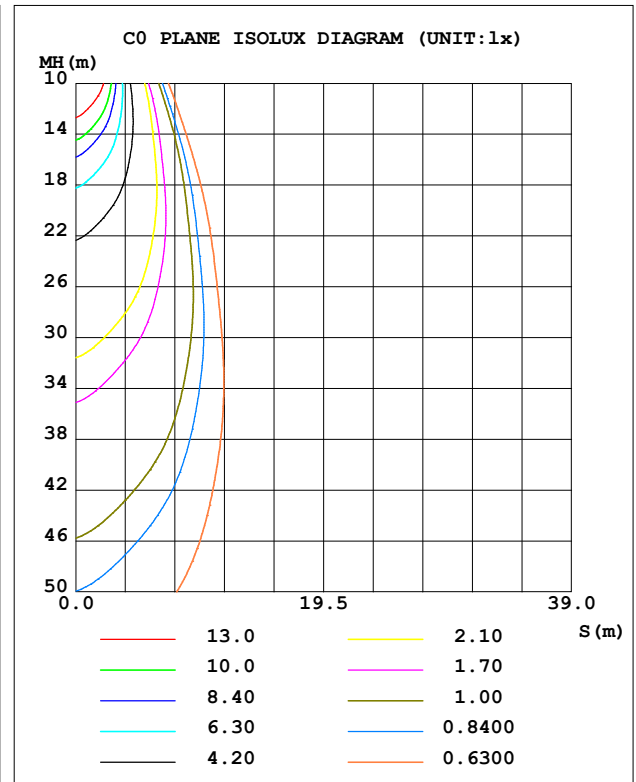
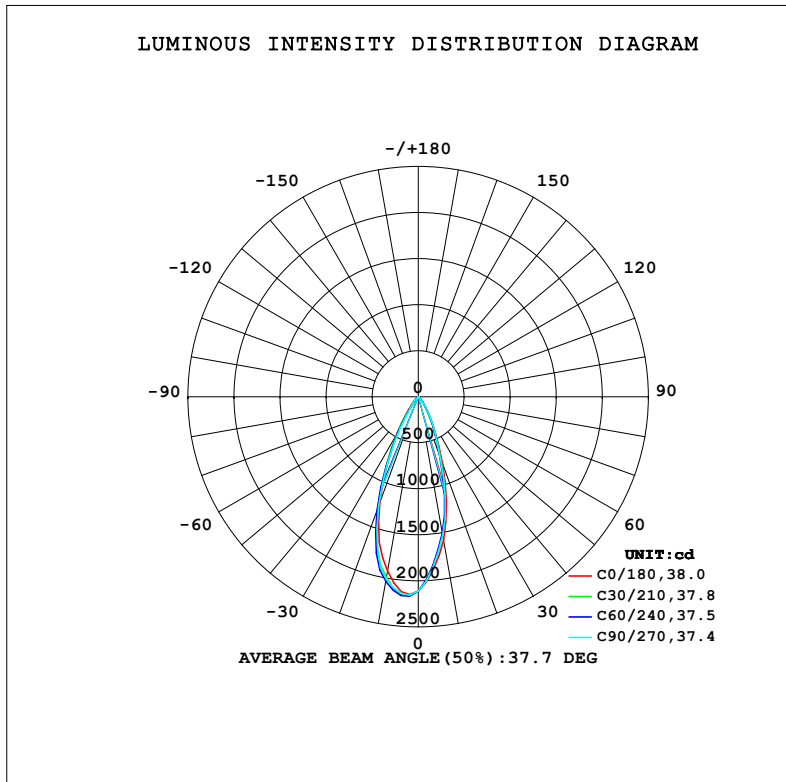


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 93M20FGL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	93M20FGL1230/BL	Imax (cd)	2169	S/MH (C0/180)	0.68
NOMINAL POWER (W)	12	LOR (%)	114.7	S/MH (C90/270)	0.68
RATED VOLTAGE (V)	48	TOTAL FLUX (lm)	997.46	η UP, DN (C0-180)	0.0, 49.5
NOMINAL FLUX (lm)	870	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 65.1
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE (V)	48	η down (%)	114.7	CIBSE SHR MAX	0.60



