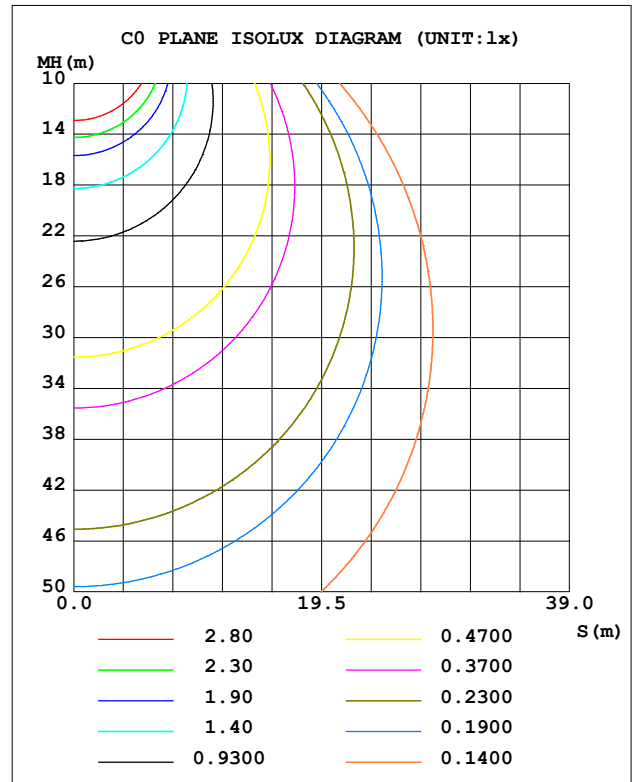
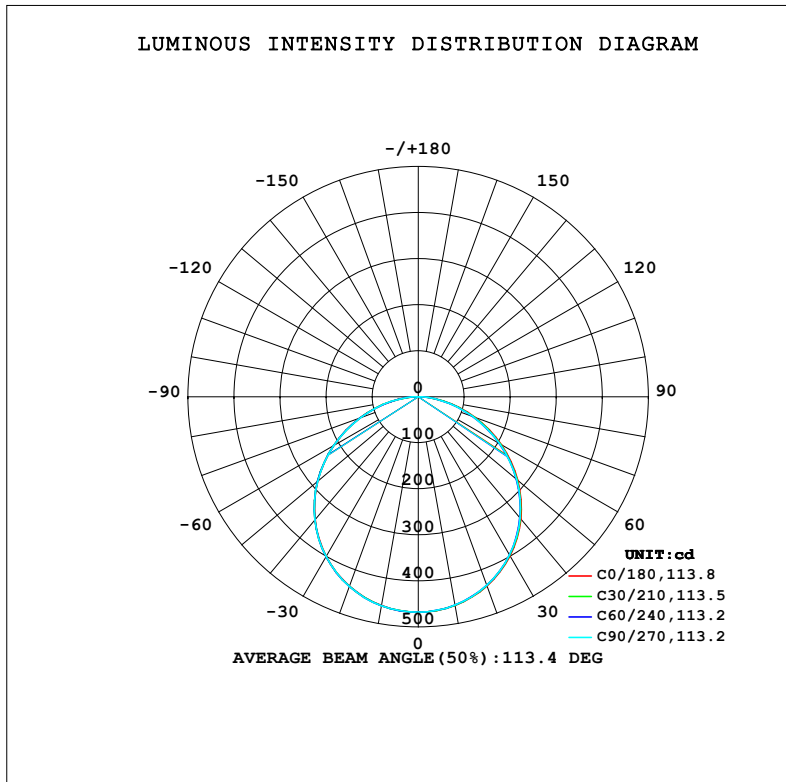


