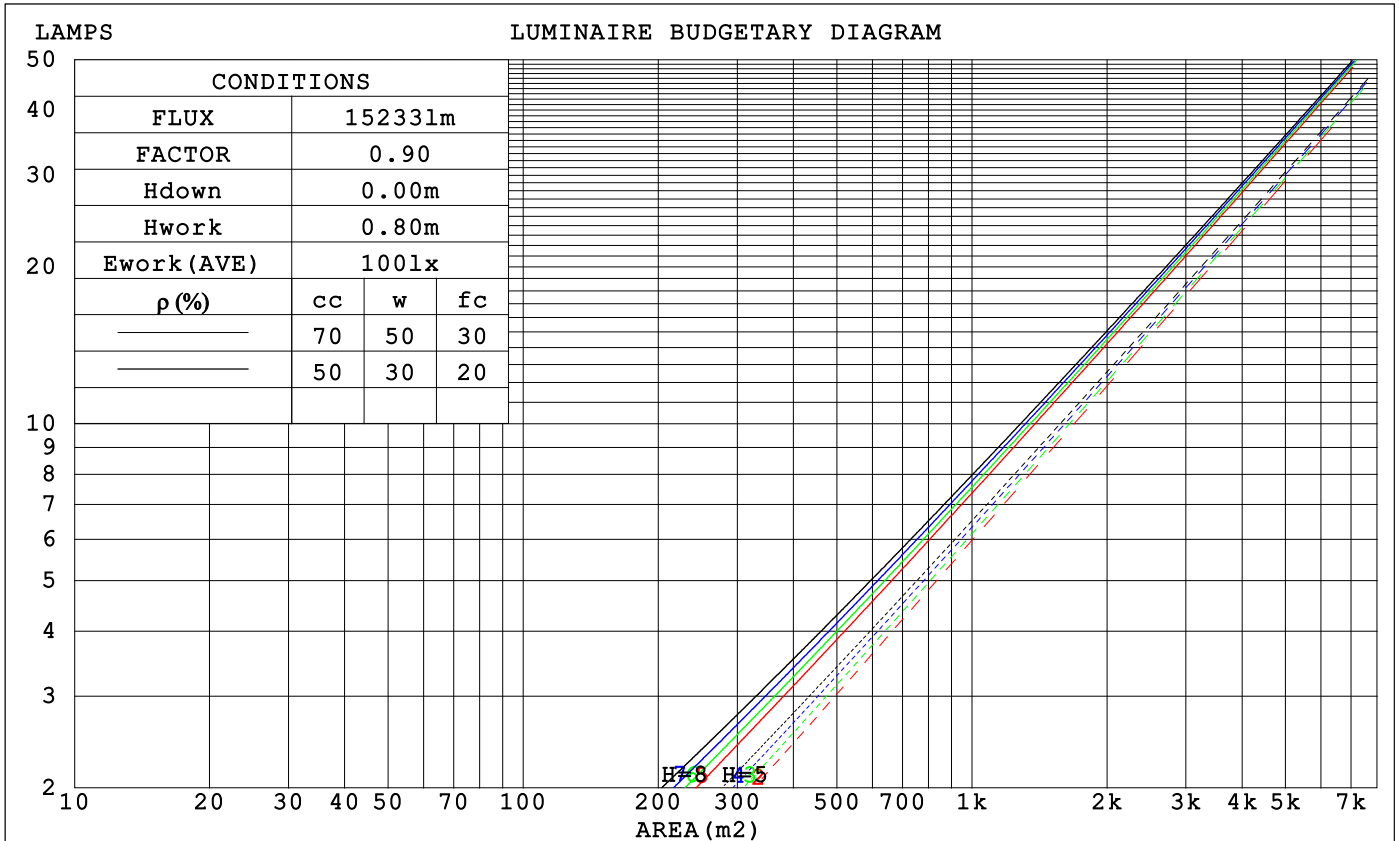
C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: LCX  
 Test Date: 2023-09-27

