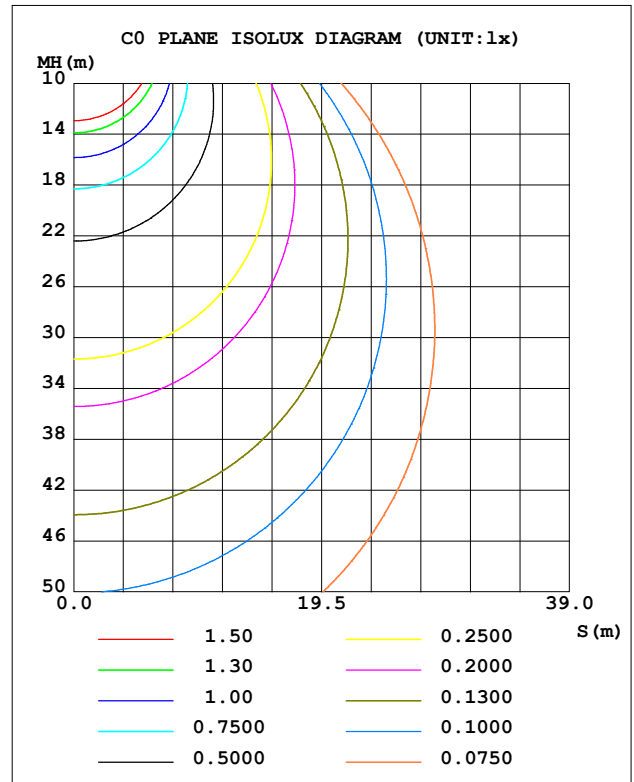
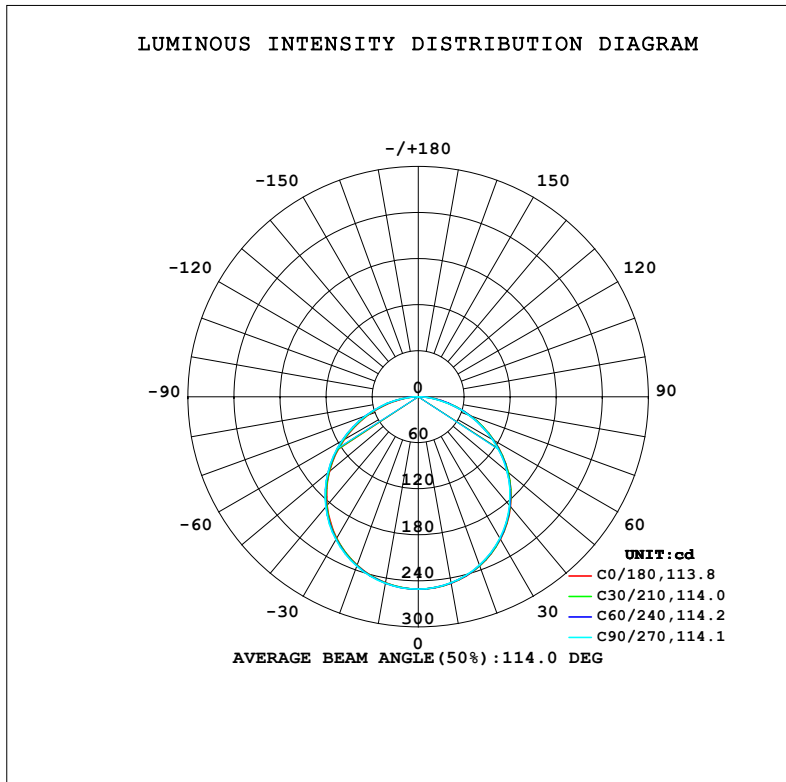


## LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 99XLED637WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 170	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99XLED637WW	Imax (cd)	250.7	S/MH (C0/180)	1.26
NOMINAL POWER (W)	12	LOR (%)	75.3	S/MH (C90/270)	1.27
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	730.35	$\eta$ UP, DN (C0-180)	0.0, 37.4
NOMINAL FLUX (lm)	970	CIE CLASS	DIRECT	$\eta$ UP, DN (C180-360)	0.0, 37.9
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	$\eta$ down (%)	75.3	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 25 October 2022