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 99LED968CW	TYPE: 99LED968CW	WEIGHT: 1
SPEC.:	DIM.: 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99LED968CW	I _{max} (cd)	468.0	S/MH (C0/180)	1.27
NOMINAL POWER (W)	18	LOR (%)	95.7	S/MH (C90/270)	1.27
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	1359.5	η UP, DN (C0-180)	0.0, 47.4
NOMINAL FLUX (lm)	1420	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 48.3
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	95.7	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 15 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	460.1	459.6	459.5	459.9	460.4	460.8	460.8	460.6	0- 10	44.30	44.30	3.26,3.12
20	437.0	435.9	435.5	436.5	437.8	438.4	438.4	437.9	10- 20	127.2	171.5	12.6,12.1
30	398.9	397.1	396.7	398.2	400.2	401.0	400.9	400.2	20- 30	193.6	365.1	26.9,25.7
40	346.8	344.2	343.8	345.8	348.7	349.5	349.3	348.3	30- 40	234.4	599.5	44.1,42.2
50	282.5	279.0	278.5	281.1	285.1	285.7	285.3	283.9	40- 50	243.8	843.3	62,59.4
60	208.8	204.7	203.9	207.2	212.1	212.5	211.8	210.4	50- 60	220.4	1064	78.2,74.9
70	131.5	126.9	125.7	129.5	135.1	135.0	133.6	132.7	60- 70	168.4	1232	90.6,86.8
80	56.80	53.97	52.71	56.15	60.03	60.98	59.30	58.84	70- 80	98.79	1331	97.9,93.7
90	0.8095	0.8048	0.7867	0.7901	0.7059	1.298	2.145	0.8417	80- 90	28.67	1360	100,95.7
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): 722.28 lm

%lum = 53.1%
%lamp = 50.9%

Conical surface Flux(130deg): 1155.8 lm

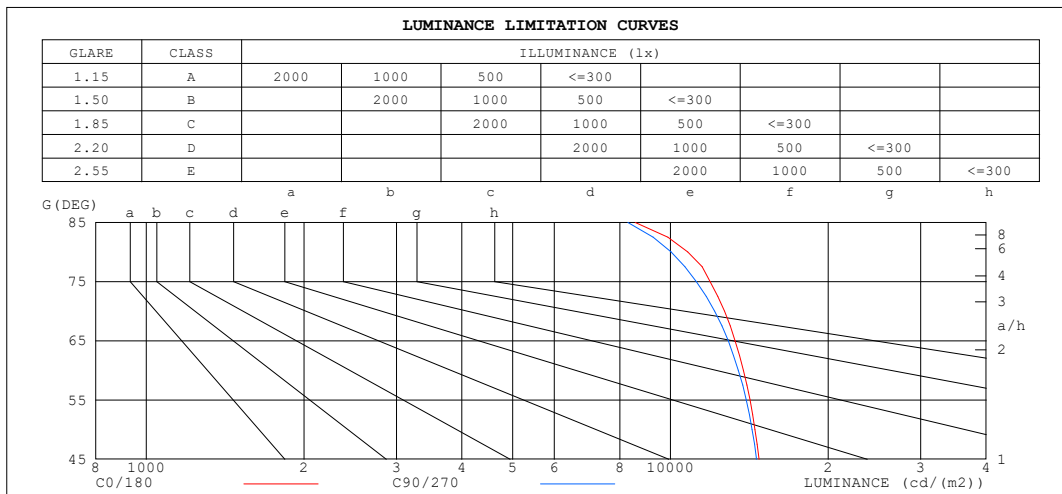
%lum = 85.0%
%lamp = 81.4%

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:15 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: 99LED968CW	TYPE: 99LED968CW	WEIGHT: 1
SPEC.:	DIM.: 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	8564	8293
80	10790	10025
75	11894	11200
70	12681	12141
65	13285	12889
60	13777	13469
55	14177	13945
50	14497	14311
45	14745	14599

