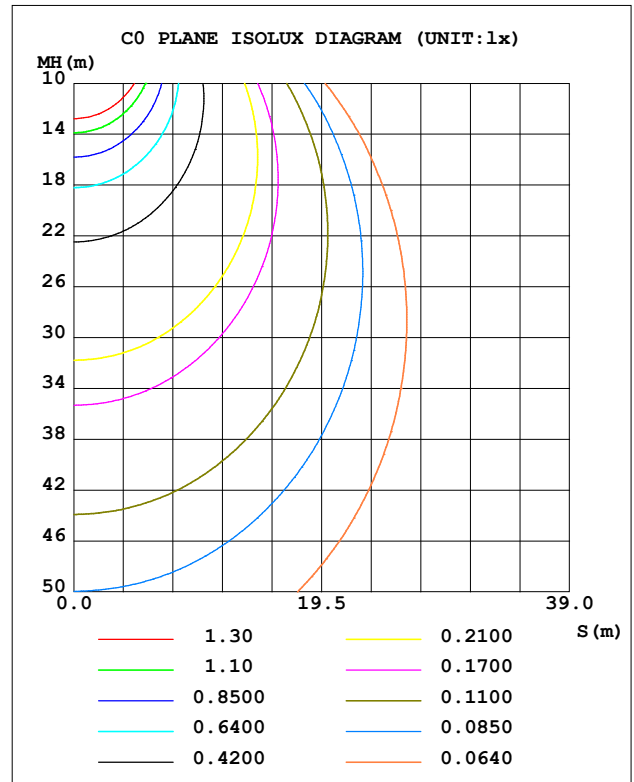
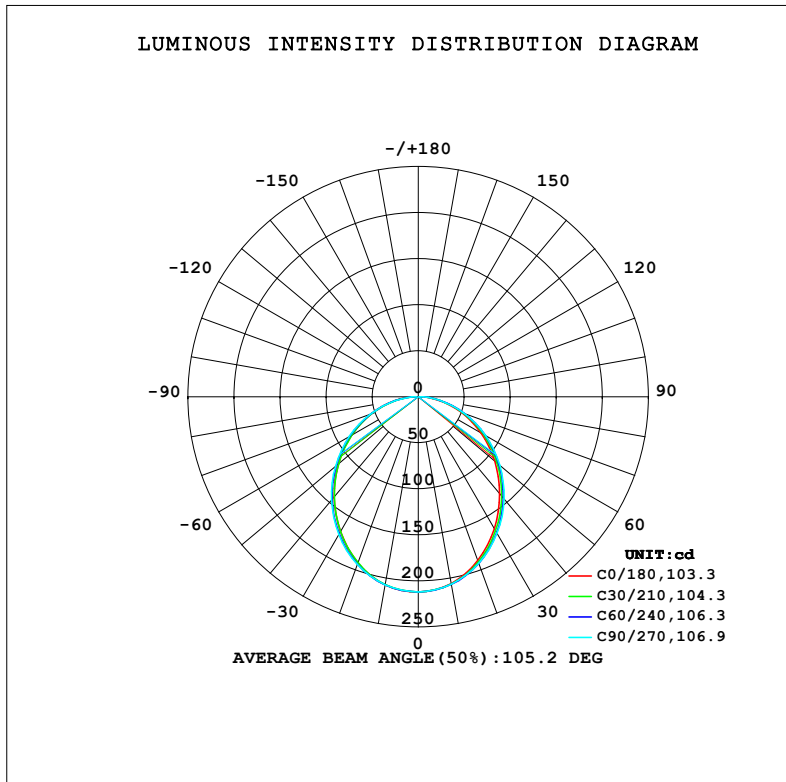


