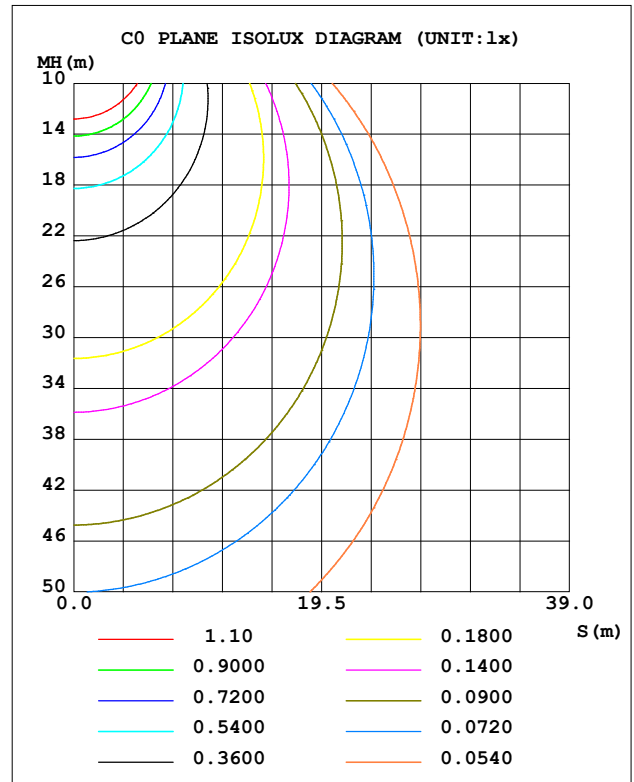
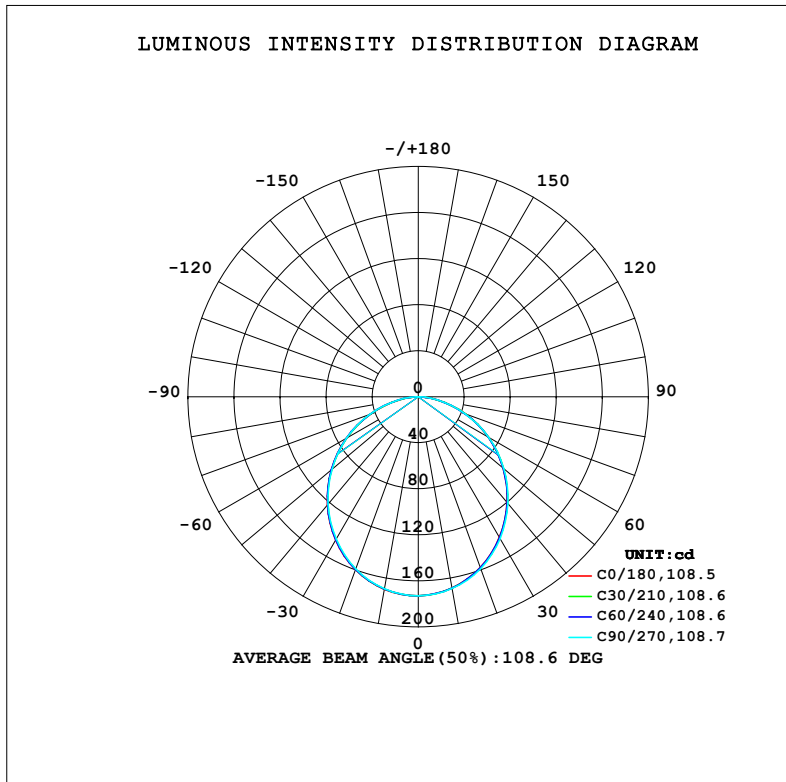


