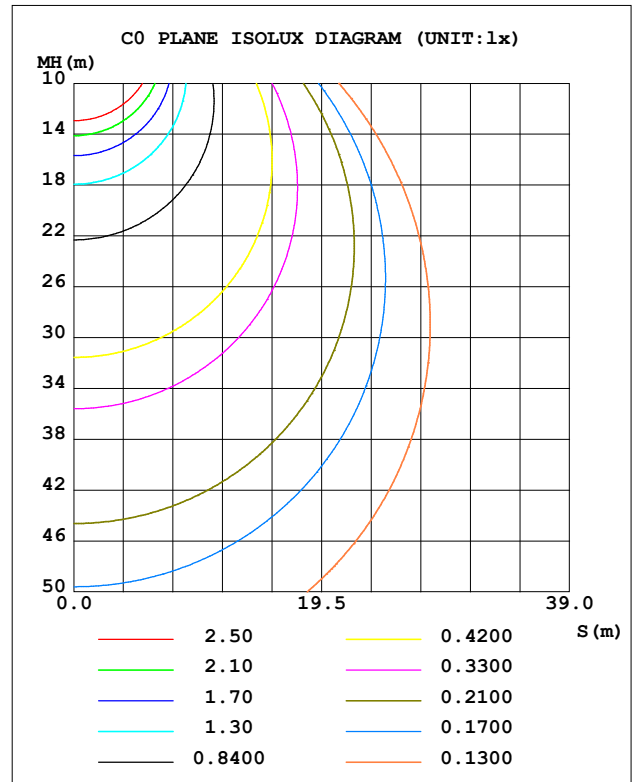
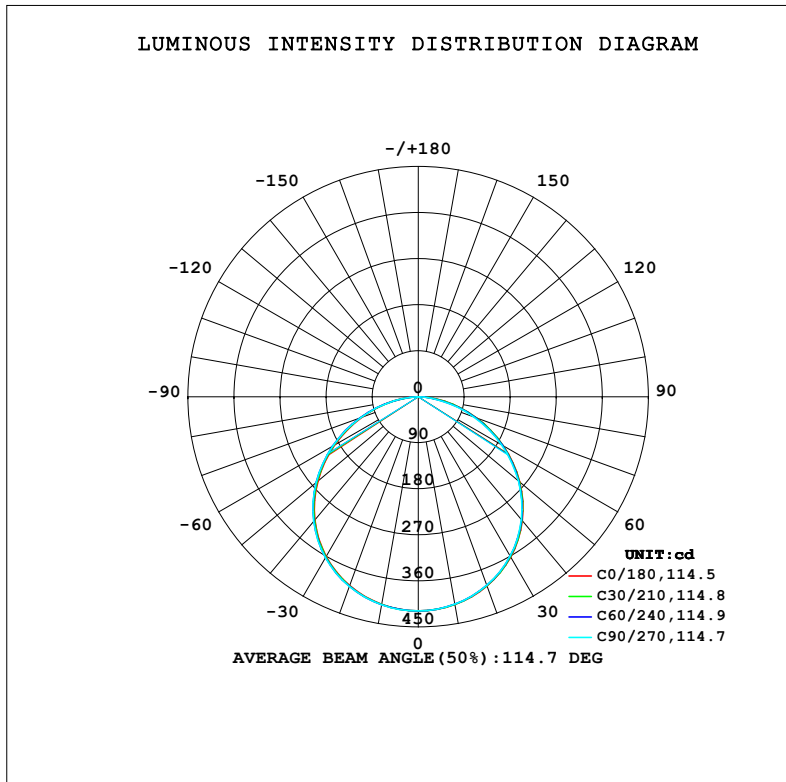


