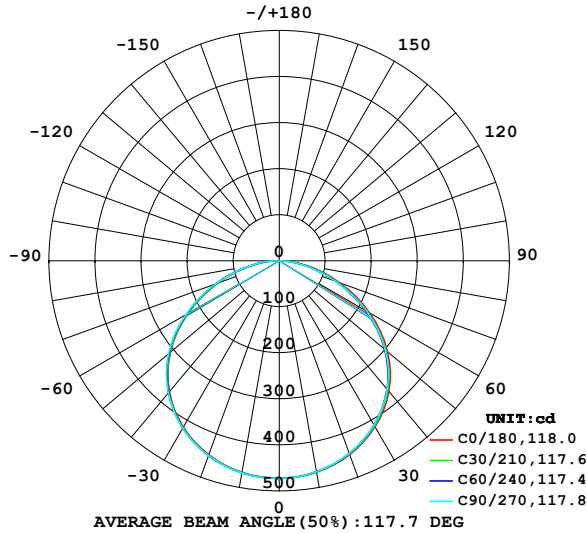


**LUMINAIRE PHOTOMETRIC TEST REPORT**

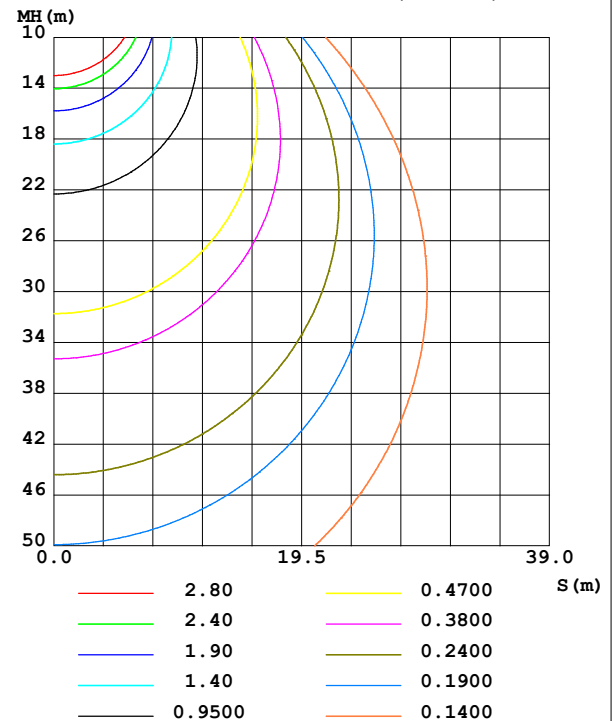
NAME: 99LED969	TYPE: 99LED969	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99LED969	I <sub>max</sub> (cd)	472.7	S/MH (C0/180)	1.31
NOMINAL POWER (W)	18	LOR (%)	101.2	S/MH (C90/270)	1.32
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	1437.6	η UP, DN (C0-180)	0.0, 49.7
NOMINAL FLUX (lm)	1420	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 51.5
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.50
TEST VOLTAGE (V)	230	η down (%)	101.2	CIBSE SHR MAX	1.50

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: 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	466.5	465.5	465.3	465.8	466.7	467.6	467.8	467.3	0- 10	44.83	44.83	3.12,3.16
20	447.9	445.8	445.2	446.2	448.3	449.9	450.1	449.3	10- 20	129.6	174.4	12.1,12.3
30	416.2	412.7	412.1	413.3	417.0	419.0	419.5	417.9	20- 30	200.0	374.4	26,26.4
40	370.3	364.9	364.9	365.9	371.5	373.6	375.0	372.2	30- 40	247.0	621.4	43.2,43.8
50	307.2	299.8	300.8	301.4	308.7	311.3	313.9	309.5	40- 50	262.3	883.7	61.5,62.2
60	226.8	218.1	218.9	220.2	228.8	231.9	234.8	229.8	50- 60	239.3	1123	78.1,79.1
70	140.2	131.6	130.6	133.6	142.2	145.0	146.5	143.2	60- 70	180.6	1304	90.7,91.8
80	60.78	53.71	51.46	55.30	62.05	64.85	65.10	63.41	70- 80	103.6	1407	97.9,99.1
90	0.8538	0.8547	0.8495	0.8549	0.8701	3.800	4.689	2.703	80- 90	30.43	1438	100,101
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): 752.93 lm

