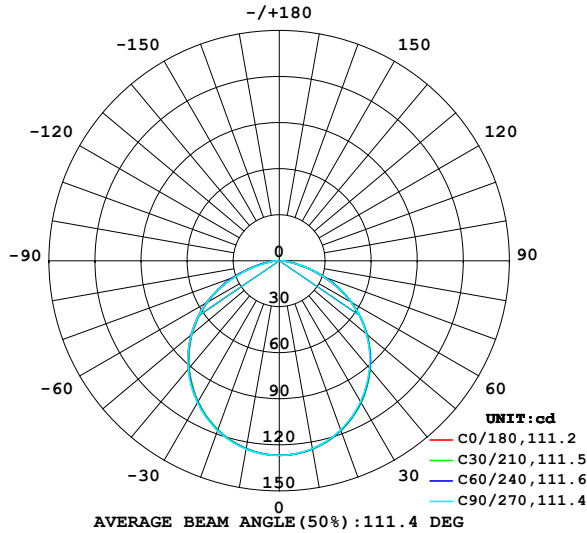


LUMINAIRE PHOTOMETRIC TEST REPORT

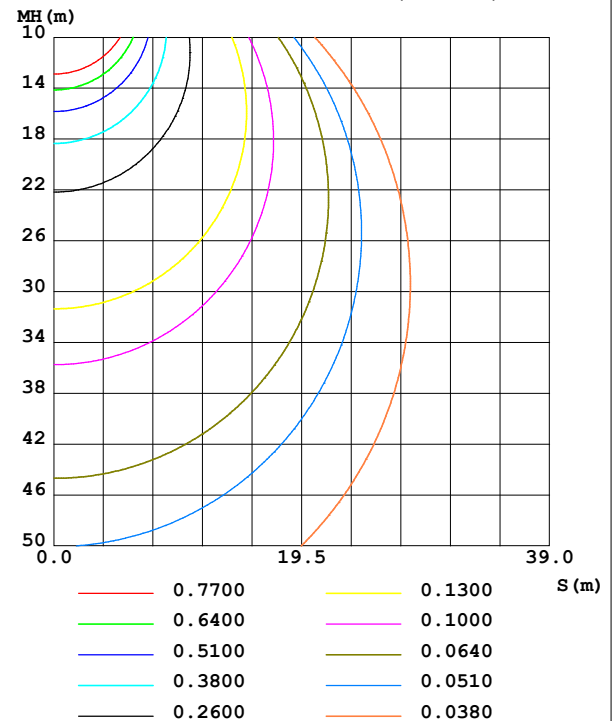
NAME: 99LED643	TYPE: 99LED643	WEIGHT: 1
SPEC.:	DIM.: 100 x 100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Square	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99LED643	I _{max} (cd)	126.8	S/MH (C0/180)	1.24
NOMINAL POWER (W)	6	LOR (%)	88.0	S/MH (C90/270)	1.25
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	352.01	η UP, DN (C0-180)	0.0, 43.8
NOMINAL FLUX (lm)	400	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 44.2
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	88.0	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: 17 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:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	124.6	124.5	124.3	124.2	124.3	124.4	124.6	124.7	0- 10	11.99	11.99	3.41,3
20	117.7	117.5	117.2	117.0	117.1	117.4	117.7	118.0	10- 20	34.29	46.28	13.1,11.6
30	106.7	106.4	106.0	105.9	106.0	106.4	106.7	107.1	20- 30	51.80	98.08	27.9,24.5
40	92.17	91.97	91.57	91.47	91.52	92.04	92.36	92.67	30- 40	62.29	160.4	45.6,40.1
50	74.62	74.55	74.21	74.27	74.25	74.87	75.01	75.32	40- 50	64.54	224.9	63.9,56.2
60	54.11	54.35	53.91	54.31	54.05	54.91	54.72	55.09	50- 60	57.97	282.9	80.4,70.7
70	30.53	31.89	30.73	32.08	30.95	32.62	31.24	32.51	60- 70	42.79	325.7	92.5,81.4
80	9.374	10.05	9.712	10.38	9.840	10.57	9.929	10.36	70- 80	21.43	347.1	98.6,86.8
90	1.318	1.687	1.404	1.720	1.408	1.668	1.379	1.681	80- 90	4.914	352.0	100,88
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): 192.9 lm