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 09 November 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	1583	1512	1528	1659	1921	2022	2010	1844	0- 10	183.1	183.1	18.4,21
20	779.0	704.3	699.3	868.2	1219	1311	1261	1072	10- 20	385.6	568.7	57,65.4
30	255.9	249.5	260.2	311.1	458.8	464.4	392.5	348.1	20- 30	283.6	852.3	85.4,98
40	76.32	70.53	67.15	85.74	123.1	86.03	54.14	69.45	30- 40	112.0	964.3	96.7,111
50	10.71	10.22	5.822	15.86	30.94	14.77	4.178	10.49	40- 50	30.39	994.7	99.7,114
60	0.1865	0.1755	0.1682	0.2066	0.0658	0.0626	0.0679	0.0557	50- 60	2.655	997.3	100,115
70	0.0658	0.0572	0.0488	0.0639	0.0192	0.0218	0.0299	0.0231	60- 70	0.0787	997.4	100,115
80	0.0137	0.0095	0	0.0109	0.0137	0.0109	0.0163	0.0136	70- 80	0.0252	997.4	100,115
90	0	0	0	0	0.0137	0.0095	0.0109	0.0122	80- 90	0.0078	997.5	100,115
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): 984.94 lm

%lum = 98.7%

%lamp = 113.2%

Conical surface Flux(130deg): 997.39 lm

%lum = 100.0%

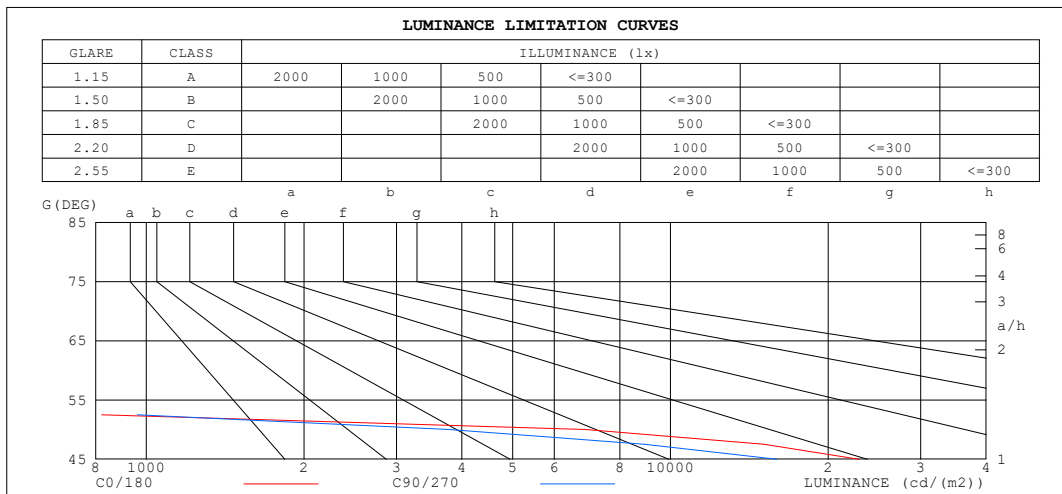
%lamp = 114.6%

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature:25.3°C
 Operators:
 Test Date:09 November 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: 93M20FGL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	0	0
80	33	0
75	53	22
70	80	60
65	113	99
60	154	141
55	231	235
50	6894	3785
45	22874	15959

