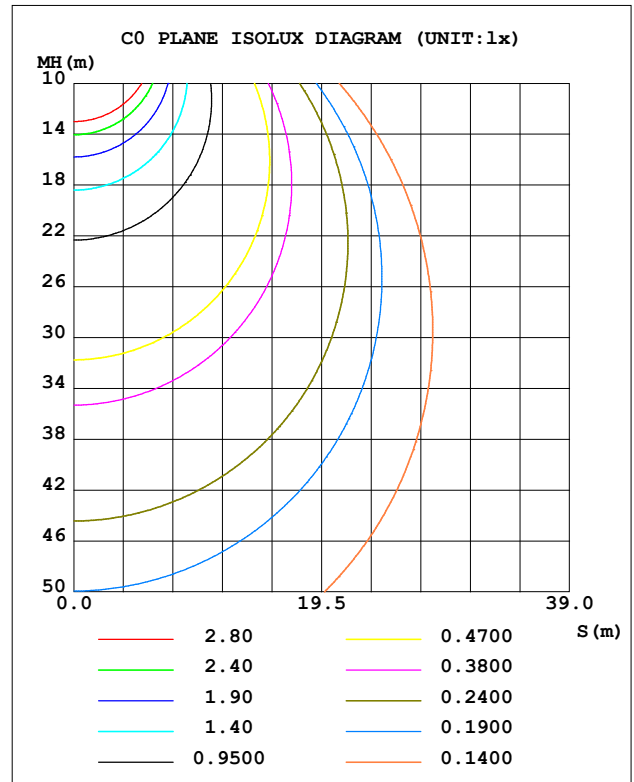
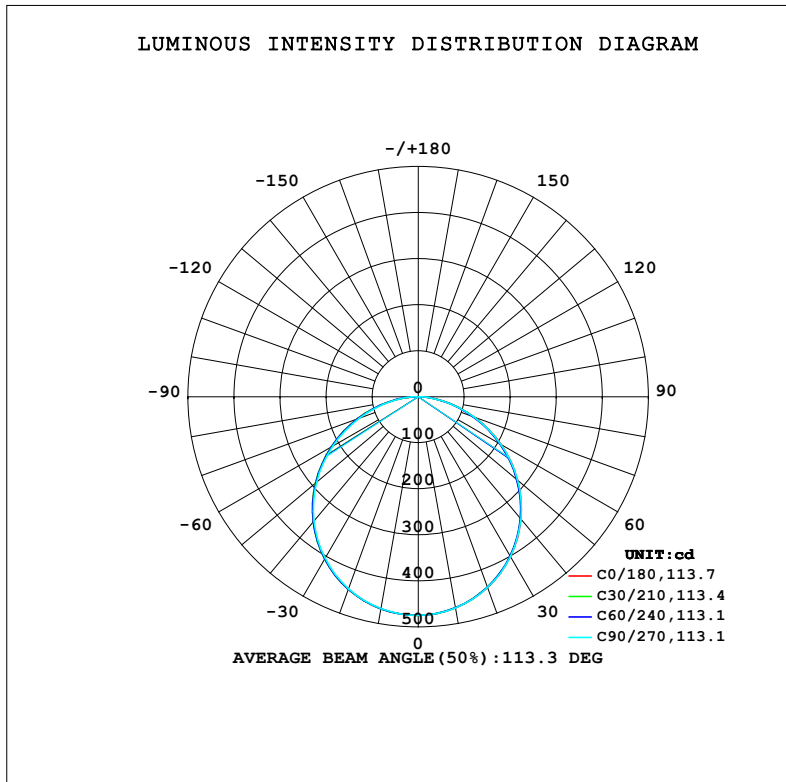


## LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 99LED969WW	TYPE: 99LED969WW	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99LED969WW	I <sub>max</sub> (cd)	474.7	S/MH (C0/180)	1.27
NOMINAL POWER (W)	18	LOR (%)	97.1	S/MH (C90/270)	1.27
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	1378.4	η UP, DN (C0-180)	0.0, 48.0
NOMINAL FLUX (lm)	1420	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 49.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	97.1	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 11 August 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	465.5	465.2	465.7	466.7	467.6	467.9	467.2	466.3	0- 10	44.92	44.92	3.26,3.16
20	440.6	439.7	440.6	442.9	444.7	445.0	443.7	442.1	10- 20	128.8	173.7	12.6,12.2
30	400.6	399.2	400.5	403.8	406.6	407.0	404.9	402.6	20- 30	195.7	369.4	26.8,26
40	347.1	345.0	346.8	351.0	355.0	355.1	352.5	349.4	30- 40	236.6	606.1	44,42.7
50	281.9	279.3	281.5	286.4	291.4	291.3	288.2	284.4	40- 50	246.1	852.2	61.8,60
60	208.1	205.0	207.2	212.8	218.6	218.3	214.5	210.6	50- 60	223.0	1075	78,75.7
70	130.3	126.9	128.8	135.0	141.3	140.5	135.9	132.6	60- 70	171.2	1246	90.4,87.8
80	56.48	53.26	54.14	60.33	65.90	65.57	61.63	58.63	70- 80	101.3	1348	97.8,94.9
90	0.8452	0.8284	0.8163	0.9121	3.269	3.756	2.838	0.7218	80- 90	30.63	1378	100,97.1
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): 730 lm

%lum = 53.0%

%lamp = 51.4%

Conical surface Flux(130deg): 1168.8 lm

%lum = 84.8%

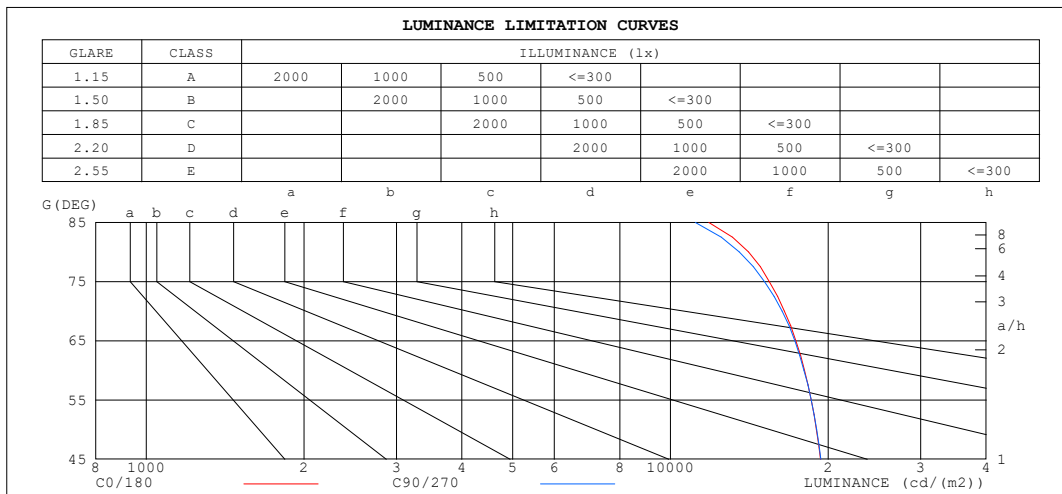
%lamp = 82.3%

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:11 August 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: 99LED969WW	TYPE: 99LED969WW	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	11838	11154
80	14079	13524
75	15431	15116
70	16498	16334
65	17343	17264
60	18021	17975
55	18558	18550
50	18985	18994
45	19333	19352

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 11 August 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: 99LED969WW	TYPE: 99LED969WW	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	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	.306	.174	.055	.299	.171	.054	.286	.164	.052	.275	.158	.051	.264	.153	.049	
2.0	.287	.157	.048	.281	.155	.048	.269	.150	.047	.259	.145	.045	.249	.141	.044	
3.0	.265	.141	.042	.259	.139	.042	.249	.135	.041	.240	.131	.040	.231	.128	.040	
4.0	.244	.127	.037	.239	.125	.037	.230	.122	.036	.222	.119	.036	.214	.116	.035	
5.0	.225	.115	.033	.221	.113	.033	.213	.111	.033	.206	.108	.032	.199	.106	.032	
6.0	.209	.105	.030	.205	.103	.030	.198	.101	.029	.191	.099	.029	.185	.097	.029	
7.0	.194	.096	.027	.191	.095	.027	.184	.093	.027	.178	.091	.027	.173	.090	.026	
8.0	.181	.088	.025	.178	.088	.025	.172	.086	.025	.167	.085	.024	.162	.083	.024	
9.0	.170	.082	.023	.167	.081	.023	.162	.080	.023	.157	.079	.023	.153	.078	.022	
10.0	.159	.076	.021	.157	.076	.021	.152	.075	.021	.148	.074	.021	.144	.072	.021	

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	.185	.185	.185	.158	.158	.158	.108	.108	.108	.062	.062	.062	.020	.020	.020	
1.0	.175	.152	.130	.150	.130	.112	.103	.089	.077	.059	.052	.045	.019	.017	.015	
2.0	.168	.128	.095	.144	.110	.082	.098	.076	.057	.057	.044	.033	.018	.014	.011	
3.0	.160	.111	.072	.137	.096	.062	.094	.067	.044	.054	.039	.026	.017	.013	.008	
4.0	.153	.098	.056	.131	.085	.049	.090	.059	.034	.052	.035	.020	.017	.011	.007	
5.0	.145	.088	.046	.125	.076	.040	.086	.053	.028	.050	.031	.017	.016	.010	.005	
6.0	.138	.080	.038	.119	.069	.033	.082	.048	.023	.048	.028	.014	.015	.009	.005	
7.0	.132	.073	.032	.113	.063	.028	.078	.044	.020	.046	.026	.012	.015	.009	.004	
8.0	.126	.068	.028	.108	.059	.024	.075	.041	.017	.043	.024	.010	.014	.008	.003	
9.0	.120	.063	.024	.103	.054	.021	.071	.038	.015	.042	.023	.009	.013	.007	.003	
10.0	.114	.059	.022	.098	.051	.019	.068	.036	.013	.040	.021	.008	.013	.007	.003	

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:11 August 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: 99LED969WW						TYPE: 99LED969WW			WEIGHT: 1		
SPEC.:						DIM.: 220 x 220			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	21.7	23.2	22.0	23.4	23.7	21.7	23.2	22.0	23.4	23.6	
	23.2	24.7	23.5	24.9	25.1	23.2	24.6	23.5	24.8	25.1	
	23.8	25.2	24.2	25.4	25.7	23.8	25.1	24.1	25.4	25.6	
	24.3	25.6	24.6	25.8	26.1	24.2	25.5	24.5	25.7	26.0	
	24.4	25.7	24.8	26.0	26.2	24.3	25.5	24.7	25.8	26.1	
	24.5	25.7	24.9	26.0	26.3	24.4	25.6	24.7	25.9	26.2	
4H	2H	22.3	23.6	22.6	23.9	24.2	22.3	23.6	22.6	23.9	24.1
	3H	24.0	25.2	24.4	25.5	25.8	24.0	25.1	24.3	25.4	25.7
	4H	24.7	25.8	25.1	26.1	26.5	24.7	25.8	25.0	26.1	26.4
	6H	25.3	26.3	25.7	26.6	27.0	25.2	26.2	25.6	26.5	26.9
	8H	25.5	26.4	25.9	26.8	27.2	25.4	26.3	25.8	26.7	27.0
	12H	25.6	26.5	26.1	26.8	27.2	25.5	26.3	25.9	26.7	27.1
8H	4H	25.0	25.9	25.4	26.3	26.6	24.9	25.8	25.3	26.2	26.6
	6H	25.7	26.5	26.2	26.9	27.3	25.6	26.4	26.1	26.8	27.2
	8H	26.0	26.7	26.4	27.1	27.5	25.9	26.5	26.3	27.0	27.4
	12H	26.2	26.7	26.7	27.2	27.7	26.0	26.6	26.5	27.1	27.5
12H	4H	25.0	25.8	25.4	26.2	26.6	24.9	25.8	25.4	26.2	26.6
	6H	25.8	26.4	26.2	26.9	27.3	25.7	26.3	26.1	26.8	27.2
	8H	26.1	26.6	26.6	27.1	27.6	26.0	26.5	26.4	27.0	27.4
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 0.2 / - 0.2					+ 0.1 / - 0.2					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.2					

CIE Pub.117, 1420 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.2)  
Area: 0.0230625 m2

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:11 August 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: 99LED969WW	TYPE: 99LED969WW	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

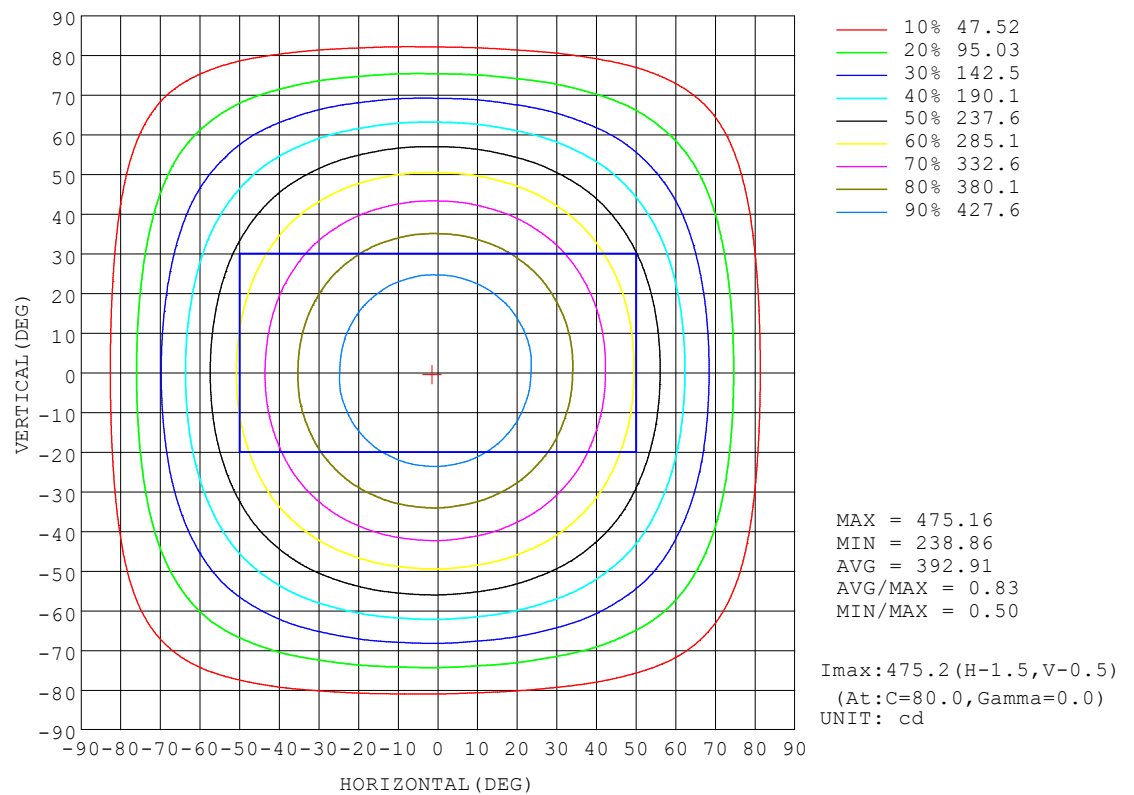
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	55	44	37	55	44	37	54	43	37	31
0.80	65	54	47	64	53	46	62	53	46	39
1.00	73	62	55	72	62	55	70	63	55	48
1.25	80	70	63	79	69	63	76	68	62	55
1.50	85	75	69	83	75	68	81	73	67	60
2.00	92	83	77	90	82	76	87	80	75	67
2.50	96	88	82	94	87	81	90	84	79	71
3.00	99	92	87	97	91	86	93	88	84	75
4.00	103	97	93	101	96	91	96	92	89	80
5.00	105	100	96	103	99	95	98	95	92	83
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: 11 August 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: 99LED969WW	TYPE: 99LED969WW	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



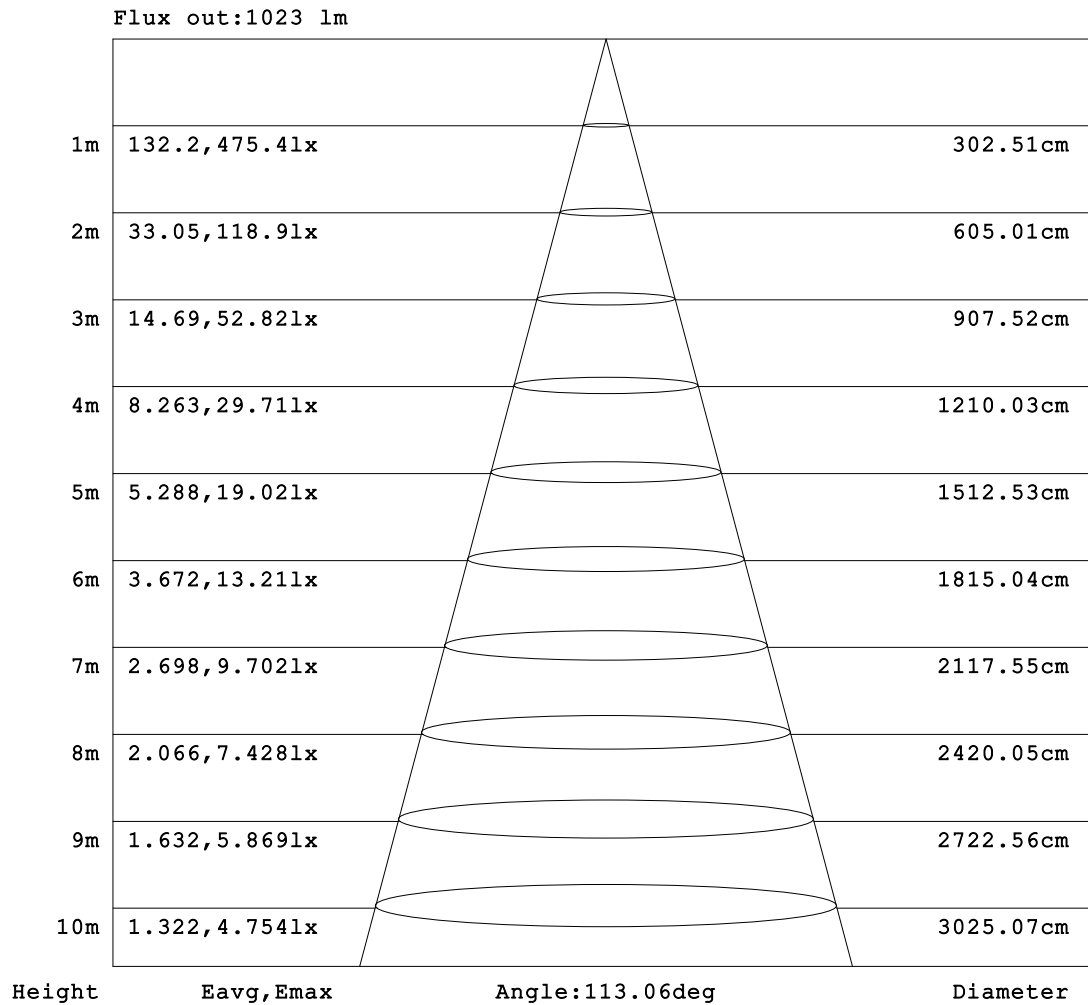
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 11 August 2022

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: 99LED969WW	TYPE: 99LED969WW	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