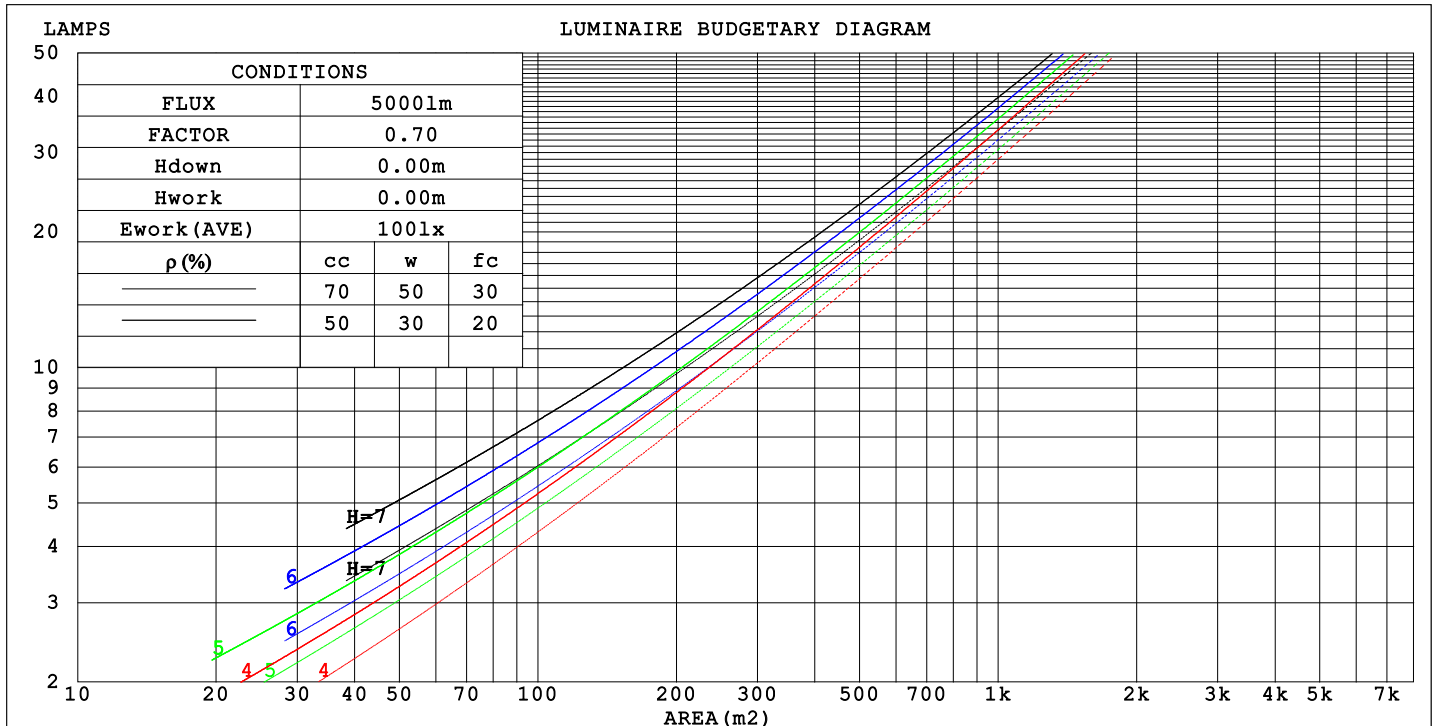
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 15 August 2022

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: 99LED968CW	TYPE: 99LED968CW	WEIGHT: 1
SPEC.:	DIM.: 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															