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 9.350m [K=1.0000]  
 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	.00
1.0	1.11	1.08	1.06	1.08	1.06	1.04	1.04	1.02	1.01	1.01	.99	.98	.97	.96	.95	.93
2.0	1.03	.99	.95	1.01	.97	.94	.98	.95	.92	.95	.92	.90	.92	.90	.88	.86
3.0	.96	.91	.86	.94	.90	.86	.92	.88	.84	.89	.86	.83	.87	.84	.82	.80
4.0	.89	.84	.79	.88	.83	.79	.86	.81	.78	.84	.80	.77	.82	.79	.76	.75
5.0	.84	.78	.73	.83	.77	.73	.81	.76	.72	.79	.75	.72	.78	.74	.71	.70
6.0	.78	.72	.68	.78	.72	.68	.76	.71	.67	.75	.70	.67	.73	.69	.66	.65
7.0	.74	.68	.63	.73	.67	.63	.72	.67	.63	.71	.66	.63	.69	.65	.62	.61
8.0	.70	.64	.59	.69	.63	.59	.68	.63	.59	.67	.62	.59	.66	.62	.59	.57
9.0	.66	.60	.56	.65	.60	.56	.64	.59	.55	.63	.59	.55	.63	.58	.55	.54
10.0	.62	.56	.53	.62	.56	.52	.61	.56	.52	.60	.55	.52	.59	.55	.52	.51



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:LCX  
 Test Date:2023-09-27

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity:65.0%  
 Test Distance:9.350m [K=1.0000]  
 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	.183	.104	.033	.176	.100	.032	.163	.094	.030	.152	.087	.028	.141	.082	.026	
2.0	.175	.096	.029	.169	.093	.029	.158	.088	.027	.149	.083	.026	.140	.079	.025	
3.0	.166	.088	.026	.161	.086	.026	.152	.082	.025	.144	.079	.024	.136	.075	.023	
4.0	.158	.082	.024	.154	.080	.024	.146	.077	.023	.139	.074	.022	.132	.072	.022	
5.0	.150	.076	.022	.146	.075	.022	.140	.073	.021	.133	.070	.021	.127	.068	.020	
6.0	.143	.072	.021	.140	.071	.020	.134	.069	.020	.128	.067	.020	.123	.065	.019	
7.0	.136	.067	.019	.134	.067	.019	.128	.065	.019	.123	.063	.018	.119	.062	.018	
8.0	.130	.064	.018	.128	.063	.018	.123	.062	.018	.119	.060	.017	.114	.059	.017	
9.0	.125	.060	.017	.123	.060	.017	.118	.058	.017	.114	.057	.016	.110	.056	.016	
10.0	.120	.057	.016	.118	.057	.016	.114	.056	.016	.110	.055	.016	.107	.054	.015	

$\rho_{cc}$	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	.172	.157	.144	.147	.135	.124	.100	.093	.086	.058	.054	.050	.019	.017	.016	
2.0	.157	.132	.112	.134	.114	.097	.092	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.144	.114	.089	.124	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010	
4.0	.134	.099	.072	.115	.086	.062	.079	.060	.044	.046	.035	.026	.015	.011	.009	
5.0	.126	.087	.059	.108	.076	.051	.074	.053	.036	.043	.031	.022	.014	.010	.007	
6.0	.118	.078	.049	.102	.068	.043	.070	.047	.030	.041	.028	.018	.013	.009	.006	
7.0	.112	.071	.042	.096	.061	.036	.066	.043	.026	.039	.025	.015	.012	.008	.005	
8.0	.106	.064	.036	.091	.056	.031	.063	.039	.022	.037	.023	.013	.012	.008	.004	
9.0	.101	.059	.031	.087	.051	.027	.060	.036	.019	.035	.021	.011	.011	.007	.004	
10.0	.096	.055	.027	.083	.048	.024	.058	.034	.017	.034	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: LCX  
 Test Date: 2023-09-27

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 9.350m [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	9.5	9.8	9.5	10.2	10.5	9.5	9.6	9.5	9.9	10.2
3H	9.9	10.8	10.3	11.1	11.5	9.7	10.6	10.1	10.9	11.3
4H	10.2	11.0	10.6	11.4	11.8	10.0	10.9	10.4	11.2	11.6
6H	10.3	11.0	10.7	11.4	11.8	10.1	10.9	10.6	11.3	11.7
8H	10.3	11.0	10.7	11.4	11.8	10.1	10.8	10.6	11.2	11.6
12H	10.2	10.9	10.7	11.3	11.7	10.1	10.8	10.5	11.1	11.6
4H 2H	9.5	9.9	9.5	10.3	10.7	9.5	9.7	9.5	10.1	10.5
3H	10.4	11.0	10.8	11.4	11.8	10.2	10.9	10.6	11.3	11.7
4H	10.7	11.3	11.2	11.7	12.2	10.6	11.2	11.0	11.6	12.1
6H	10.9	11.4	11.3	11.8	12.3	10.8	11.3	11.2	11.7	12.2
8H	10.9	11.3	11.3	11.8	12.3	10.7	11.2	11.2	11.7	12.1
12H	10.8	11.2	11.3	11.7	12.2	10.7	11.1	11.2	11.6	12.1
8H 4H	10.8	11.2	11.2	11.7	12.2	10.6	11.1	11.1	11.6	12.1
6H	11.0	11.3	11.5	11.8	12.3	10.8	11.2	11.4	11.7	12.2
8H	11.0	11.3	11.5	11.8	12.3	10.8	11.2	11.4	11.7	12.2
12H	10.9	11.2	11.5	11.7	12.3	10.8	11.1	11.3	11.6	12.2
12H 4H	10.7	11.1	11.2	11.6	12.1	10.6	11.0	11.1	11.5	12.0
6H	10.9	11.3	11.5	11.7	12.3	10.8	11.1	11.3	11.6	12.2
8H	10.9	11.2	11.5	11.7	12.3	10.8	11.1	11.4	11.6	12.2
CIE190: 2010										

