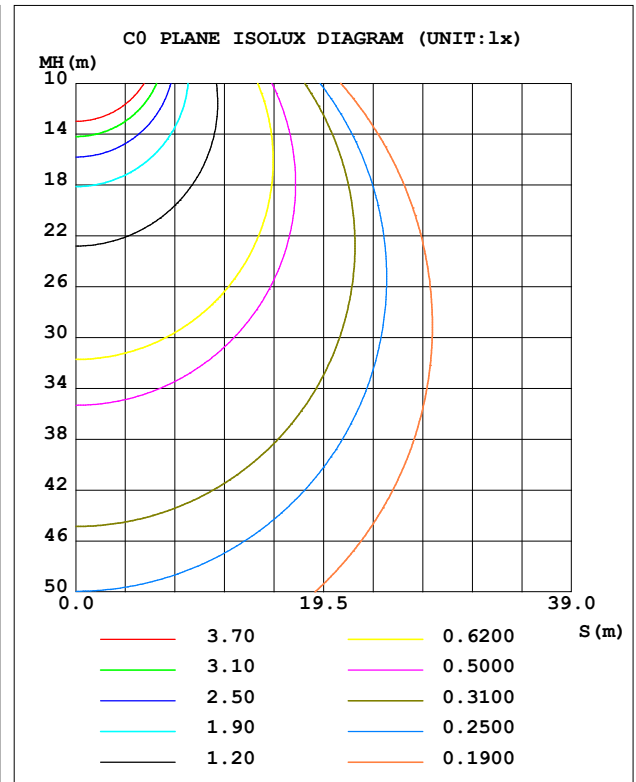
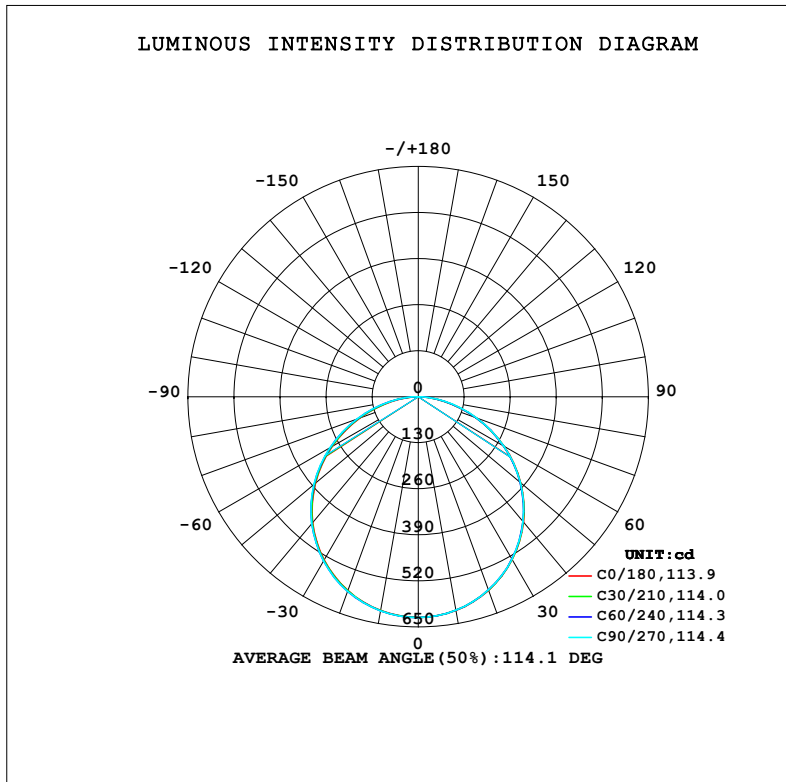


## LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 99XLED642W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99XLED642W	I <sub>max</sub> (cd)	623.1	S/MH (C0/180)	1.27
NOMINAL POWER (W)	24	LOR (%)	91.0	S/MH (C90/270)	1.28
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	1820.6	η UP, DN (C0-180)	0.0, 45.1
NOMINAL FLUX (lm)	2000	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 45.9
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	91.0	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 26 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	612.5	611.9	611.8	612.1	612.9	613.6	613.8	613.4	0- 10	58.98	58.98	3.24,2.95
20	581.4	580.4	580.2	580.7	582.1	583.7	584.3	583.3	10- 20	169.3	228.3	12.5,11.4
30	530.8	529.4	529.3	529.9	531.8	534.2	535.1	533.7	20- 30	257.8	486.1	26.7,24.3
40	462.3	460.6	460.6	461.2	463.5	466.6	467.8	465.9	30- 40	312.7	798.7	43.9,39.9
50	377.8	375.8	376.0	376.4	379.0	382.6	384.4	381.9	40- 50	326.4	1125	61.8,56.3
60	280.1	278.2	278.9	278.7	281.1	285.4	288.0	284.9	50- 60	296.5	1422	78.1,71.1
70	174.7	174.1	175.5	174.5	175.2	181.0	184.2	180.6	60- 70	227.6	1649	90.6,82.5
80	73.64	73.89	75.50	74.38	74.45	79.74	83.47	79.36	70- 80	133.1	1782	97.9,89.1
90	1.038	1.053	1.067	1.055	0.9053	0.9267	0.9883	0.9218	80- 90	38.27	1821	100,91
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): 962.96 lm

%lum = 52.9%  
%lamp = 48.1%

Conical surface Flux(130deg): 1546.1 lm

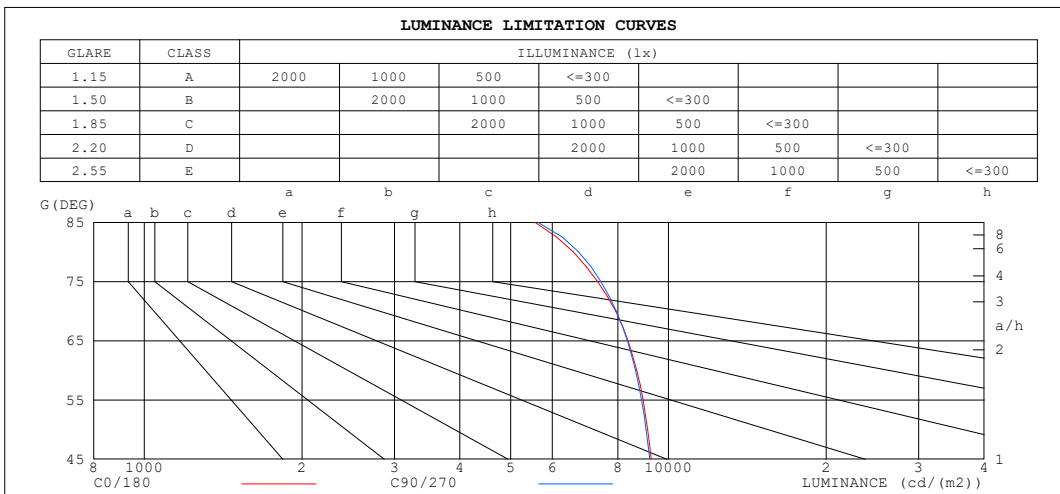
%lum = 84.9%  
%lamp = 77.3%

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:26 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: 99XLED642W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	5572	5643
80	6582	6738
75	7324	7432
70	7928	7954
65	8369	8345
60	8696	8645
55	8941	8884
50	9123	9065
45	9261	9207