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:15 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: 99LED968CW	TYPE: 99LED968CW	WEIGHT: 1
SPEC.:	DIM.: 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	.300	.171	.054	.294	.168	.053	.281	.161	.051	.269	.155	.050	.259	.150	.048	
2.0	.282	.154	.047	.276	.152	.047	.265	.147	.046	.254	.143	.045	.245	.138	.044	
3.0	.260	.139	.042	.255	.137	.041	.245	.133	.040	.236	.129	.040	.227	.126	.039	
4.0	.240	.125	.037	.235	.123	.036	.227	.120	.036	.218	.117	.035	.211	.115	.035	
5.0	.222	.113	.033	.218	.112	.033	.210	.109	.032	.202	.107	.032	.196	.105	.031	
6.0	.205	.103	.029	.202	.102	.029	.195	.100	.029	.188	.098	.029	.182	.096	.028	
7.0	.191	.095	.027	.188	.094	.027	.182	.092	.026	.176	.090	.026	.170	.089	.026	
8.0	.178	.087	.025	.176	.086	.024	.170	.085	.024	.165	.083	.024	.160	.082	.024	
9.0	.167	.081	.023	.165	.080	.023	.160	.079	.022	.155	.078	.022	.150	.076	.022	
10.0	.157	.075	.021	.155	.075	.021	.150	.074	.021	.146	.073	.021	.142	.071	.020	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.182	.182	.182	.156	.156	.156	.106	.106	.106	.061	.061	.061	.020	.020	.020	
1.0	.173	.149	.128	.148	.128	.110	.101	.088	.076	.058	.051	.044	.019	.016	.014	
2.0	.165	.126	.094	.142	.109	.081	.097	.075	.056	.056	.044	.033	.018	.014	.011	
3.0	.158	.109	.071	.135	.094	.061	.093	.066	.043	.054	.038	.025	.017	.012	.008	
4.0	.151	.097	.056	.129	.084	.048	.089	.058	.034	.051	.034	.020	.017	.011	.007	
5.0	.143	.087	.045	.123	.075	.039	.085	.052	.028	.049	.031	.016	.016	.010	.005	
6.0	.137	.079	.037	.117	.068	.033	.081	.048	.023	.047	.028	.014	.015	.009	.005	
7.0	.130	.072	.032	.112	.063	.028	.077	.044	.020	.045	.026	.012	.014	.008	.004	
8.0	.124	.067	.027	.107	.058	.024	.074	.041	.017	.043	.024	.010	.014	.008	.003	
9.0	.118	.062	.024	.102	.054	.021	.070	.038	.015	.041	.022	.009	.013	.007	.003	
10.0	.112	.058	.021	.097	.050	.019	.067	.035	.013	.039	.021	.008	.013	.007	.003	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:15 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: 99LED968CW					TYPE: 99LED968CW					WEIGHT: 1				
SPEC.:					DIM.: 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	20.8	22.4	21.1	22.6	22.8	20.7	22.3	21.0	22.5	22.7				
3H	22.4	23.8	22.7	24.0	24.3	22.2	23.6	22.5	23.9	24.1				
4H	23.0	24.3	23.3	24.6	24.8	22.8	24.1	23.1	24.4	24.6				
6H	23.4	24.7	23.8	25.0	25.3	23.2	24.5	23.5	24.7	25.0				
8H	23.6	24.8	23.9	25.1	25.4	23.3	24.6	23.7	24.8	25.1				
12H	23.7	24.8	24.0	25.1	25.4	23.4	24.6	23.7	24.9	25.2				
4H 2H	21.4	22.8	21.7	23.0	23.3	21.3	22.7	21.7	22.9	23.2				
3H	23.1	24.3	23.5	24.6	24.9	23.0	24.2	23.3	24.5	24.8				
4H	23.9	25.0	24.3	25.3	25.6	23.7	24.8	24.1	25.1	25.4				
6H	24.5	25.4	24.9	25.8	26.1	24.2	25.2	24.6	25.5	25.9				
8H	24.7	25.6	25.1	25.9	26.3	24.4	25.3	24.8	25.7	26.1				
12H	24.8	25.6	25.2	26.0	26.4	24.5	25.3	24.9	25.7	26.1				
8H 4H	24.1	25.0	24.5	25.4	25.8	24.0	24.9	24.4	25.2	25.6				
6H	24.9	25.6	25.3	26.0	26.4	24.7	25.4	25.1	25.8	26.2				
8H	25.2	25.8	25.6	26.2	26.7	24.9	25.6	25.4	26.0	26.4				
12H	25.4	25.9	25.8	26.4	26.8	25.1	25.6	25.6	26.1	26.6				
12H 4H	24.1	25.0	24.6	25.3	25.8	24.0	24.8	24.4	25.2	25.6				
6H	24.9	25.6	25.4	26.0	26.5	24.7	25.4	25.2	25.8	26.3				
8H	25.2	25.8	25.7	26.3	26.7	25.0	25.6	25.5	26.0	26.5				
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, 1420 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.2)
Area: 0.030276 m2