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 99LED960CW	TYPE: 99LED960CW	WEIGHT: 1
SPEC.:	DIM.: F100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99LED960CW	Imax(cd)	172.9	S/MH(C0/180)	1.24
NOMINAL POWER(W)	6	LOR(%)	92.8	S/MH(C90/270)	1.23
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	473.19	η UP,DN(C0-180)	0.0,46.1
NOMINAL FLUX(lm)	510	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,46.6
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	η down (%)	92.8	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:10 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	168.7	168.8	169.1	169.5	169.8	169.7	169.4	169.1	0- 10	16.33	16.33	3.45,3.2
20	157.8	158.1	158.8	159.2	159.8	159.7	159.1	158.6	10- 20	46.51	62.84	13.3,12.3
30	141.1	141.4	142.2	142.8	143.8	143.4	142.8	142.2	20- 30	69.71	132.5	28,26
40	120.1	120.4	121.2	121.9	122.9	122.5	121.9	121.3	30- 40	82.84	215.4	45.5,42.2
50	96.22	96.42	97.08	97.62	98.62	98.41	97.90	97.43	40- 50	84.70	300.1	63.4,58.8
60	70.55	70.46	70.76	71.26	72.08	72.15	71.96	71.56	50- 60	75.64	375.7	79.4,73.7
70	43.50	43.24	43.26	43.54	44.22	44.48	44.55	44.36	60- 70	57.06	432.8	91.5,84.9
80	17.84	17.49	17.38	17.36	17.80	18.18	18.44	18.39	70- 80	32.23	465.0	98.3,91.2
90	0.2402	0.2372	0.2360	0.2355	0.2036	0.1979	0.2007	0.2025	80- 90	8.174	473.2	100,92.8
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): 258.21 lm

%lum = 54.6%

%lamp = 50.6%

Conical surface Flux(130deg): 407.08 lm

%lum = 86.0%

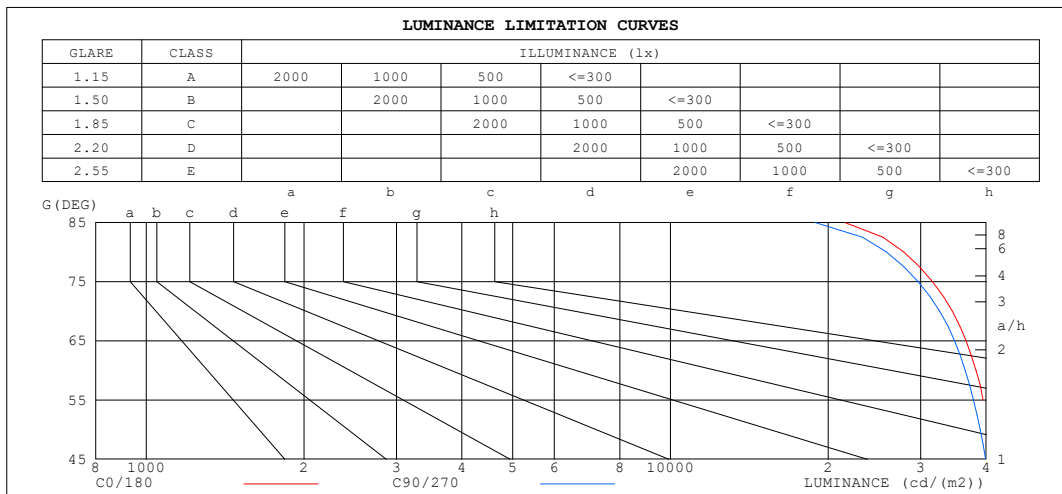
%lamp = 79.8%

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:10 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: 99LED960CW	TYPE: 99LED960CW	WEIGHT: 1
SPEC.:	DIM.: F100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	21501	18864
80	27848	25808
75	31610	29685
70	34475	32622
65	36625	34828
60	38250	36502
55	39484	37842
50	40579	38953
45	41586	39927