%lum = 52.4%  
%lamp = 53.0%

Conical surface Flux(130deg): 1222.3 lm

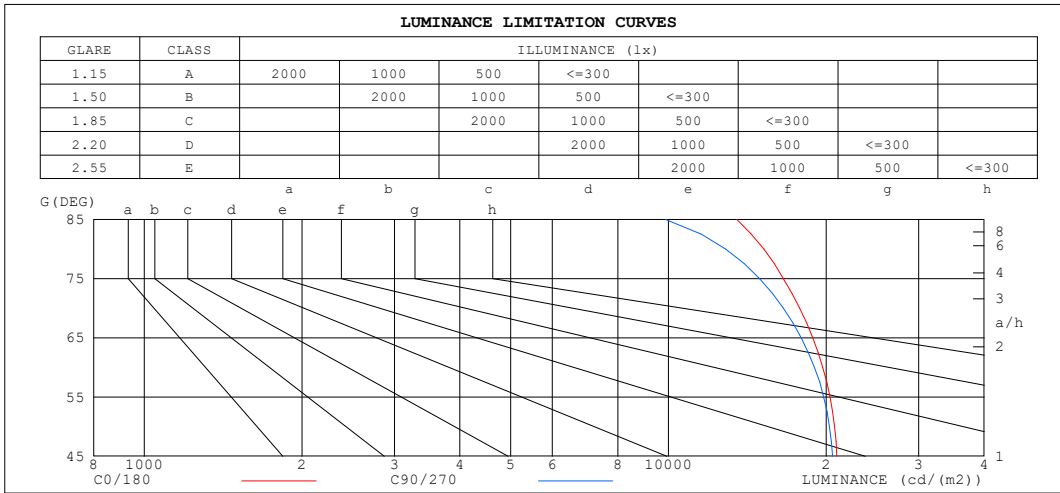
%lum = 85.0%  
%lamp = 86.1%

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: 99LED969	TYPE: 99LED969	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	13506	9866
80	15193	12845
75	16563	14913
70	17789	16558
65	18842	17902
60	19693	18982
55	20338	19776
50	20743	20282
45	20943	20547

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: 99LED969	TYPE: 99LED969	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	.319	.181	.057	.312	.178	.057	.298	.171	.055	.286	.165	.053	.275	.159	.051	
2.0	.300	.164	.050	.293	.162	.050	.281	.156	.049	.270	.152	.047	.260	.147	.046	
3.0	.277	.147	.044	.271	.145	.044	.261	.141	.043	.251	.138	.042	.242	.134	.041	
4.0	.255	.133	.039	.250	.131	.039	.241	.128	.038	.232	.125	.038	.224	.122	.037	
5.0	.236	.120	.035	.231	.119	.035	.223	.116	.034	.215	.114	.034	.208	.111	.033	
6.0	.218	.110	.031	.215	.108	.031	.207	.106	.031	.200	.104	.031	.194	.102	.030	
7.0	.203	.100	.028	.200	.100	.028	.193	.098	.028	.187	.096	.028	.181	.094	.028	
8.0	.190	.093	.026	.187	.092	.026	.181	.090	.026	.175	.089	.026	.170	.087	.025	
9.0	.178	.086	.024	.175	.085	.024	.170	.084	.024	.165	.083	.024	.160	.081	.023	
10.0	.167	.080	.022	.164	.079	.022	.160	.078	.022	.155	.077	.022	.151	.076	.022	