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:15 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: 99LED968CW	TYPE: 99LED968CW	WEIGHT: 1
SPEC.:	DIM.: 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

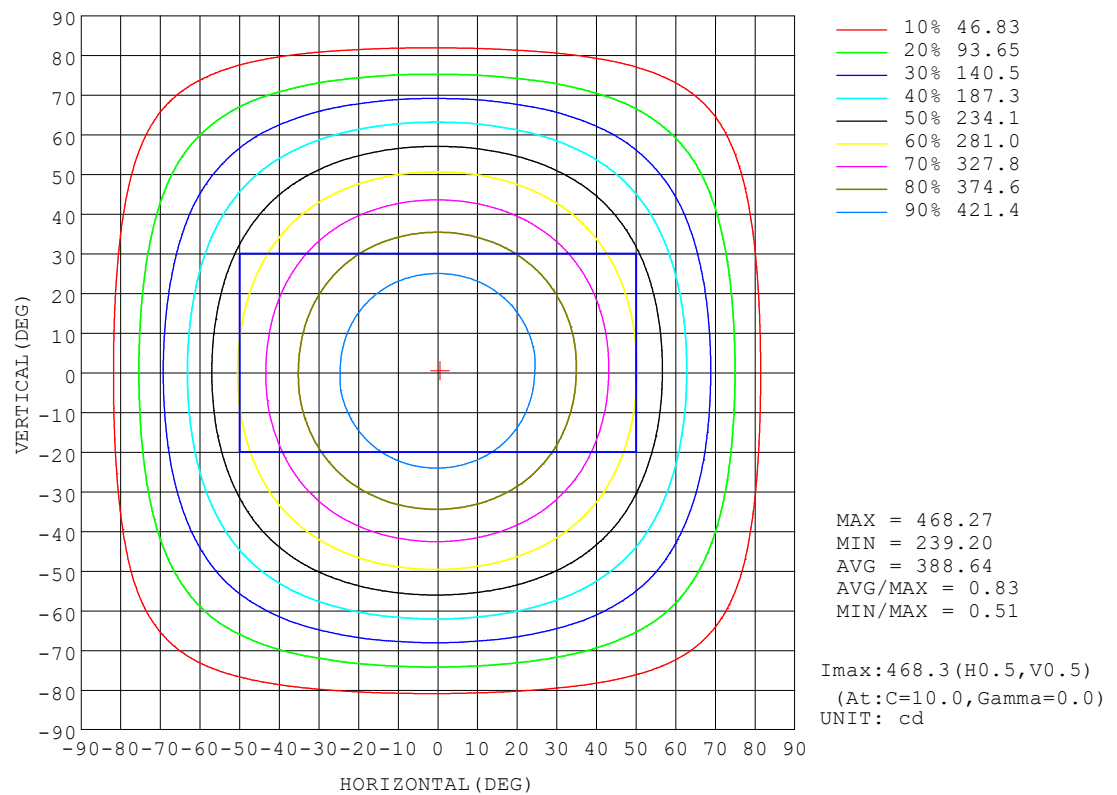
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	55	44	37	54	43	37	53	43	37	30
0.80	64	53	46	63	53	46	62	52	46	39
1.00	72	62	55	71	61	54	69	63	54	47
1.25	79	69	62	78	68	62	75	67	61	54
1.50	84	74	68	82	74	67	80	72	66	59
2.00	91	82	76	89	81	75	86	79	74	66
2.50	94	87	81	92	86	80	89	83	78	70
3.00	98	91	86	96	90	85	92	87	83	74
4.00	102	96	91	99	94	90	95	91	88	79
5.00	104	99	95	102	97	94	97	94	91	82
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: 15 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: 99LED968CW	TYPE: 99LED968CW	WEIGHT: 1
SPEC.:	DIM.: 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