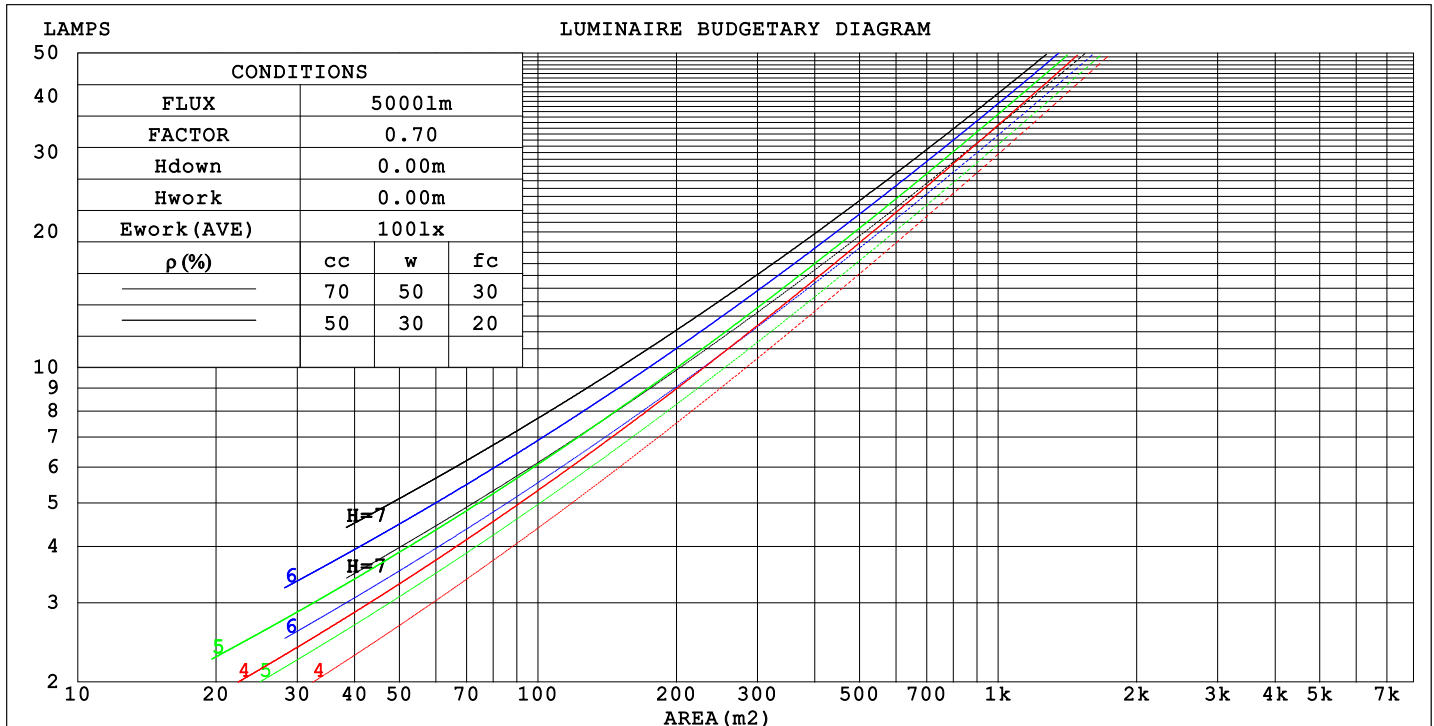
C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 25.3°C
 Operators:
 Test Date: 10 August 2022