CIE190: 2010  
 Area: 0.1992 m2

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:LCX  
 Test Date:2023-09-27

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity:65.0%  
 Test Distance:9.350m [K=1.0000]  
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

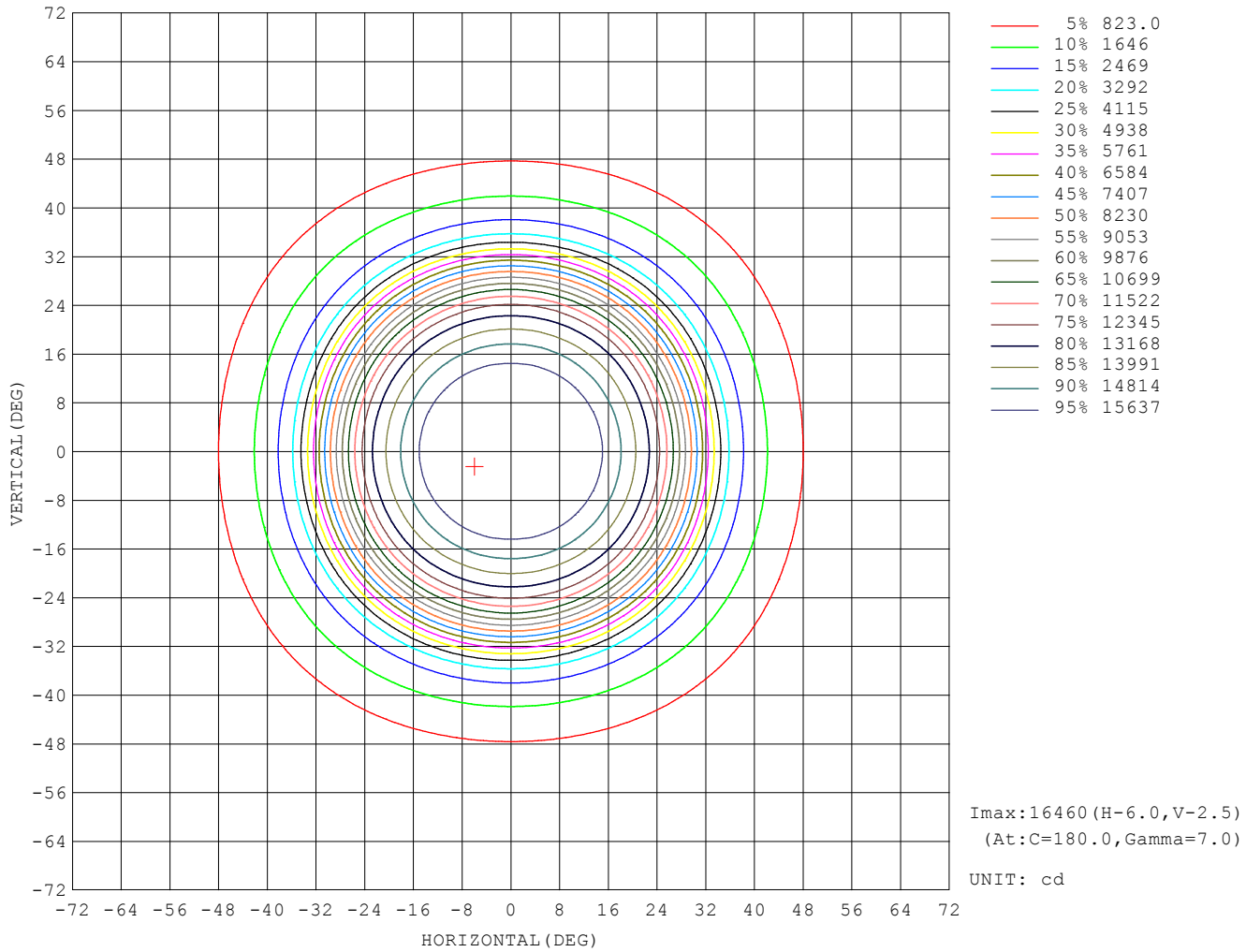
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	85	79	75	85	78	74	84	78	74	71
0.80	93	87	83	92	86	83	91	86	82	78
1.00	98	92	88	97	91	88	95	91	87	83
1.25	102	97	93	101	96	92	99	95	92	87
1.50	105	100	96	104	99	96	101	98	95	90
2.00	108	103	100	106	102	99	104	100	98	92
2.50	110	106	102	108	104	102	105	102	100	94
3.00	111	108	105	109	106	104	106	104	102	95
4.00	113	110	108	111	109	107	108	106	104	97
5.00	115	112	110	113	110	109	109	107	106	98
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: LCX  
 Test Date: 2023-09-27