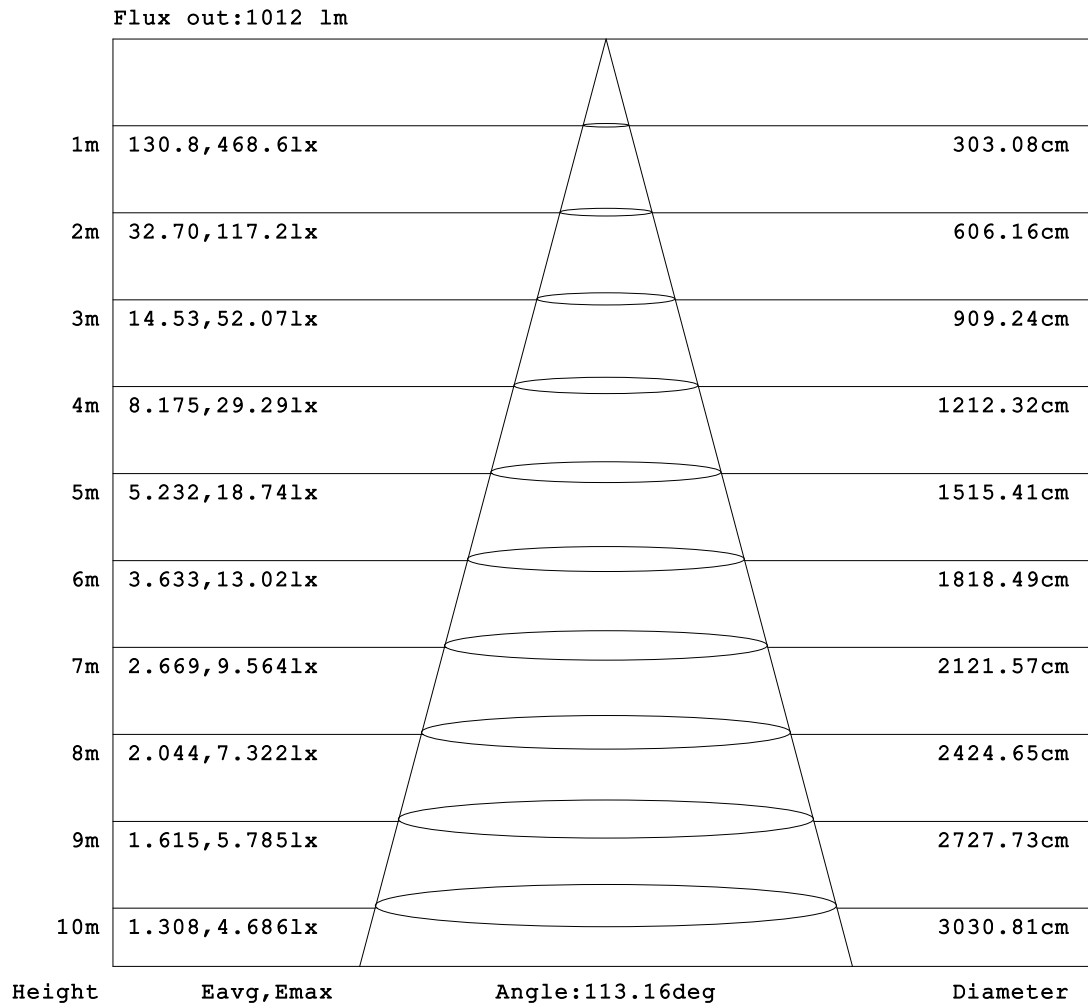


C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature:25.3°C
 Operators:
 Test Date:15 August 2022

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: 99LED968CW	TYPE: 99LED968CW	WEIGHT: 1
SPEC.:	DIM.: 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