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: 99LED960CW	TYPE: 99LED960CW	WEIGHT: 1
SPEC.:	DIM.: F100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	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:10 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: 99LED960CW	TYPE: 99LED960CW	WEIGHT: 1
SPEC.:	DIM.: F100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	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	.284	.161	.051	.277	.158	.050	.265	.152	.049	.254	.146	.047	.243	.141	.045	
2.0	.268	.147	.045	.262	.144	.044	.251	.140	.043	.241	.135	.042	.232	.131	.041	
3.0	.248	.132	.040	.243	.130	.039	.234	.127	.038	.225	.123	.038	.216	.120	.037	
4.0	.229	.119	.035	.225	.118	.035	.216	.115	.034	.208	.112	.034	.201	.109	.033	
5.0	.212	.108	.031	.208	.107	.031	.201	.104	.031	.194	.102	.030	.187	.100	.030	
6.0	.197	.099	.028	.193	.098	.028	.187	.096	.028	.180	.094	.028	.175	.092	.027	
7.0	.183	.091	.026	.180	.090	.026	.174	.088	.025	.169	.086	.025	.163	.085	.025	
8.0	.171	.084	.024	.169	.083	.023	.163	.082	.023	.158	.080	.023	.153	.079	.023	
9.0	.161	.078	.022	.158	.077	.022	.153	.076	.021	.149	.075	.021	.144	.073	.021	
10.0	.151	.072	.020	.149	.072	.020	.144	.071	.020	.140	.070	.020	.136	.069	.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
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.177	.177	.177	.151	.151	.151	.103	.103	.103	.059	.059	.059	.019	.019	.019	
1.0	.167	.145	.125	.143	.124	.108	.098	.086	.074	.056	.050	.043	.018	.016	.014	
2.0	.159	.122	.091	.137	.105	.079	.094	.073	.055	.054	.042	.032	.017	.014	.011	
3.0	.152	.106	.069	.130	.091	.060	.090	.064	.042	.052	.037	.025	.017	.012	.008	
4.0	.145	.094	.054	.124	.081	.047	.086	.056	.033	.050	.033	.020	.016	.011	.006	
5.0	.138	.084	.044	.119	.073	.038	.082	.051	.027	.047	.030	.016	.015	.010	.005	
6.0	.132	.076	.037	.113	.066	.032	.078	.046	.022	.045	.027	.013	.015	.009	.004	
7.0	.125	.070	.031	.108	.060	.027	.074	.042	.019	.043	.025	.011	.014	.008	.004	
8.0	.119	.064	.027	.103	.056	.023	.071	.039	.017	.041	.023	.010	.013	.008	.003	
9.0	.114	.060	.023	.098	.052	.020	.068	.036	.015	.040	.022	.009	.013	.007	.003	
10.0	.108	.056	.021	.093	.048	.018	.065	.034	.013	.038	.020	.008	.012	.007	.003	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:10 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: 99LED960CW					TYPE: 99LED960CW			WEIGHT: 1			
SPEC.:					DIM.: F100			SERIAL No.: 0			
MFR.: Elmark Industries JSC					SUR.: circular			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	27.9	29.4	28.2	29.6	29.9	27.8	29.3	28.0	29.5	29.7	
	29.4	30.8	29.7	31.1	31.3	29.2	30.6	29.5	30.8	31.1	
	30.0	31.3	30.3	31.6	31.9	29.8	31.1	30.1	31.3	31.6	
	30.4	31.7	30.8	32.0	32.2	30.1	31.4	30.5	31.7	31.9	
	30.5	31.8	30.9	32.0	32.3	30.2	31.5	30.6	31.7	32.0	
	30.6	31.8	31.0	32.1	32.4	30.3	31.4	30.6	31.7	32.0	
4H	2H	28.5	29.8	28.8	30.1	30.3	28.4	29.7	28.7	29.9	30.2
	3H	30.2	31.3	30.5	31.6	31.9	30.0	31.2	30.3	31.4	31.8
	4H	30.9	31.9	31.3	32.3	32.6	30.7	31.7	31.0	32.1	32.4
	6H	31.4	32.4	31.8	32.7	33.1	31.2	32.1	31.6	32.5	32.8
	8H	31.6	32.5	32.0	32.8	33.2	31.3	32.2	31.7	32.6	32.9
	12H	31.7	32.5	32.1	32.9	33.3	31.4	32.2	31.8	32.6	33.0
8H	4H	31.1	32.0	31.5	32.4	32.7	30.9	31.8	31.3	32.2	32.6
	6H	31.8	32.5	32.2	32.9	33.3	31.6	32.3	32.0	32.7	33.1
	8H	32.0	32.7	32.5	33.1	33.5	31.8	32.4	32.2	32.9	33.3
	12H	32.2	32.7	32.7	33.2	33.7	31.9	32.5	32.4	32.9	33.4
12H	4H	31.1	31.9	31.5	32.3	32.7	30.9	31.7	31.4	32.1	32.5
	6H	31.8	32.5	32.3	32.9	33.3	31.6	32.3	32.1	32.7	33.1
	8H	32.1	32.7	32.6	33.1	33.6	31.9	32.4	32.3	32.9	33.3
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 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.2					