%lum = 54.8%

%lamp = 48.2%

Conical surface Flux(130deg): 306.68 lm

%lum = 87.1%

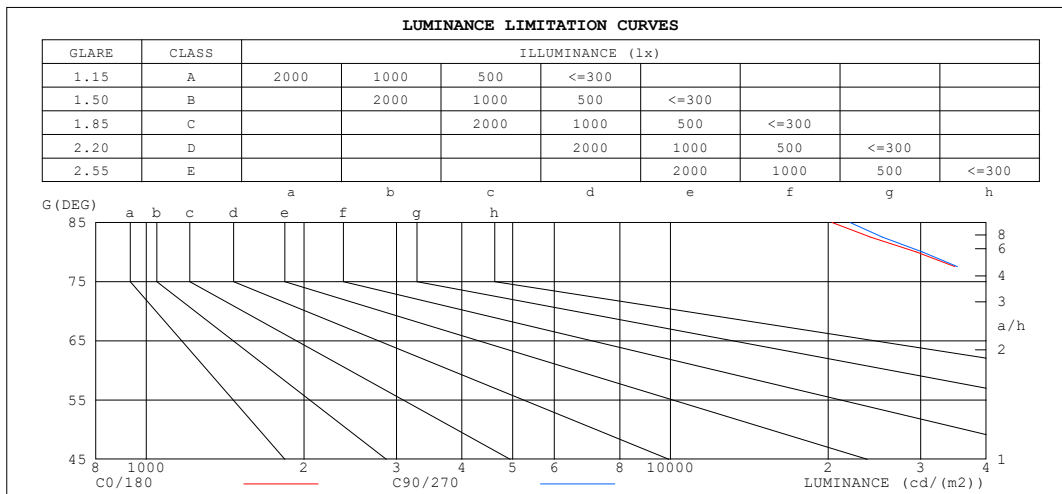
%lamp = 76.7%

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:17 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:

LUMINANCE LIMITATION CURVES

NAME: 99LED643	TYPE: 99LED643	WEIGHT: 1
SPEC.:	DIM.: 100 x 100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Square	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	20329	21991
80	29415	30207
75	40016	40114
70	48643	48523
65	55124	54620
60	58972	58231
55	61529	60679
50	63255	62352
45	64543	63600