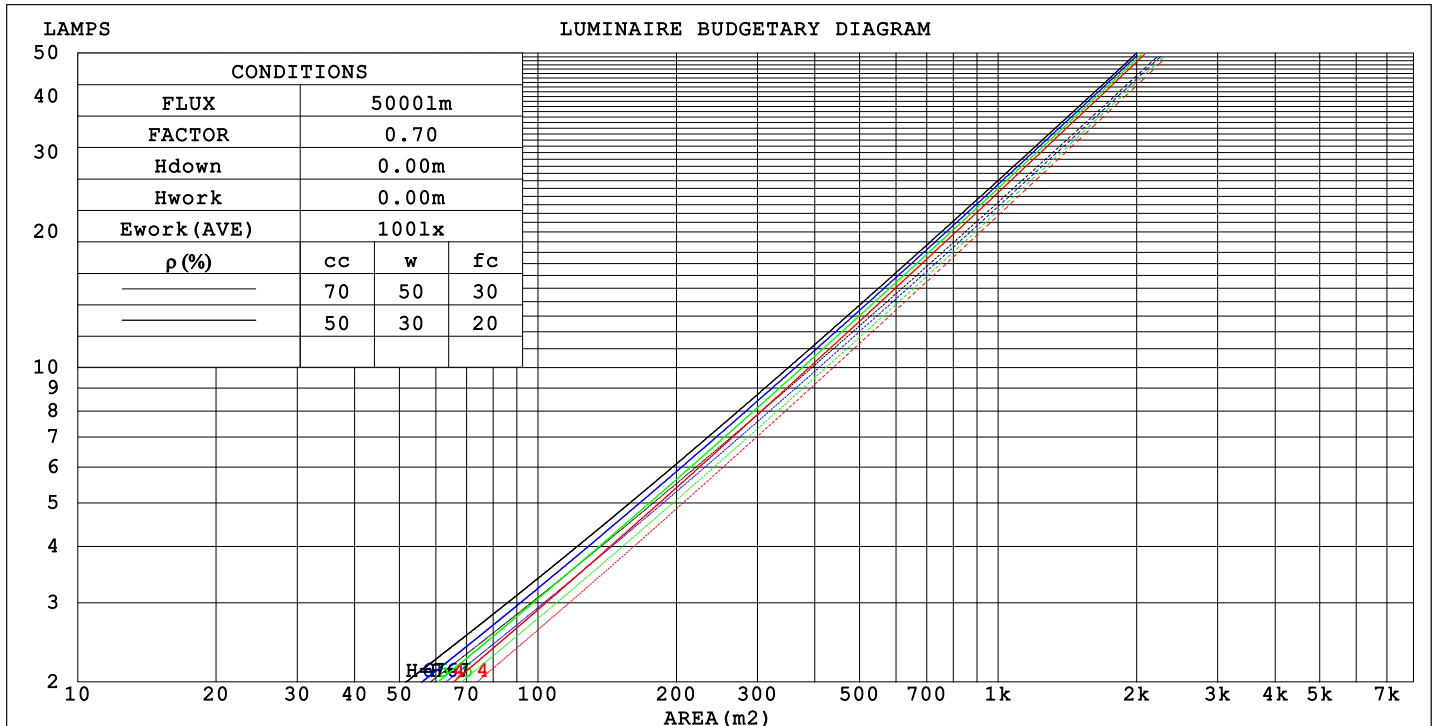
C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature: 25.3°C
 Operators:
 Test Date: 09 November 2022

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: 93M20FGL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	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:09 November 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: 93M20FGL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	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	.181	.103	.033	.173	.099	.031	.159	.091	.029	.146	.084	.027	.134	.078	.025	
2.0	.171	.094	.029	.165	.091	.028	.153	.085	.026	.142	.080	.025	.132	.075	.024	
3.0	.162	.086	.026	.157	.084	.025	.147	.079	.024	.137	.075	.023	.129	.071	.022	
4.0	.154	.080	.023	.149	.078	.023	.141	.075	.022	.133	.071	.021	.125	.068	.021	
5.0	.146	.075	.022	.142	.073	.021	.135	.070	.021	.128	.068	.020	.122	.065	.020	
6.0	.140	.070	.020	.136	.069	.020	.130	.066	.019	.124	.064	.019	.118	.062	.018	
7.0	.133	.066	.019	.130	.065	.019	.125	.063	.018	.119	.061	.018	.114	.059	.017	
8.0	.128	.062	.018	.125	.062	.017	.120	.060	.017	.115	.058	.017	.111	.057	.017	
9.0	.123	.059	.017	.120	.059	.016	.116	.057	.016	.111	.056	.016	.107	.055	.016	
10.0	.118	.056	.016	.116	.056	.016	.112	.055	.015	.108	.053	.015	.104	.052	.015	