CIE Pub.117, 510.0 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -2.3)
Area: 0.0038465 m2

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:10 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: 99LED960CW	TYPE: 99LED960CW	WEIGHT: 1
SPEC.:	DIM.: F100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:

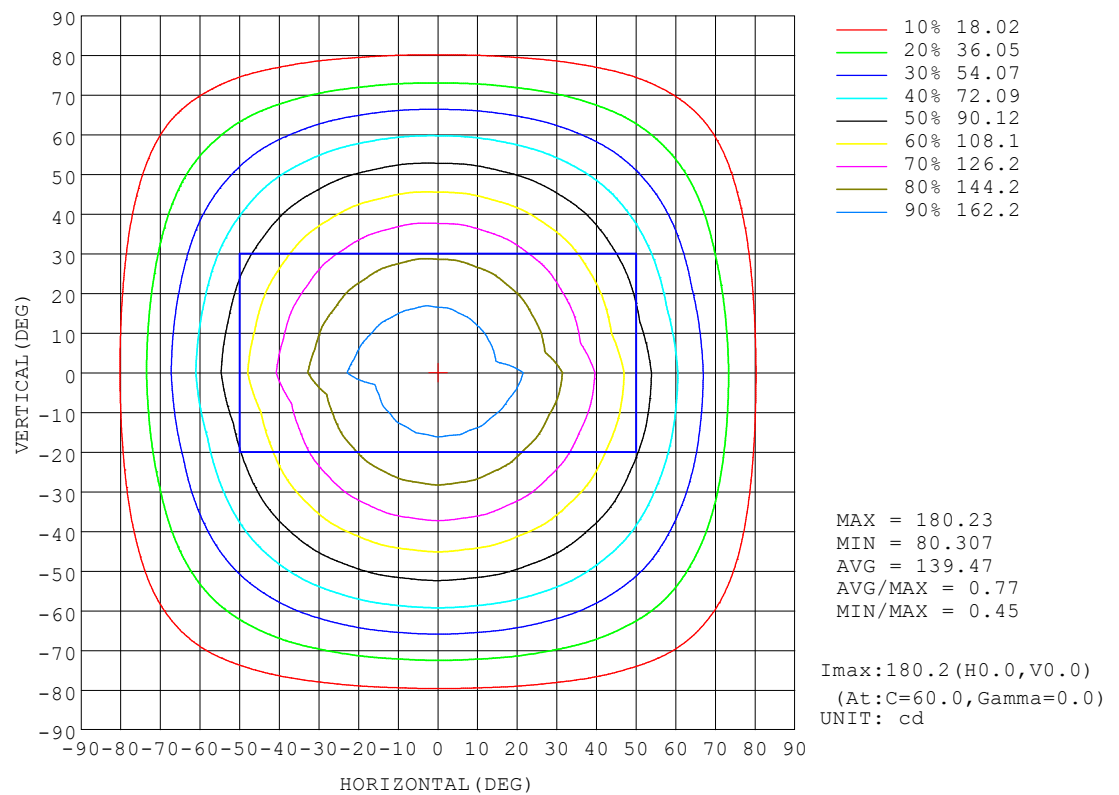
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	54	43	37	53	43	37	52	42	36	31
0.80	63	52	46	62	52	46	61	51	45	39
1.00	71	61	54	70	60	54	68	61	53	47
1.25	77	68	61	76	67	61	74	66	60	53
1.50	82	73	67	81	72	66	78	71	65	58
2.00	88	81	75	87	79	74	83	77	73	65
2.50	92	85	79	90	84	78	87	81	77	69
3.00	95	89	84	93	87	83	89	85	81	73
4.00	99	94	89	97	92	88	93	89	86	77
5.00	101	97	93	99	95	91	95	91	89	80
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: 10 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: 99LED960CW	TYPE: 99LED960CW	WEIGHT: 1
SPEC.:	DIM.: F100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:

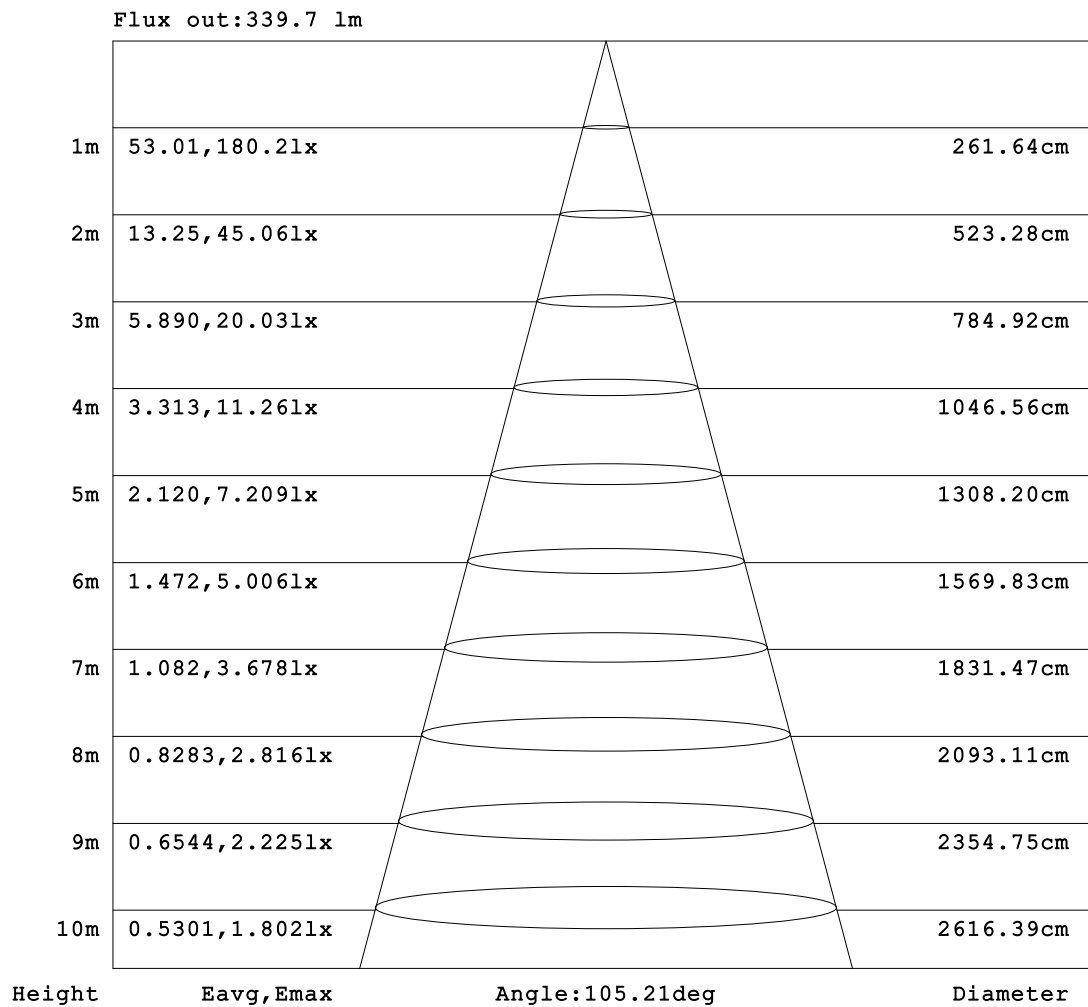


C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators:
Test Date: 10 August 2022

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: 99LED960CW	TYPE: 99LED960CW	WEIGHT: 1
SPEC.:	DIM.: F100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:



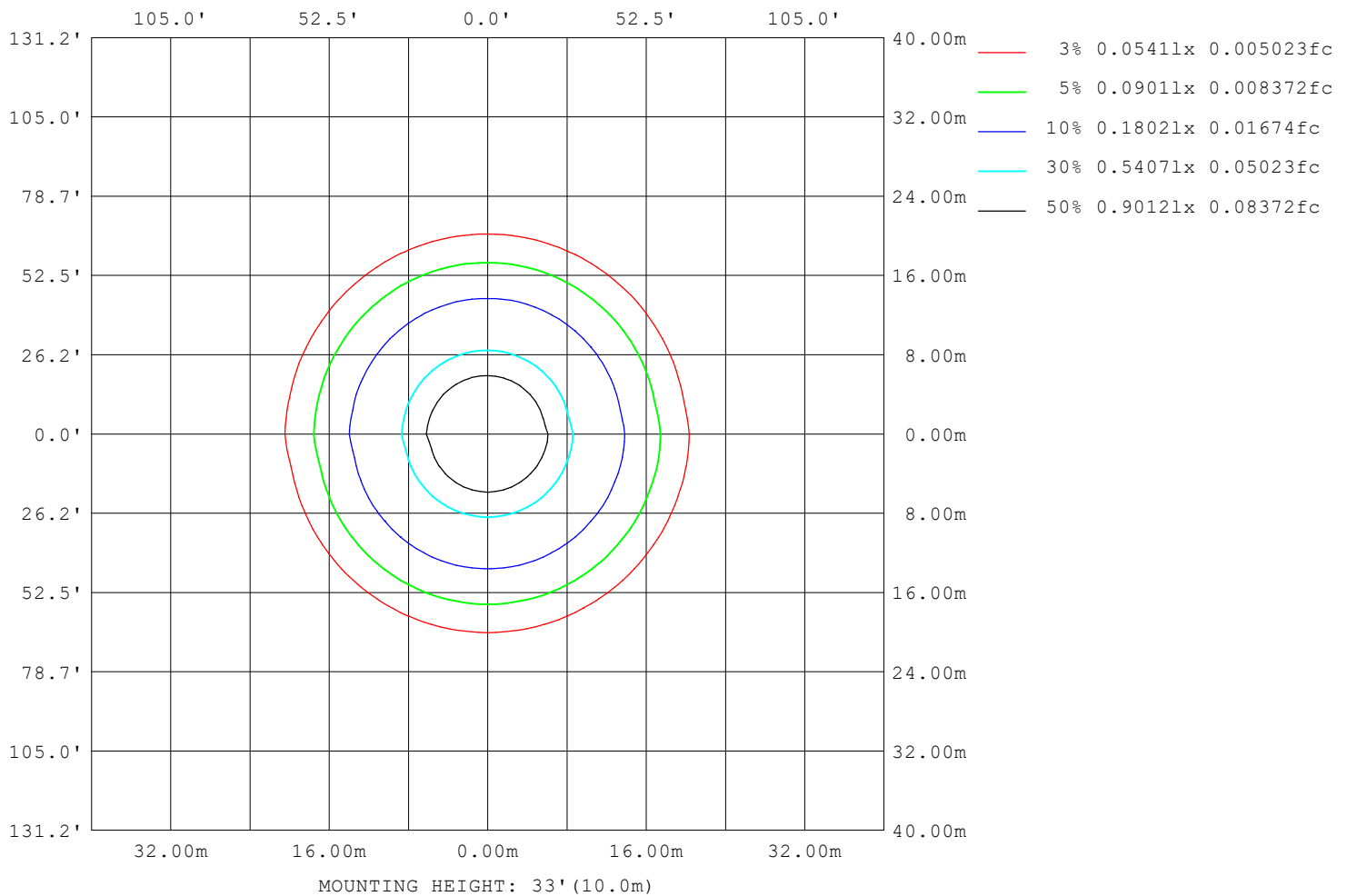
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 25.3°C
 Operators:
 Test Date: 10 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: 99LED960CW	TYPE: 99LED960CW	WEIGHT: 1
SPEC.:	DIM.: F100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 25.3°C
 Operators:
 Test Date: 10 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: 99LED960CW	TYPE: 99LED960CW	WEIGHT: 1
SPEC.:	DIM.: F100	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:

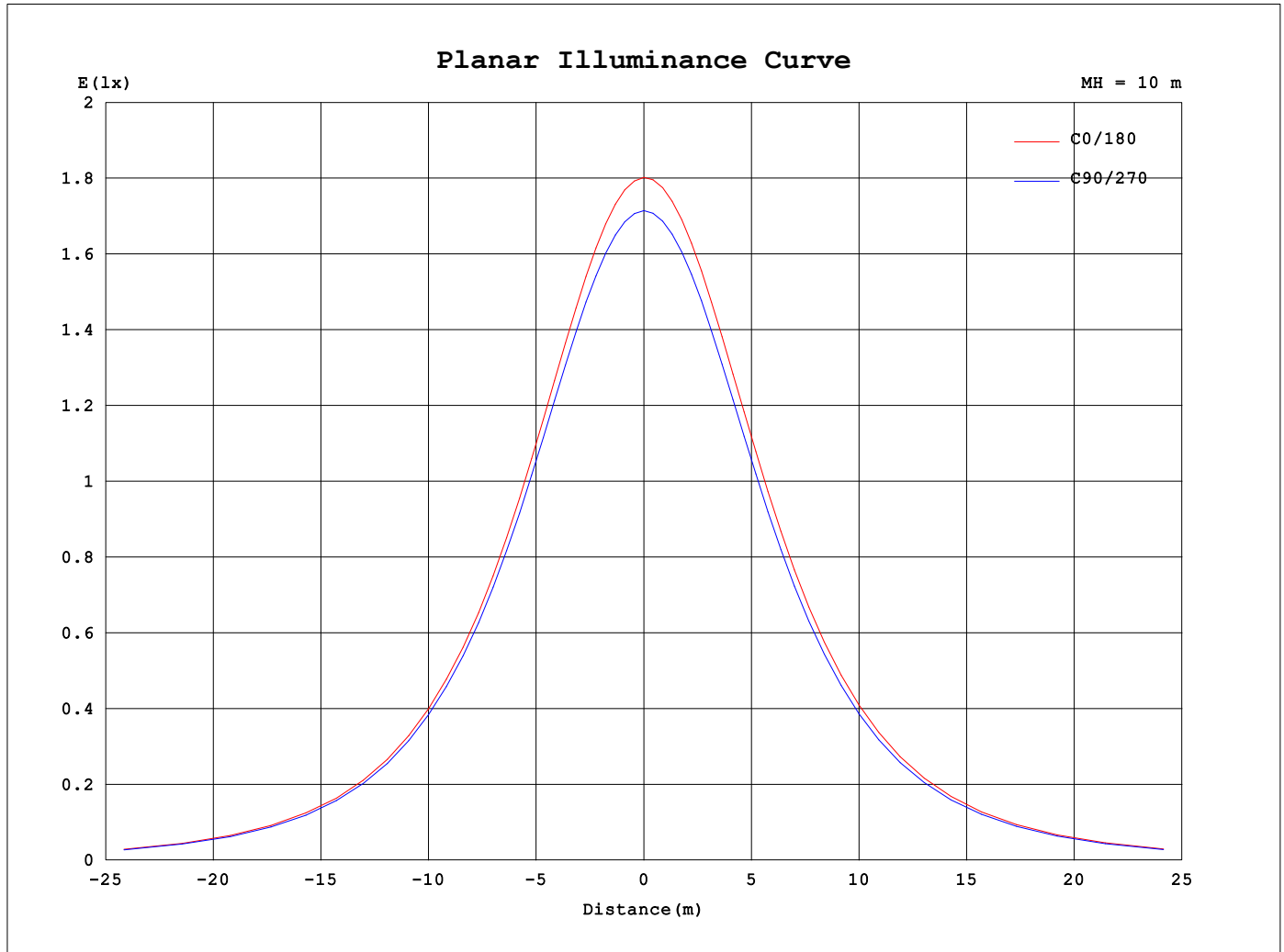
AvgL	cd/m2
L_0~180 (65) av	35477
L_0~180 (75) av	30465
L_0~180 (85) av	20218
L_90~270 (65) av	35486
L_90~270 (75) av	30549
L_90~270 (85) av	20330
L_45 (65) av	35490
L_45 (75) av	30518
L_45 (85) av	20253

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:10 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: 10 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:

```