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 93M20FFL1230/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	93M20FFL1230/BL	Imax (cd)	211.9	S/MH (C0/180)	1.19
NOMINAL POWER (W)	12	LOR (%)	75.9	S/MH (C90/270)	1.22
RATED VOLTAGE (V)	48	TOTAL FLUX (lm)	568.96	η UP, DN (C0-180)	0.0, 37.6
NOMINAL FLUX (lm)	750	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 38.3
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	48	η down (%)	75.9	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 08 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	206.0	206.8	206.7	206.6	207.6	207.3	207.4	207.4	0- 10	19.99	19.99	3.51,2.67
20	189.1	191.8	192.4	191.3	192.0	192.6	193.7	193.0	10- 20	56.54	76.53	13.5,10.2
30	165.3	169.2	171.0	168.7	169.0	170.2	172.7	170.8	20- 30	83.64	160.2	28.2,21.4
40	137.6	142.4	145.0	141.9	142.3	143.7	146.6	144.1	30- 40	98.11	258.3	45.4,34.4
50	108.4	113.2	115.6	112.8	113.2	114.5	117.3	115.0	40- 50	99.26	357.5	62.8,47.7
60	78.97	83.15	84.76	82.96	83.63	84.60	86.80	84.88	50- 60	88.38	445.9	78.4,59.5
70	49.55	52.82	53.44	52.83	54.28	54.38	55.35	54.40	60- 70	67.90	513.8	90.3,68.5
80	22.22	24.19	23.79	24.43	26.62	25.75	25.39	25.54	70- 80	40.99	554.8	97.5,74
90	1.963	2.324	1.462	2.767	4.739	3.459	2.320	3.009	80- 90	14.15	569.0	100,75.9
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): 308.55 lm

%lum = 54.2%
%lamp = 41.1%

Conical surface Flux(130deg): 482.94 lm

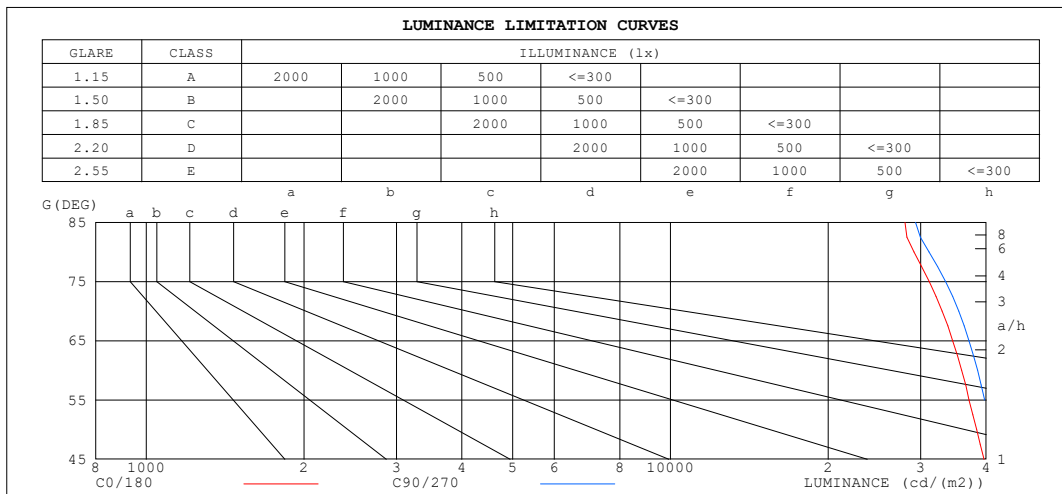
%lum = 84.9%
%lamp = 64.4%

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:08 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: 93M20FFL1230/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	28011	29333
80	29127	31127
75	31159	33483
70	32970	35495
65	34560	37109
60	35945	38512
55	37079	39746
50	38363	40874
45	39615	41955