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 99XLED615	TYPE: 99XLED615	WEIGHT: 1
SPEC.:	DIM.: F225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circle F175	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99XLED615	I _{max} (cd)	418.5	S/MH (C0/180)	1.28
NOMINAL POWER (W)	18	LOR (%)	90.9	S/MH (C90/270)	1.29
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	1227.3	η UP, DN (C0-180)	0.0, 45.1
NOMINAL FLUX (lm)	1350	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 45.8
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	90.9	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators:
Test Date: 09 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	412.4	411.9	411.6	411.5	412.0	412.5	412.9	412.8	0- 10	39.65	39.65	3.23,2.94
20	393.6	392.7	392.0	391.7	392.7	393.9	394.5	394.4	10- 20	114.2	153.8	12.5,11.4
30	361.7	360.5	359.3	358.9	360.3	362.1	363.1	362.9	20- 30	174.6	328.4	26.8,24.3
40	316.4	315.0	313.5	312.7	314.3	316.9	318.1	318.0	30- 40	212.6	541.0	44.1,40.1
50	258.9	257.5	255.4	254.1	256.0	259.2	260.7	260.6	40- 50	222.1	763.1	62.2,56.5
60	191.9	190.8	188.3	186.3	188.5	192.3	193.8	193.5	50- 60	201.1	964.2	78.6,71.4
70	121.4	119.5	115.4	114.7	117.6	121.0	120.6	121.8	60- 70	153.4	1118	91.1,82.8
80	52.81	49.85	44.32	46.19	49.65	50.52	49.32	50.61	70- 80	88.29	1206	98.3,89.3
90	0.8989	0.7273	0.7047	0.7304	0.6347	0.6510	0.6149	0.6216	80- 90	21.35	1227	100,90.9
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): 652.83 lm

%lum = 53.2%
%lamp = 48.4%

Conical surface Flux(130deg): 1048.3 lm

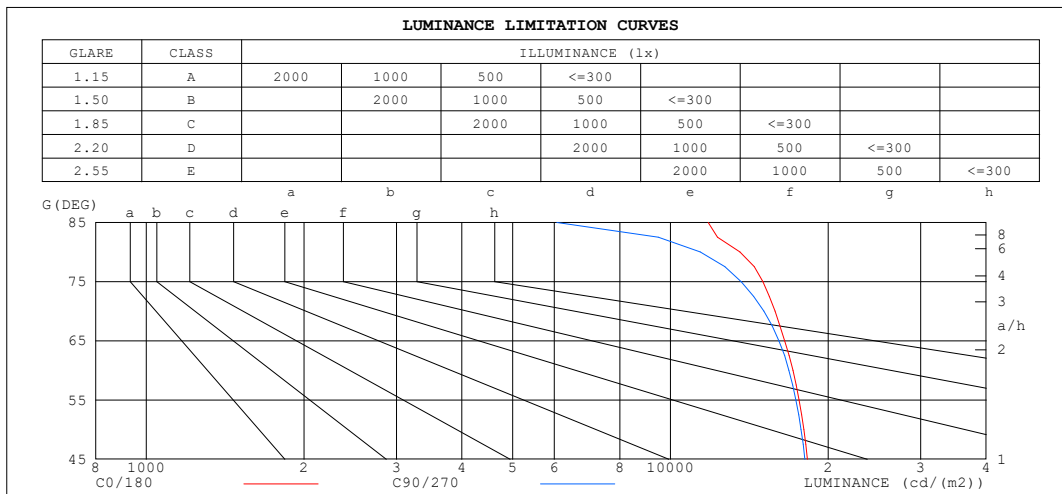
%lum = 85.4%
%lamp = 77.6%

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:09 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: 99XLED615	TYPE: 99XLED615	WEIGHT: 1
SPEC.:	DIM.: F225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circle F175	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	11803	6070
80	13564	11398
75	15002	13645
70	15832	15063
65	16521	16094
60	17117	16817
55	17601	17337
50	17966	17743
45	18235	18050