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 2.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 6.265m [K=1.0000]  
Remarks:

### ZONAL FLUX DIAGRAM

#### ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	246.8	246.5	246.1	246.0	246.2	246.6	246.8	246.9	0- 10	23.73	23.73	3.25,2.45
20	234.6	234.1	233.4	233.0	233.4	234.2	234.8	234.9	10- 20	68.11	91.84	12.6,9.47
30	214.4	213.8	212.8	212.2	212.8	214.0	214.8	214.9	20- 30	103.6	195.5	26.8,20.2
40	187.0	186.2	185.0	184.2	184.9	186.5	187.6	187.6	30- 40	125.6	321.1	44,33.1
50	153.0	152.3	151.1	150.0	151.0	152.8	153.8	154.0	40- 50	131.0	452.1	61.9,46.6
60	113.9	113.3	111.8	110.3	111.5	113.8	114.9	114.8	50- 60	119.0	571.0	78.2,58.9
70	71.97	71.65	70.01	68.10	69.24	72.24	73.46	72.66	60- 70	91.25	662.3	90.7,68.3
80	31.02	30.99	29.53	27.84	28.86	31.49	32.45	31.39	70- 80	53.20	715.5	98,73.8
90	0.3943	0.4001	0.4030	0.3988	0.3508	0.3498	0.3594	0.3498	80- 90	14.86	730.4	100,75.3
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): 386.97 lm

%lum = 53.0%  
%lamp = 39.9%

Conical surface Flux(130deg): 620.93 lm

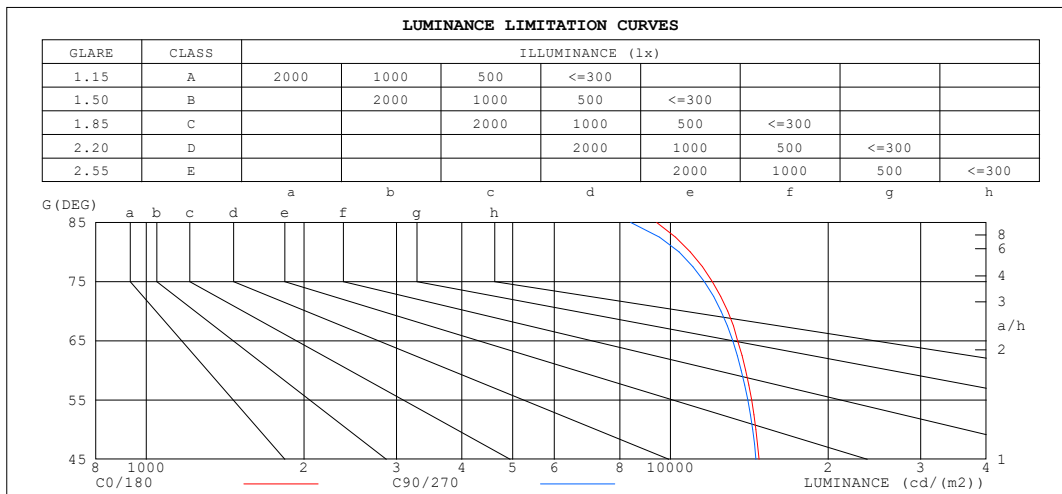
%lum = 85.0%  
%lamp = 64.0%

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:25 October 2022

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 2.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:

### LUMINANCE LIMITATION CURVES

NAME: 99XLED637WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 170	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	9403	8392
80	10913	10376
75	12009	11595
70	12855	12490
65	13437	13143
60	13918	13643
55	14278	14038
50	14545	14341
45	14755	14552

