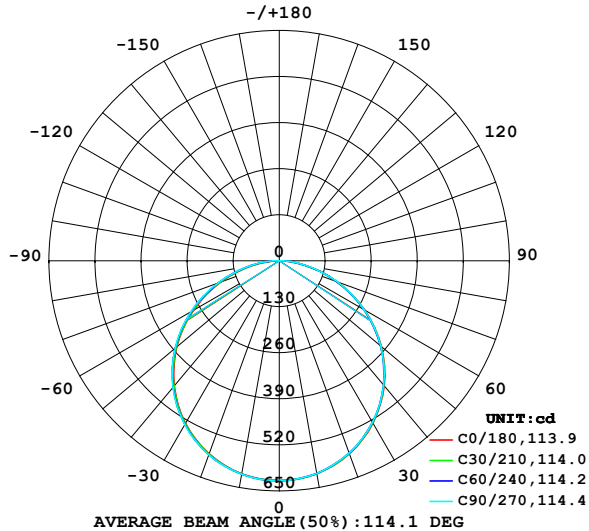


LUMINAIRE PHOTOMETRIC TEST REPORT

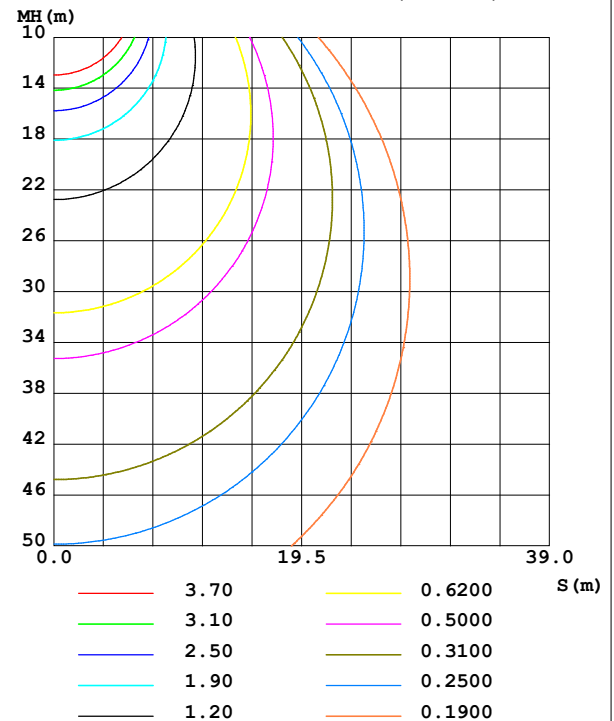
NAME: 99XLED642CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99XLED642CW	Imax (cd)	621.0	S/MH (C0/180)	1.27
NOMINAL POWER (W)	24	LOR (%)	90.7	S/MH (C90/270)	1.28
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	1814.8	η UP, DN (C0-180)	0.0, 44.9
NOMINAL FLUX (lm)	2000	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 45.8
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	90.7	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:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	610.6	609.9	609.6	609.9	610.7	611.6	612.0	611.6	0- 10	58.79	58.79	3.24,2.94
20	579.5	578.3	577.9	578.4	579.9	581.8	582.8	581.7	10- 20	168.8	227.6	12.5,11.4
30	529.2	527.3	527.0	527.5	529.7	532.5	534.0	532.3	20- 30	256.9	484.4	26.7,24.2
40	460.8	458.5	458.3	458.9	461.4	465.1	467.1	464.8	30- 40	311.5	796.0	43.9,39.8
50	376.6	373.9	373.8	374.3	377.3	381.8	384.1	381.2	40- 50	325.2	1121	61.8,56.1
60	278.9	276.4	277.1	277.1	280.2	285.3	288.3	284.6	50- 60	295.5	1417	78.1,70.8
70	173.6	172.7	174.1	173.5	175.2	181.5	185.0	180.9	60- 70	226.9	1643	90.6,82.2
80	73.88	73.26	74.54	73.69	74.26	80.75	84.61	80.54	70- 80	133.0	1776	97.9,88.8
90	1.036	1.050	1.065	1.057	0.9001	0.9225	1.081	0.9341	80- 90	38.31	1815	100,90.7
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): 959.56 lm

%lum = 52.9%

%lamp = 48.0%

Conical surface Flux(130deg): 1540.6 lm

%lum = 84.9%

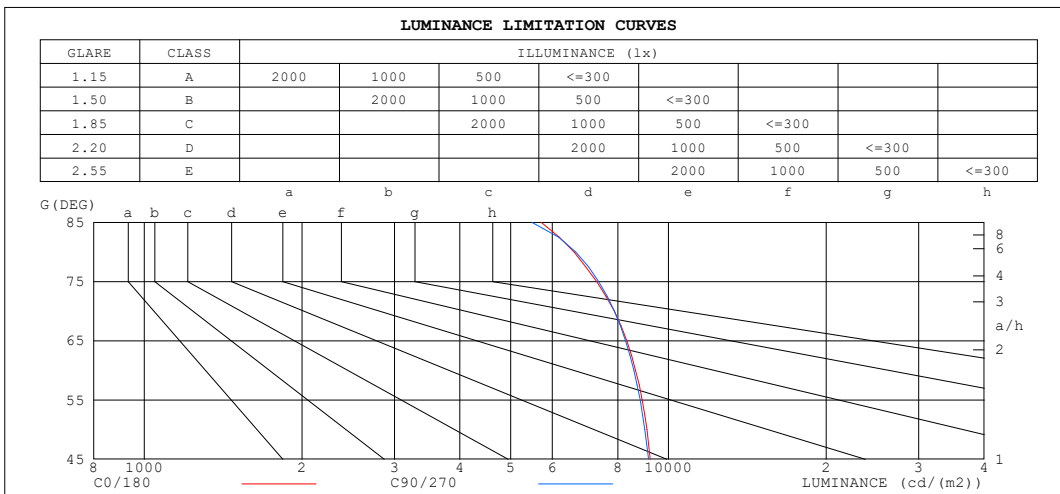
%lamp = 77.0%

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:

LUMINANCE LIMITATION CURVES

NAME: 99XLED642CW	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	5719	5494
80	6602	6651
75	7293	7359
70	7878	7888
65	8322	8281
60	8654	8588
55	8907	8827
50	9091	9010
45	9230	9156

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:

```

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: 99XLED642CW	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	.285	.162	.051	.279	.159	.051	.267	.153	.049	.256	.148	.047	.246	.142	.046	
2.0	.268	.147	.045	.262	.144	.044	.251	.140	.043	.242	.136	.042	.233	.132	.041	
3.0	.247	.132	.039	.242	.130	.039	.233	.126	.038	.224	.123	.038	.216	.120	.037	
4.0	.228	.118	.035	.224	.117	.035	.215	.114	.034	.207	.111	.034	.200	.109	.033	
5.0	.211	.107	.031	.207	.106	.031	.199	.104	.031	.192	.101	.030	.186	.099	.030	
6.0	.195	.098	.028	.192	.097	.028	.185	.095	.028	.179	.093	.027	.173	.091	.027	
7.0	.181	.090	.025	.178	.089	.025	.172	.087	.025	.167	.086	.025	.162	.084	.025	
8.0	.169	.083	.023	.167	.082	.023	.161	.081	.023	.156	.079	.023	.152	.078	.023	
9.0	.159	.077	.021	.156	.076	.021	.151	.075	.021	.147	.074	.021	.143	.073	.021	
10.0	.149	.071	.020	.147	.071	.020	.143	.070	.020	.139	.069	.020	.135	.068	.019	

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	.140	.122	.105	.096	.084	.072	.055	.048	.042	.018	.016	.014	
2.0	.157	.120	.089	.134	.103	.077	.092	.071	.053	.053	.041	.031	.017	.013	.010	
3.0	.150	.104	.067	.128	.089	.058	.088	.062	.041	.051	.036	.024	.016	.012	.008	
4.0	.143	.092	.053	.123	.079	.046	.084	.055	.032	.049	.032	.019	.016	.011	.006	
5.0	.136	.082	.043	.117	.071	.037	.080	.050	.026	.047	.029	.016	.015	.010	.005	
6.0	.129	.075	.035	.111	.065	.031	.077	.045	.022	.045	.027	.013	.014	.009	.004	
7.0	.123	.068	.030	.106	.059	.026	.073	.042	.019	.043	.024	.011	.014	.008	.004	
8.0	.117	.063	.026	.101	.055	.023	.070	.038	.016	.041	.023	.010	.013	.007	.003	
9.0	.112	.059	.023	.096	.051	.020	.067	.036	.014	.039	.021	.008	.013	.007	.003	
10.0	.107	.055	.020	.092	.048	.018	.064	.033	.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: 99XLED642CW					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	18.0	19.6	18.3	19.8	20.0	18.0	19.5	18.3	19.7	19.9				
3H	19.6	21.0	19.9	21.2	21.4	19.5	21.0	19.8	21.2	21.4				
4H	20.2	21.5	20.5	21.8	22.0	20.1	21.5	20.5	21.7	22.0				
6H	20.6	21.9	20.9	22.1	22.4	20.6	21.9	20.9	22.1	22.4				
8H	20.7	22.0	21.1	22.2	22.5	20.7	22.0	21.1	22.2	22.5				
12H	20.8	22.0	21.2	22.3	22.6	20.8	22.0	21.1	22.3	22.6				
4H 2H	18.6	20.0	19.0	20.2	20.5	18.6	20.0	18.9	20.2	20.5				
3H	20.3	21.5	20.7	21.8	22.1	20.3	21.5	20.7	21.8	22.1				
4H	21.1	22.1	21.4	22.5	22.8	21.1	22.1	21.4	22.5	22.8				
6H	21.6	22.6	22.0	22.9	23.3	21.6	22.6	22.0	22.9	23.3				
8H	21.8	22.7	22.2	23.1	23.5	21.8	22.7	22.2	23.1	23.5				
12H	21.9	22.8	22.4	23.1	23.6	21.9	22.8	22.4	23.1	23.6				
8H 4H	21.3	22.2	21.7	22.6	23.0	21.3	22.2	21.7	22.6	23.0				
6H	22.0	22.8	22.5	23.2	23.6	22.0	22.8	22.5	23.2	23.6				
8H	22.3	23.0	22.8	23.4	23.8	22.3	23.0	22.8	23.4	23.9				
12H	22.5	23.1	23.0	23.5	24.0	22.5	23.1	23.0	23.5	24.0				
12H 4H	21.3	22.2	21.8	22.6	23.0	21.3	22.2	21.8	22.6	23.0				
6H	22.1	22.8	22.6	23.2	23.6	22.1	22.8	22.6	23.2	23.6				
8H	22.4	23.0	22.9	23.4	23.9	22.4	23.0	22.9	23.4	23.9				
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: 99XLED642CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

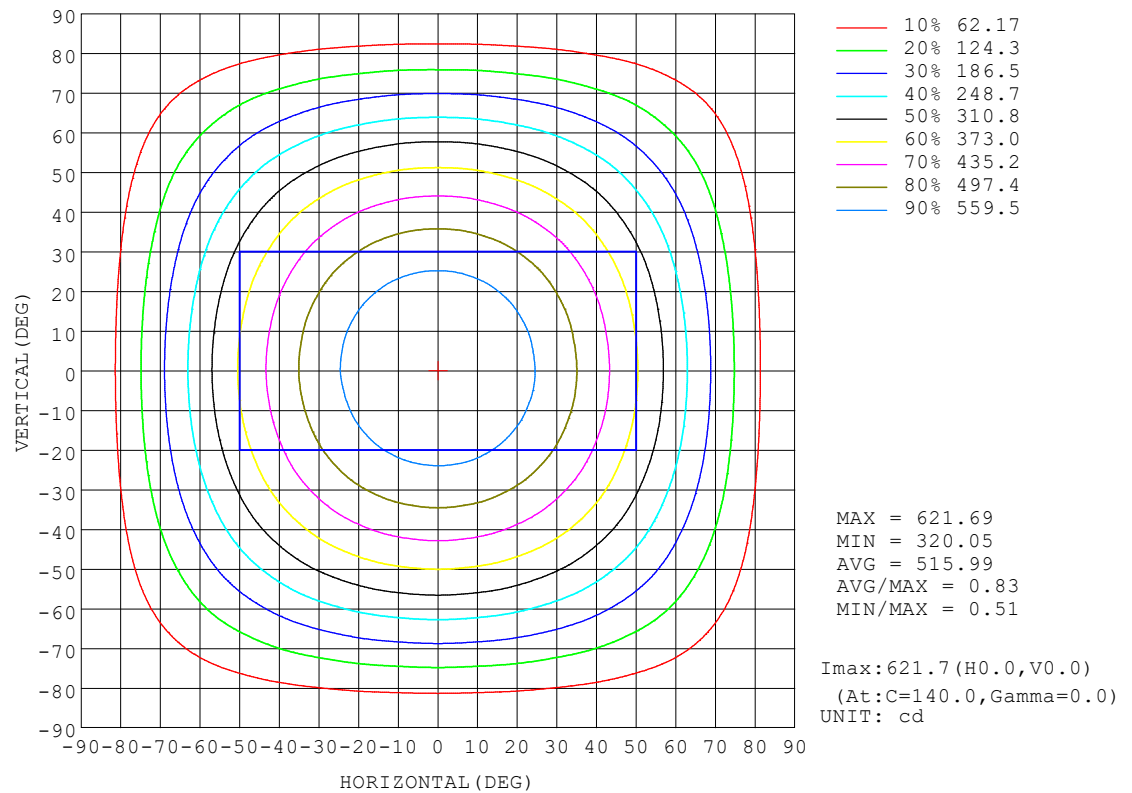
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	52	41	35	51	41	35	50	41	35	29
0.80	61	50	44	60	50	43	58	49	43	37
1.00	69	58	52	67	58	51	65	59	51	44
1.25	75	65	59	74	65	58	71	63	58	51
1.50	80	70	64	78	70	64	75	68	63	56
2.00	86	78	72	84	77	71	81	75	70	63
2.50	89	82	77	88	81	76	84	79	74	67
3.00	93	86	81	91	85	80	87	82	78	70
4.00	96	91	87	94	89	85	90	86	83	75
5.00	98	94	90	96	92	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: 99XLED642CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

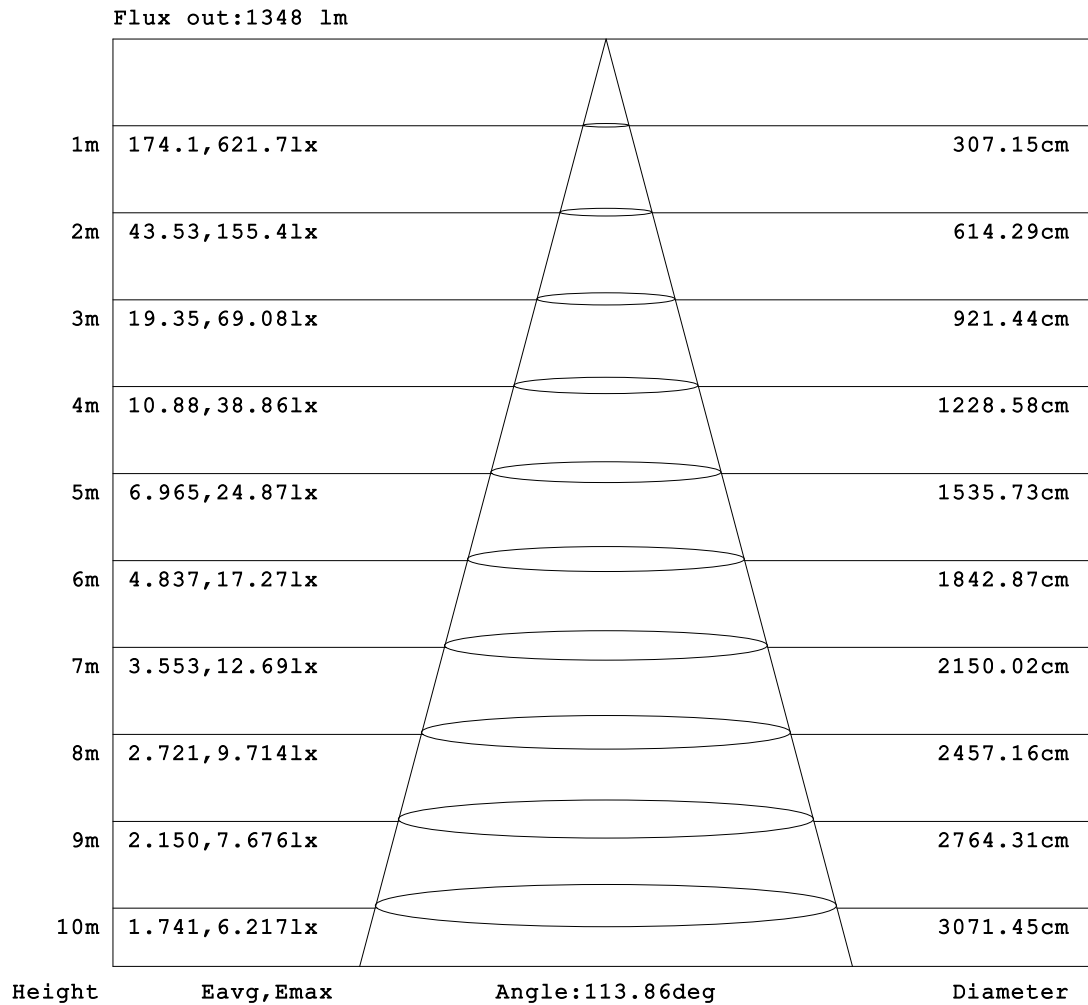


C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature:25.3°C
 Operators:
 Test Date:26 October 2022

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:

AAI Figure

NAME: 99XLED642CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



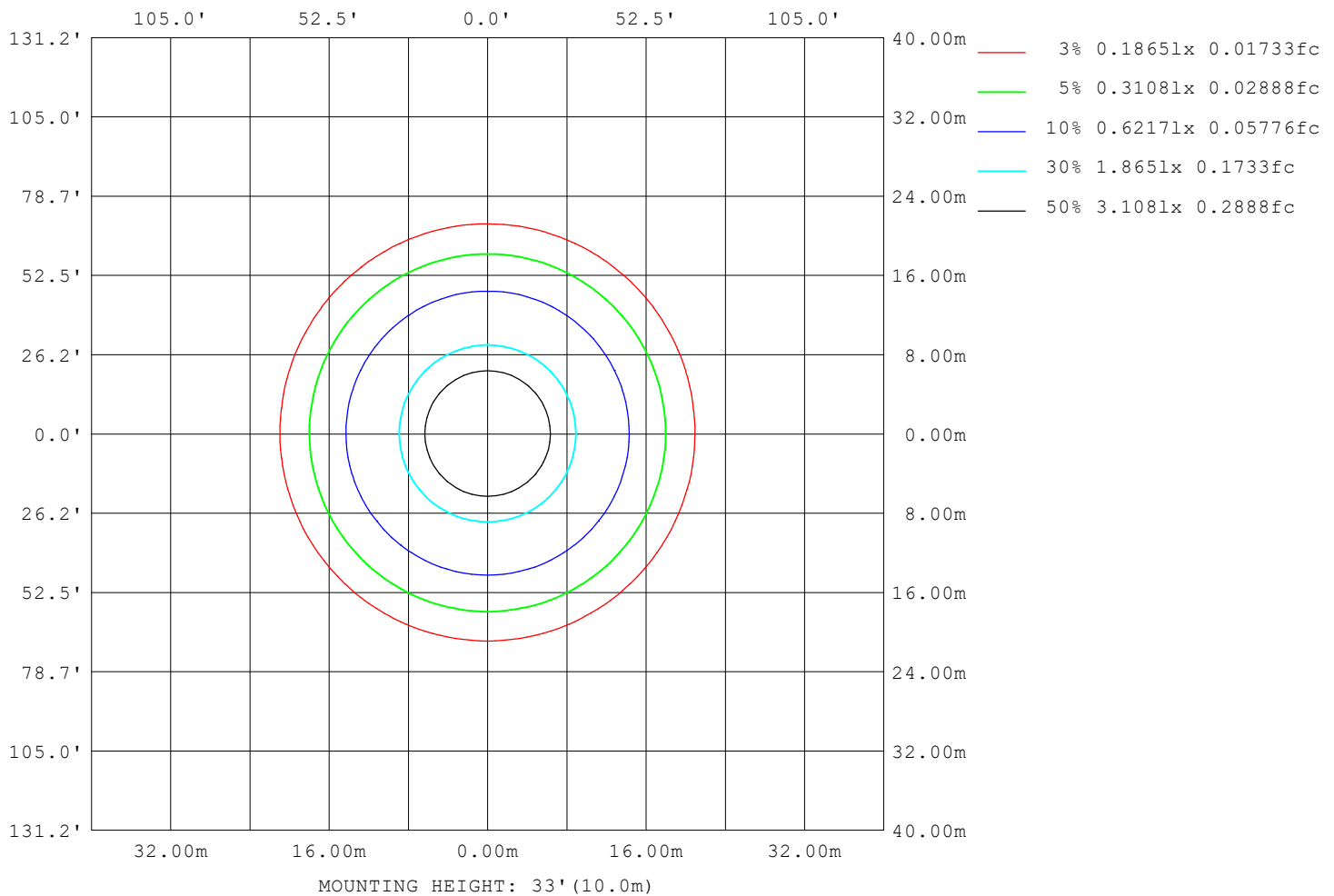
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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: 99XLED642CW	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: 99XLED642CW	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 300 x 300	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

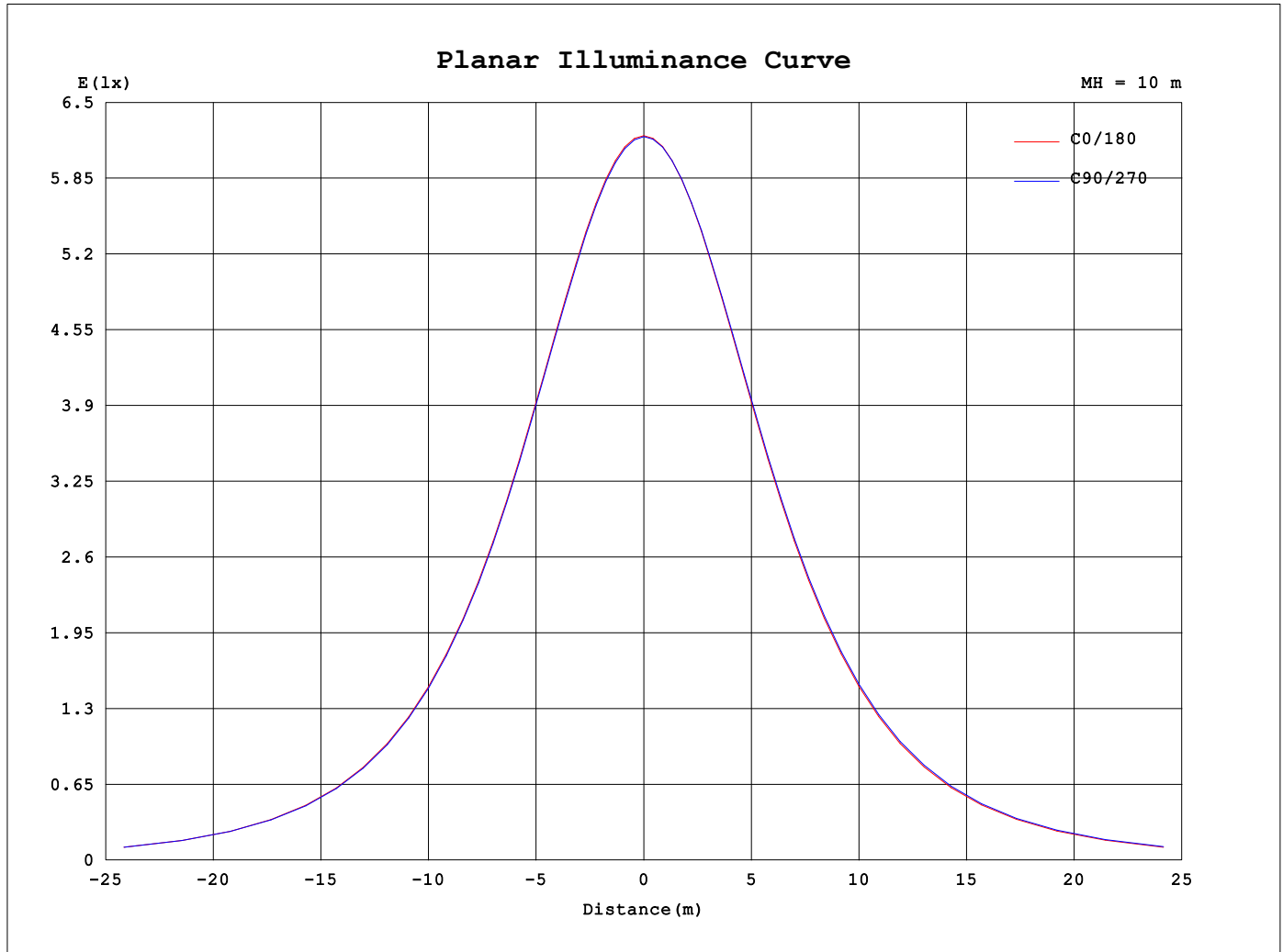
AvgL	cd/m2
L_0~180 (65) av	8342
L_0~180 (75) av	7328
L_0~180 (85) av	5672
L_90~270 (65) av	8491
L_90~270 (75) av	7669
L_90~270 (85) av	6252
L_45 (65) av	8411
L_45 (75) av	7540
L_45 (85) av	5908

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

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:

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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:

```