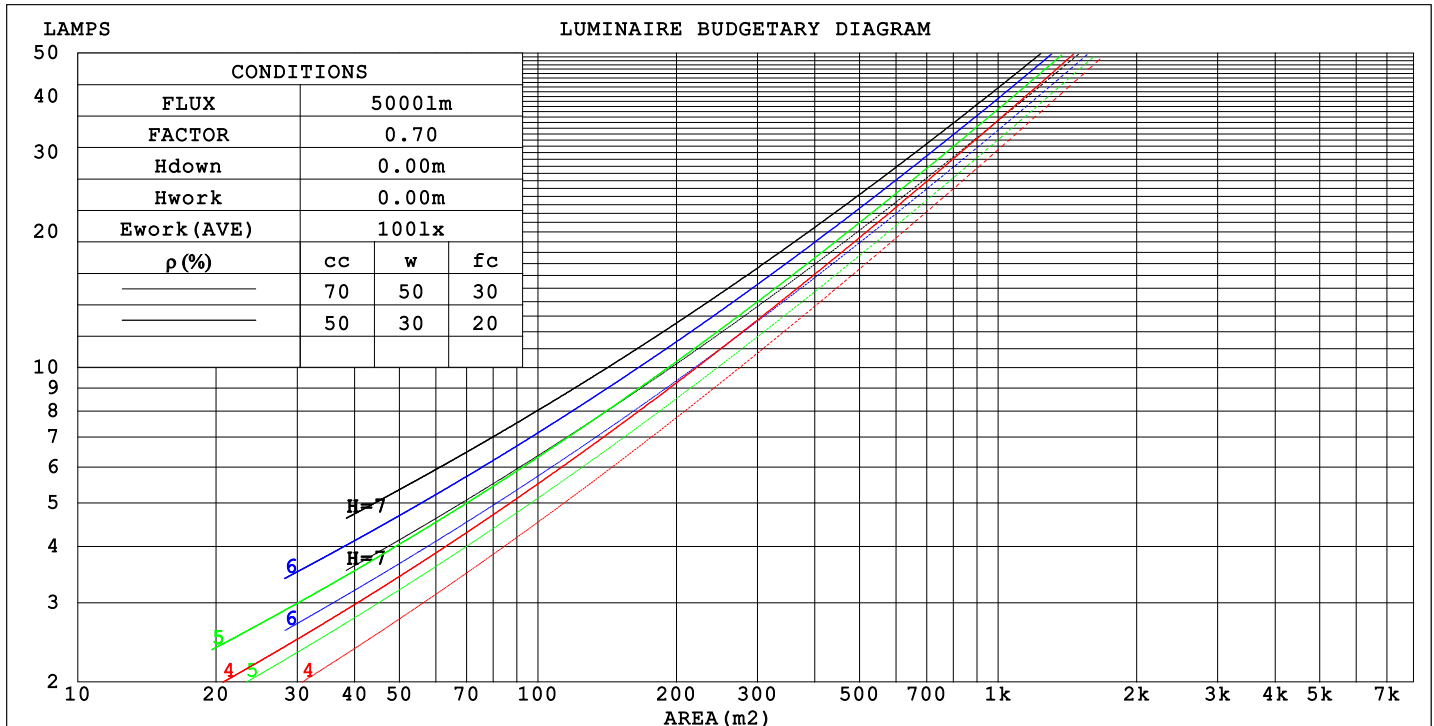
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators:
Test Date: 09 August 2022