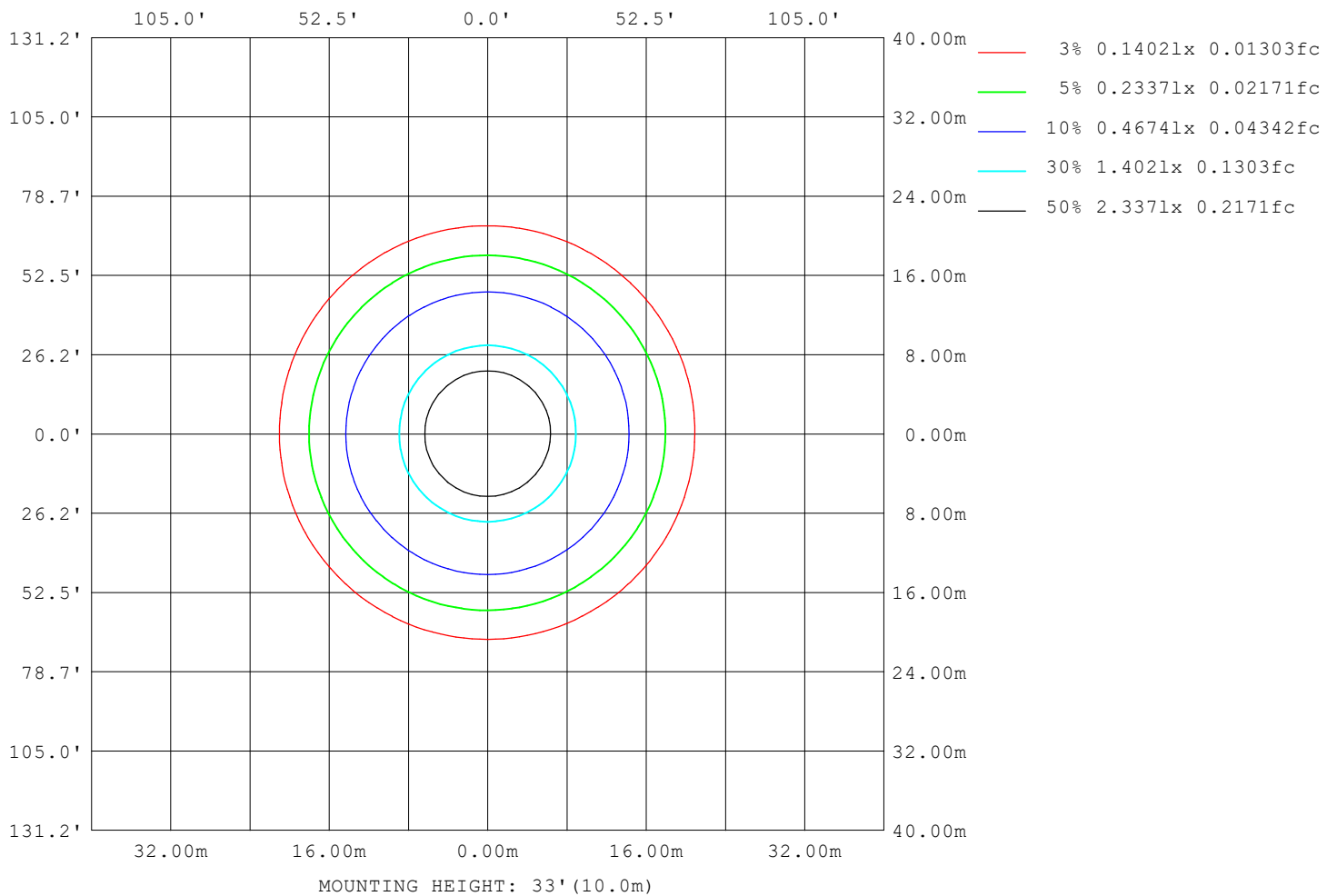
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature:25.3°C
 Operators:
 Test Date:15 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: 99LED968CW	TYPE: 99LED968CW	WEIGHT: 1
SPEC.:	DIM.: 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: 15 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: 99LED968CW	TYPE: 99LED968CW	WEIGHT: 1
SPEC.:	DIM.: 225 x 225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