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 9.350m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

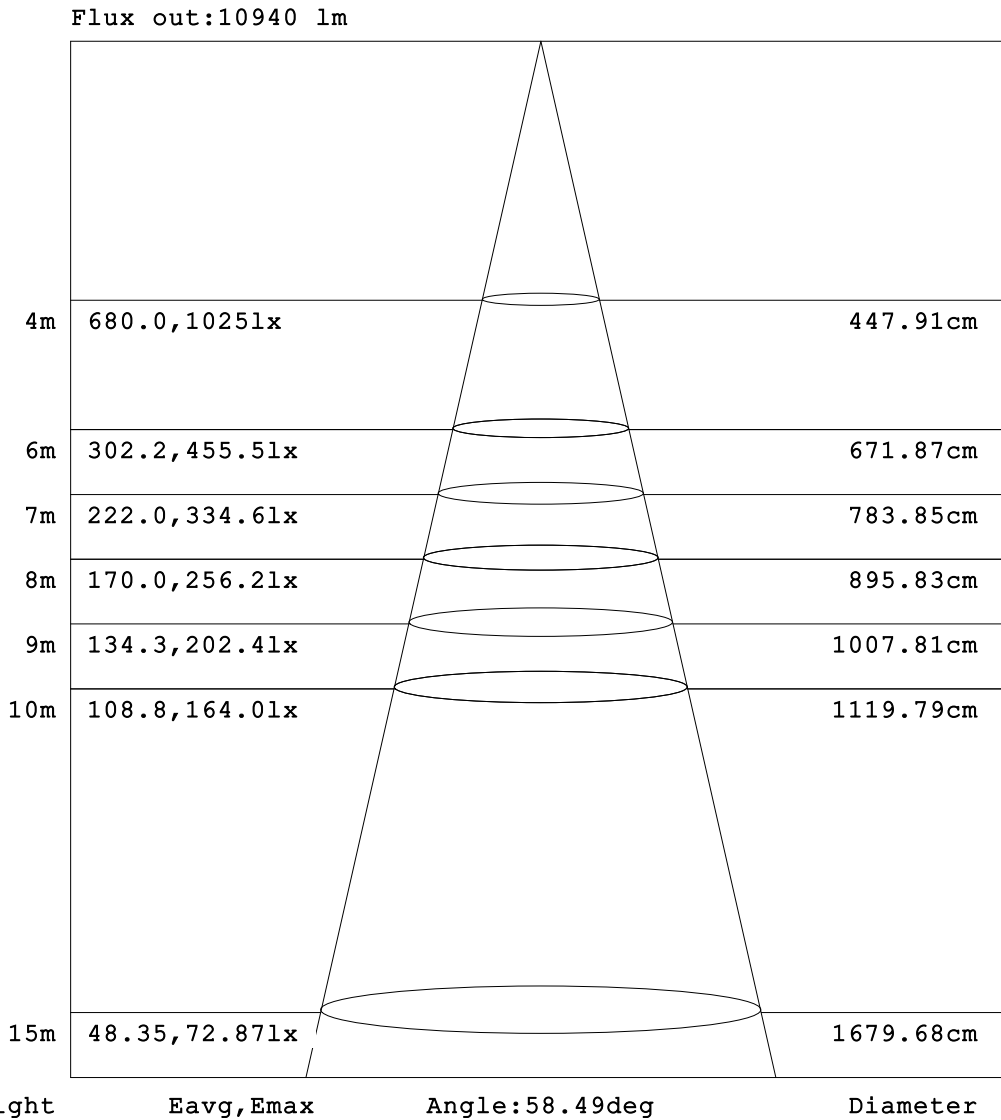


C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: LCX  
 Test Date: 2023-09-27