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 25 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 6.265m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 2.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:

```

## WEC AND CCEC

NAME: 99XLED637WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 170	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

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	.236	.134	.043	.231	.132	.042	.221	.127	.040	.212	.122	.039	.203	.118	.038	
2.0	.222	.122	.037	.217	.120	.037	.208	.116	.036	.200	.112	.035	.193	.109	.034	
3.0	.205	.109	.033	.201	.108	.032	.193	.105	.032	.186	.102	.031	.179	.099	.031	
4.0	.189	.098	.029	.185	.097	.029	.178	.095	.028	.172	.092	.028	.166	.090	.027	
5.0	.175	.089	.026	.171	.088	.026	.165	.086	.025	.159	.084	.025	.154	.082	.025	
6.0	.162	.081	.023	.159	.080	.023	.153	.079	.023	.148	.077	.023	.143	.076	.022	
7.0	.150	.074	.021	.148	.074	.021	.143	.072	.021	.138	.071	.021	.134	.070	.020	
8.0	.140	.069	.019	.138	.068	.019	.134	.067	.019	.130	.066	.019	.126	.065	.019	
9.0	.132	.064	.018	.130	.063	.018	.126	.062	.018	.122	.061	.017	.118	.060	.017	
10.0	.124	.059	.016	.122	.059	.016	.118	.058	.016	.115	.057	.016	.112	.056	.016	

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	.143	.143	.143	.123	.123	.123	.084	.084	.084	.048	.048	.048	.015	.015	.015	
1.0	.136	.118	.101	.116	.101	.087	.080	.069	.060	.046	.040	.035	.015	.013	.011	
2.0	.130	.099	.074	.111	.085	.064	.076	.059	.044	.044	.034	.026	.014	.011	.008	
3.0	.124	.086	.056	.106	.074	.048	.073	.052	.034	.042	.030	.020	.014	.010	.007	
4.0	.118	.076	.044	.102	.066	.038	.070	.046	.027	.040	.027	.016	.013	.009	.005	
5.0	.113	.068	.035	.097	.059	.031	.067	.041	.022	.039	.024	.013	.012	.008	.004	
6.0	.107	.062	.029	.092	.054	.026	.064	.038	.018	.037	.022	.011	.012	.007	.004	
7.0	.102	.057	.025	.088	.049	.022	.061	.034	.015	.035	.020	.009	.011	.007	.003	
8.0	.097	.052	.022	.084	.045	.019	.058	.032	.013	.034	.019	.008	.011	.006	.003	
9.0	.093	.049	.019	.080	.042	.016	.055	.030	.012	.032	.018	.007	.010	.006	.002	
10.0	.088	.045	.017	.076	.039	.015	.053	.028	.010	.031	.016	.006	.010	.005	.002	

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:25 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:

## UGR(Unified Glare Rating) Table

NAME: 99XLED637WW					TYPE:			WEIGHT: 1			
SPEC.:					DIM.: F 170			SERIAL No.: 0			
MFR.: Elmark Industries JSC					SUR.: round			Shielding Angle:			
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	23.8	22.5	24.0	24.2	22.2	23.7	22.4	23.9	24.1
	3H	23.8	25.2	24.1	25.5	25.7	23.7	25.1	24.0	25.4	25.6
	4H	24.4	25.8	24.8	26.0	26.3	24.3	25.7	24.6	25.9	26.2
	6H	24.9	26.2	25.2	26.4	26.7	24.7	26.0	25.1	26.3	26.6
	8H	25.0	26.3	25.4	26.5	26.8	24.9	26.1	25.2	26.4	26.7
	12H	25.1	26.3	25.5	26.6	26.9	24.9	26.1	25.3	26.4	26.7
4H	2H	22.9	24.2	23.2	24.5	24.7	22.8	24.2	23.1	24.4	24.7
	3H	24.6	25.8	25.0	26.1	26.4	24.5	25.7	24.9	26.0	26.3
	4H	25.4	26.4	25.7	26.8	27.1	25.3	26.3	25.6	26.7	27.0
	6H	25.9	26.9	26.3	27.3	27.6	25.8	26.8	26.2	27.1	27.5
	8H	26.2	27.0	26.6	27.4	27.8	26.0	26.9	26.4	27.3	27.7
	12H	26.3	27.1	26.7	27.5	27.9	26.1	26.9	26.5	27.3	27.7
8H	4H	25.6	26.5	26.1	26.9	27.3	25.6	26.4	26.0	26.8	27.2
	6H	26.4	27.1	26.8	27.5	28.0	26.3	27.0	26.7	27.4	27.8
	8H	26.7	27.3	27.1	27.8	28.2	26.5	27.2	27.0	27.6	28.1
	12H	26.9	27.4	27.4	27.9	28.4	26.7	27.3	27.2	27.7	28.2
12H	4H	25.7	26.5	26.1	26.9	27.3	25.6	26.4	26.0	26.8	27.2
	6H	26.4	27.1	26.9	27.5	28.0	26.3	27.0	26.8	27.4	27.9
	8H	26.8	27.3	27.2	27.8	28.3	26.6	27.2	27.1	27.7	28.1
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				

CIE Pub.117, 970.0 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.1)  
Area: 0.016384 m2

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:25 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

NAME: 99XLED637WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 170	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

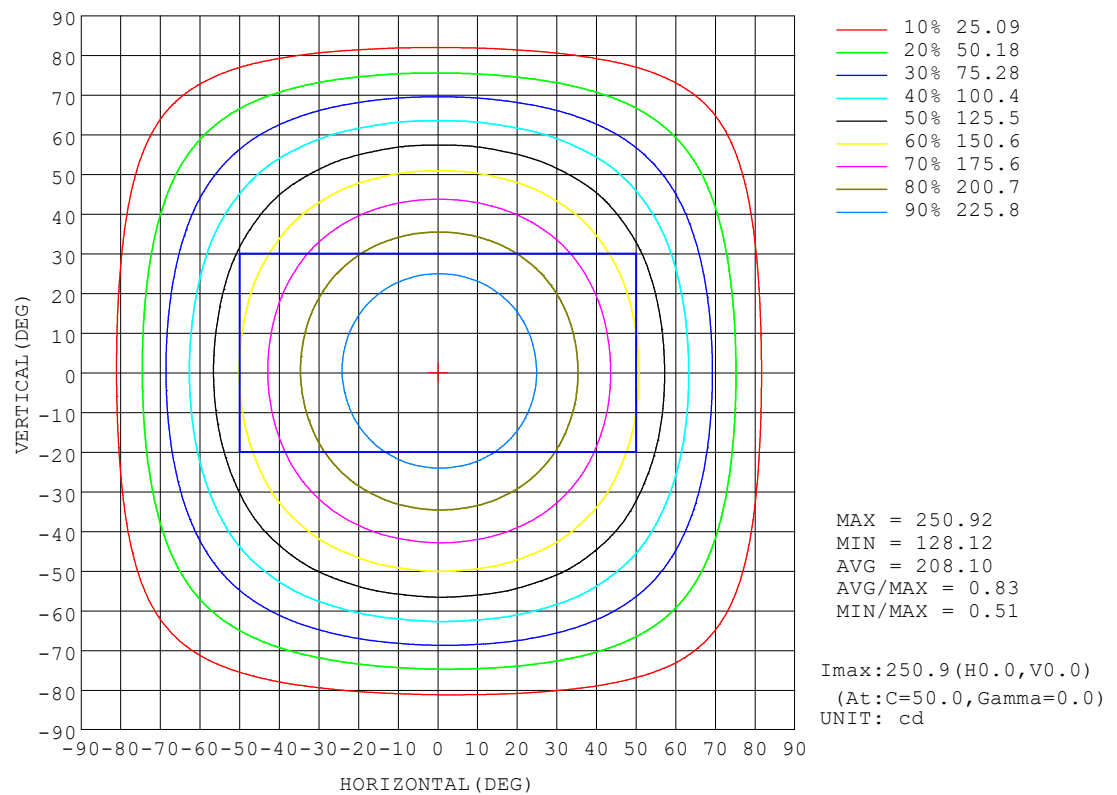
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	43	34	29	42	34	29	42	34	29	24
0.80	51	42	36	50	41	36	48	41	36	30
1.00	57	48	43	56	48	43	54	49	42	37
1.25	62	54	49	61	54	49	59	53	48	42
1.50	66	59	53	65	58	53	63	57	52	46
2.00	71	65	60	70	64	59	67	62	58	52
2.50	74	68	64	73	67	63	70	65	62	55
3.00	77	72	67	75	70	67	72	68	65	58
4.00	80	76	72	78	74	71	75	72	69	62
5.00	82	78	75	80	77	74	76	74	71	65
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 25 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 6.265m [K=1.0000]  
Remarks:

### ISOCANDELA DIAGRAM

NAME: 99XLED637WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 170	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



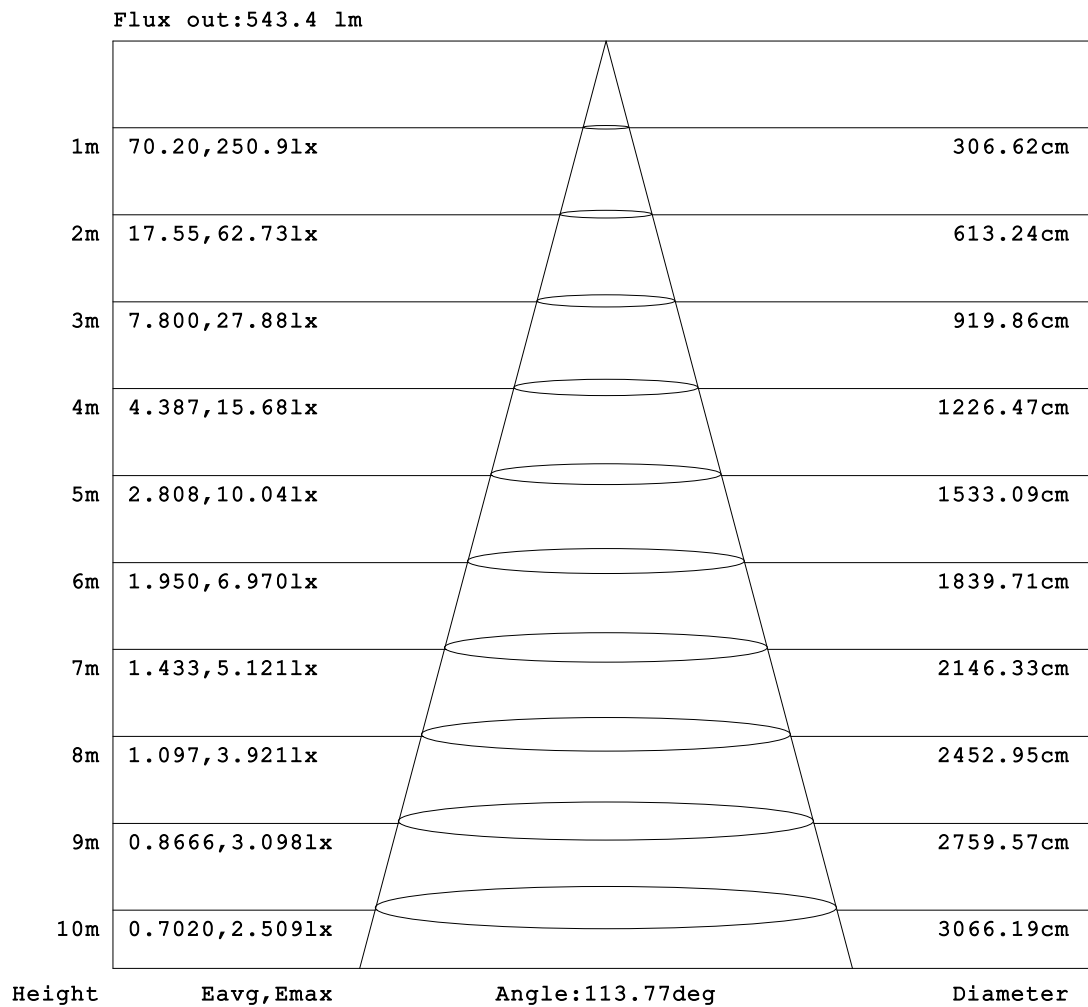
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 25 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 6.265m [K=1.0000]  
Remarks:



**AAI Figure**

NAME: 99XLED637WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 170	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



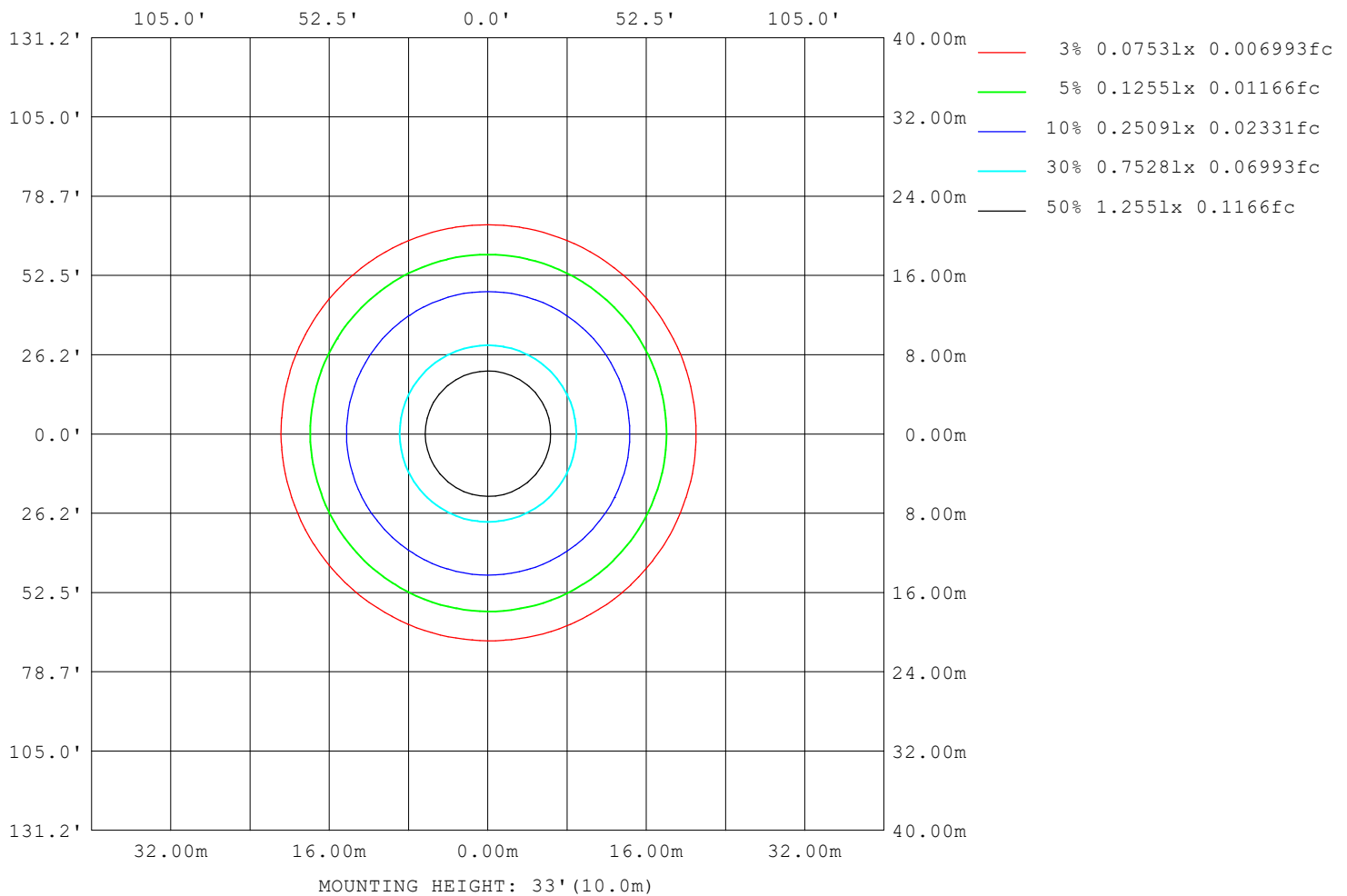
