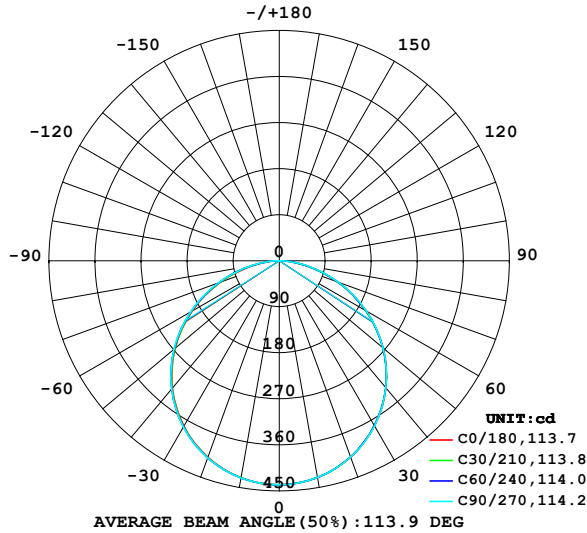


LUMINAIRE PHOTOMETRIC TEST REPORT

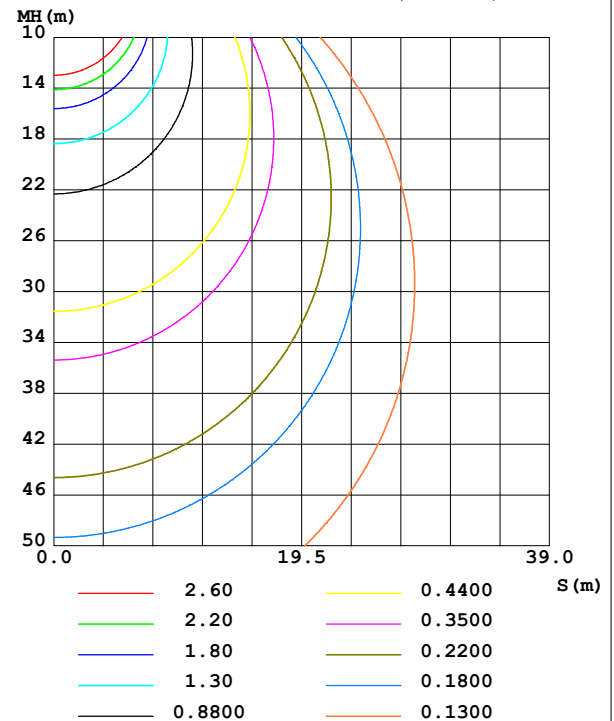
NAME: 99XLED641W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99XLED641W	I _{max} (cd)	437.9	S/MH (C0/180)	1.27
NOMINAL POWER (W)	18	LOR (%)	79.6	S/MH (C90/270)	1.27
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	1273.7	η UP, DN (C0-180)	0.0, 39.6
NOMINAL FLUX (lm)	1600	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 40.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	79.6	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: MEDIUM
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	430.4	430.2	430.2	430.4	430.6	430.9	431.1	430.8	0- 10	41.45	41.45	3.25,2.59
20	408.4	408.0	408.1	408.4	408.8	409.7	409.9	409.3	10- 20	119.0	160.4	12.6,10
30	372.6	372.1	372.5	372.7	373.3	374.6	375.1	374.1	20- 30	181.0	341.5	26.8,21.3
40	324.3	323.8	324.4	324.5	325.1	326.7	327.5	326.2	30- 40	219.5	560.9	44,35.1
50	264.9	264.3	265.0	265.0	265.7	267.5	268.6	267.0	40- 50	229.0	789.9	62,49.4
60	196.1	195.5	196.4	196.1	196.8	198.9	200.3	198.4	50- 60	207.8	997.7	78.3,62.4
70	121.5	121.6	123.1	122.2	122.1	124.7	126.5	124.4	60- 70	158.9	1157	90.8,72.3
80	49.99	50.63	52.09	51.23	50.27	53.21	55.14	53.02	70- 80	91.65	1248	98,78
90	0.7100	0.7186	0.7270	0.7186	0.6148	0.6220	0.6372	0.6274	80- 90	25.48	1274	100,79.6
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): 676.15 lm

%lum = 53.1%
%lamp = 42.3%

Conical surface Flux(130deg): 1084.7 lm

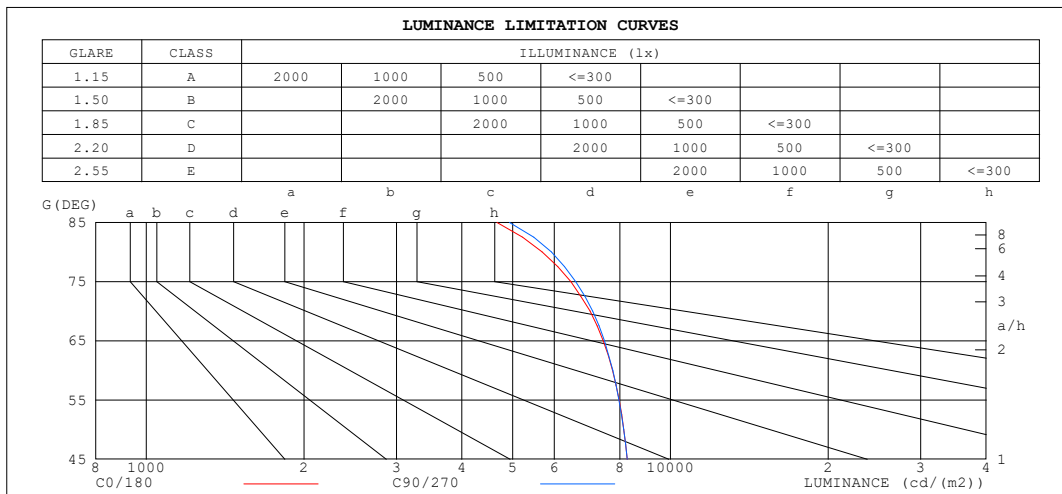
%lum = 85.2%
%lamp = 67.8%

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
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: 99XLED641W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	4663	4930
80	5690	5924
75	6455	6591
70	7023	7108
65	7446	7485
60	7752	7756
55	7979	7976
50	8145	8141
45	8271	8266

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
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: 99XLED641W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 225 x 225	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	.249	.142	.045	.243	.139	.044	.233	.134	.043	.223	.129	.041	.214	.124	.040	
2.0	.234	.128	.039	.229	.126	.039	.220	.122	.038	.211	.118	.037	.203	.115	.036	
3.0	.216	.115	.034	.212	.114	.034	.204	.110	.034	.196	.107	.033	.189	.105	.032	
4.0	.200	.104	.030	.196	.102	.030	.188	.100	.030	.182	.097	.029	.175	.095	.029	
5.0	.184	.094	.027	.181	.093	.027	.174	.091	.027	.168	.089	.026	.163	.087	.026	
6.0	.171	.086	.025	.168	.085	.024	.162	.083	.024	.157	.081	.024	.152	.080	.024	
7.0	.159	.079	.022	.156	.078	.022	.151	.076	.022	.146	.075	.022	.142	.074	.022	
8.0	.148	.073	.020	.146	.072	.020	.141	.071	.020	.137	.069	.020	.133	.068	.020	
9.0	.139	.067	.019	.137	.067	.019	.133	.066	.019	.129	.065	.018	.125	.064	.018	
10.0	.131	.063	.017	.129	.062	.017	.125	.061	.017	.121	.060	.017	.118	.059	.017	

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	.152	.152	.152	.130	.130	.130	.088	.088	.088	.051	.051	.051	.016	.016	.016	
1.0	.144	.124	.107	.123	.107	.092	.084	.073	.064	.048	.042	.037	.016	.014	.012	
2.0	.137	.105	.078	.118	.090	.067	.081	.063	.047	.046	.036	.028	.015	.012	.009	
3.0	.131	.091	.059	.112	.079	.051	.077	.055	.036	.045	.032	.021	.014	.010	.007	
4.0	.125	.080	.046	.107	.069	.040	.074	.048	.028	.043	.028	.017	.014	.009	.006	
5.0	.119	.072	.037	.102	.062	.033	.071	.044	.023	.041	.026	.014	.013	.008	.004	
6.0	.114	.065	.031	.098	.057	.027	.067	.040	.019	.039	.023	.011	.013	.008	.004	
7.0	.108	.060	.026	.093	.052	.023	.064	.036	.016	.037	.021	.010	.012	.007	.003	
8.0	.103	.055	.023	.089	.048	.020	.061	.034	.014	.036	.020	.008	.012	.007	.003	
9.0	.098	.051	.020	.084	.045	.017	.059	.031	.012	.034	.019	.007	.011	.006	.002	
10.0	.093	.048	.018	.081	.042	.016	.056	.029	.011	.033	.017	.007	.011	.006	.002	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
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: 99XLED641W					TYPE:			WEIGHT: 1			
SPEC.:					DIM.: square 225 x 225			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	18.4	20.0	18.7	20.2	20.4	18.5	20.0	18.7	20.2	20.4
	3H	20.0	21.4	20.3	21.6	21.8	20.0	21.4	20.3	21.6	21.9
	4H	20.5	21.9	20.9	22.1	22.4	20.6	21.9	20.9	22.2	22.4
	6H	20.9	22.2	21.3	22.5	22.8	21.0	22.3	21.3	22.6	22.8
	8H	21.1	22.3	21.4	22.6	22.9	21.1	22.4	21.5	22.7	23.0
	12H	21.1	22.3	21.5	22.6	22.9	21.2	22.4	21.6	22.7	23.0
4H	2H	19.1	20.4	19.4	20.7	20.9	19.1	20.4	19.4	20.7	20.9
	3H	20.7	21.9	21.1	22.2	22.5	20.8	22.0	21.1	22.2	22.6
	4H	21.5	22.5	21.8	22.9	23.2	21.5	22.6	21.9	22.9	23.2
	6H	22.0	22.9	22.4	23.3	23.7	22.1	23.0	22.5	23.4	23.7
	8H	22.1	23.0	22.6	23.4	23.8	22.2	23.1	22.7	23.5	23.9
	12H	22.2	23.1	22.7	23.5	23.9	22.4	23.2	22.8	23.6	24.0
8H	4H	21.7	22.6	22.1	23.0	23.4	21.8	22.7	22.2	23.0	23.4
	6H	22.4	23.1	22.8	23.5	24.0	22.5	23.2	22.9	23.6	24.0
	8H	22.6	23.3	23.1	23.7	24.2	22.7	23.4	23.2	23.8	24.3
	12H	22.8	23.4	23.3	23.8	24.3	22.9	23.5	23.4	23.9	24.4
12H	4H	21.7	22.6	22.2	22.9	23.3	21.8	22.6	22.2	23.0	23.4
	6H	22.4	23.1	22.9	23.5	24.0	22.5	23.2	23.0	23.6	24.0
	8H	22.7	23.3	23.2	23.7	24.2	22.8	23.4	23.3	23.8	24.3
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: 0.050625 m2

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
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: 99XLED641W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

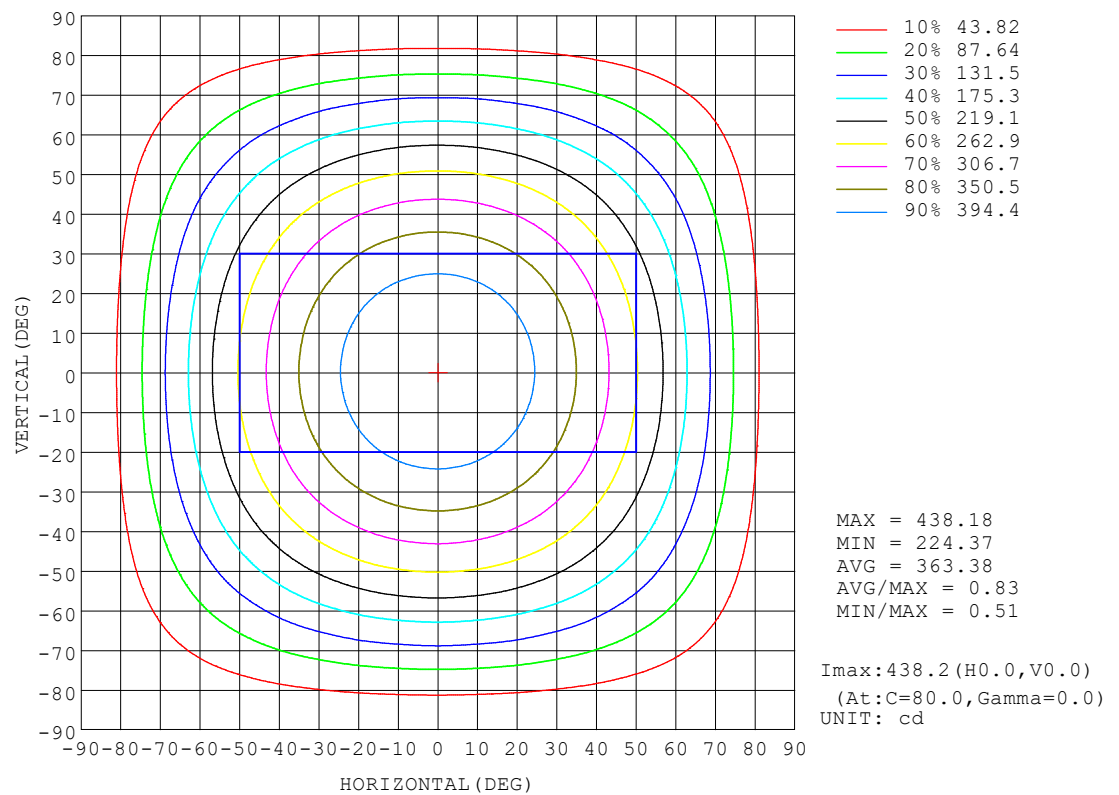
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	46	36	31	45	36	31	44	36	30	25
0.80	54	44	38	53	44	38	51	43	38	32
1.00	60	51	45	59	51	45	57	52	45	39
1.25	66	57	52	65	57	51	63	56	51	45
1.50	70	62	56	69	61	56	66	60	55	49
2.00	75	69	63	74	68	63	71	66	62	55
2.50	79	72	67	77	71	67	74	69	65	59
3.00	81	76	71	80	74	70	76	72	69	62
4.00	84	80	76	83	78	75	79	76	73	66
5.00	86	83	79	84	81	78	81	78	76	68
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: 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: 99XLED641W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

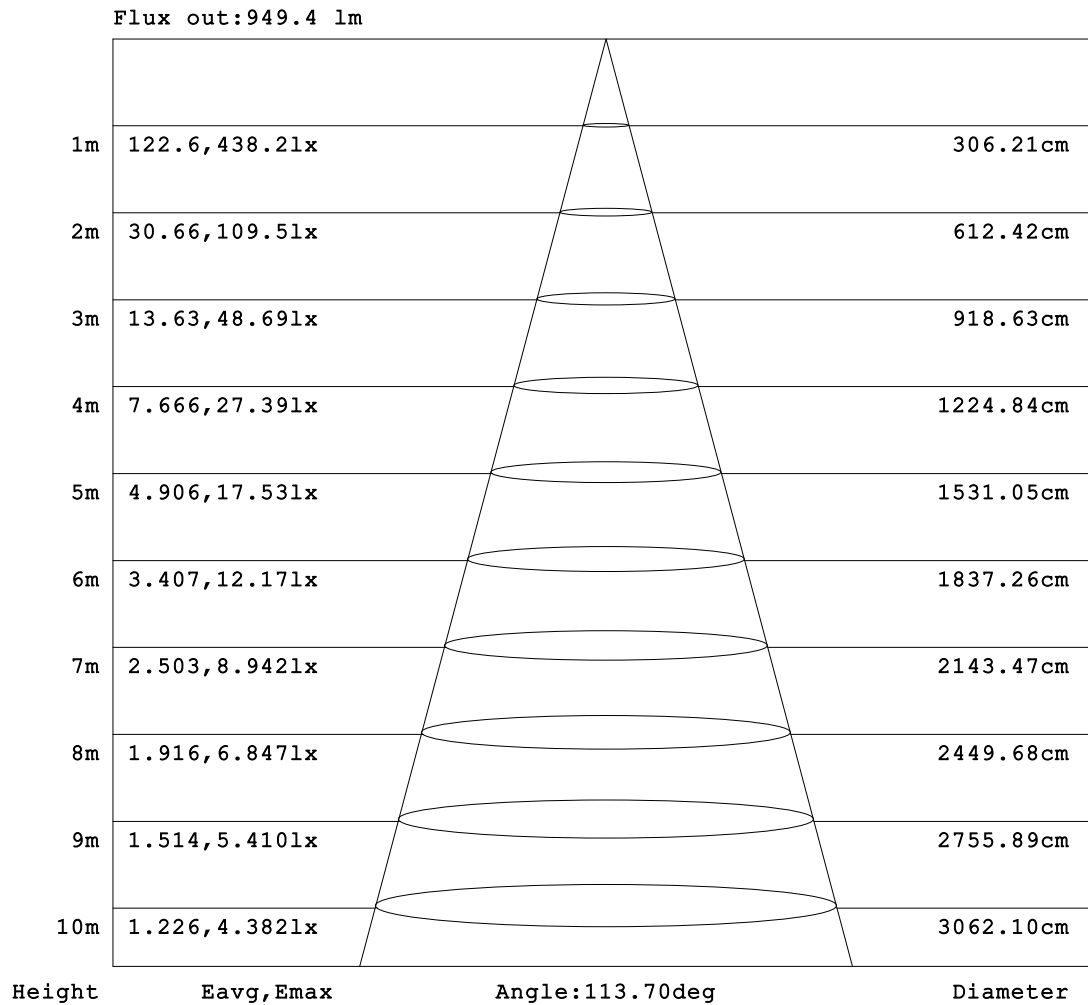


C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature:25.3°C
 Operators:
 Test Date:26 October 2022