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 9.350m [K=1.0000]  
 Remarks:



AAI Figure



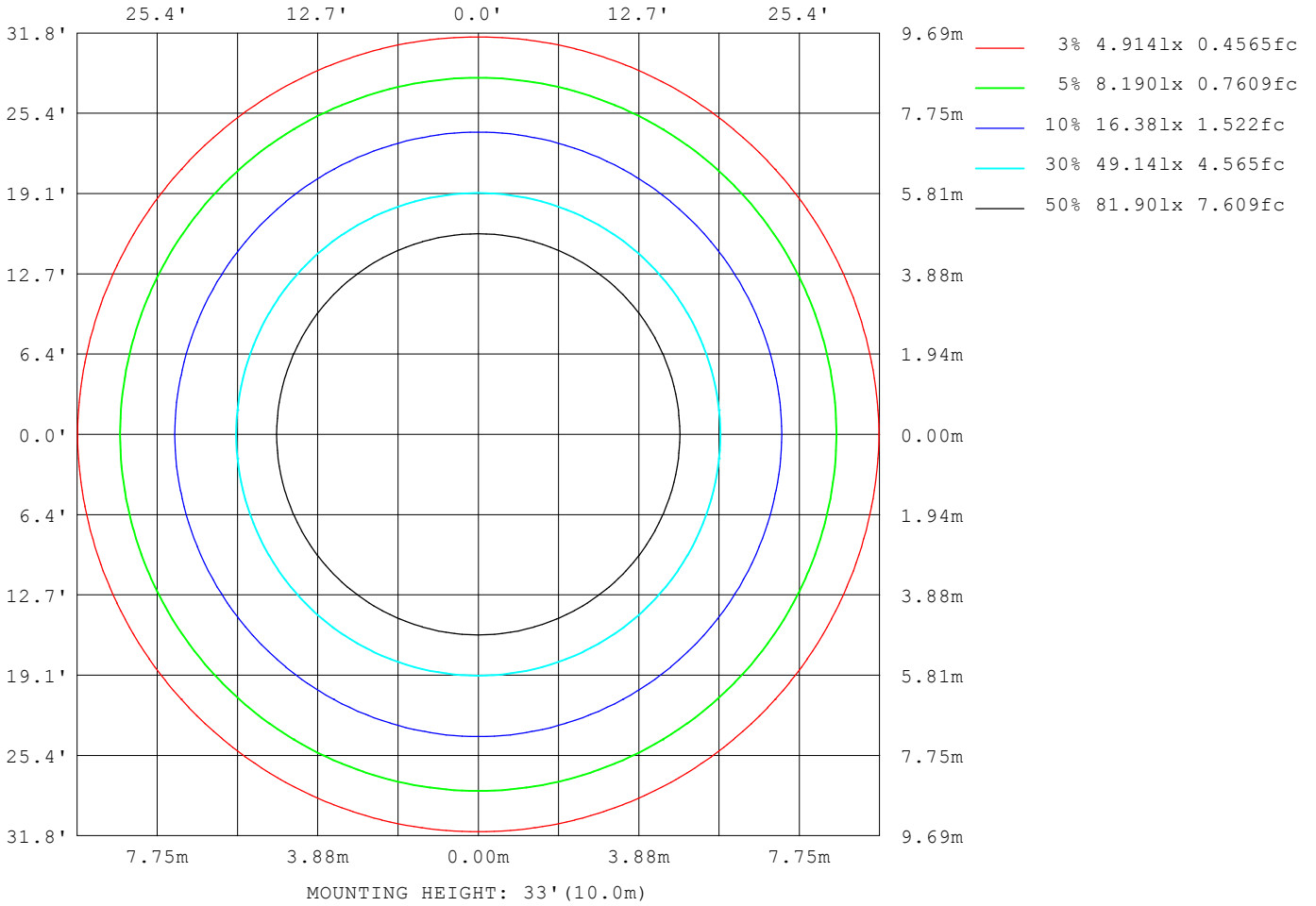
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:LCX  
 Test Date:2023-09-27