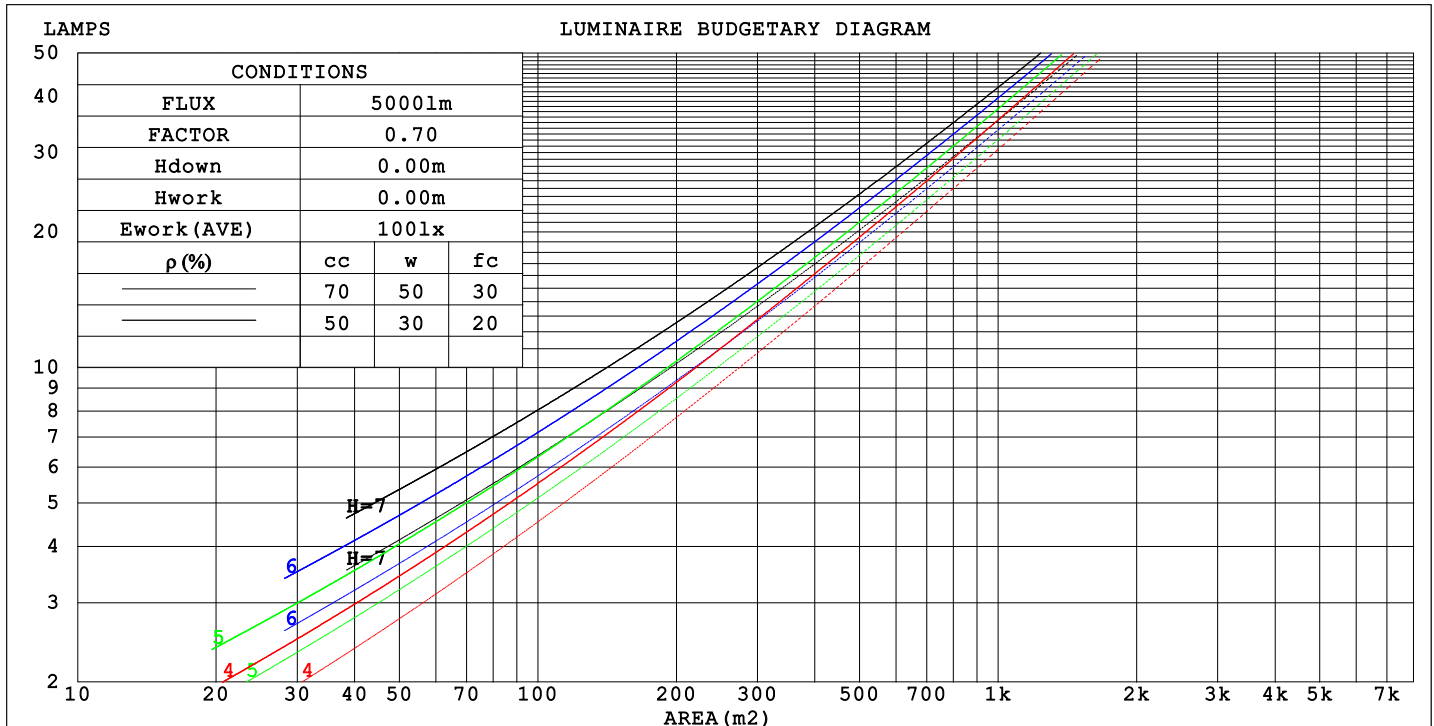
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 26 October 2022

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: 99XLED642W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	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															



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:26 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:

## WEC AND CCEC

NAME: 99XLED642W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	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	.286	.163	.052	.280	.160	.051	.268	.154	.049	.257	.148	.047	.246	.143	.046	
2.0	.269	.147	.045	.263	.145	.045	.252	.140	.044	.242	.136	.043	.233	.132	.042	
3.0	.248	.132	.040	.243	.130	.039	.234	.127	.038	.225	.123	.038	.217	.120	.037	
4.0	.229	.119	.035	.224	.117	.035	.216	.114	.034	.208	.112	.034	.201	.109	.033	
5.0	.211	.108	.031	.207	.106	.031	.200	.104	.031	.193	.102	.030	.186	.100	.030	
6.0	.196	.098	.028	.192	.097	.028	.186	.095	.028	.179	.093	.027	.174	.091	.027	
7.0	.182	.090	.026	.179	.089	.025	.173	.087	.025	.167	.086	.025	.162	.084	.025	
8.0	.170	.083	.023	.167	.082	.023	.162	.081	.023	.157	.079	.023	.152	.078	.023	
9.0	.159	.077	.021	.157	.076	.021	.152	.075	.021	.147	.074	.021	.143	.073	.021	
10.0	.150	.072	.020	.147	.071	.020	.143	.070	.020	.139	.069	.020	.135	.068	.020	

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	.173	.173	.173	.148	.148	.148	.101	.101	.101	.058	.058	.058	.019	.019	.019	
1.0	.164	.142	.122	.141	.122	.105	.096	.084	.073	.055	.049	.042	.018	.016	.014	
2.0	.157	.120	.089	.135	.103	.077	.092	.072	.054	.053	.042	.031	.017	.013	.010	
3.0	.150	.104	.067	.129	.090	.058	.088	.062	.041	.051	.036	.024	.016	.012	.008	
4.0	.143	.092	.053	.123	.079	.046	.085	.055	.032	.049	.032	.019	.016	.011	.006	
5.0	.136	.083	.043	.117	.071	.037	.081	.050	.026	.047	.029	.016	.015	.010	.005	
6.0	.130	.075	.035	.112	.065	.031	.077	.045	.022	.045	.027	.013	.014	.009	.004	
7.0	.124	.069	.030	.106	.059	.026	.073	.042	.019	.043	.025	.011	.014	.008	.004	
8.0	.118	.063	.026	.101	.055	.023	.070	.039	.016	.041	.023	.010	.013	.007	.003	
9.0	.112	.059	.023	.097	.051	.020	.067	.036	.014	.039	.021	.008	.013	.007	.003	
10.0	.107	.055	.020	.092	.048	.018	.064	.034	.013	.037	.020	.008	.012	.007	.002	

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:26 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: 99XLED642W					TYPE:					WEIGHT: 1				
SPEC.:					DIM.: square 300 x 300					SERIAL No.: 0				
MFR.: Elmark Industries JSC					SUR.: square					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	18.1	19.6	18.3	19.8	20.0	18.0	19.6	18.3	19.8	20.0				
3H	19.6	21.0	19.9	21.2	21.5	19.6	21.0	19.9	21.2	21.5				
4H	20.2	21.5	20.5	21.8	22.0	20.2	21.5	20.5	21.8	22.0				
6H	20.6	21.9	20.9	22.2	22.4	20.6	21.9	21.0	22.2	22.5				
8H	20.7	22.0	21.1	22.3	22.6	20.8	22.0	21.1	22.3	22.6				
12H	20.8	22.0	21.2	22.3	22.6	20.8	22.0	21.2	22.3	22.6				
4H 2H	18.7	20.0	19.0	20.3	20.5	18.6	20.0	19.0	20.2	20.5				
3H	20.4	21.6	20.7	21.9	22.2	20.4	21.6	20.7	21.8	22.2				
4H	21.1	22.2	21.5	22.5	22.8	21.1	22.2	21.5	22.5	22.8				
6H	21.6	22.6	22.0	23.0	23.3	21.7	22.6	22.1	23.0	23.4				
8H	21.8	22.7	22.2	23.1	23.5	21.9	22.8	22.3	23.1	23.5				
12H	21.9	22.8	22.4	23.2	23.6	22.0	22.8	22.4	23.2	23.6				
8H 4H	21.4	22.3	21.8	22.6	23.0	21.4	22.3	21.8	22.6	23.0				
6H	22.1	22.8	22.5	23.2	23.6	22.1	22.8	22.5	23.2	23.7				
8H	22.3	23.0	22.8	23.4	23.9	22.4	23.0	22.8	23.5	23.9				
12H	22.5	23.1	23.0	23.5	24.0	22.6	23.1	23.0	23.6	24.1				
12H 4H	21.4	22.2	21.8	22.6	23.0	21.4	22.2	21.8	22.6	23.0				
6H	22.1	22.8	22.6	23.2	23.7	22.2	22.8	22.6	23.2	23.7				
8H	22.4	23.0	22.9	23.4	23.9	22.5	23.0	22.9	23.5	24.0				
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, 2000 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 2.4)  
Area: 0.064516 m2

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:26 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: 99XLED642W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

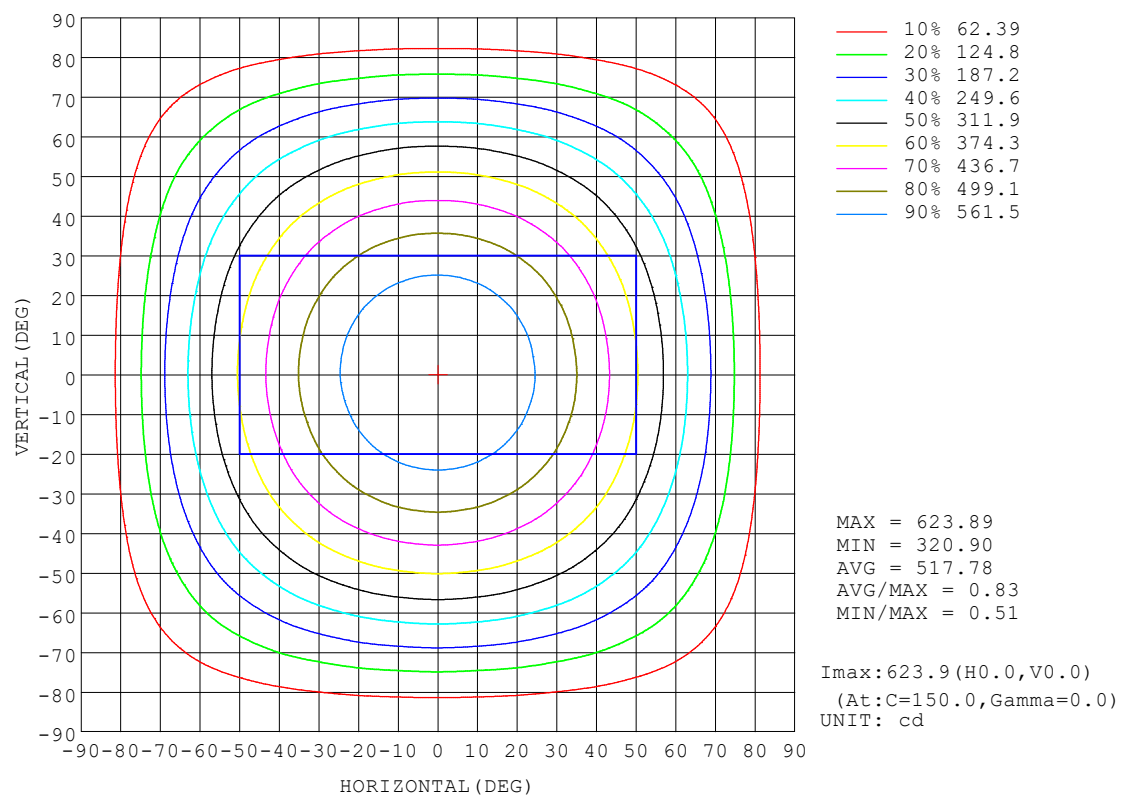
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	52	41	35	51	41	35	50	41	35	29
0.80	61	50	44	60	50	44	59	49	43	37
1.00	69	59	52	68	58	52	66	59	51	45
1.25	75	66	59	74	65	59	71	64	58	51
1.50	80	71	64	78	70	64	76	68	63	56
2.00	86	78	72	84	77	72	81	75	70	63
2.50	90	83	77	88	81	76	84	79	74	67
3.00	93	86	81	91	85	80	87	82	78	71
4.00	97	91	87	94	90	86	90	87	83	75
5.00	99	94	91	97	93	89	92	89	86	78
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: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 26 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: 99XLED642W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



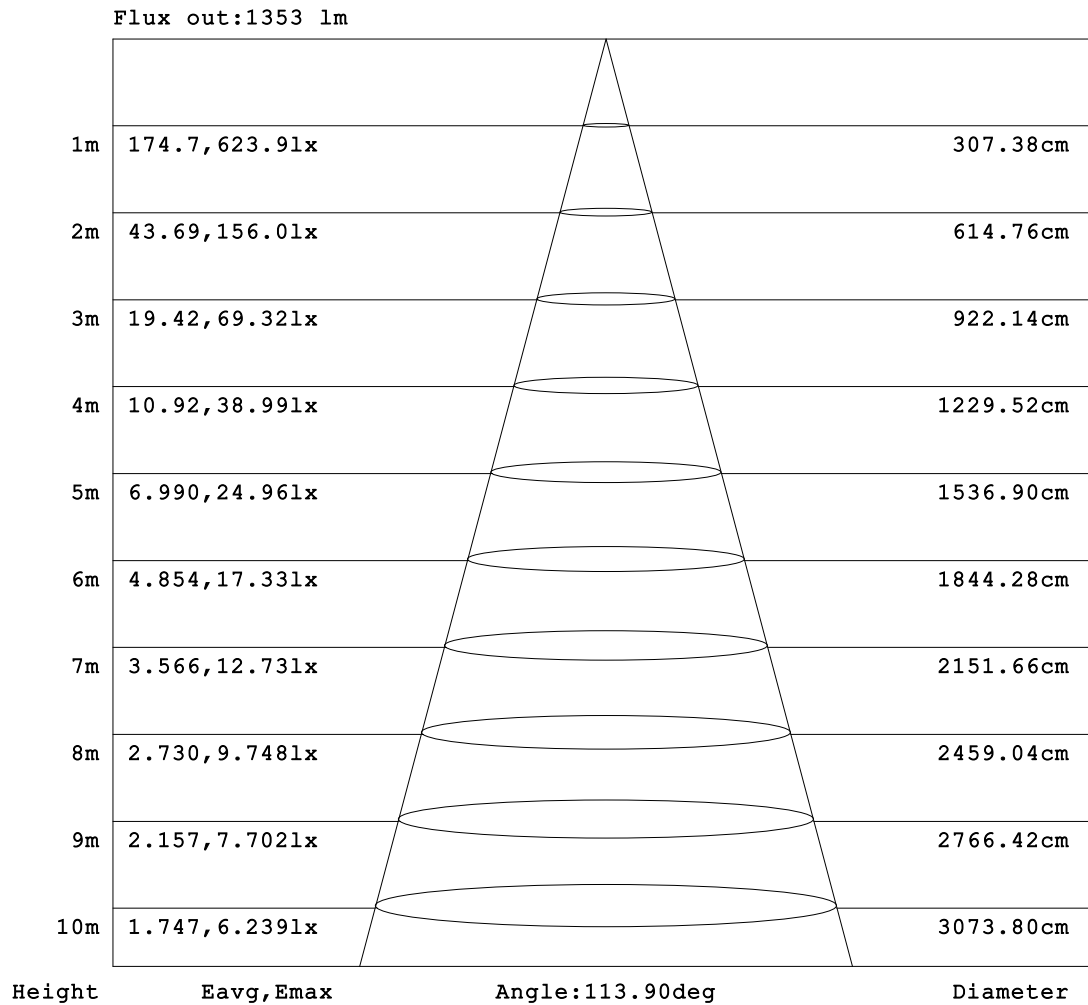
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 26 October 2022

$\gamma$  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:



**AAI Figure**

NAME: 99XLED642W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



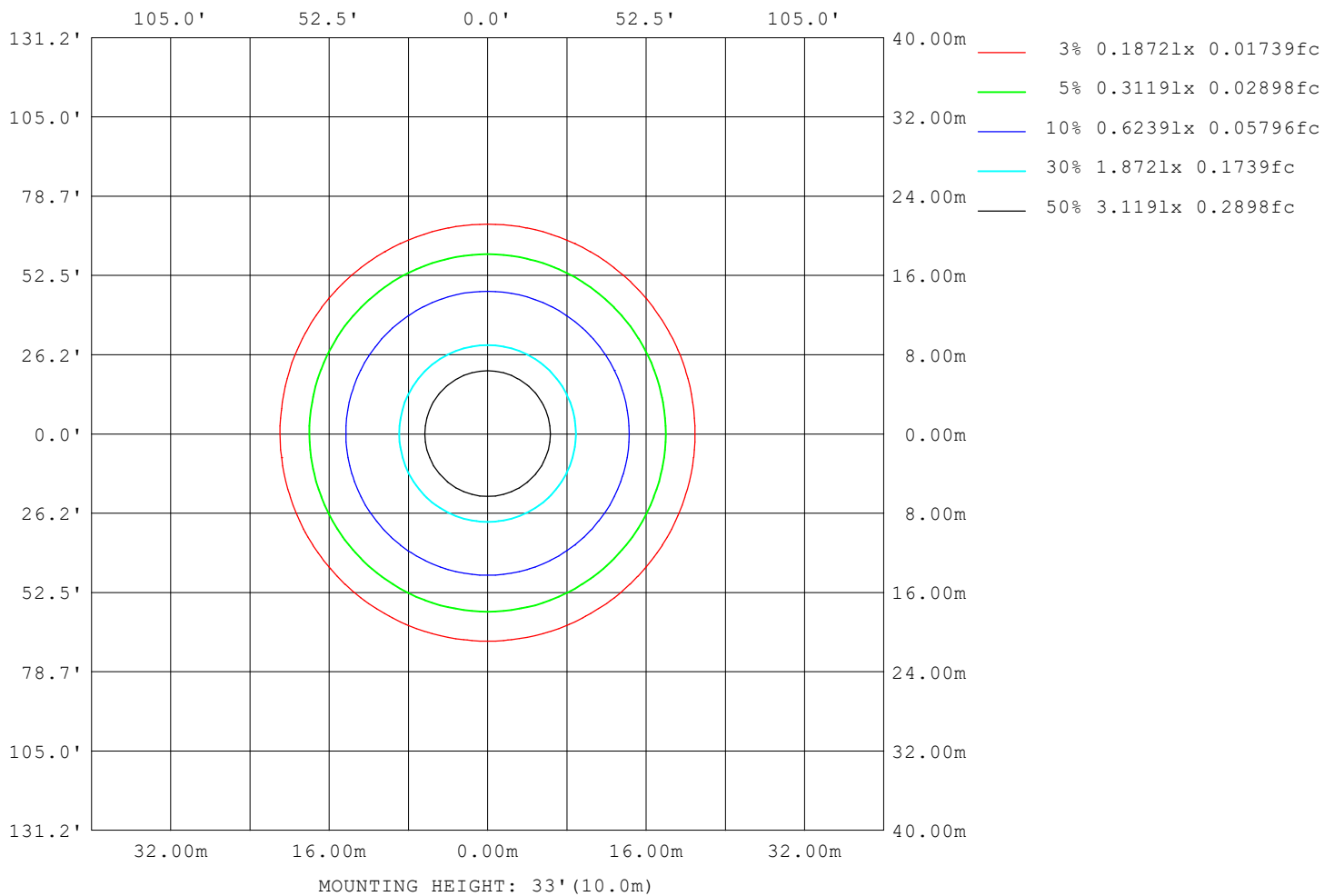
**Note:** The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 26 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: 99XLED642W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 26 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: 99XLED642W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

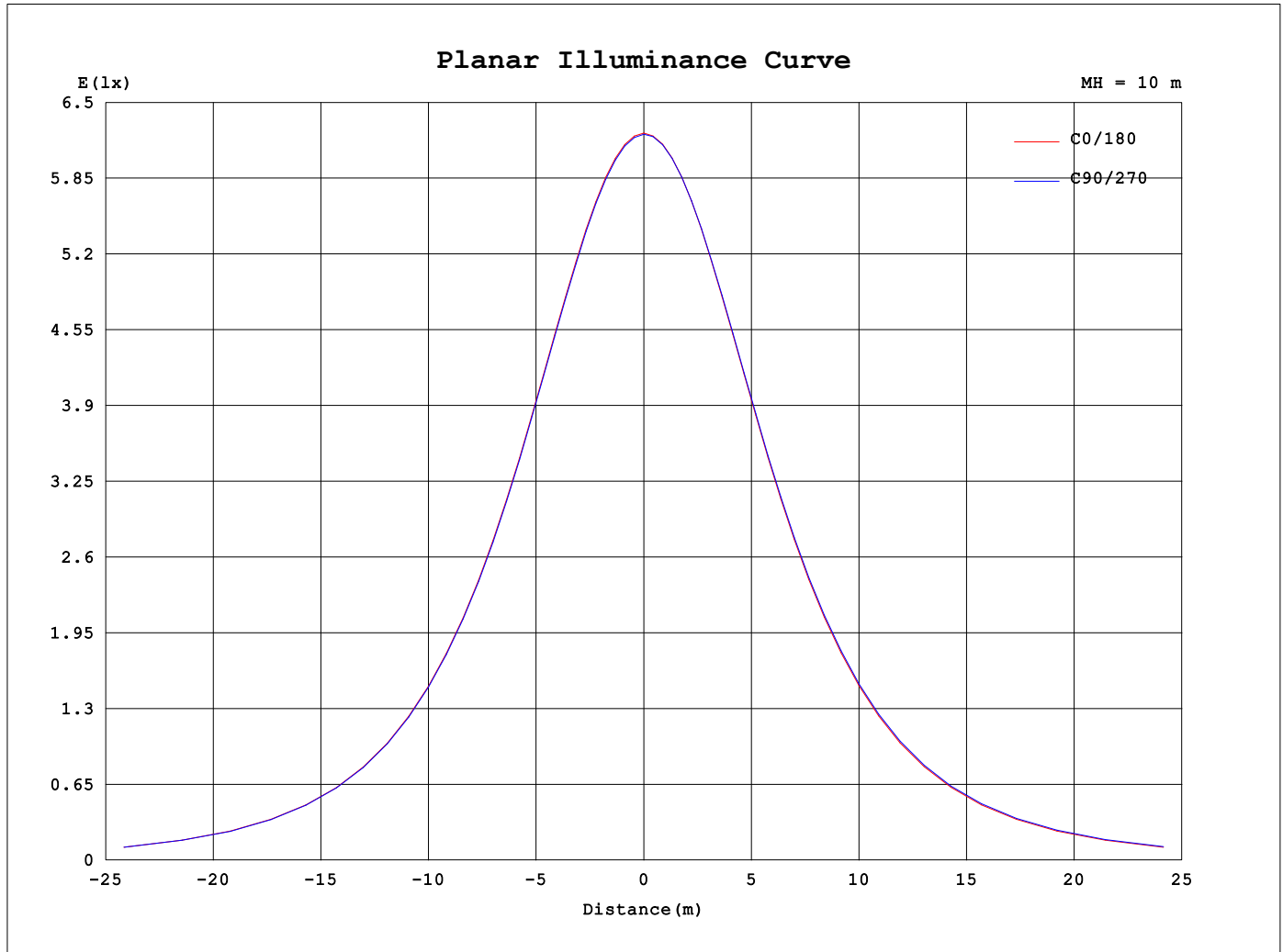
AvgL	cd/m2
L_0~180 (65) av	8371
L_0~180 (75) av	7337
L_0~180 (85) av	5658
L_90~270 (65) av	8511
L_90~270 (75) av	7674
L_90~270 (85) av	6233
L_45 (65) av	8435
L_45 (75) av	7550
L_45 (85) av	5893

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:26 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: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 26 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:

```