**Note:** The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 25 October 2022

γ Range: 0 - 90DEG  
 γ Interval: 2.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
 Humidity: 65.0%  
 Test Distance: 6.265m [K=1.0000]  
 Remarks:

**ISOLUX DIAGRAM**

NAME: 99XLED637WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 170	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 25 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 6.265m [K=1.0000]  
Remarks:

### LED Avg.L Report

NAME: 99XLED637WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 170	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

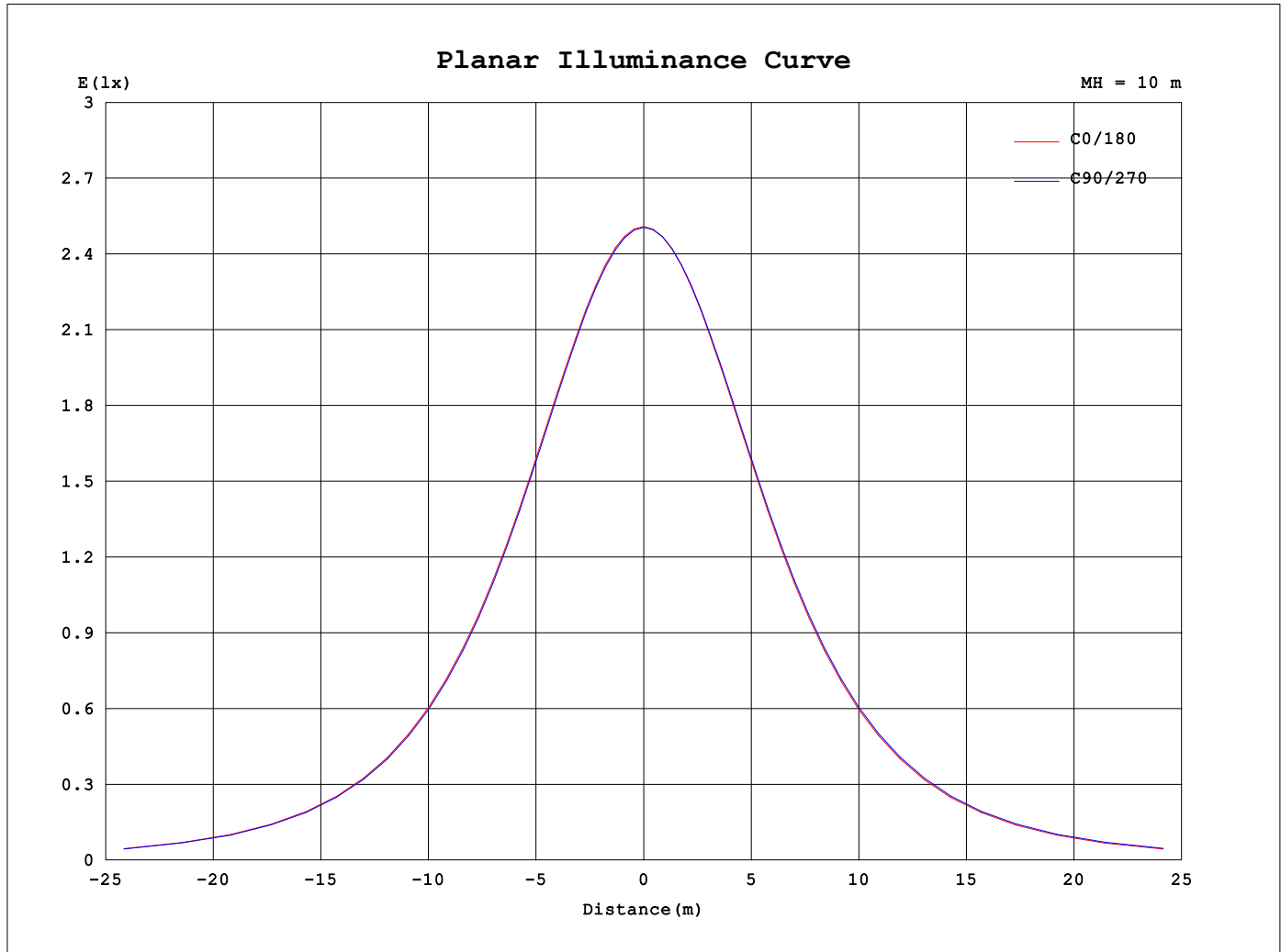
AvgL	cd/m2
L_0~180 (65) av	13248
L_0~180 (75) av	11700
L_0~180 (85) av	8803
L_90~270 (65) av	13375
L_90~270 (75) av	11983
L_90~270 (85) av	9255
L_45 (65) av	13315
L_45 (75) av	11839
L_45 (85) av	9005

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:25 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 25 October 2022

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 2.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 6.265m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 2.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 2.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:

```