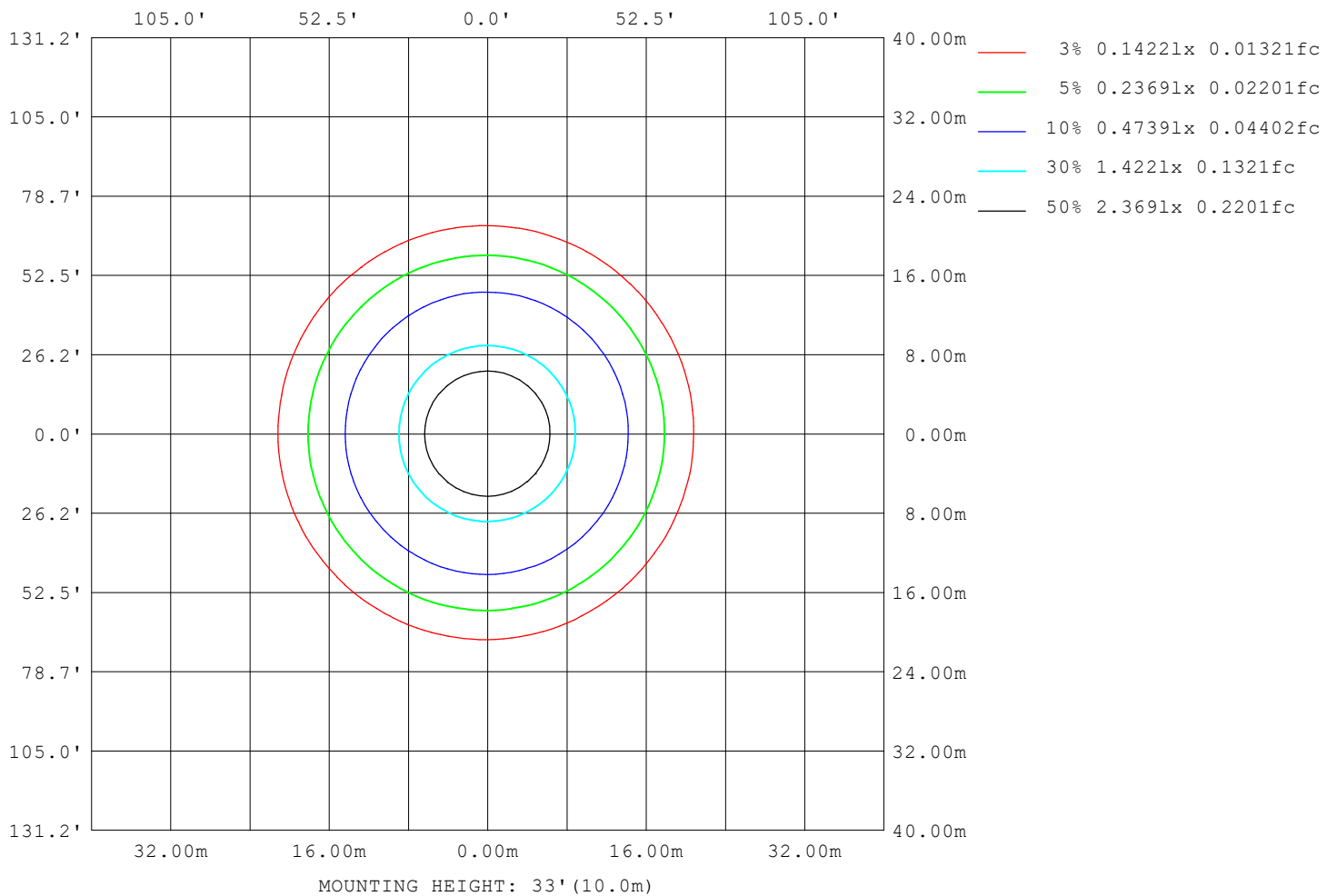
**Note:** The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 11 August 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: 99LED969WW	TYPE: 99LED969WW	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	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: 11 August 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: 99LED969WW	TYPE: 99LED969WW	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

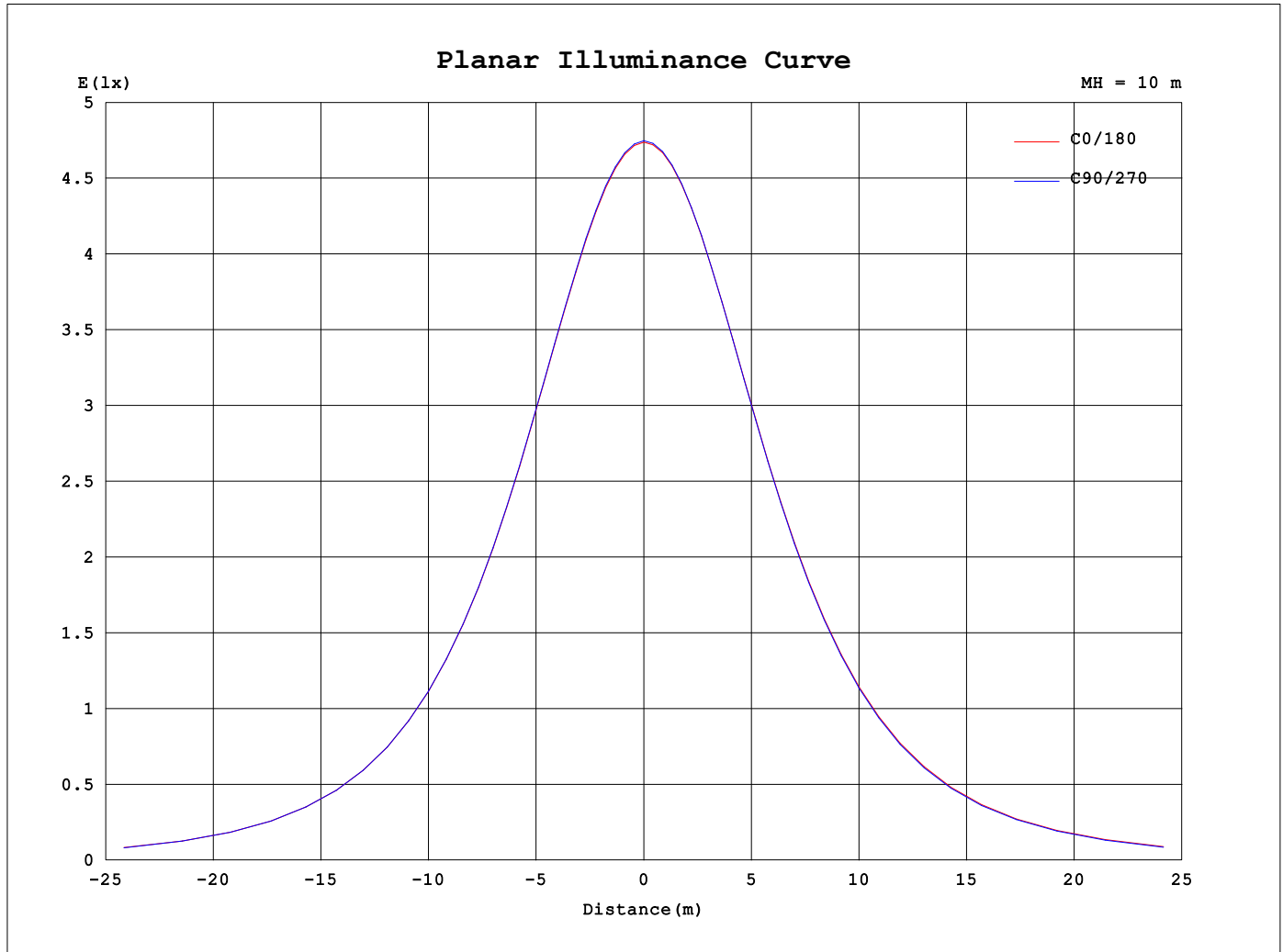
AvgL	cd/m2
L_0~180 (65) av	17926
L_0~180 (75) av	16335
L_0~180 (85) av	13887
L_90~270 (65) av	17624
L_90~270 (75) av	15725
L_90~270 (85) av	12871
L_45 (65) av	17733
L_45 (75) av	15996
L_45 (85) av	13360

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:11 August 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: 11 August 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:

```