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: 99XLED615	TYPE: 99XLED615	WEIGHT: 1
SPEC.:	DIM.: F225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circle F175	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:09 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: 99XLED615	TYPE: 99XLED615	WEIGHT: 1
SPEC.:	DIM.: F225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circle F175	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	.282	.160	.051	.276	.157	.050	.264	.151	.048	.252	.146	.047	.242	.140	.045	
2.0	.266	.146	.045	.260	.143	.044	.250	.139	.043	.240	.135	.042	.231	.131	.041	
3.0	.246	.131	.039	.241	.129	.039	.232	.126	.038	.223	.122	.038	.215	.119	.037	
4.0	.227	.118	.035	.223	.117	.035	.215	.114	.034	.207	.111	.034	.200	.109	.033	
5.0	.210	.107	.031	.206	.106	.031	.199	.104	.030	.192	.101	.030	.186	.099	.030	
6.0	.195	.098	.028	.192	.097	.028	.185	.095	.028	.179	.093	.027	.173	.091	.027	
7.0	.181	.090	.025	.178	.089	.025	.172	.087	.025	.167	.086	.025	.162	.084	.025	
8.0	.169	.083	.023	.167	.082	.023	.161	.081	.023	.156	.079	.023	.152	.078	.023	
9.0	.159	.077	.021	.156	.076	.021	.152	.075	.021	.147	.074	.021	.143	.073	.021	
10.0	.149	.072	.020	.147	.071	.020	.143	.070	.020	.139	.069	.020	.135	.068	.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	.173	.173	.173	.148	.148	.148	.101	.101	.101	.058	.058	.058	.019	.019	.019	
1.0	.164	.142	.122	.140	.122	.105	.096	.084	.073	.055	.048	.042	.018	.016	.014	
2.0	.157	.120	.089	.134	.103	.077	.092	.071	.054	.053	.042	.031	.017	.013	.010	
3.0	.150	.104	.067	.128	.090	.058	.088	.062	.041	.051	.036	.024	.016	.012	.008	
4.0	.143	.092	.053	.123	.079	.046	.084	.055	.032	.049	.032	.019	.016	.011	.006	
5.0	.136	.082	.043	.117	.071	.037	.081	.050	.026	.047	.029	.016	.015	.010	.005	
6.0	.130	.075	.035	.111	.065	.031	.077	.045	.022	.045	.027	.013	.014	.009	.004	
7.0	.123	.069	.030	.106	.059	.026	.073	.042	.019	.043	.025	.011	.014	.008	.004	
8.0	.117	.063	.026	.101	.055	.023	.070	.039	.016	.041	.023	.010	.013	.007	.003	
9.0	.112	.059	.023	.096	.051	.020	.067	.036	.014	.039	.021	.008	.013	.007	.003	
10.0	.107	.055	.020	.092	.048	.018	.064	.034	.013	.037	.020	.008	.012	.007	.002	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:09 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: 99XLED615					TYPE: 99XLED615			WEIGHT: 1			
SPEC.:					DIM.: F225			SERIAL No.: 0			
MFR.: Elmark Industries JSC					SUR.: circle F175			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	21.8	23.4	22.1	23.6	23.8	21.8	23.3	22.0	23.5	23.7
	3H	23.4	24.8	23.7	25.0	25.3	23.3	24.7	23.6	24.9	25.1
	4H	24.0	25.4	24.3	25.6	25.9	23.8	25.2	24.1	25.4	25.7
	6H	24.5	25.8	24.8	26.0	26.3	24.2	25.5	24.5	25.7	26.0
	8H	24.6	25.9	25.0	26.2	26.5	24.3	25.5	24.6	25.8	26.1
	12H	24.7	25.9	25.1	26.2	26.5	24.3	25.4	24.6	25.7	26.0
4H	2H	22.4	23.8	22.8	24.0	24.3	22.4	23.7	22.7	24.0	24.3
	3H	24.2	25.4	24.5	25.7	26.0	24.1	25.2	24.4	25.5	25.8
	4H	25.0	26.0	25.3	26.4	26.7	24.8	25.8	25.1	26.2	26.5
	6H	25.6	26.5	26.0	26.9	27.2	25.2	26.2	25.6	26.5	26.9
	8H	25.8	26.7	26.2	27.0	27.4	25.3	26.2	25.8	26.6	27.0
	12H	25.9	26.7	26.3	27.1	27.5	25.4	26.2	25.8	26.6	27.0
8H	4H	25.2	26.1	25.6	26.5	26.9	25.0	25.9	25.4	26.3	26.7
	6H	26.0	26.7	26.4	27.1	27.5	25.7	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	25.9	26.5	26.4	26.9	27.4
12H	4H	25.2	26.0	25.7	26.4	26.8	25.1	25.9	25.5	26.3	26.7
	6H	26.0	26.7	26.5	27.1	27.6	25.7	26.4	26.2	26.8	27.2
	8H	26.4	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					+ 0.1 / - 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, 1350 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.0)
Area: 0.0224041 m2