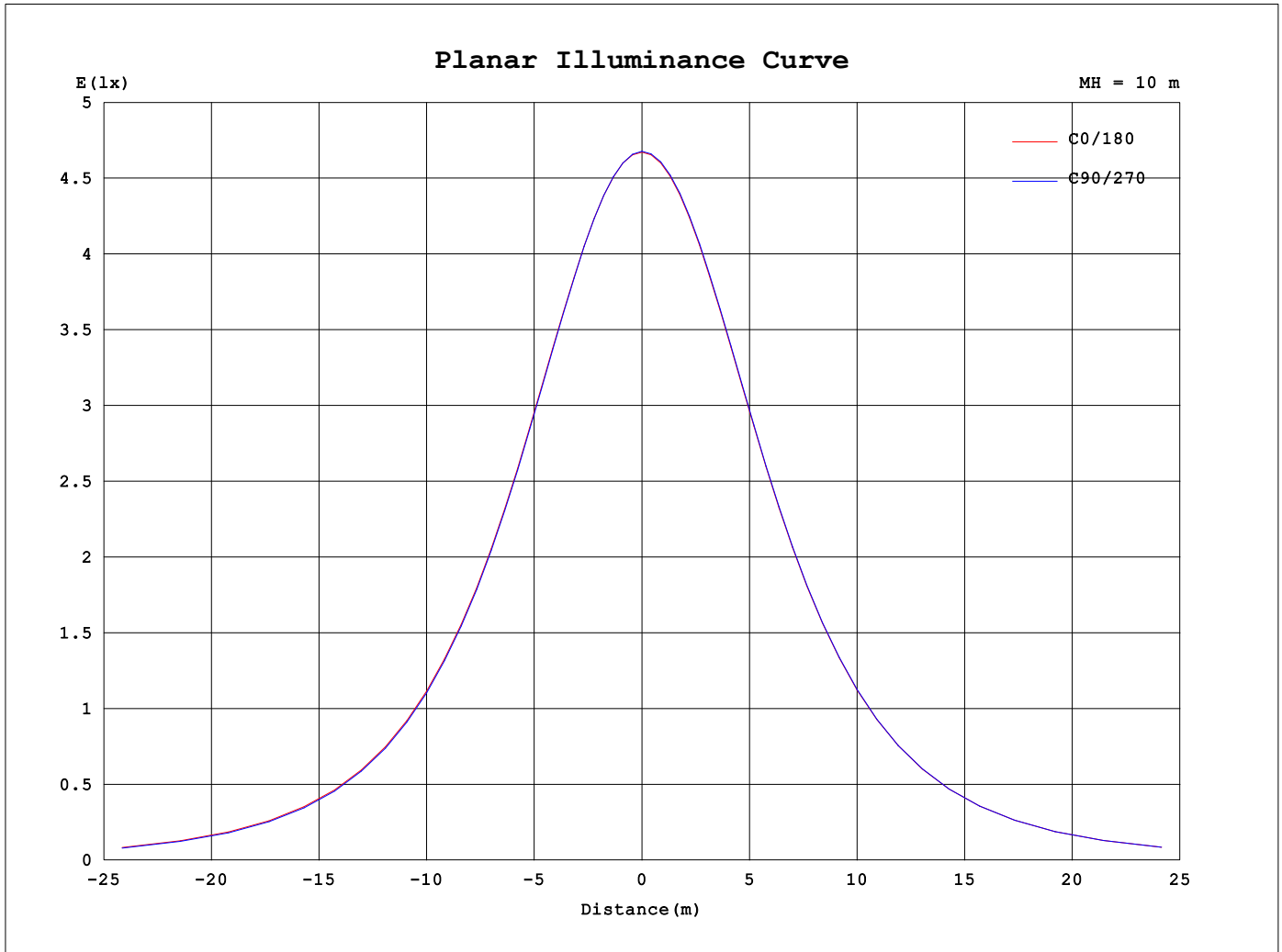
AvgL	cd/m2
L_0~180 (65) av	13434
L_0~180 (75) av	12142
L_0~180 (85) av	9131
L_90~270 (65) av	13198
L_90~270 (75) av	11671
L_90~270 (85) av	9324
L_45 (65) av	13282
L_45 (75) av	11875
L_45 (85) av	9265

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:15 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: MEDIUM
 Temperature: 25.3°C
 Operators:
 Test Date: 15 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:

```