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: 99XLED641W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



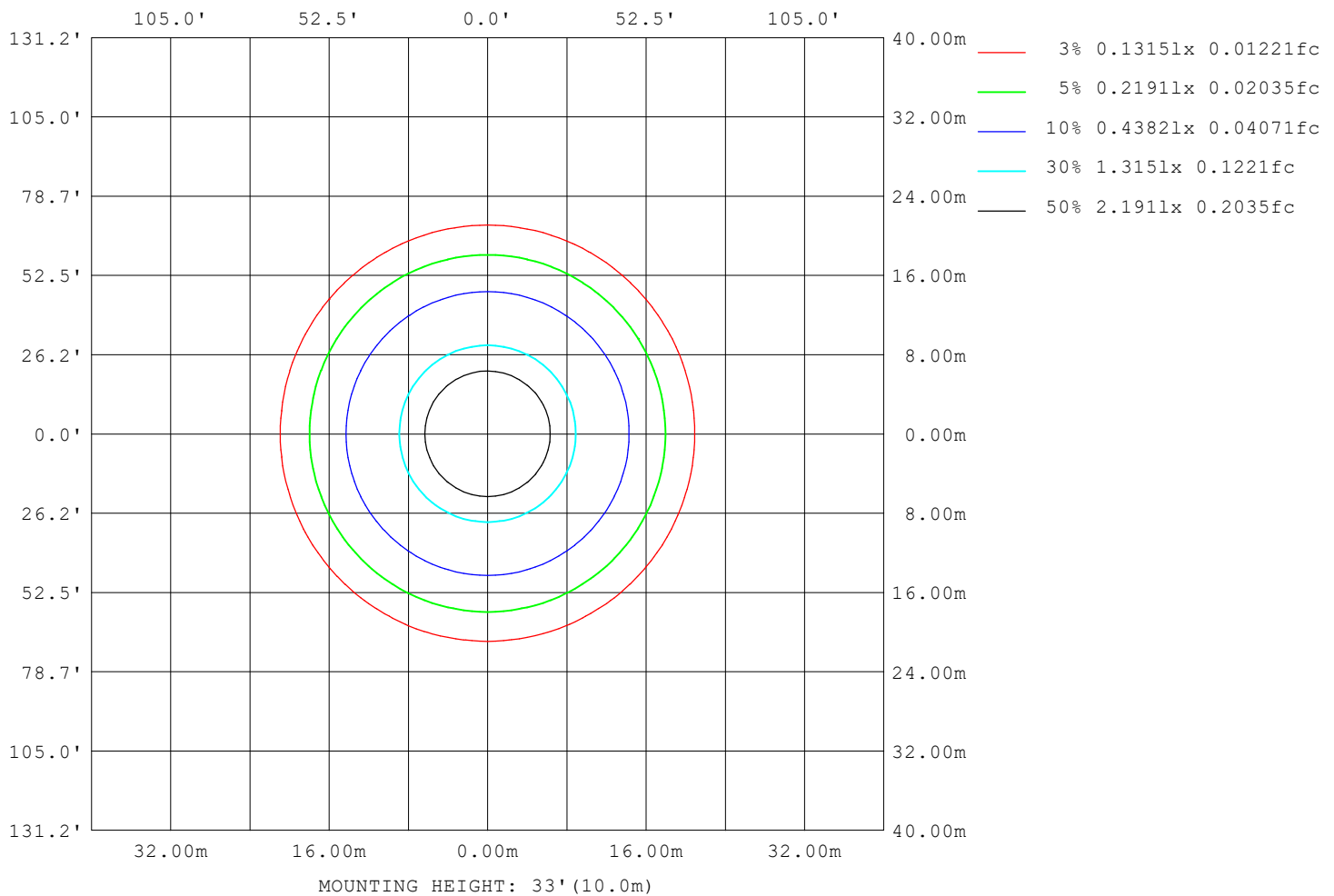
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 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: 99XLED641W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
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: 99XLED641W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: square 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