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	.193	.193	.193	.165	.165	.165	.112	.112	.112	.065	.065	.065	.021	.021	.021	
1.0	.183	.158	.136	.157	.136	.117	.107	.093	.081	.062	.054	.047	.020	.017	.015	
2.0	.175	.134	.099	.150	.115	.085	.103	.080	.060	.059	.046	.035	.019	.015	.011	
3.0	.167	.116	.075	.143	.100	.065	.098	.069	.045	.057	.041	.027	.018	.013	.009	
4.0	.160	.102	.059	.137	.088	.051	.094	.062	.036	.054	.036	.021	.018	.012	.007	
5.0	.152	.092	.047	.131	.079	.041	.090	.055	.029	.052	.033	.017	.017	.011	.006	
6.0	.145	.083	.039	.124	.072	.034	.086	.051	.024	.050	.030	.014	.016	.010	.005	
7.0	.138	.076	.033	.119	.066	.029	.082	.046	.021	.048	.027	.012	.015	.009	.004	
8.0	.131	.071	.029	.113	.061	.025	.078	.043	.018	.045	.025	.011	.015	.008	.004	
9.0	.125	.066	.025	.108	.057	.022	.075	.040	.016	.043	.024	.009	.014	.008	.003	
10.0	.119	.061	.023	.103	.053	.020	.071	.037	.014	.042	.022	.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: 99LED969					TYPE: 99LED969			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	22.1	23.6	22.4	23.8	24.1	22.0	23.5	22.2	23.7	23.9
	3H	23.6	25.0	23.9	25.3	25.5	23.4	24.8	23.7	25.0	25.3
	4H	24.2	25.6	24.5	25.8	26.1	23.9	25.2	24.2	25.5	25.8
	6H	24.6	25.9	25.0	26.2	26.5	24.2	25.5	24.6	25.8	26.1
	8H	24.8	26.0	25.1	26.3	26.6	24.3	25.6	24.7	25.9	26.1
	12H	24.9	26.1	25.2	26.4	26.7	24.4	25.6	24.7	25.9	26.2
4H	2H	22.7	24.0	23.0	24.3	24.5	22.5	23.9	22.9	24.1	24.4
	3H	24.3	25.5	24.7	25.8	26.1	24.1	25.3	24.5	25.6	25.9
	4H	25.1	26.1	25.4	26.5	26.8	24.8	25.9	25.1	26.2	26.5
	6H	25.6	26.6	26.0	26.9	27.3	25.2	26.2	25.6	26.6	26.9
	8H	25.8	26.7	26.2	27.1	27.5	25.4	26.3	25.8	26.6	27.0
	12H	26.0	26.8	26.4	27.2	27.6	25.4	26.3	25.9	26.7	27.1
8H	4H	25.3	26.2	25.7	26.5	26.9	25.0	25.9	25.4	26.3	26.7
	6H	26.0	26.7	26.4	27.1	27.6	25.6	26.4	26.1	26.8	27.2
	8H	26.3	26.9	26.7	27.4	27.8	25.8	26.5	26.3	26.9	27.4
	12H	26.5	27.0	27.0	27.5	28.0	26.0	26.5	26.4	27.0	27.5
12H	4H	25.3	26.1	25.7	26.5	26.9	25.0	25.9	25.5	26.2	26.6
	6H	26.0	26.7	26.5	27.1	27.6	25.7	26.3	26.1	26.8	27.2
	8H	26.3	26.9	26.8	27.4	27.8	25.9	26.5	26.4	26.9	27.4
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 0.1 / - 0.2					+ 0.2 / - 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, 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: 99LED969	TYPE: 99LED969	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

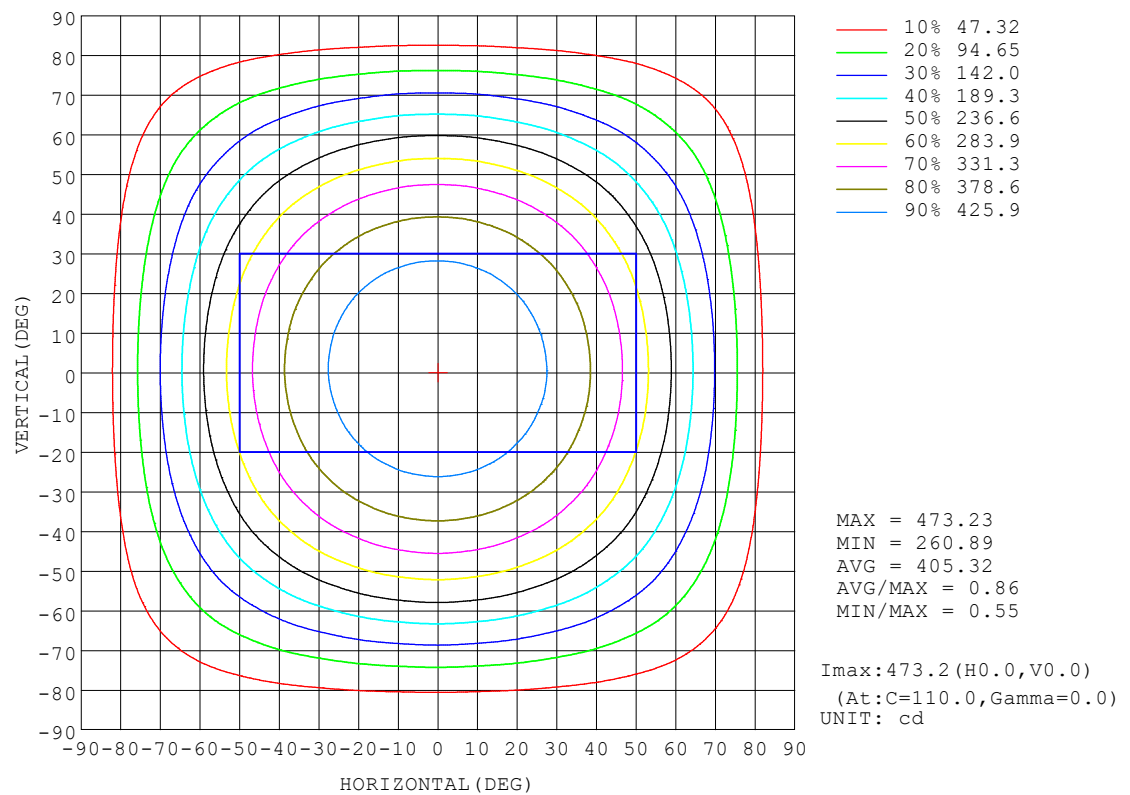
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	57	45	38	57	45	38	55	45	38	31
0.80	68	56	48	67	55	48	65	54	47	40
1.00	76	65	57	75	64	57	73	66	56	49
1.25	83	73	65	82	72	65	79	70	64	57
1.50	89	78	71	87	78	71	84	76	70	62
2.00	96	87	80	94	86	79	90	83	78	70
2.50	100	92	85	98	90	85	94	88	83	74
3.00	103	96	90	101	94	89	97	92	87	78
4.00	107	101	97	105	100	95	101	96	92	83
5.00	110	105	101	107	103	99	103	99	96	87
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: 99LED969	TYPE: 99LED969	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



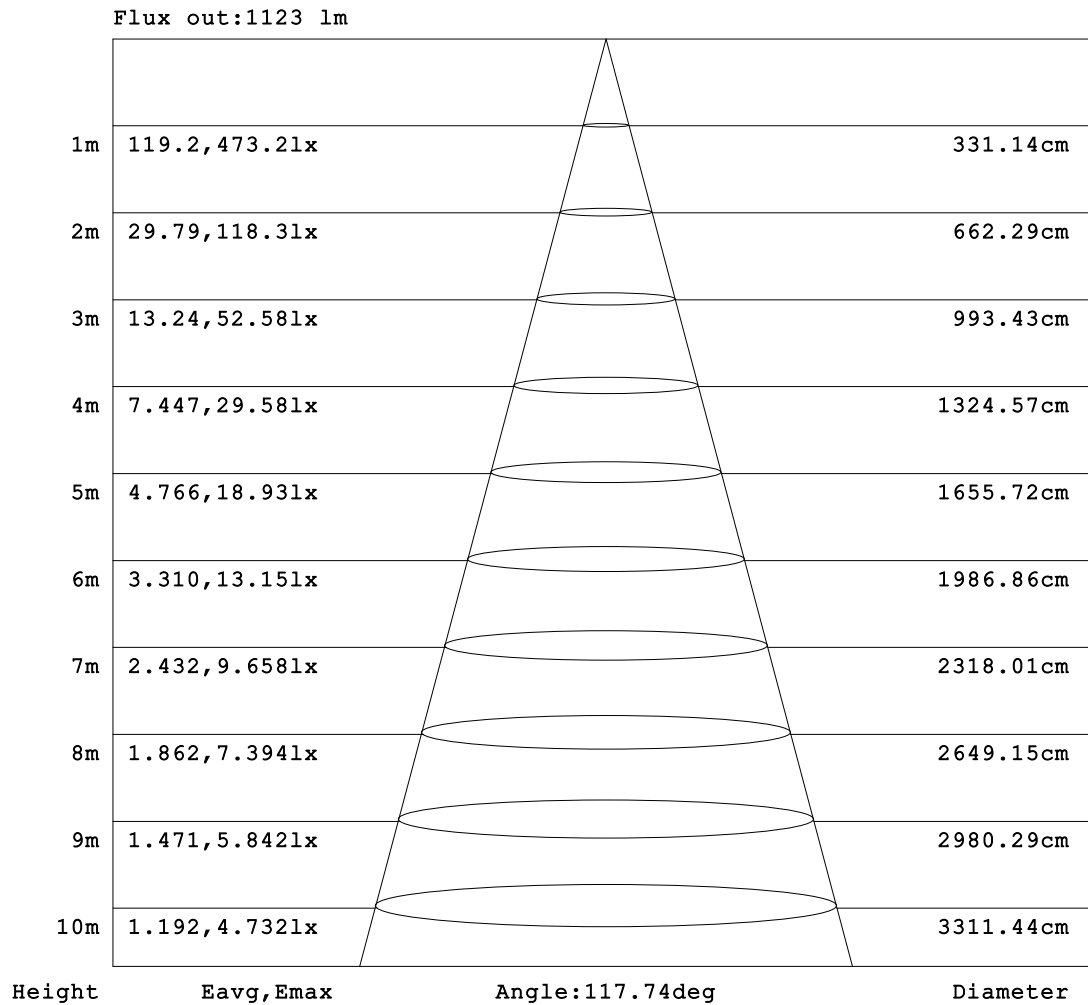
C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 11 August 2022

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: 99LED969	TYPE: 99LED969	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



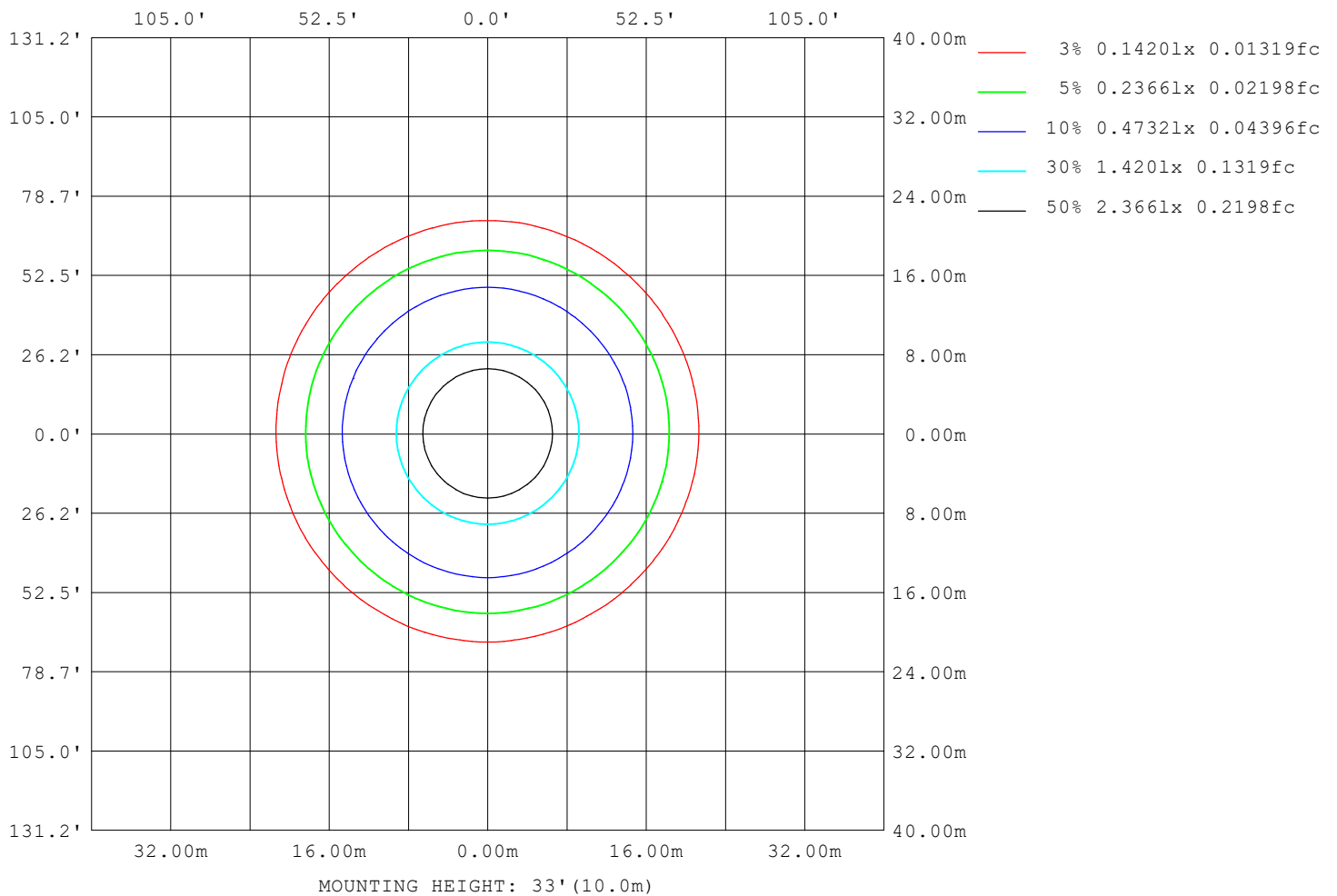
**Note:**The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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: 99LED969	TYPE: 99LED969	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: 99LED969	TYPE: 99LED969	WEIGHT: 1
SPEC.:	DIM.: 220 x 220	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