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	.218	.218	.218	.187	.187	.187	.127	.127	.127	.073	.073	.073	.023	.023	.023	
1.0	.195	.181	.168	.167	.155	.144	.114	.107	.100	.066	.062	.058	.021	.020	.019	
2.0	.176	.152	.132	.150	.131	.114	.103	.091	.080	.059	.053	.047	.019	.017	.015	
3.0	.160	.130	.106	.137	.112	.092	.094	.078	.064	.054	.046	.038	.017	.015	.012	
4.0	.147	.113	.086	.126	.098	.075	.087	.068	.053	.050	.040	.031	.016	.013	.010	
5.0	.137	.099	.072	.117	.086	.062	.081	.060	.044	.047	.035	.026	.015	.011	.009	
6.0	.127	.088	.060	.110	.076	.052	.076	.053	.037	.044	.031	.022	.014	.010	.007	
7.0	.120	.079	.051	.103	.069	.044	.071	.048	.031	.041	.028	.019	.013	.009	.006	
8.0	.113	.072	.044	.097	.062	.038	.067	.044	.027	.039	.026	.016	.013	.008	.005	
9.0	.107	.066	.038	.092	.057	.033	.064	.040	.024	.037	.024	.014	.012	.008	.005	
10.0	.101	.061	.033	.087	.053	.029	.061	.037	.021	.035	.022	.012	.011	.007	.004	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:09 November 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: 93M20FGL1230/BL						TYPE:			WEIGHT: 1		
SPEC.:						DIM.: 220 x 108 x 20			SERIAL No.: 0		
MFR.: Elmark Industries JSC						SUR.: paralelepiped			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	16.0	16.8	16.2	17.0	17.1	15.7	16.5	16.0	16.7	16.9
	3H	15.9	16.6	16.1	16.8	17.0	15.6	16.3	15.8	16.5	16.7
	4H	15.8	16.5	16.0	16.7	16.9	15.5	16.2	15.8	16.4	16.6
	6H	15.7	16.4	16.0	16.6	16.8	15.4	16.1	15.7	16.3	16.5
	8H	15.6	16.3	15.9	16.5	16.8	15.4	16.0	15.7	16.3	16.5
	12H	15.6	16.2	15.9	16.5	16.7	15.3	15.9	15.6	16.2	16.5
4H	2H	15.8	16.5	16.0	16.7	16.9	15.5	16.2	15.8	16.4	16.6
	3H	15.6	16.2	15.9	16.5	16.7	15.3	15.9	15.6	16.2	16.5
	4H	15.5	16.1	15.8	16.4	16.7	15.2	15.8	15.6	16.1	16.4
	6H	15.4	15.9	15.8	16.2	16.6	15.1	15.6	15.5	15.9	16.3
	8H	15.3	15.8	15.7	16.2	16.5	15.1	15.5	15.5	15.9	16.2
	12H	15.3	15.7	15.7	16.1	16.5	15.0	15.4	15.4	15.8	16.2
8H	4H	15.3	15.8	15.7	16.2	16.5	15.1	15.5	15.5	15.9	16.2
	6H	15.2	15.6	15.7	16.0	16.4	15.0	15.3	15.4	15.7	16.1
	8H	15.2	15.5	15.6	15.9	16.4	14.9	15.2	15.3	15.7	16.1
	12H	15.1	15.4	15.6	15.9	16.3	14.8	15.1	15.3	15.6	16.0
12H	4H	15.3	15.7	15.7	16.1	16.5	15.0	15.4	15.4	15.8	16.2
	6H	15.2	15.5	15.6	15.9	16.4	14.9	15.2	15.3	15.7	16.1
	8H	15.1	15.4	15.6	15.9	16.3	14.8	15.1	15.3	15.6	16.0
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 3.0 / -30.6					+ 3.6 / -30.3				
1.5H		+ 5.0 / -29.6					+ 6.0 / -28.2				
2.0H		+ 7.9 / -27.0					+ 8.1 / -23.1				