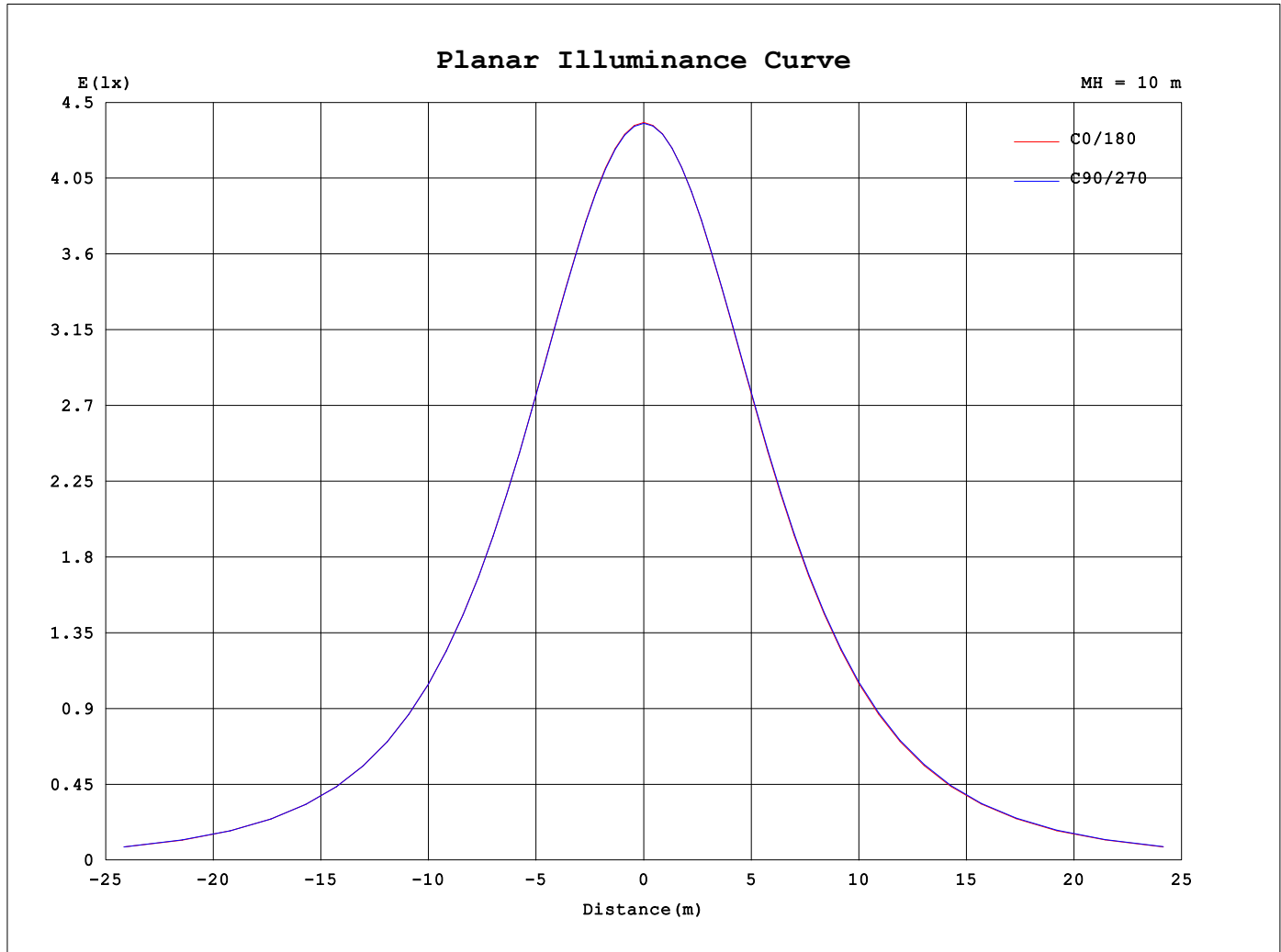
AvgL	cd/m2
L_0~180 (65) av	7460
L_0~180 (75) av	6454
L_0~180 (85) av	4741
L_90~270 (65) av	7570
L_90~270 (75) av	6716
L_90~270 (85) av	5222
L_45 (65) av	7503
L_45 (75) av	6620
L_45 (85) av	4940

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
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: MEDIUM
 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:

```