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:09 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: 99XLED615	TYPE: 99XLED615	WEIGHT: 1
SPEC.:	DIM.: F225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circle F175	Shielding Angle:

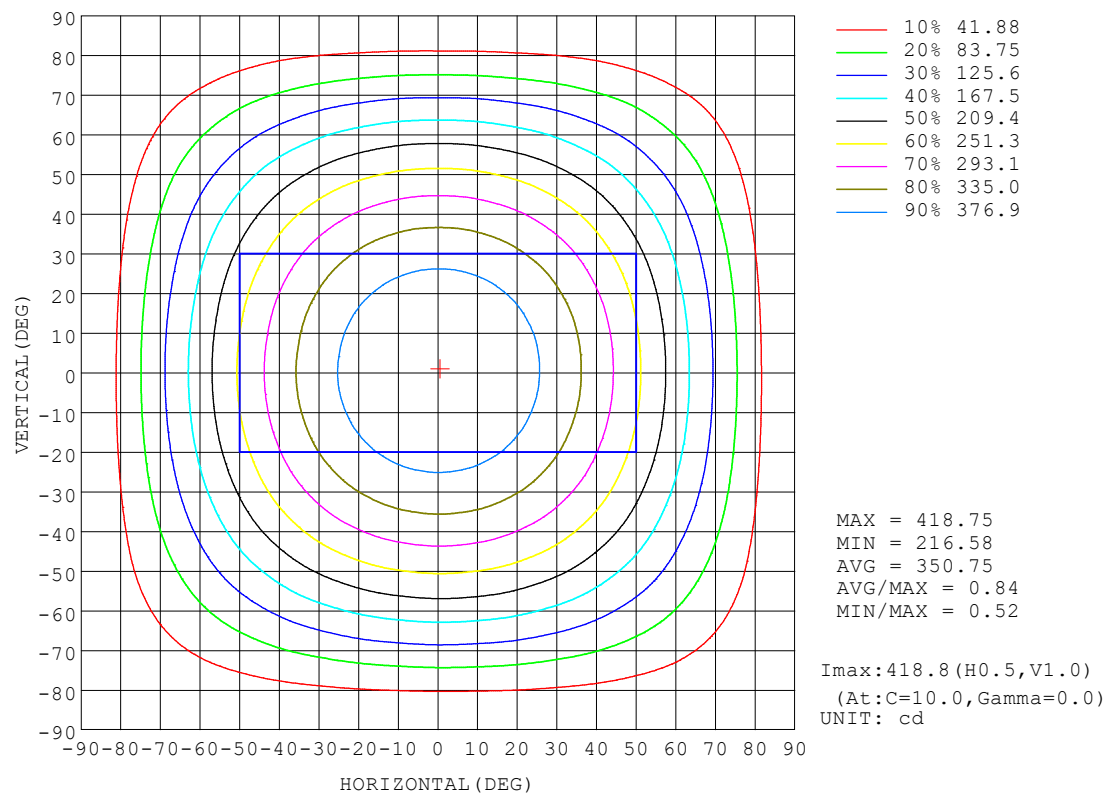
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	52	41	35	51	41	35	50	41	35	29
0.80	61	51	44	60	50	44	59	49	43	37
1.00	69	59	52	68	58	52	66	59	51	45
1.25	75	66	59	74	65	59	72	64	58	51
1.50	80	71	64	78	70	64	76	68	63	56
2.00	86	78	72	85	77	72	81	75	70	63
2.50	90	83	77	88	81	76	84	79	75	67
3.00	93	87	82	91	85	81	87	83	79	71
4.00	97	91	87	94	90	86	91	87	83	75
5.00	99	94	91	97	93	89	92	89	86	78
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: 09 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: 99XLED615	TYPE: 99XLED615	WEIGHT: 1
SPEC.:	DIM.: F225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circle F175	Shielding Angle:

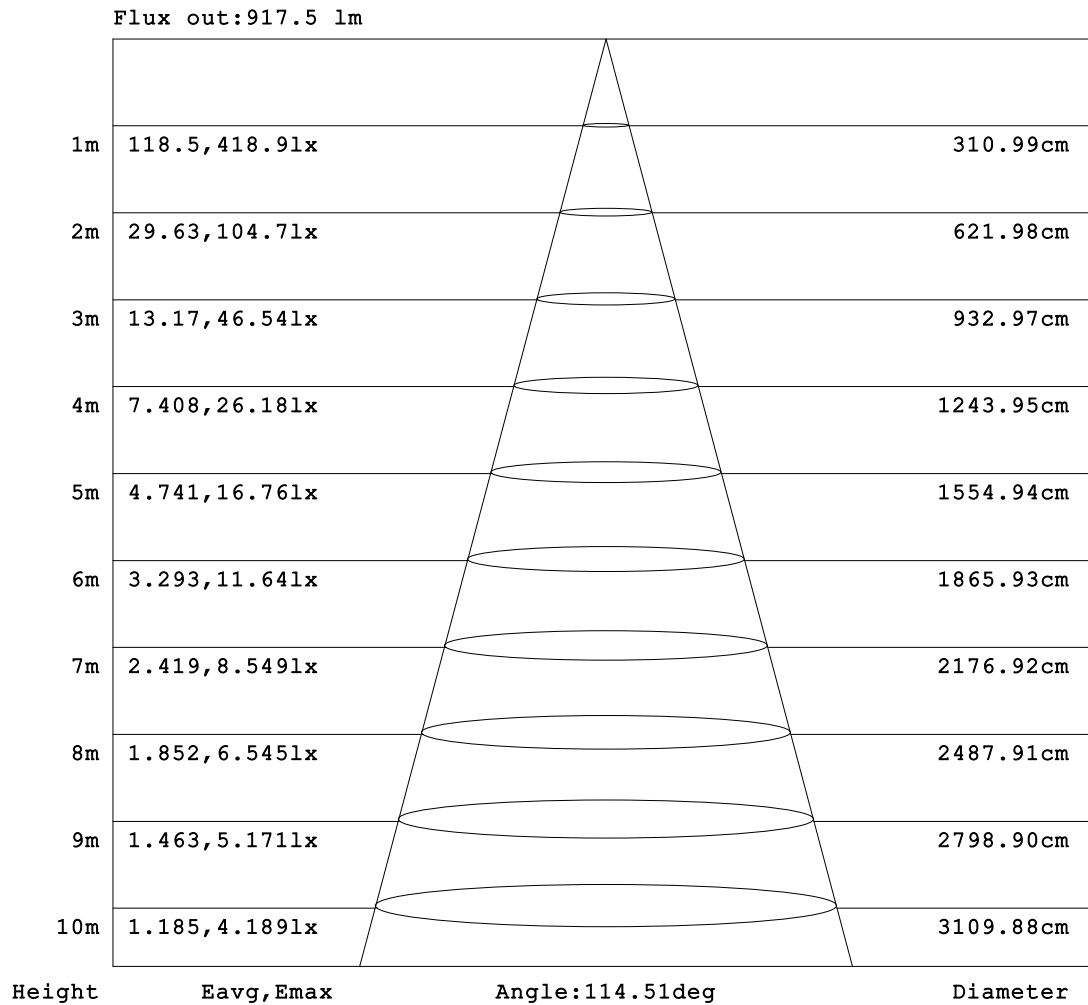


C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 25.3°C
 Operators:
 Test Date: 09 August 2022

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: 99XLED615	TYPE: 99XLED615	WEIGHT: 1
SPEC.:	DIM.: F225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circle F175	Shielding Angle:



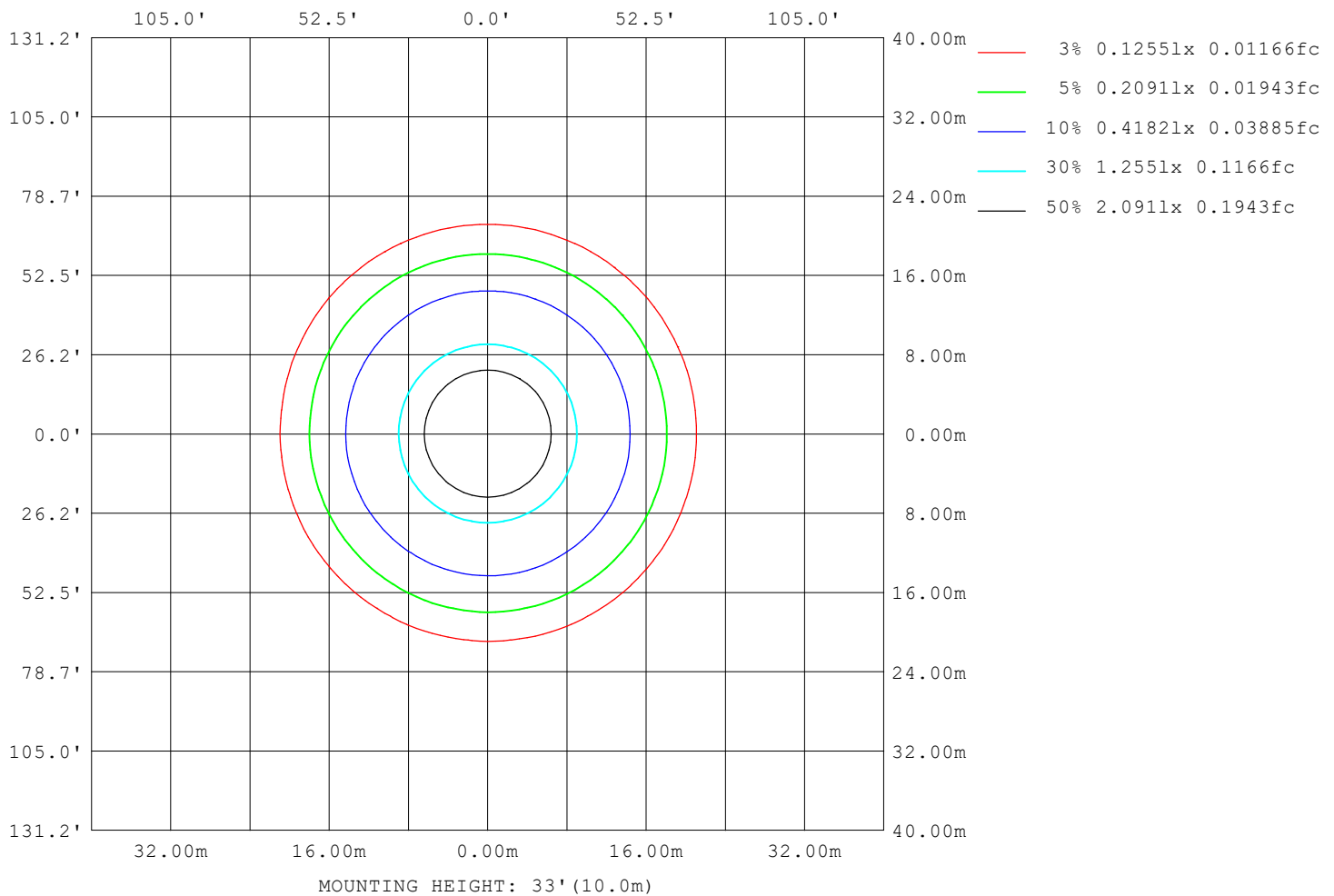
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 25.3°C
 Operators:
 Test Date: 09 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: 99XLED615	TYPE: 99XLED615	WEIGHT: 1
SPEC.:	DIM.: F225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circle F175	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 25.3°C
 Operators:
 Test Date: 09 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: 99XLED615	TYPE: 99XLED615	WEIGHT: 1
SPEC.:	DIM.: F225	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circle F175	Shielding Angle:

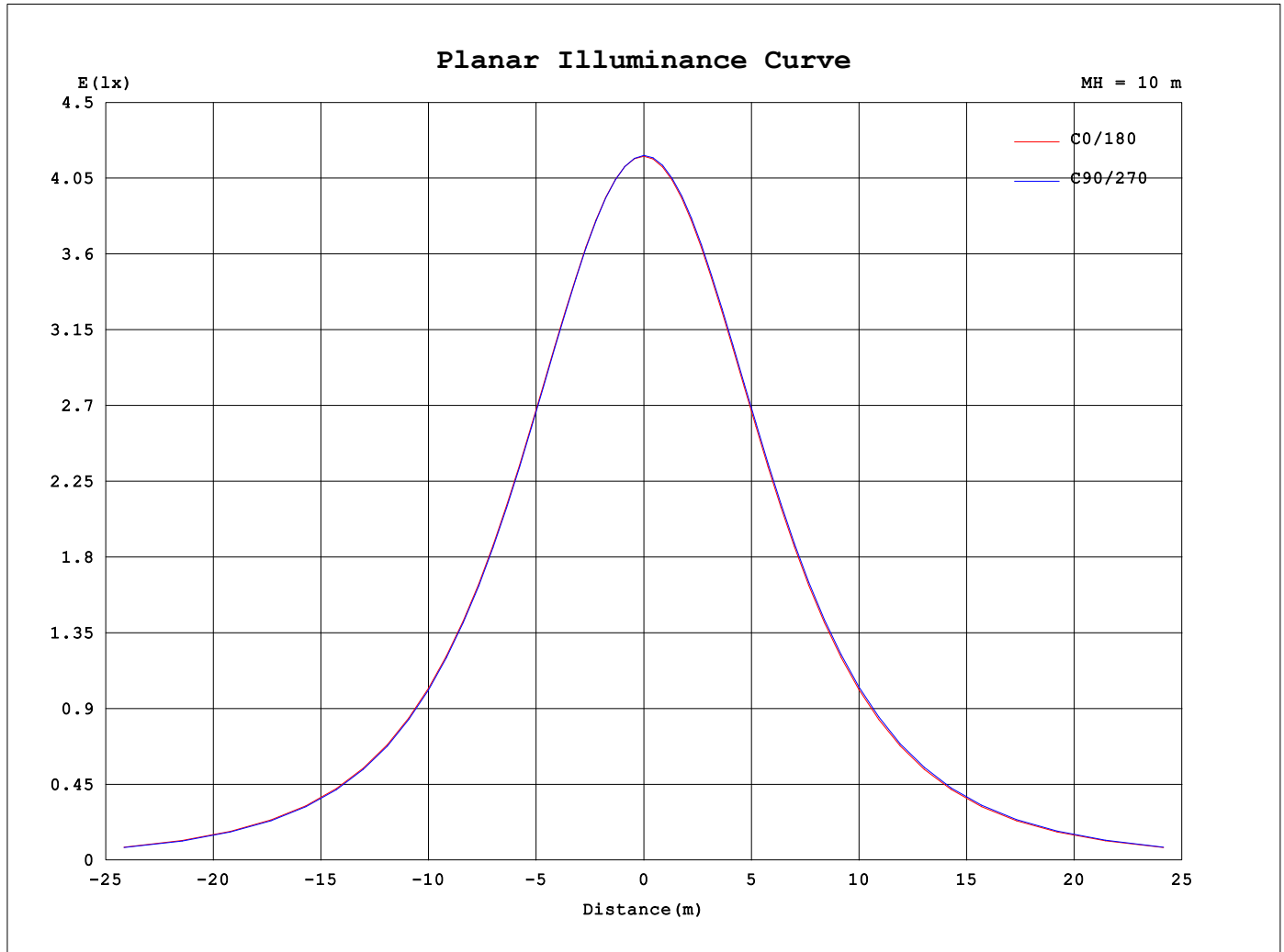
AvgL	cd/m2
L_0~180 (65) av	16349
L_0~180 (75) av	14676
L_0~180 (85) av	11180
L_90~270 (65) av	16369
L_90~270 (75) av	14095
L_90~270 (85) av	7250
L_45 (65) av	16406
L_45 (75) av	14455
L_45 (85) av	8723

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:09 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: 09 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:

```