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity:65.0%  
 Test Distance:9.350m [K=1.0000]  
 Remarks:

EVERFINE GONIOPHOTOMETERS SYSTEM TEST REPORT

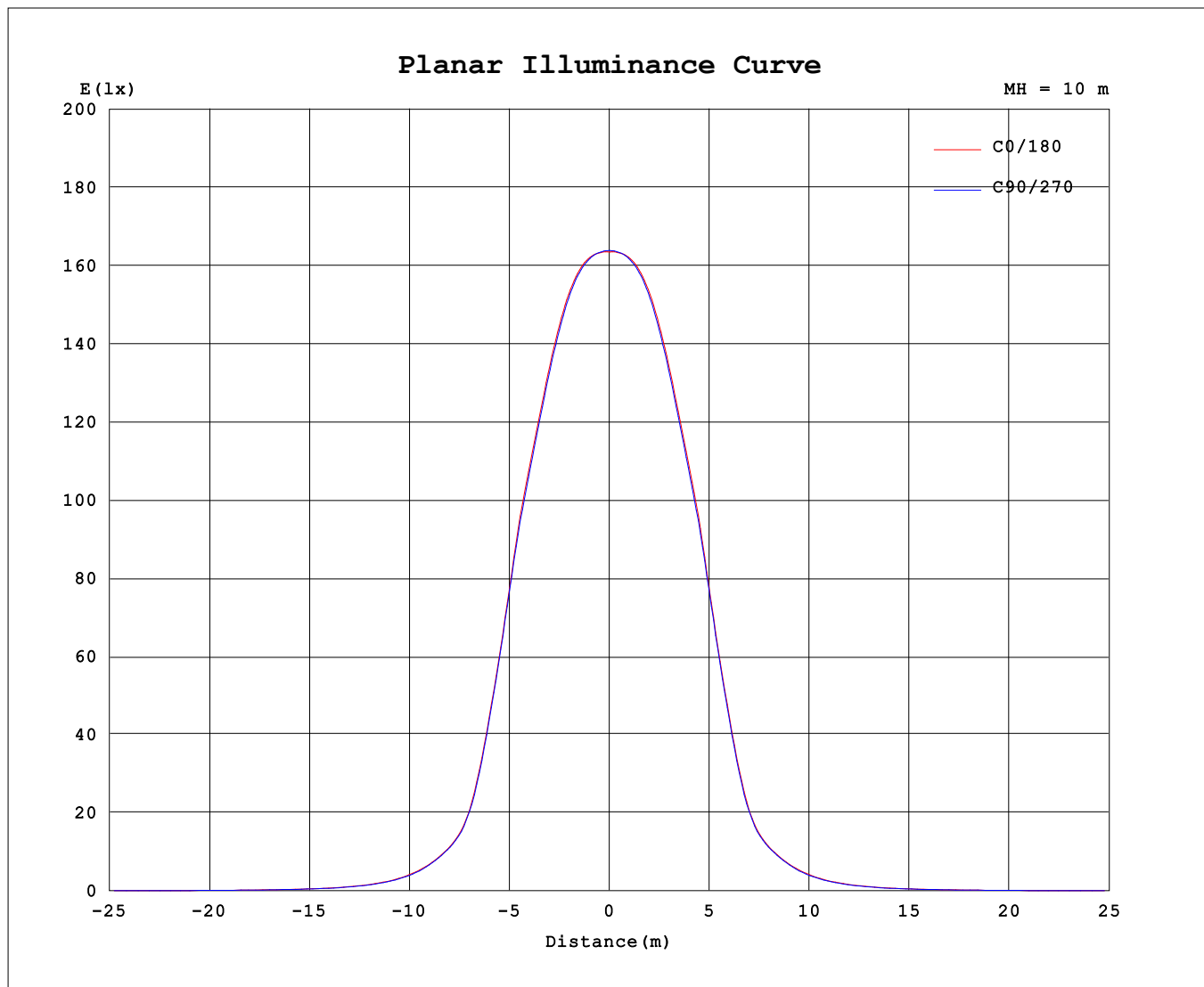
ISOLUX DIAGRAM



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators: LCX  
 Test Date: 2023-09-27

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
 Humidity: 65.0%  
 Test Distance: 9.350m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators: LCX  
Test Date: 2023-09-27

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.465  
Humidity: 65.0%  
Test Distance: 9.350m [K=1.0000]  
Remarks: