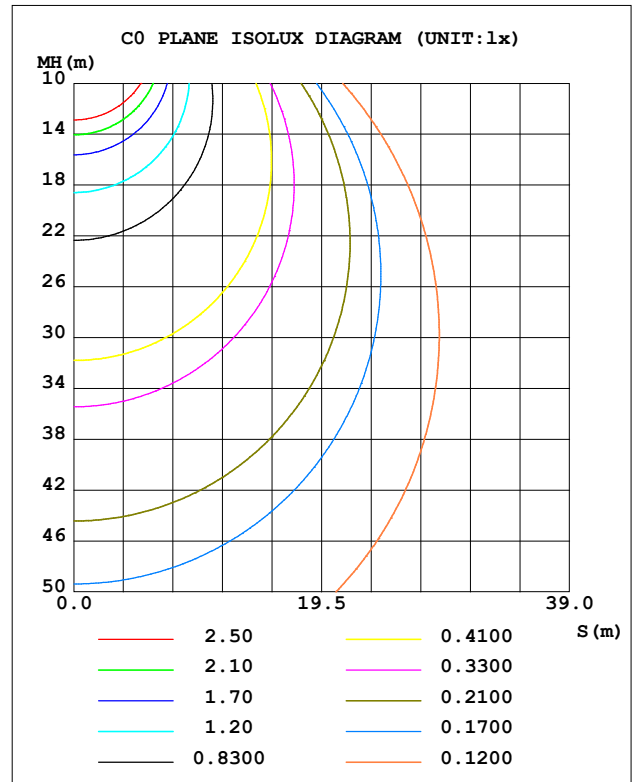
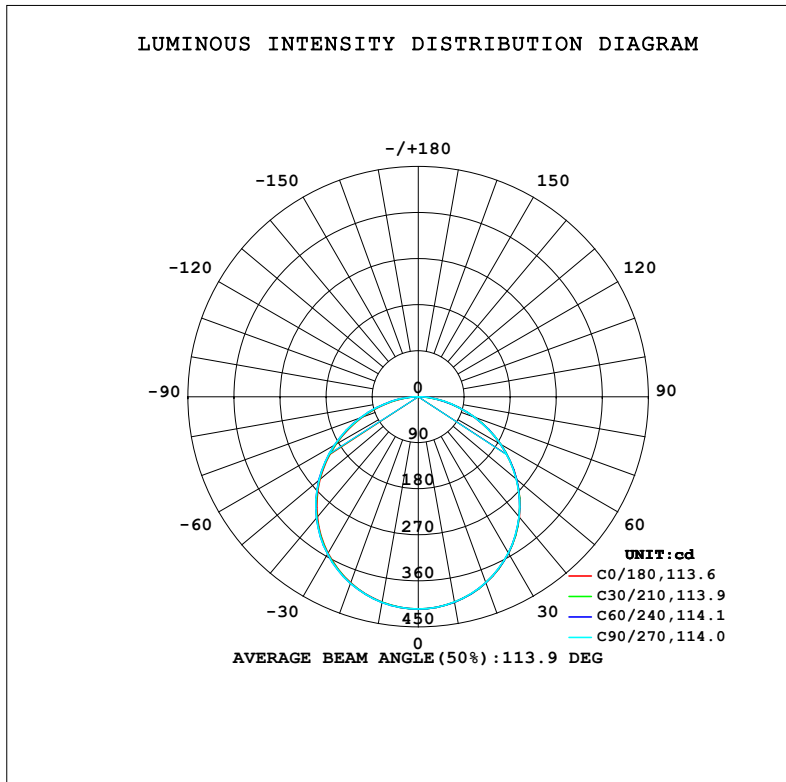


## LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 99XLED638CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99XLED638CW	I <sub>max</sub> (cd)	414.8	S/MH (C0/180)	1.27
NOMINAL POWER (W)	18	LOR (%)	75.5	S/MH (C90/270)	1.27
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	1207.6	η UP, DN (C0-180)	0.0, 37.5
NOMINAL FLUX (lm)	1600	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 37.9
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	75.5	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

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:

### ZONAL FLUX DIAGRAM

#### ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	407.7	407.5	407.4	407.4	407.7	408.1	408.3	408.0	0- 10	39.26	39.26	3.25,2.45
20	386.9	386.7	386.4	386.3	386.9	387.8	388.1	387.5	10- 20	112.7	151.9	12.6,9.49
30	353.1	352.8	352.4	352.2	353.1	354.4	354.9	354.0	20- 30	171.4	323.3	26.8,20.2
40	307.3	307.1	306.5	306.2	307.2	309.0	309.6	308.4	30- 40	207.6	530.9	44,33.2
50	251.0	250.7	250.1	249.6	250.7	253.0	253.7	252.3	40- 50	216.5	747.4	61.9,46.7
60	186.2	186.2	185.5	184.3	185.6	188.7	189.4	187.6	50- 60	196.5	943.9	78.2,59
70	116.6	117.5	116.9	114.7	116.0	119.7	120.4	118.1	60- 70	150.7	1095	90.6,68.4
80	49.97	51.00	50.19	48.35	49.25	52.59	53.29	50.83	70- 80	88.05	1183	97.9,73.9
90	0.6780	0.6889	0.6914	0.6803	0.5882	0.5977	0.5988	0.5851	80- 90	25.00	1208	100,75.5
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): 639.85 lm

%lum = 53.0%  
%lamp = 40.0%

Conical surface Flux(130deg): 1026.3 lm

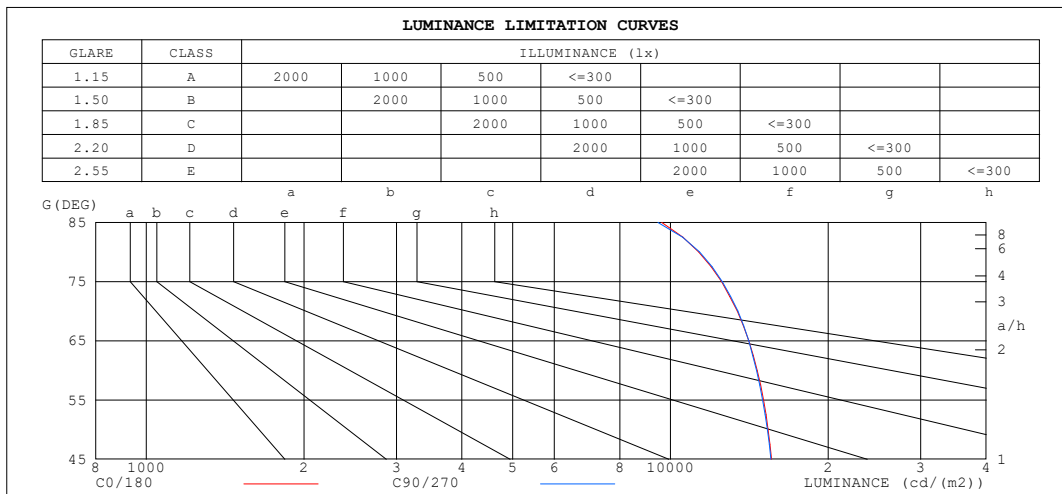
%lum = 85.0%  
%lamp = 64.1%

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: 99XLED638CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	9619	9463
80	11309	11366
75	12510	12550
70	13402	13440
65	14110	14108
60	14636	14590
55	15044	14991
50	15350	15300
45	15586	15540

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: 99XLED638CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 225	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	.237	.135	.043	.232	.132	.042	.222	.127	.041	.212	.122	.039	.204	.118	.038	
2.0	.222	.122	.037	.218	.120	.037	.209	.116	.036	.201	.113	.035	.193	.109	.034	
3.0	.205	.109	.033	.201	.108	.032	.193	.105	.032	.186	.102	.031	.180	.099	.031	
4.0	.189	.098	.029	.186	.097	.029	.179	.095	.028	.172	.093	.028	.166	.090	.028	
5.0	.175	.089	.026	.172	.088	.026	.166	.086	.025	.160	.084	.025	.154	.083	.025	
6.0	.162	.081	.023	.159	.080	.023	.154	.079	.023	.149	.077	.023	.144	.076	.022	
7.0	.151	.075	.021	.148	.074	.021	.143	.072	.021	.139	.071	.021	.134	.070	.021	
8.0	.141	.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	.018	.119	.060	.017	
10.0	.124	.059	.016	.122	.059	.016	.119	.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	.144	.144	.144	.123	.123	.123	.084	.084	.084	.048	.048	.048	.015	.015	.015	
1.0	.136	.118	.101	.117	.101	.087	.080	.070	.060	.046	.040	.035	.015	.013	.011	
2.0	.130	.100	.074	.112	.086	.064	.076	.059	.044	.044	.034	.026	.014	.011	.008	
3.0	.124	.086	.056	.107	.074	.048	.073	.052	.034	.042	.030	.020	.014	.010	.007	
4.0	.119	.076	.044	.102	.066	.038	.070	.046	.027	.041	.027	.016	.013	.009	.005	
5.0	.113	.068	.035	.097	.059	.031	.067	.041	.022	.039	.024	.013	.012	.008	.004	
6.0	.108	.062	.029	.093	.054	.026	.064	.038	.018	.037	.022	.011	.012	.007	.004	
7.0	.102	.057	.025	.088	.049	.022	.061	.035	.015	.035	.020	.009	.011	.007	.003	
8.0	.098	.053	.022	.084	.046	.019	.058	.032	.013	.034	.019	.008	.011	.006	.003	
9.0	.093	.049	.019	.080	.042	.017	.055	.030	.012	.032	.018	.007	.010	.006	.002	
10.0	.089	.046	.017	.076	.040	.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: 99XLED638CW					TYPE:			WEIGHT: 1			
SPEC.:					DIM.: F 225			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	20.7	22.2	20.9	22.4	22.6	20.7	22.2	20.9	22.4	22.6
	3H	22.2	23.6	22.5	23.9	24.1	22.2	23.6	22.5	23.9	24.1
	4H	22.8	24.2	23.1	24.4	24.7	22.8	24.2	23.1	24.4	24.7
	6H	23.3	24.5	23.6	24.8	25.1	23.3	24.5	23.6	24.8	25.1
	8H	23.4	24.6	23.7	24.9	25.2	23.4	24.6	23.7	24.9	25.2
	12H	23.5	24.7	23.8	25.0	25.3	23.5	24.7	23.8	25.0	25.3
4H	2H	21.3	22.6	21.6	22.9	23.1	21.3	22.6	21.6	22.9	23.1
	3H	23.0	24.2	23.4	24.5	24.8	23.0	24.2	23.4	24.5	24.8
	4H	23.8	24.8	24.1	25.2	25.5	23.8	24.8	24.1	25.2	25.5
	6H	24.3	25.3	24.7	25.6	26.0	24.3	25.3	24.7	25.6	26.0
	8H	24.5	25.4	24.9	25.8	26.2	24.5	25.4	24.9	25.8	26.2
	12H	24.6	25.5	25.1	25.8	26.3	24.6	25.5	25.1	25.9	26.3
8H	4H	24.0	24.9	24.4	25.3	25.7	24.0	24.9	24.4	25.3	25.7
	6H	24.8	25.5	25.2	25.9	26.3	24.8	25.5	25.2	25.9	26.3
	8H	25.0	25.7	25.5	26.1	26.6	25.0	25.7	25.5	26.1	26.6
	12H	25.2	25.8	25.7	26.3	26.7	25.2	25.8	25.7	26.3	26.7
12H	4H	24.0	24.9	24.5	25.3	25.7	24.1	24.9	24.5	25.3	25.7
	6H	24.8	25.5	25.3	25.9	26.4	24.8	25.5	25.3	25.9	26.4
	8H	25.1	25.7	25.6	26.2	26.6	25.2	25.7	25.6	26.2	26.6
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, 1600 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.6)  
Area: 0.025434 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: 99XLED638CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

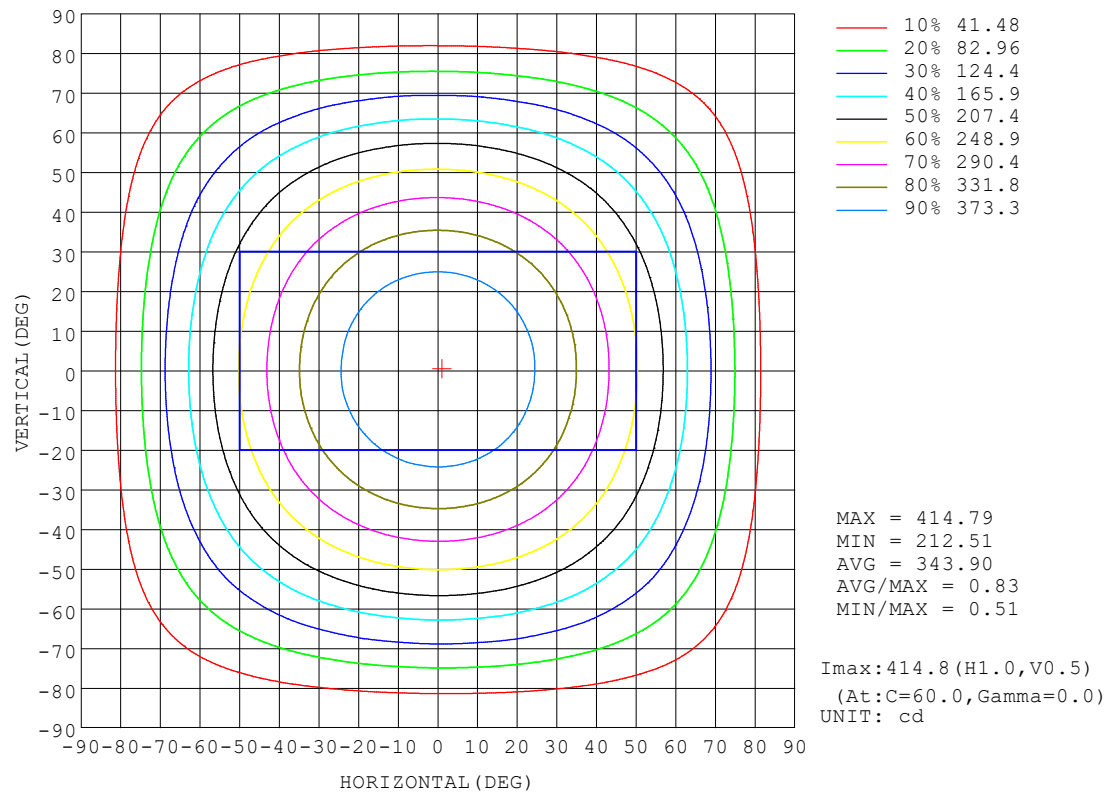
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	43	34	29	43	34	29	42	34	29	24
0.80	51	42	36	50	42	36	49	41	36	31
1.00	57	49	43	56	48	43	54	49	42	37
1.25	62	54	49	61	54	49	59	53	48	43
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	68	75	71	67	72	68	65	59
4.00	80	76	72	78	74	71	75	72	69	62
5.00	82	78	75	80	77	74	77	74	72	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: 99XLED638CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



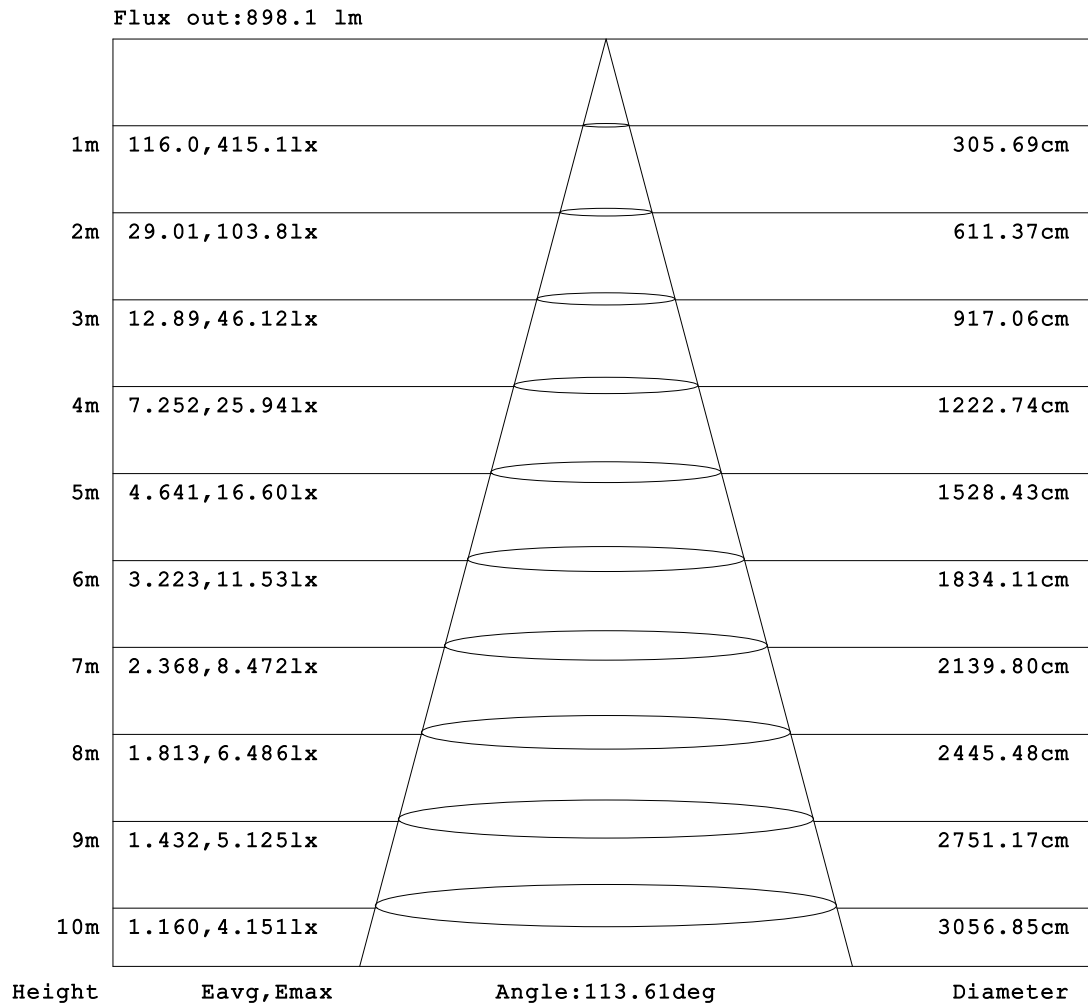
C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 25 October 2022

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: 99XLED638CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 225	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

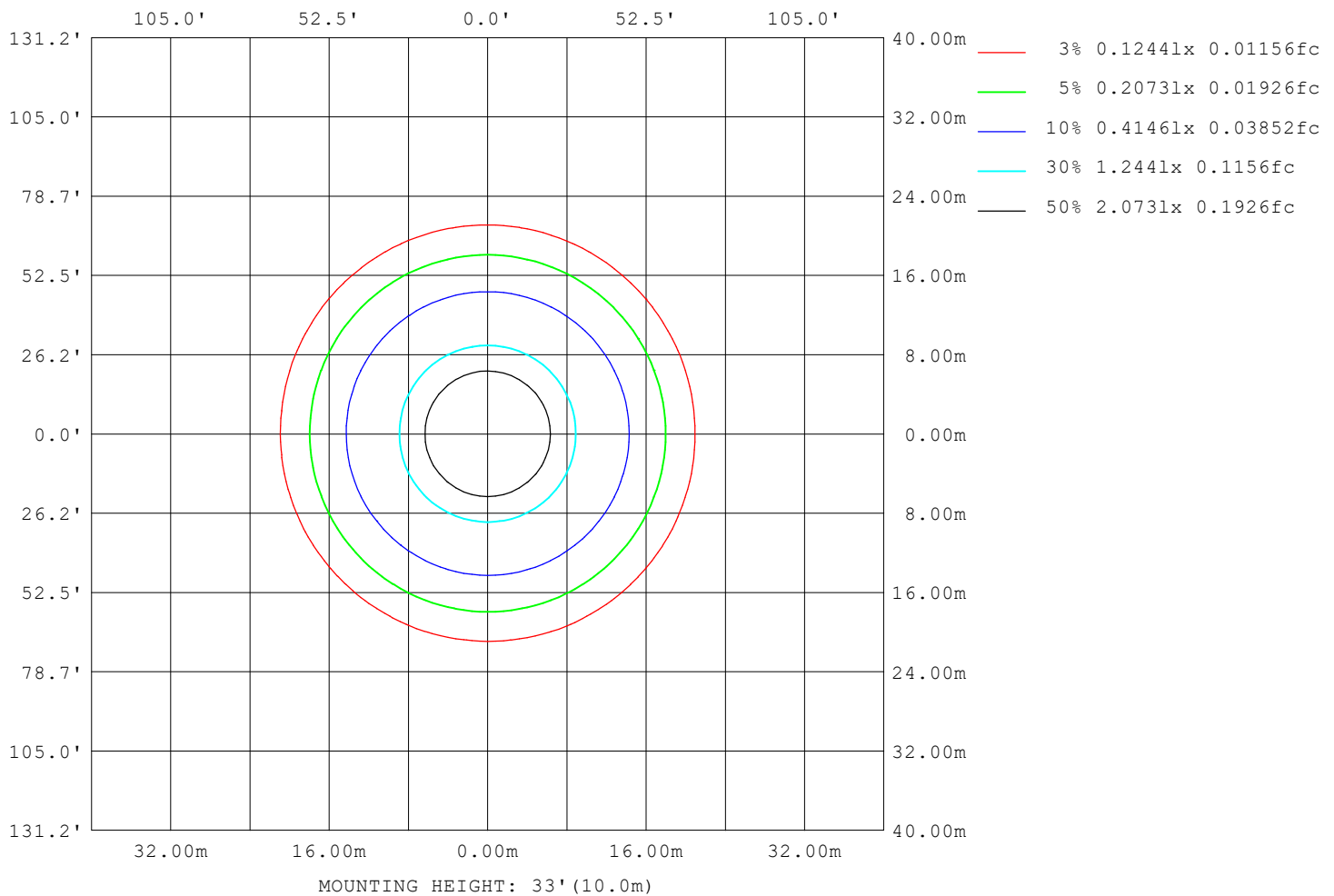
Humidity: 65.0%

Test Distance: 6.265m [K=1.0000]

Remarks:

## ISOLUX DIAGRAM

NAME: 99XLED638CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 225	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: 99XLED638CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

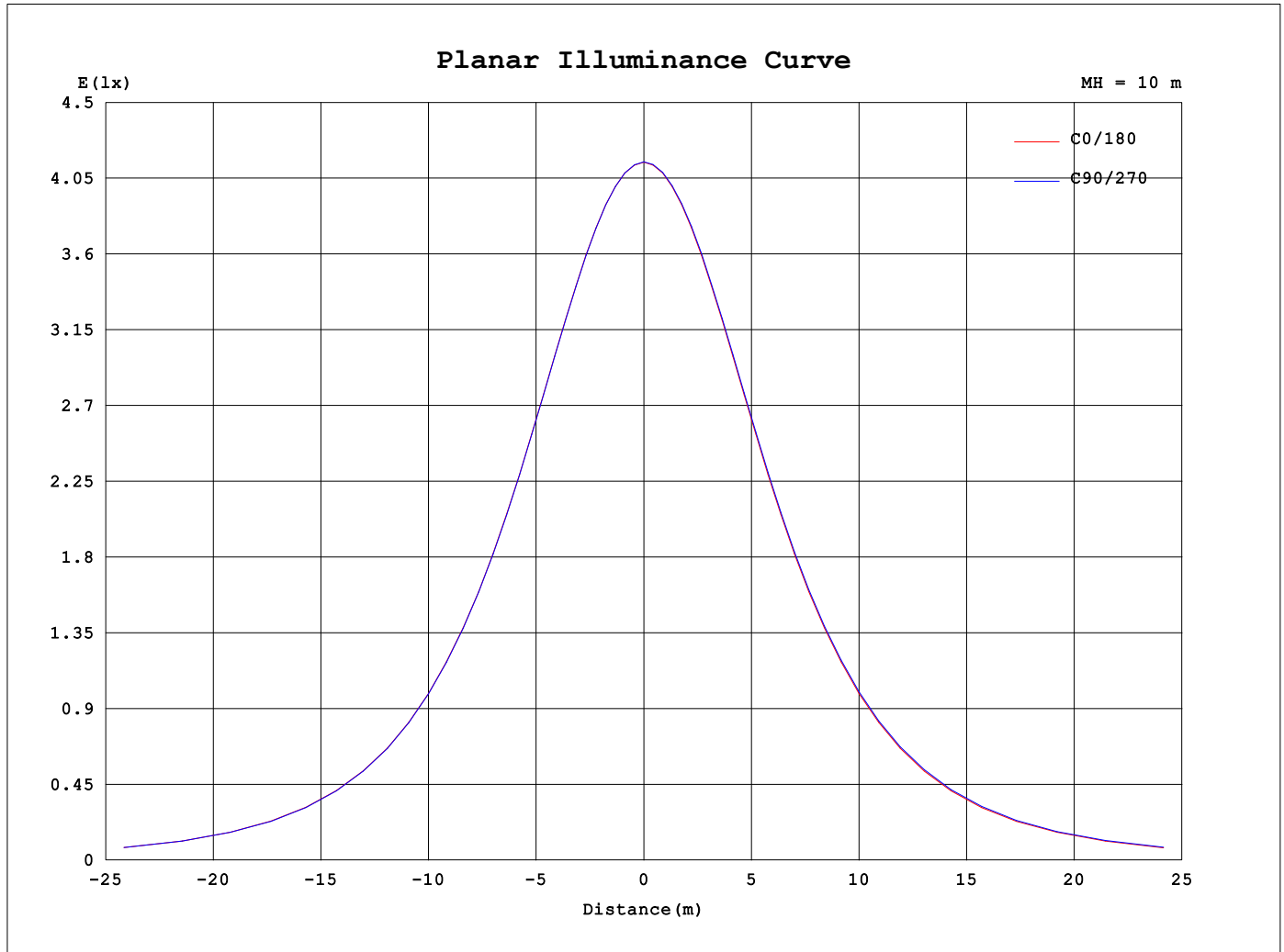
AvgL	cd/m2
L_0~180 (65) av	14094
L_0~180 (75) av	12447
L_0~180 (85) av	9532
L_90~270 (65) av	14273
L_90~270 (75) av	12816
L_90~270 (85) av	10063
L_45 (65) av	14186
L_45 (75) av	12636
L_45 (85) av	9822

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:

```