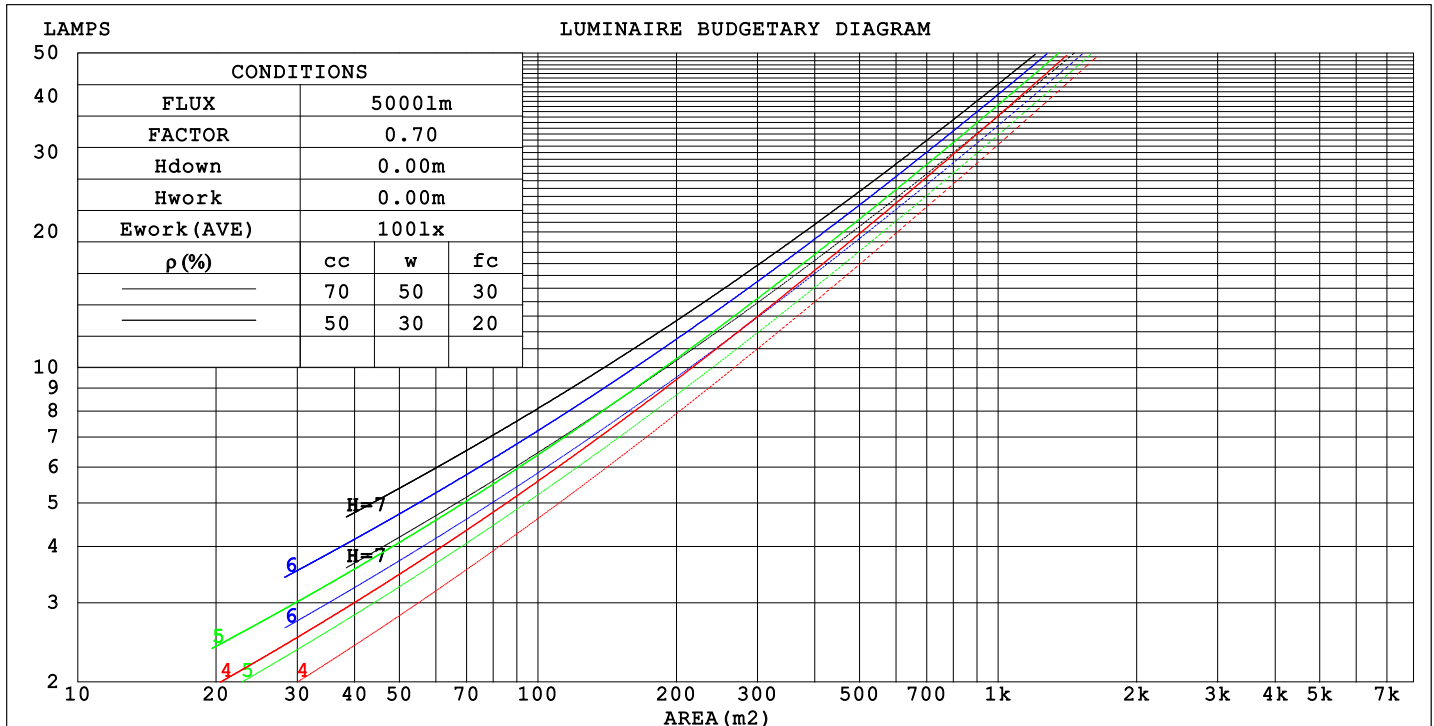
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators:
Test Date: 17 August 2022

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: 99LED643	TYPE: 99LED643	WEIGHT: 1
SPEC.:	DIM.: 100 x 100	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:17 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:

WEC AND CCEC

NAME: 99LED643	TYPE: 99LED643	WEIGHT: 1
SPEC.:	DIM.: 100 x 100	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	.264	.150	.048	.258	.147	.047	.246	.141	.045	.235	.136	.044	.225	.131	.042	
2.0	.251	.137	.042	.245	.135	.042	.235	.131	.041	.226	.127	.040	.217	.123	.039	
3.0	.233	.124	.037	.229	.122	.037	.220	.119	.036	.211	.116	.036	.203	.113	.035	
4.0	.216	.112	.033	.212	.111	.033	.204	.108	.032	.197	.106	.032	.190	.103	.031	
5.0	.201	.102	.030	.197	.101	.029	.190	.099	.029	.183	.097	.029	.177	.094	.028	
6.0	.186	.093	.027	.183	.092	.027	.177	.091	.026	.171	.089	.026	.165	.087	.026	
7.0	.174	.086	.024	.171	.085	.024	.165	.083	.024	.160	.082	.024	.155	.080	.024	
8.0	.162	.079	.022	.160	.079	.022	.155	.077	.022	.150	.076	.022	.145	.075	.022	
9.0	.152	.074	.021	.150	.073	.020	.145	.072	.020	.141	.071	.020	.137	.070	.020	
10.0	.143	.069	.019	.141	.068	.019	.137	.067	.019	.133	.066	.019	.129	.065	.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	.168	.168	.168	.143	.143	.143	.098	.098	.098	.056	.056	.056	.018	.018	.018	
1.0	.158	.137	.119	.135	.118	.102	.093	.081	.071	.053	.047	.041	.017	.015	.013	
2.0	.151	.116	.087	.129	.100	.075	.089	.069	.052	.051	.040	.031	.016	.013	.010	
3.0	.144	.101	.066	.123	.087	.057	.085	.060	.040	.049	.035	.024	.016	.011	.008	
4.0	.137	.089	.052	.118	.077	.045	.081	.053	.032	.047	.031	.019	.015	.010	.006	
5.0	.131	.080	.042	.112	.069	.036	.077	.048	.026	.045	.028	.015	.014	.009	.005	
6.0	.125	.072	.035	.107	.063	.030	.074	.044	.021	.043	.026	.013	.014	.008	.004	
7.0	.119	.066	.029	.102	.057	.026	.071	.040	.018	.041	.024	.011	.013	.008	.004	
8.0	.113	.061	.025	.097	.053	.022	.067	.037	.016	.039	.022	.009	.013	.007	.003	
9.0	.108	.057	.022	.093	.049	.019	.064	.035	.014	.037	.020	.008	.012	.007	.003	
10.0	.103	.053	.020	.089	.046	.017	.061	.032	.012	.036	.019	.007	.012	.006	.002	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:17 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: 99LED643					TYPE: 99LED643			WEIGHT: 1			
SPEC.:					DIM.: 100 x 100			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	30.4	31.9	30.7	32.1	32.3	30.3	31.9	30.6	32.1	32.3	
	31.7	33.1	32.0	33.4	33.6	31.7	33.1	32.0	33.3	33.5	
	32.1	33.5	32.5	33.7	34.0	32.1	33.4	32.4	33.7	33.9	
	32.3	33.6	32.7	33.9	34.1	32.3	33.6	32.6	33.8	34.1	
	32.4	33.6	32.7	33.8	34.1	32.3	33.5	32.7	33.8	34.1	
	32.3	33.5	32.7	33.8	34.1	32.3	33.5	32.7	33.8	34.1	
4H 2H	31.0	32.3	31.3	32.6	32.8	30.9	32.3	31.3	32.5	32.8	
	32.5	33.6	32.8	33.9	34.2	32.4	33.6	32.8	33.9	34.2	
	33.0	34.0	33.4	34.4	34.7	33.0	34.0	33.3	34.3	34.7	
	33.3	34.2	33.7	34.5	34.9	33.3	34.2	33.7	34.5	34.9	
	33.3	34.2	33.7	34.5	34.9	33.3	34.2	33.7	34.5	34.9	
	33.3	34.1	33.8	34.5	34.9	33.3	34.1	33.8	34.5	34.9	
8H 4H	33.2	34.0	33.6	34.4	34.8	33.1	34.0	33.6	34.4	34.8	
	33.5	34.3	34.0	34.7	35.1	33.5	34.3	34.0	34.7	35.1	
	33.6	34.3	34.1	34.7	35.1	33.6	34.3	34.1	34.7	35.2	
	33.7	34.2	34.2	34.7	35.2	33.7	34.2	34.2	34.7	35.2	
12H 4H	33.1	33.9	33.6	34.3	34.7	33.1	33.9	33.6	34.3	34.7	
	33.5	34.2	34.0	34.6	35.1	33.5	34.2	34.0	34.6	35.1	
	33.7	34.2	34.1	34.7	35.1	33.7	34.2	34.1	34.7	35.1	
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.2					
1.5H	+ 0.2 / - 0.4					+ 0.2 / - 0.4					
2.0H	+ 0.3 / - 0.3					+ 0.2 / - 0.3					

CIE Pub.117, 400.0 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -3.2)
Area: 0.001849 m2

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:17 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: 99LED643	TYPE: 99LED643	WEIGHT: 1
SPEC.:	DIM.: 100 x 100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Square	Shielding Angle:

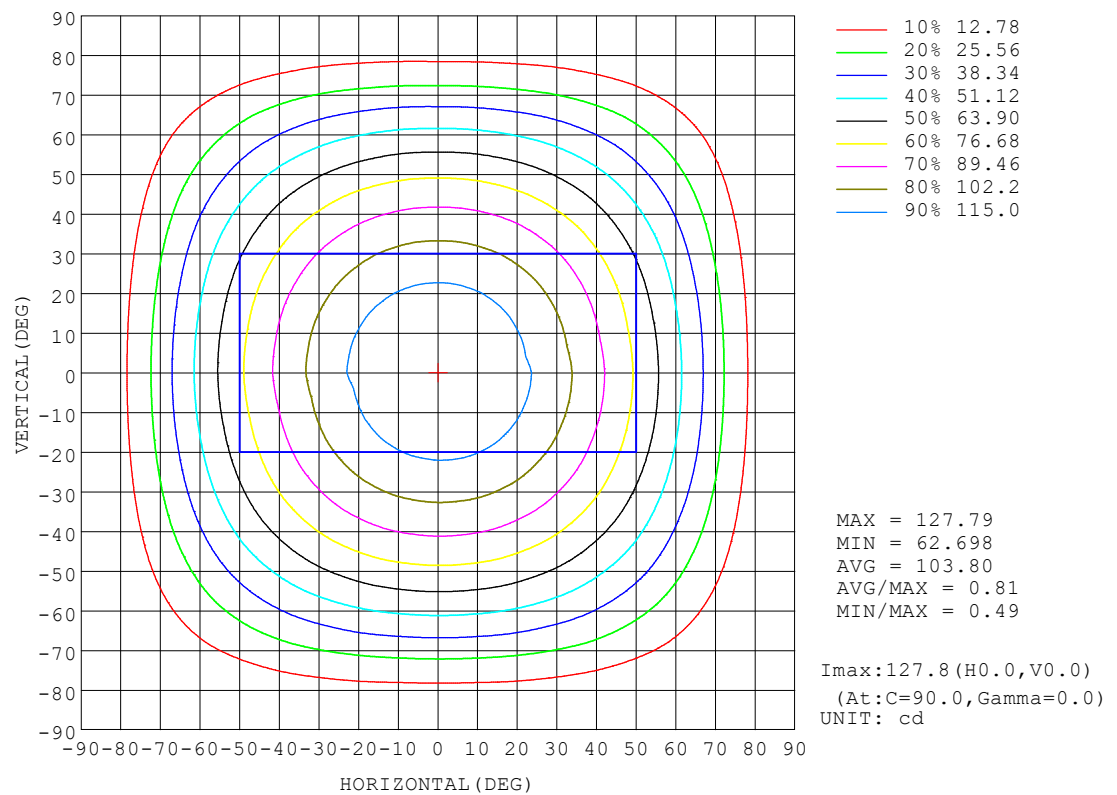
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	51	41	35	50	41	35	49	40	34	29
0.80	60	50	43	59	49	43	57	49	43	37
1.00	67	58	51	66	57	51	64	58	51	45
1.25	74	65	58	72	64	58	70	63	57	51
1.50	78	70	64	77	69	63	74	67	62	56
2.00	84	77	71	83	76	71	79	74	69	62
2.50	87	81	76	86	80	75	82	77	73	66
3.00	90	85	80	89	83	79	85	81	77	70
4.00	94	89	85	92	87	84	88	85	81	74
5.00	96	92	88	94	90	87	90	87	84	76
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: 17 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: 99LED643	TYPE: 99LED643	WEIGHT: 1
SPEC.:	DIM.: 100 x 100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Square	Shielding Angle:

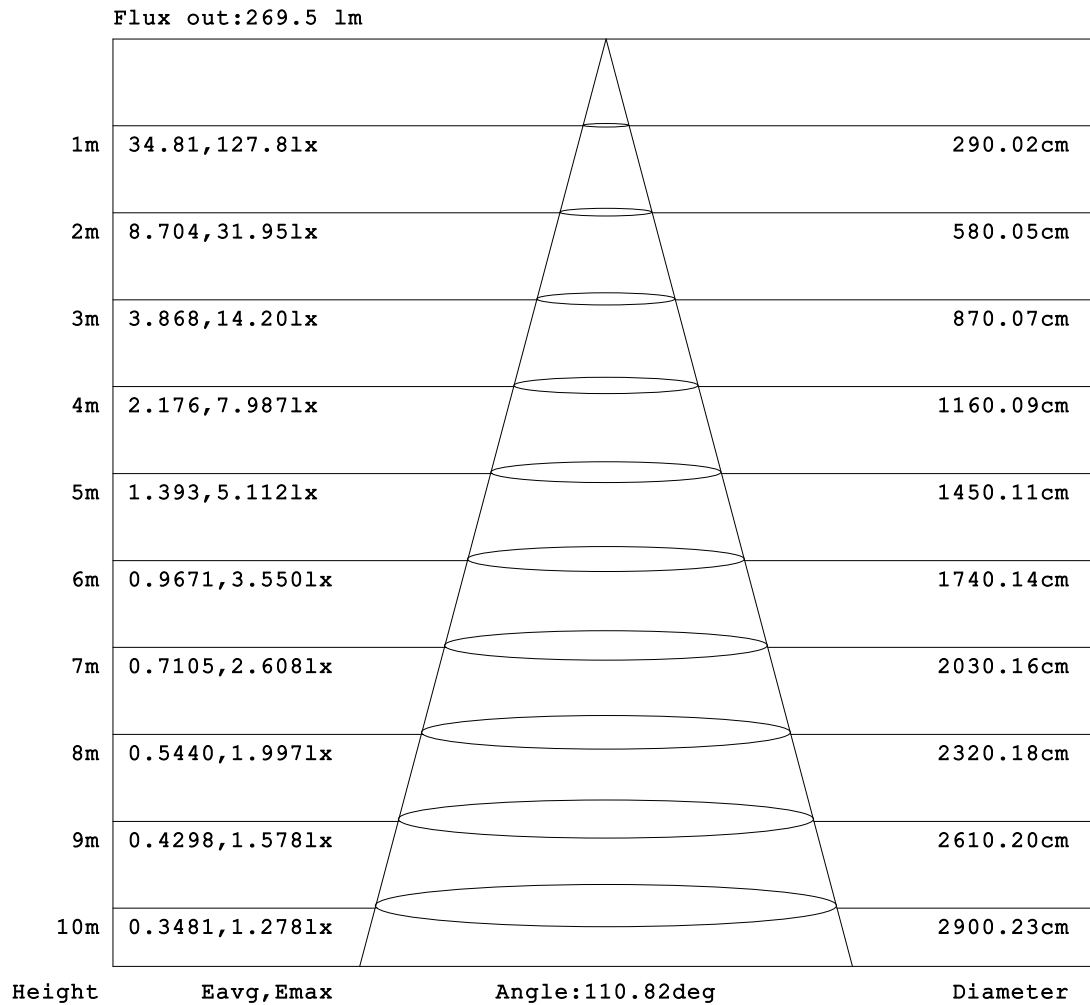


C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators:
Test Date: 17 August 2022

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: 99LED643	TYPE: 99LED643	WEIGHT: 1
SPEC.:	DIM.: 100 x 100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Square	Shielding Angle:



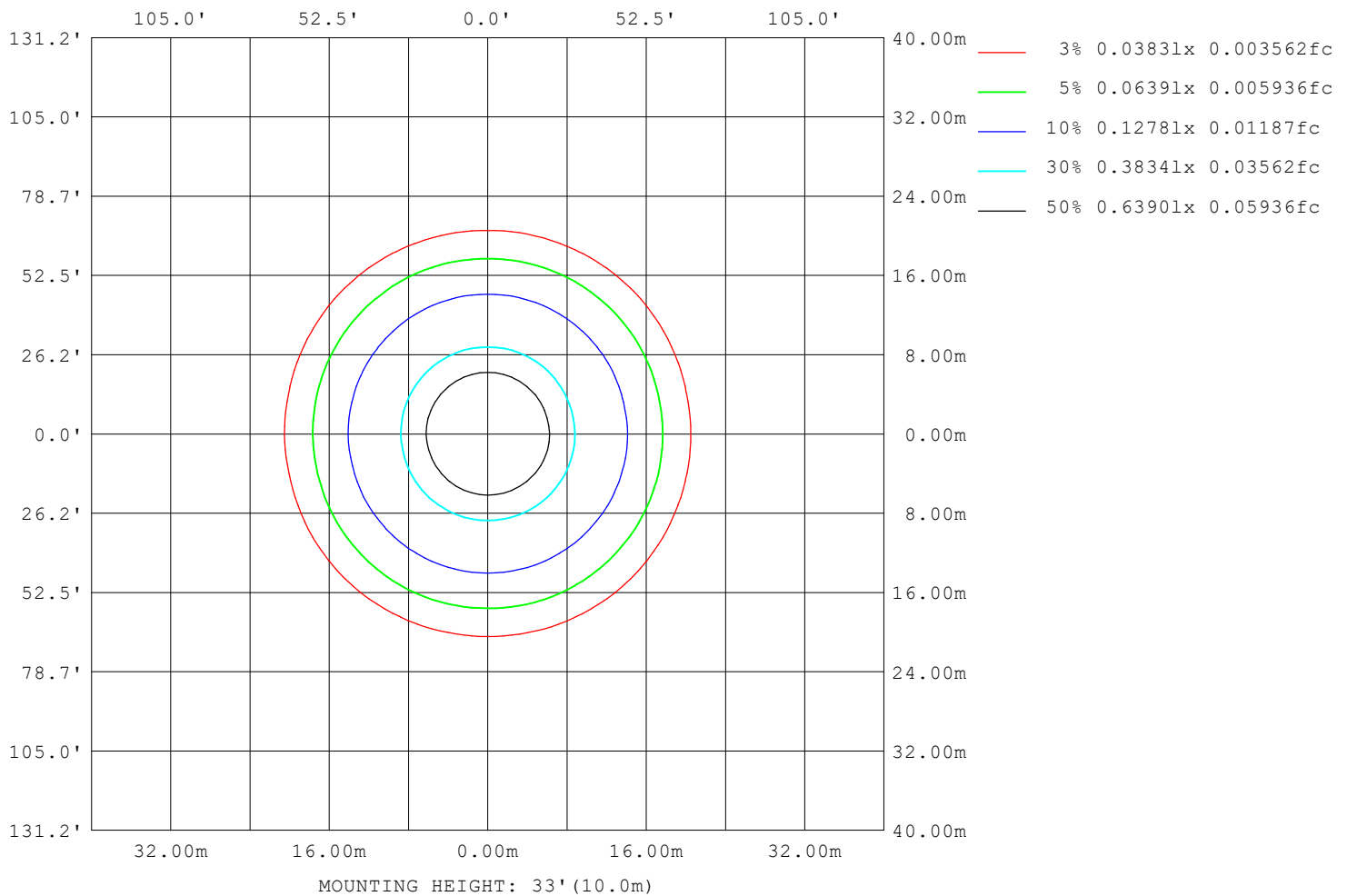
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators:
Test Date: 17 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: 99LED643	TYPE: 99LED643	WEIGHT: 1
SPEC.:	DIM.: 100 x 100	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: 17 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: 99LED643	TYPE: 99LED643	WEIGHT: 1
SPEC.:	DIM.: 100 x 100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Square	Shielding Angle:

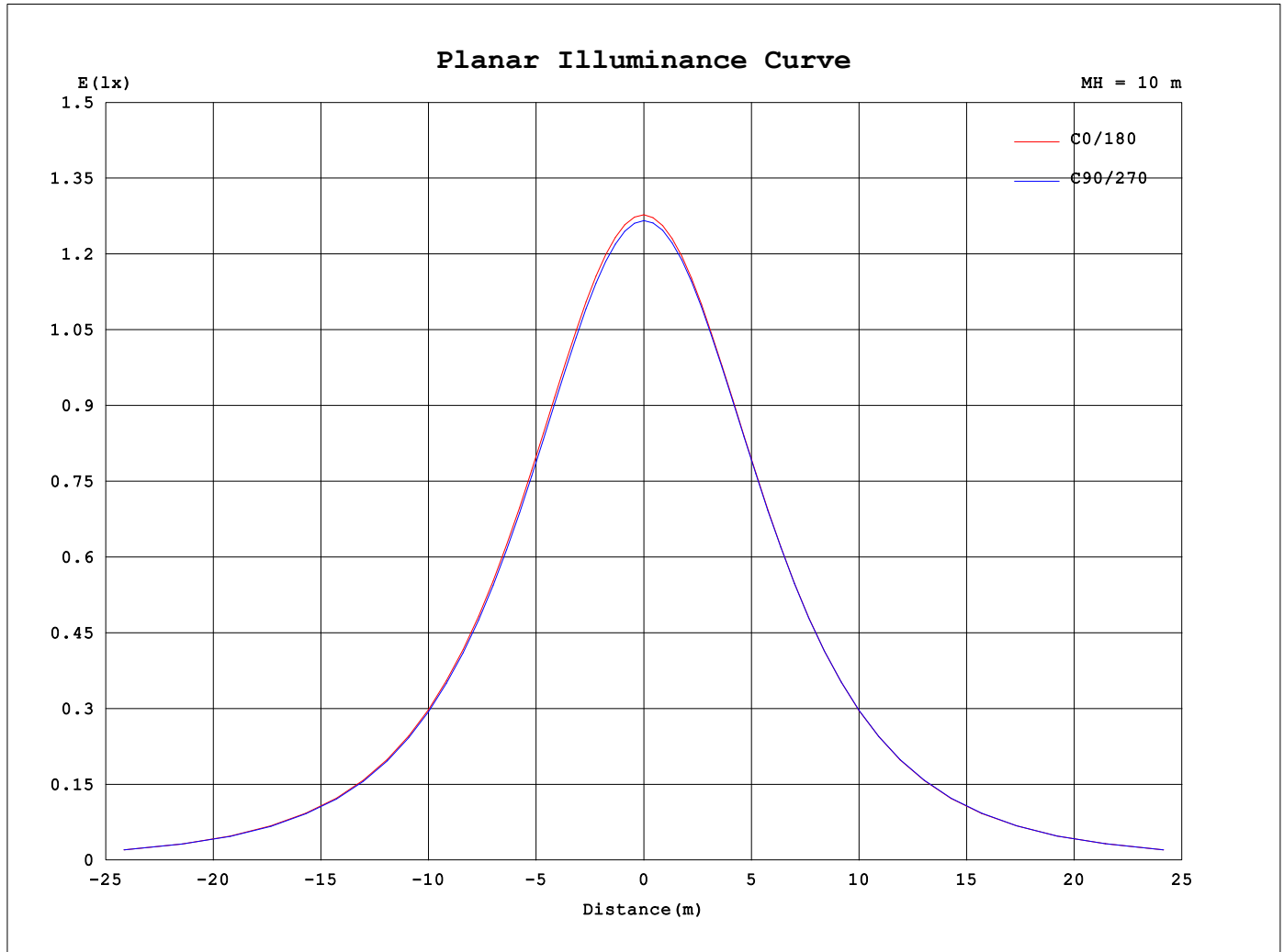
AvgL	cd/m2
L_0~180 (65) av	54820
L_0~180 (75) av	40208
L_0~180 (85) av	21194
L_90~270 (65) av	55160
L_90~270 (75) av	40603
L_90~270 (85) av	22205
L_45 (65) av	56064
L_45 (75) av	43173
L_45 (85) av	24094

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:17 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: 17 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:

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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:

```