CIE Pub.117, 870.0 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.5)
Area: 0.0024 m2

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:09 November 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: 93M20FGL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	Shielding Angle:

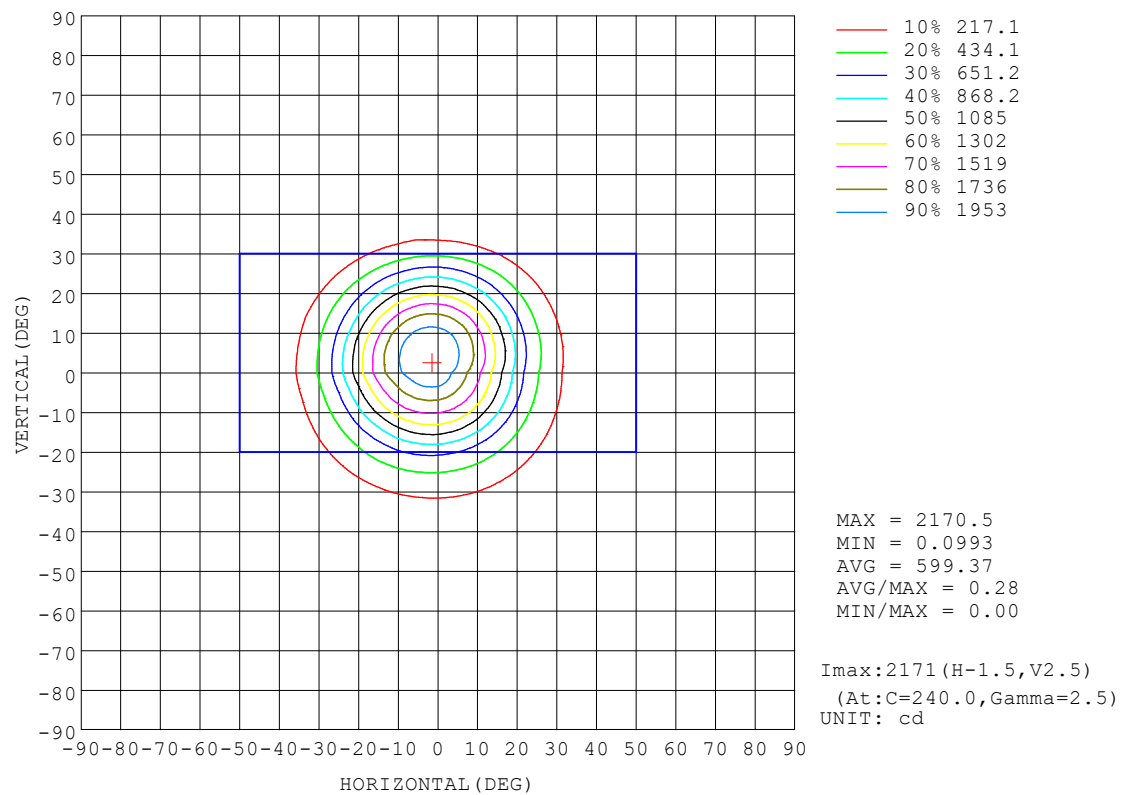
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	103	96	92	102	96	92	101	95	91	88
0.80	111	105	101	110	104	100	109	104	100	96
1.00	116	110	106	115	109	105	113	109	105	101
1.25	120	114	111	119	114	110	116	112	109	105
1.50	123	118	114	121	117	114	119	115	112	107
2.00	125	121	118	124	120	117	121	118	115	109
2.50	127	123	120	125	122	119	122	119	117	110
3.00	129	125	122	127	124	121	123	121	119	111
4.00	131	128	126	129	126	124	125	123	121	113
5.00	132	130	128	130	128	126	125	124	123	114
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: 09 November 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: 93M20FGL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	Shielding Angle:

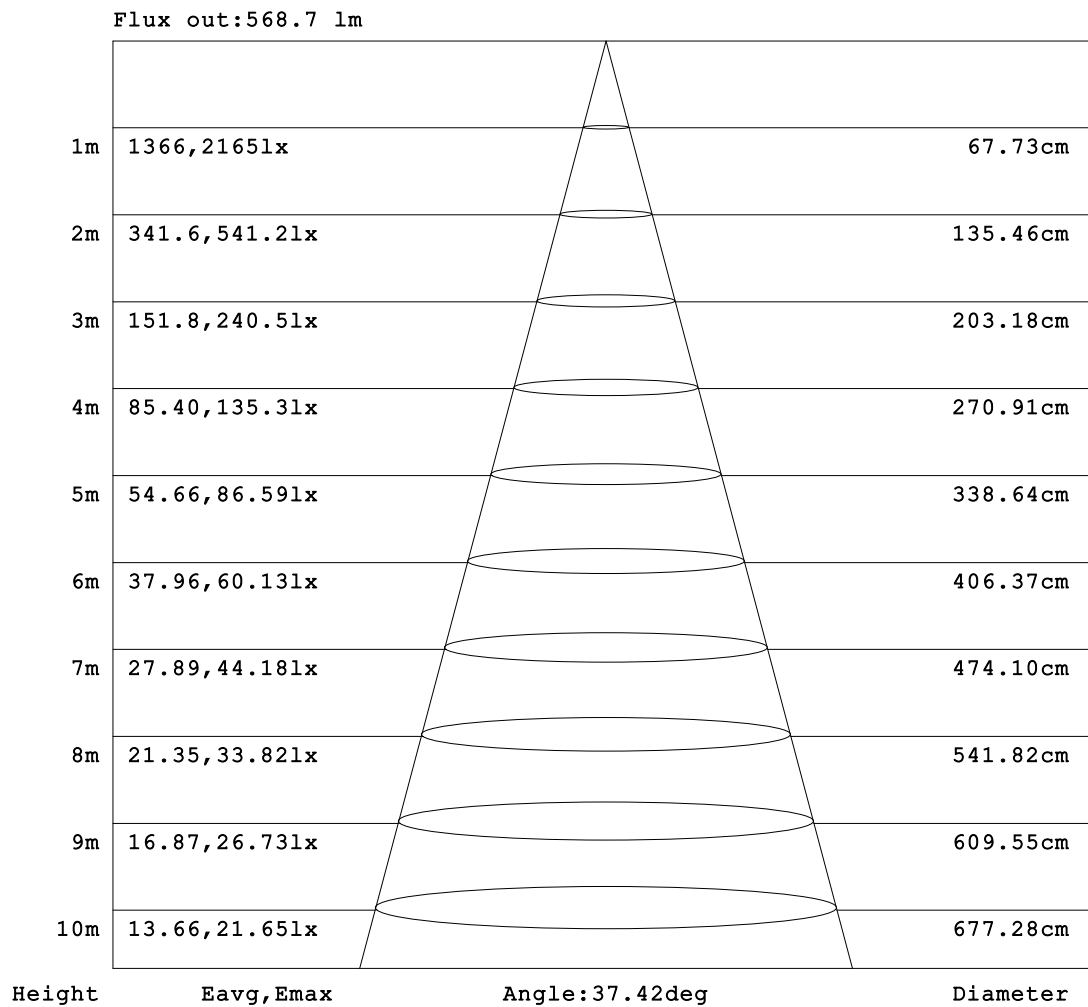


C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature:25.3°C
 Operators:
 Test Date:09 November 2022

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: 93M20FGL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	Shielding Angle:



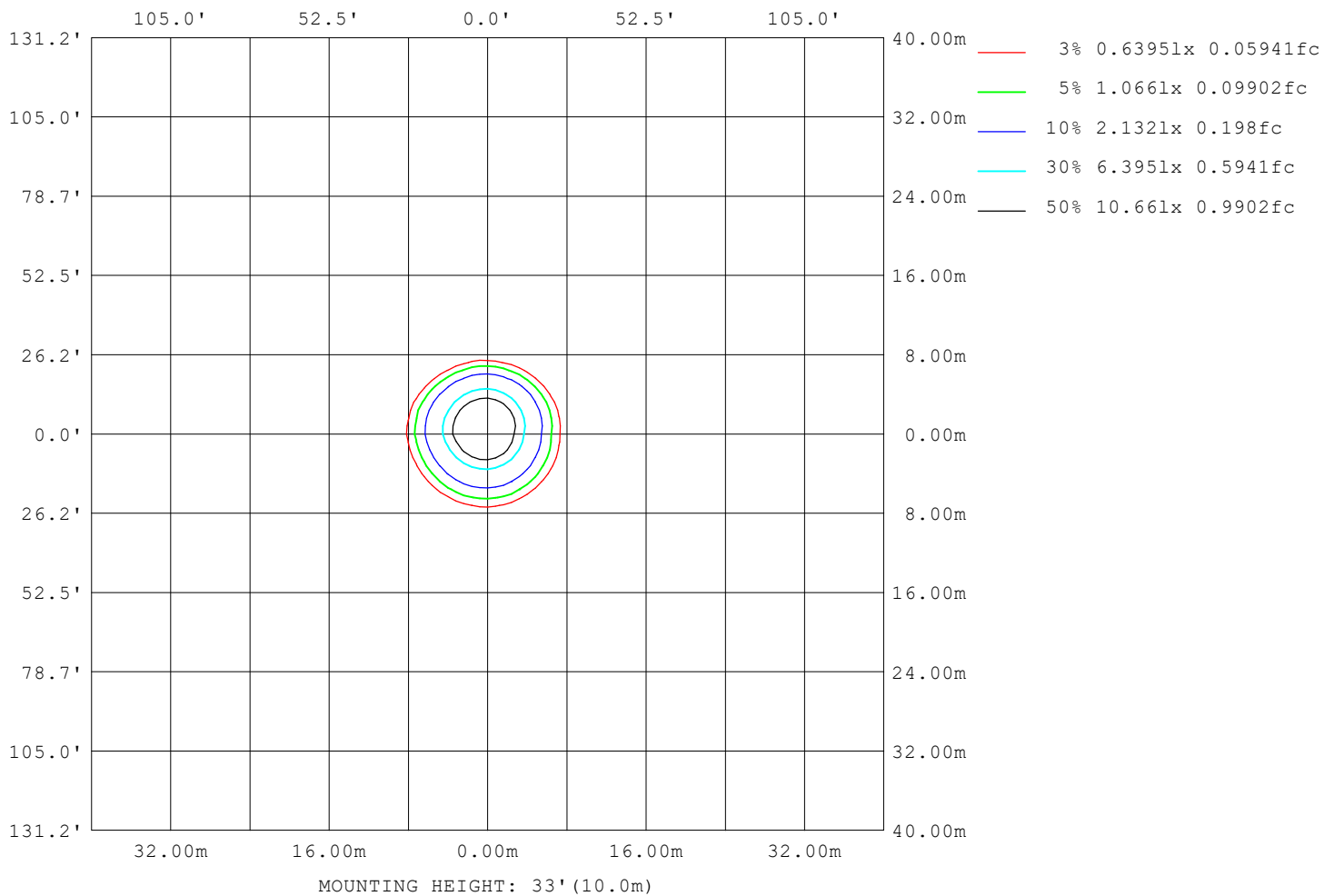
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature:25.3°C
 Operators:
 Test Date:09 November 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: 93M20FGL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 09 November 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: 93M20FGL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	Shielding Angle:

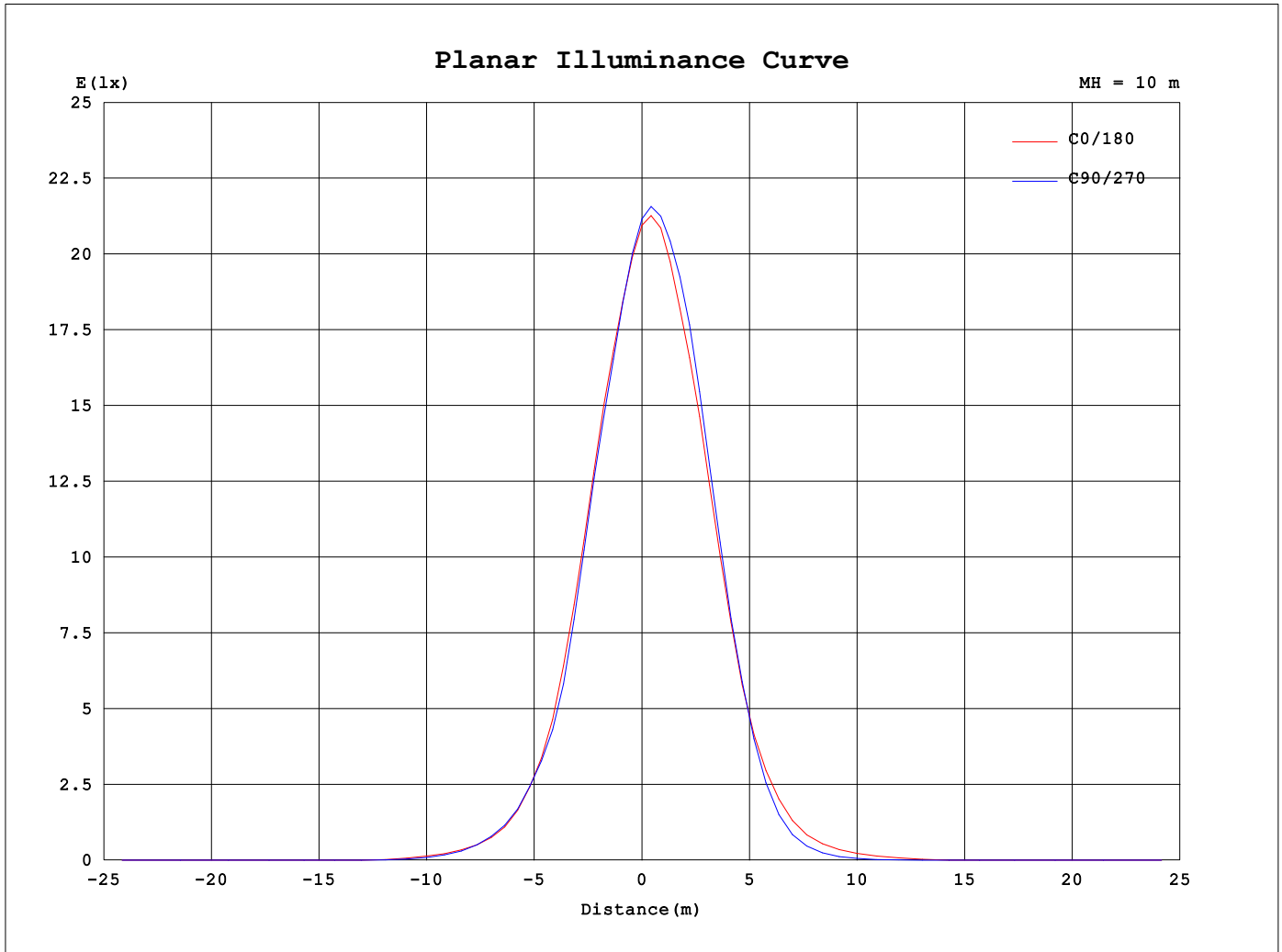
AvgL	cd/m2
L_0~180 (65) av	73
L_0~180 (75) av	38
L_0~180 (85) av	33
L_90~270 (65) av	74
L_90~270 (75) av	28
L_90~270 (85) av	32
L_45 (65) av	74
L_45 (75) av	34
L_45 (85) av	27

Standard: GB/T 29293-2012

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

```