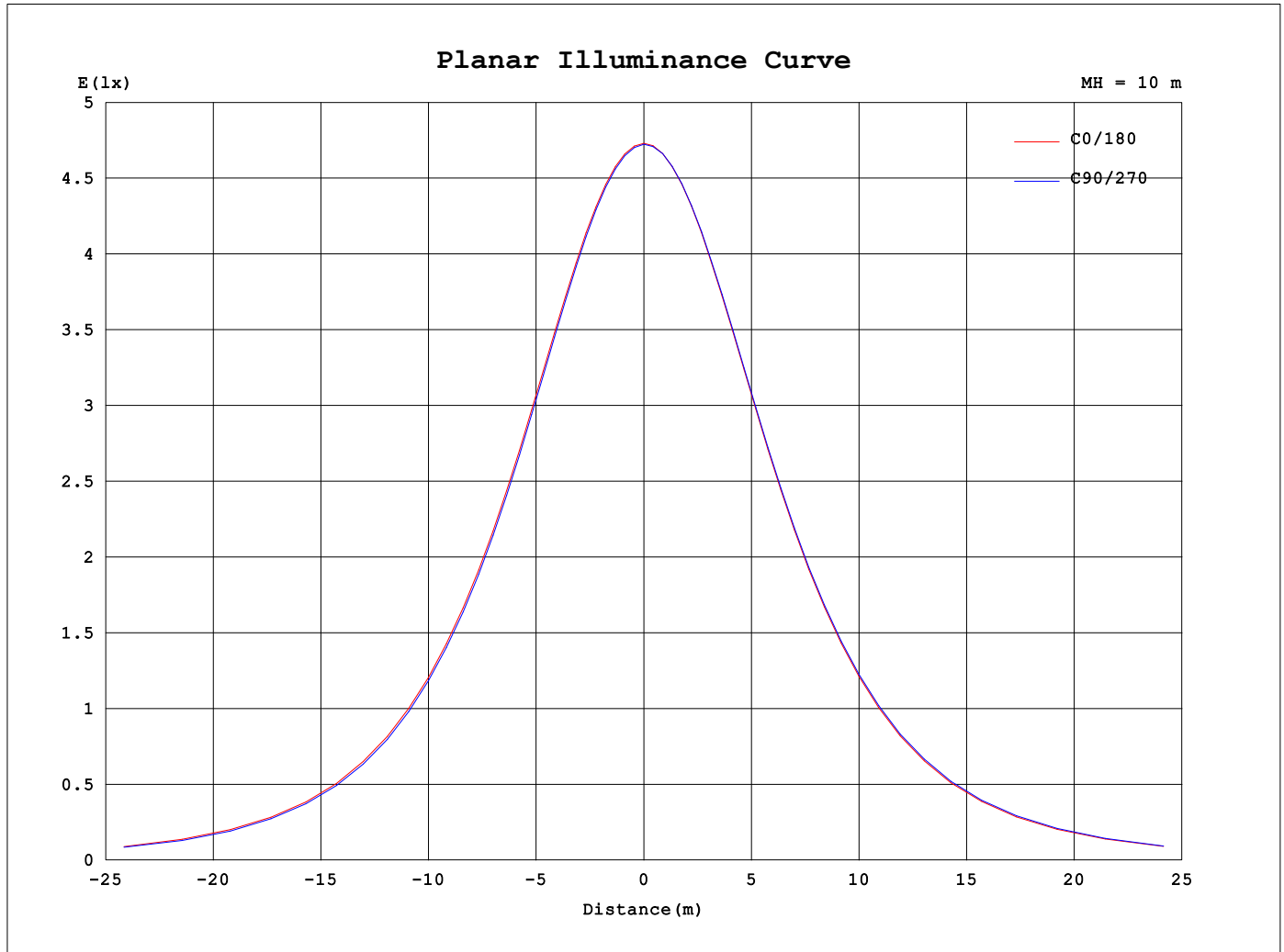
AvgL	cd/m2
L_0~180 (65) av	18920
L_0~180 (75) av	16691
L_0~180 (85) av	13737
L_90~270 (65) av	18740
L_90~270 (75) av	16169
L_90~270 (85) av	12741
L_45 (65) av	18618
L_45 (75) av	16253
L_45 (85) av	13151

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:

```