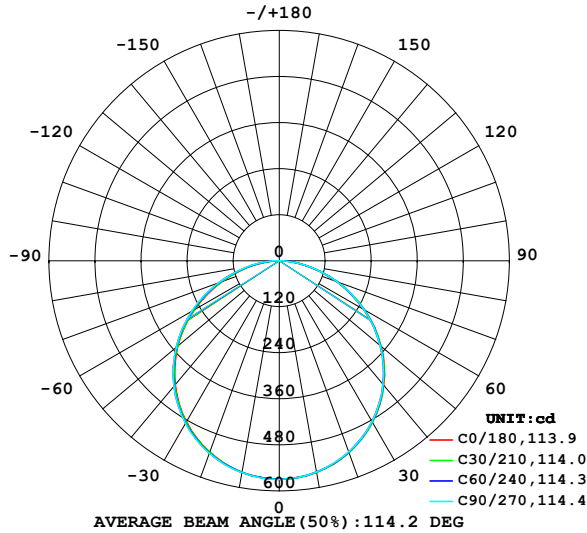


## LUMINAIRE PHOTOMETRIC TEST REPORT

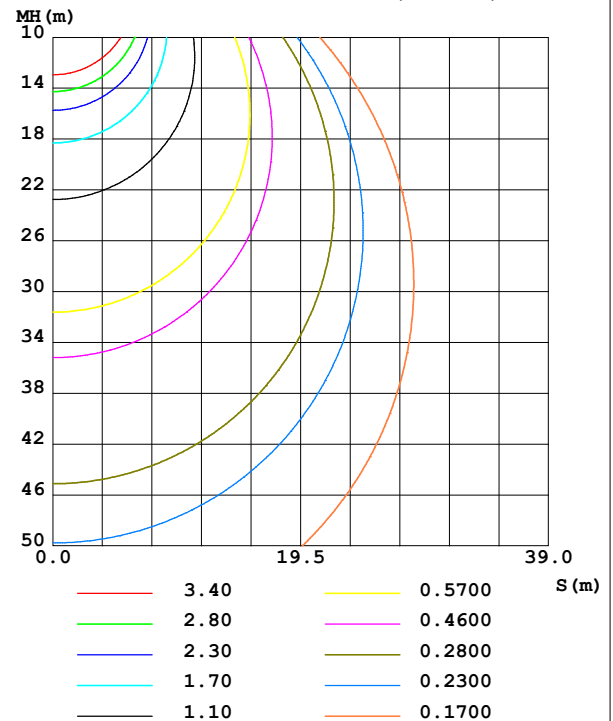
NAME: 99XLED642WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99XLED642WW	I <sub>max</sub> (cd)	569.2	S/MH (C0/180)	1.27
NOMINAL POWER (W)	24	LOR (%)	83.2	S/MH (C90/270)	1.28
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	1663.7	η UP, DN (C0-180)	0.0, 41.2
NOMINAL FLUX (lm)	2000	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 41.9
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	83.2	CIBSE SHR MAX	1.35

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:  
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	559.8	559.3	558.9	558.9	559.5	560.2	560.8	560.6	0- 10	53.88	53.88	3.24,2.69
20	531.9	530.7	530.1	530.1	531.1	532.7	533.7	533.4	10- 20	154.7	208.6	12.5,10.4
30	486.2	484.5	483.8	483.6	484.8	487.3	489.0	488.3	20- 30	235.5	444.1	26.7,22.2
40	423.9	421.8	421.0	420.6	422.2	425.4	427.6	426.6	30- 40	285.7	729.8	43.9,36.5
50	346.8	344.3	343.7	343.0	344.9	348.6	351.3	350.0	40- 50	298.2	1028	61.8,51.4
60	257.4	255.1	254.9	253.6	255.4	259.9	263.2	261.4	50- 60	271.0	1299	78.1,65
70	160.6	160.0	160.4	158.4	159.1	164.6	168.7	166.2	60- 70	208.0	1507	90.6,75.4
80	68.91	68.41	68.78	66.79	66.35	72.23	76.32	73.96	70- 80	121.7	1629	97.9,81.4
90	0.9436	0.9553	0.9693	0.9612	0.8267	0.8478	0.9747	0.8768	80- 90	35.03	1664	100,83.2
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): 879.86 lm

%lum = 52.9%

%lamp = 44.0%

Conical surface Flux(130deg): 1412.7 lm

%lum = 84.9%

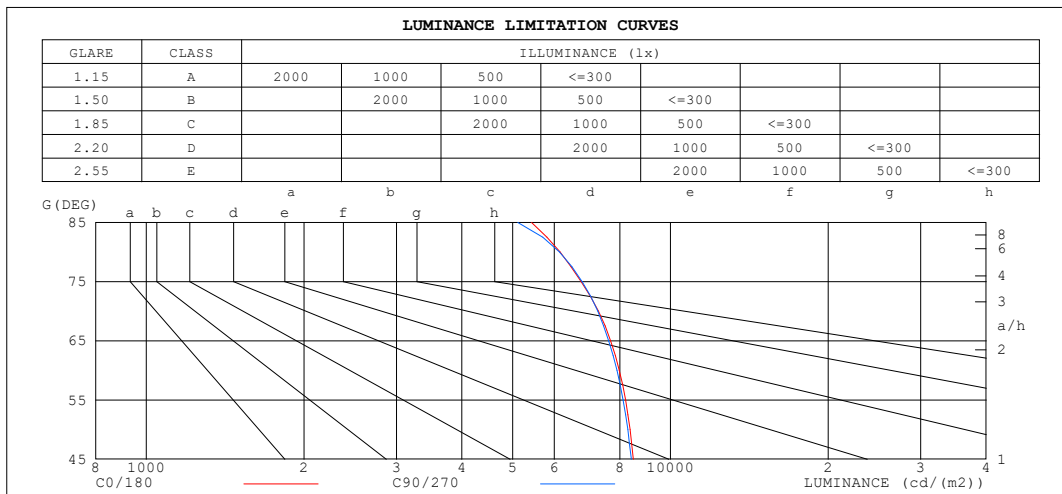
%lamp = 70.6%

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: 99XLED642WW	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	5433	5116
80	6157	6138
75	6757	6782
70	7287	7266
65	7690	7624
60	7986	7901
55	8209	8120
50	8370	8286
45	8491	8417

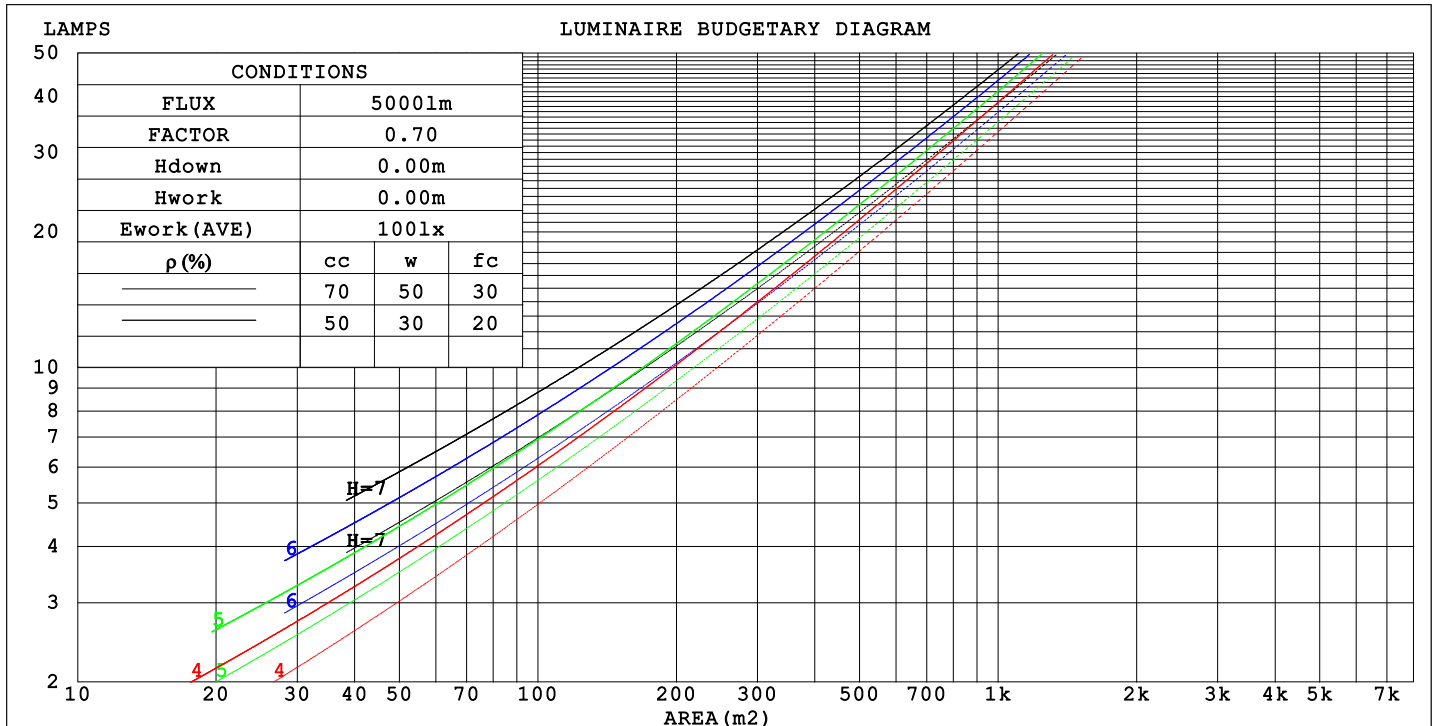
C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 26 October 2022

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: 99XLED642WW	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: 99XLED642WW	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	.262	.149	.047	.256	.146	.046	.245	.140	.045	.235	.135	.043	.225	.130	.042	
2.0	.245	.135	.041	.240	.132	.041	.230	.128	.040	.221	.124	.039	.213	.121	.038	
3.0	.227	.121	.036	.222	.119	.036	.213	.116	.035	.206	.113	.035	.198	.110	.034	
4.0	.209	.109	.032	.205	.107	.032	.197	.105	.031	.190	.102	.031	.184	.100	.030	
5.0	.193	.098	.028	.189	.097	.028	.183	.095	.028	.176	.093	.028	.170	.091	.027	
6.0	.179	.090	.026	.176	.089	.026	.170	.087	.025	.164	.085	.025	.159	.084	.025	
7.0	.166	.082	.023	.163	.081	.023	.158	.080	.023	.153	.078	.023	.148	.077	.023	
8.0	.155	.076	.021	.153	.075	.021	.148	.074	.021	.143	.073	.021	.139	.071	.021	
9.0	.145	.070	.020	.143	.070	.020	.139	.069	.019	.135	.068	.019	.131	.066	.019	
10.0	.137	.066	.018	.135	.065	.018	.131	.064	.018	.127	.063	.018	.124	.062	.018	

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	.158	.158	.158	.135	.135	.135	.092	.092	.092	.053	.053	.053	.017	.017	.017	
1.0	.150	.130	.111	.129	.111	.096	.088	.077	.066	.051	.044	.039	.016	.014	.012	
2.0	.144	.110	.081	.123	.094	.070	.084	.065	.049	.049	.038	.029	.016	.012	.009	
3.0	.137	.095	.062	.118	.082	.053	.081	.057	.037	.047	.033	.022	.015	.011	.007	
4.0	.131	.084	.048	.112	.073	.042	.077	.051	.030	.045	.030	.017	.014	.010	.006	
5.0	.125	.075	.039	.107	.065	.034	.074	.046	.024	.043	.027	.014	.014	.009	.005	
6.0	.119	.068	.032	.102	.059	.028	.070	.042	.020	.041	.024	.012	.013	.008	.004	
7.0	.113	.063	.027	.097	.054	.024	.067	.038	.017	.039	.022	.010	.013	.007	.003	
8.0	.108	.058	.024	.093	.050	.021	.064	.035	.015	.037	.021	.009	.012	.007	.003	
9.0	.103	.054	.021	.088	.047	.018	.061	.033	.013	.036	.019	.008	.012	.006	.003	
10.0	.098	.050	.019	.084	.044	.016	.058	.031	.012	.034	.018	.007	.011	.006	.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: 99XLED642WW					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	17.8	19.3	18.0	19.5	19.7	17.7	19.3	18.0	19.5	19.7
	3H	19.3	20.7	19.6	21.0	21.2	19.3	20.7	19.6	20.9	21.2
	4H	19.9	21.3	20.2	21.5	21.8	19.9	21.2	20.2	21.5	21.7
	6H	20.3	21.6	20.7	21.9	22.2	20.3	21.6	20.7	21.9	22.1
	8H	20.5	21.7	20.8	22.0	22.3	20.5	21.7	20.8	22.0	22.3
	12H	20.6	21.8	20.9	22.1	22.4	20.5	21.7	20.9	22.0	22.3
4H	2H	18.4	19.7	18.7	20.0	20.2	18.3	19.7	18.7	19.9	20.2
	3H	20.1	21.3	20.4	21.6	21.9	20.1	21.3	20.4	21.5	21.9
	4H	20.8	21.9	21.2	22.2	22.6	20.8	21.9	21.2	22.2	22.5
	6H	21.4	22.4	21.8	22.7	23.1	21.4	22.3	21.8	22.7	23.1
	8H	21.6	22.5	22.0	22.8	23.2	21.6	22.5	22.0	22.8	23.2
	12H	21.7	22.5	22.1	22.9	23.3	21.7	22.5	22.1	22.9	23.3
8H	4H	21.1	22.0	21.5	22.4	22.7	21.1	22.0	21.5	22.3	22.7
	6H	21.8	22.6	22.2	23.0	23.4	21.8	22.5	22.2	22.9	23.4
	8H	22.1	22.7	22.5	23.2	23.6	22.1	22.7	22.5	23.2	23.6
	12H	22.3	22.9	22.8	23.3	23.8	22.3	22.8	22.7	23.3	23.8
12H	4H	21.1	21.9	21.5	22.3	22.7	21.1	21.9	21.5	22.3	22.7
	6H	21.9	22.5	22.3	23.0	23.4	21.9	22.5	22.3	22.9	23.4
	8H	22.2	22.8	22.7	23.2	23.7	22.2	22.7	22.7	23.2	23.7
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: 99XLED642WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

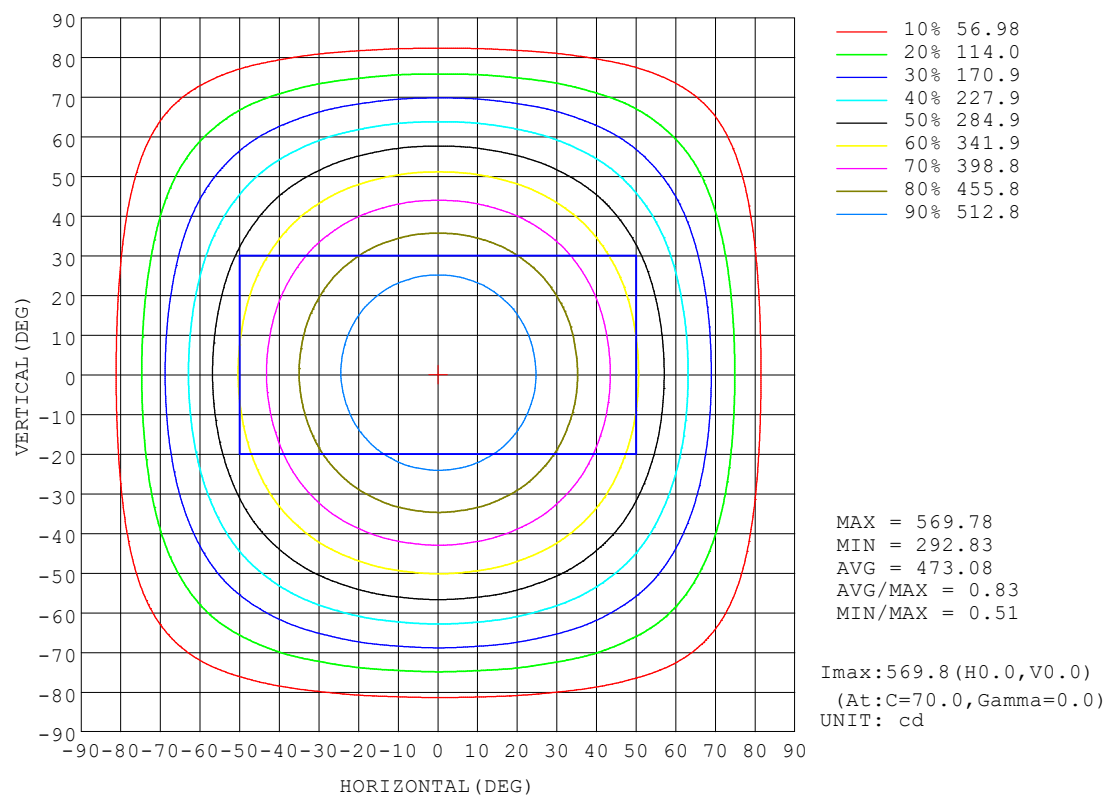
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	47	38	32	47	38	32	46	37	32	26
0.80	56	46	40	55	46	40	53	45	39	34
1.00	63	54	47	62	53	47	60	54	47	41
1.25	69	60	54	68	59	54	65	58	53	47
1.50	73	65	59	72	64	58	69	62	57	51
2.00	79	72	66	77	70	65	74	69	64	58
2.50	82	75	70	80	74	70	77	72	68	61
3.00	85	79	74	83	78	73	80	75	72	65
4.00	88	83	79	86	82	78	83	79	76	69
5.00	90	86	83	88	85	81	84	81	79	71
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: 99XLED642WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



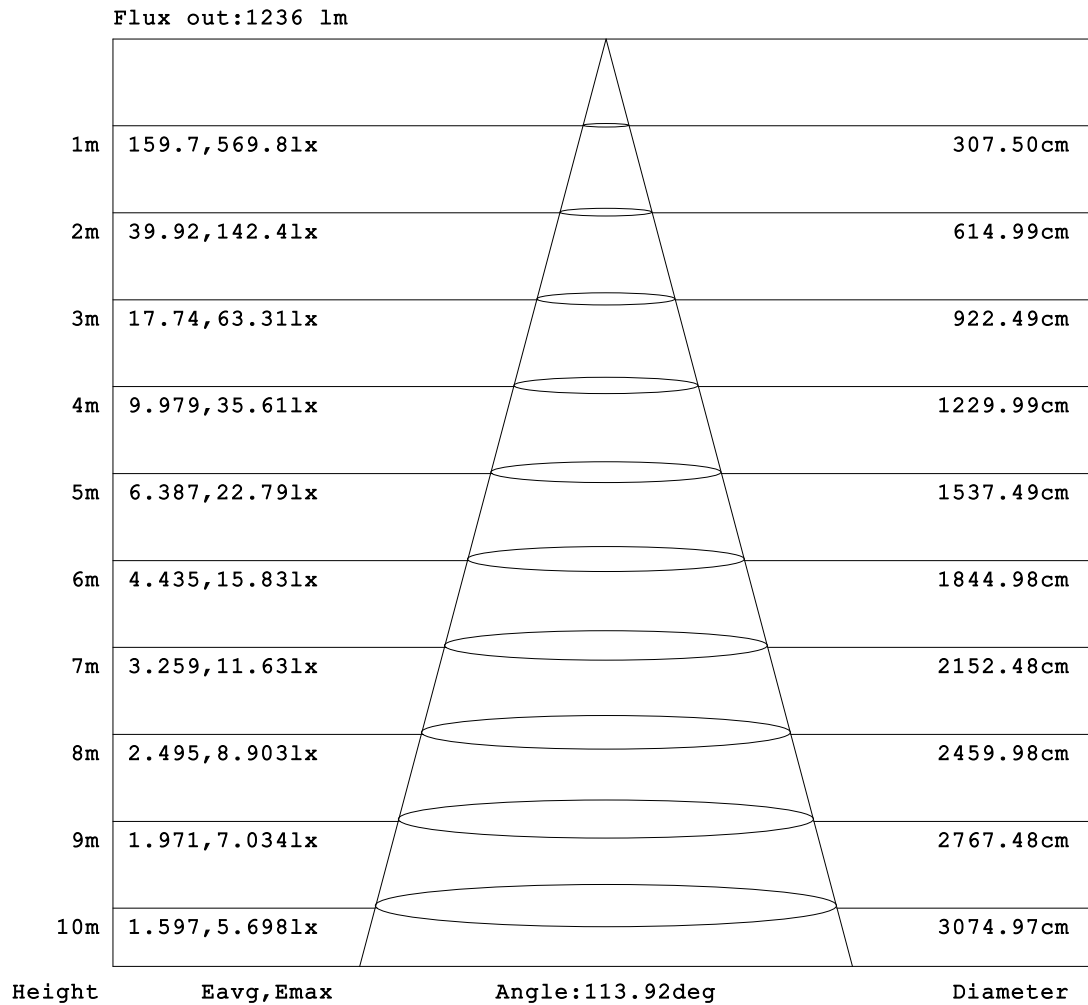
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 26 October 2022

$\gamma$  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: 99XLED642WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



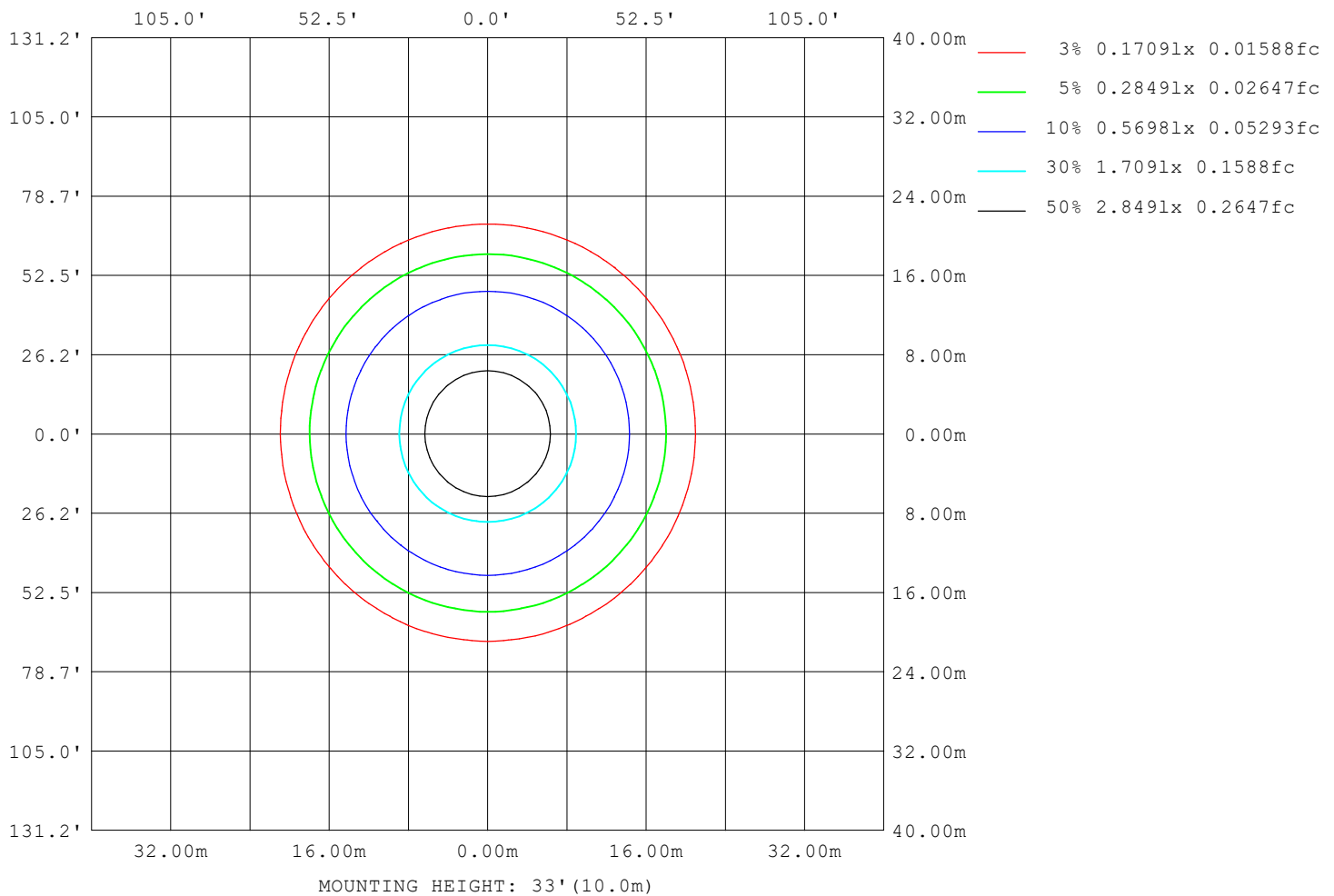
**Note:** The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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: 99XLED642WW	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: 99XLED642WW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

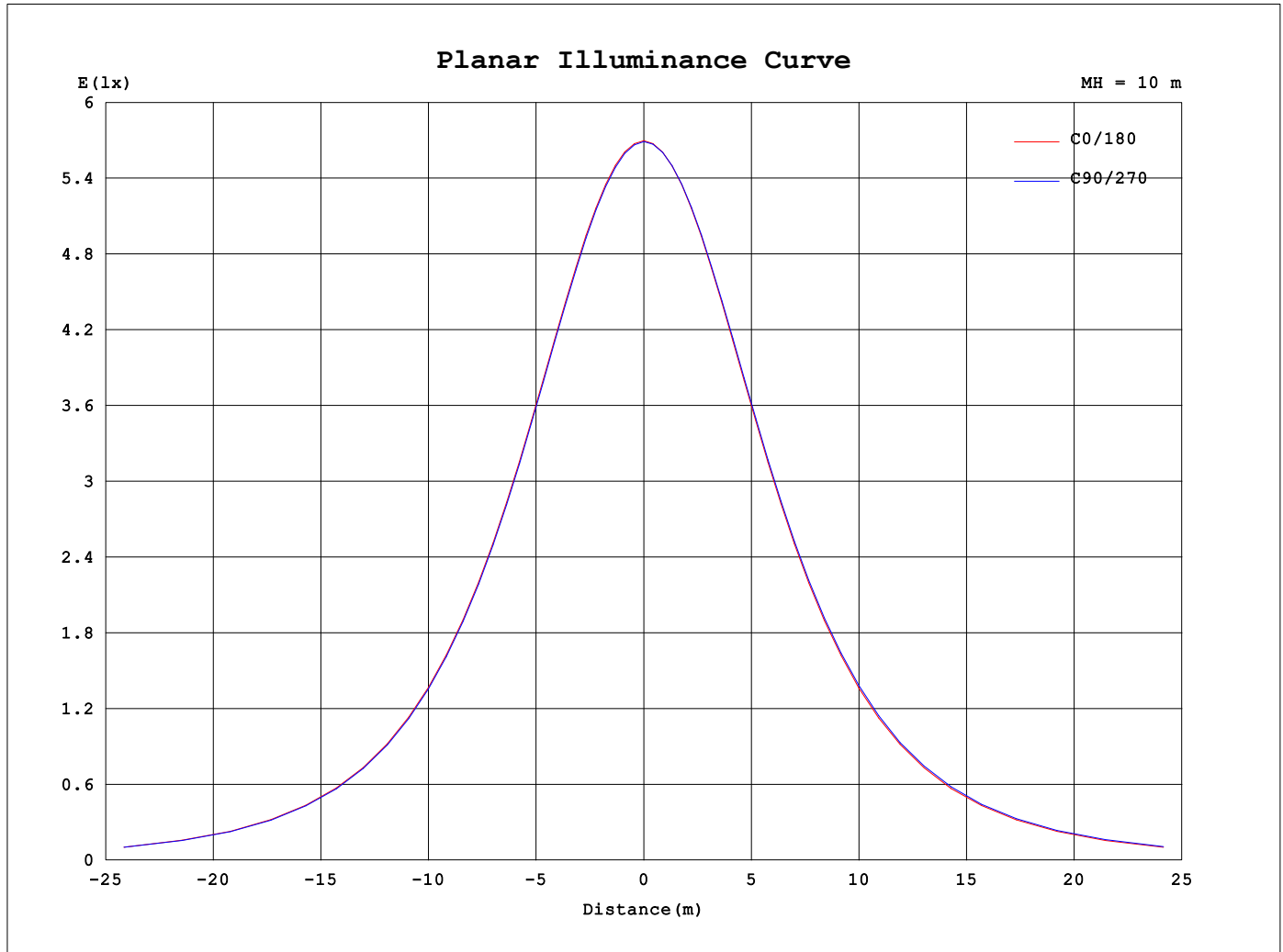
AvgL	cd/m2
L_0~180 (65) av	7648
L_0~180 (75) av	6703
L_0~180 (85) av	5171
L_90~270 (65) av	7780
L_90~270 (75) av	7022
L_90~270 (85) av	5713
L_45 (65) av	7708
L_45 (75) av	6901
L_45 (85) av	5402

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:

```

```

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:

```