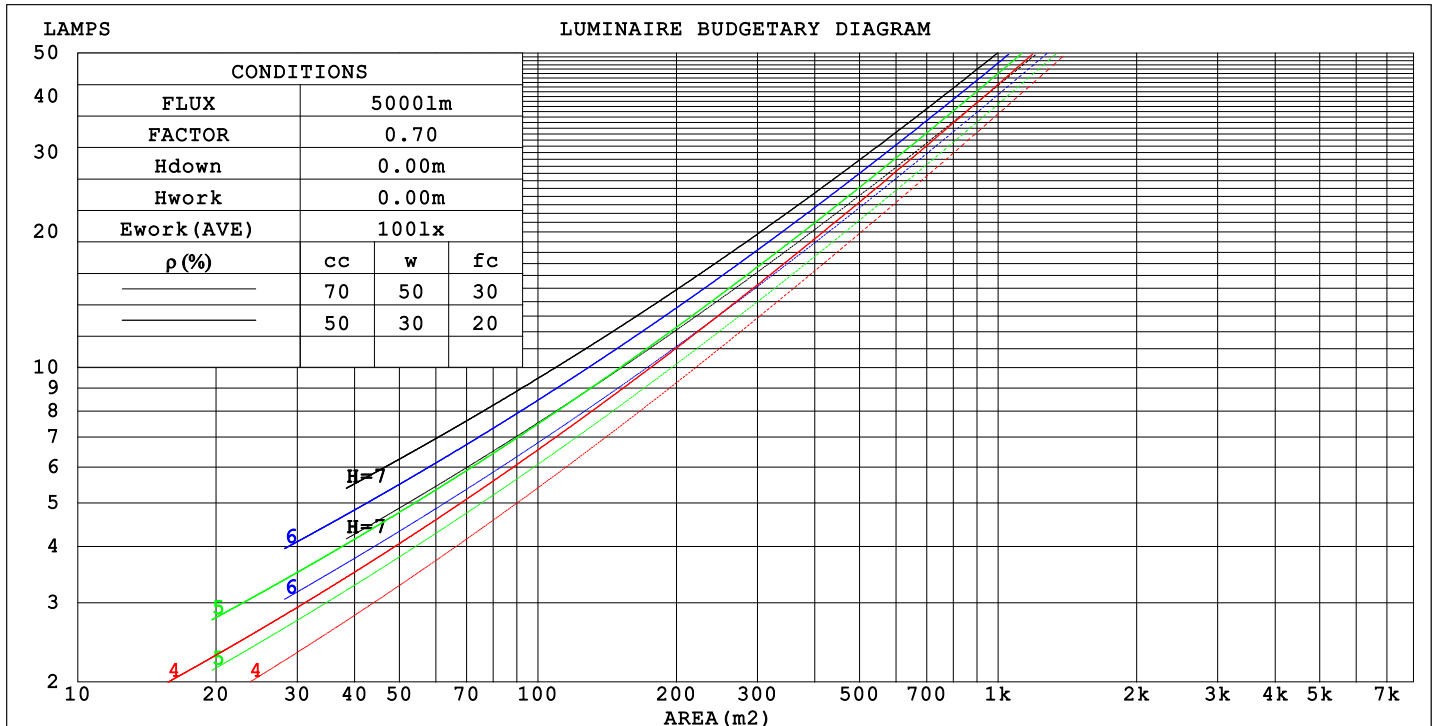
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 08 November 2022

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: 93M20FFL1230/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			Coefficients of Utilization(CU)												
0.0	.90	.90	.90	.88	.88	.88	.84	.84	.84	.81	.81	.81	.77	.77	.77	.76
1.0	.79	.75	.72	.77	.74	.71	.74	.71	.69	.71	.69	.67	.68	.66	.65	.63
2.0	.69	.63	.59	.67	.62	.58	.64	.60	.57	.62	.58	.55	.60	.57	.54	.53
3.0	.60	.54	.49	.59	.53	.49	.57	.52	.48	.55	.50	.47	.53	.49	.46	.44
4.0	.53	.47	.42	.52	.46	.41	.50	.45	.41	.49	.44	.40	.47	.43	.40	.38
5.0	.48	.41	.36	.47	.40	.36	.45	.40	.35	.44	.39	.35	.42	.38	.34	.33
6.0	.43	.36	.31	.42	.36	.31	.41	.35	.31	.40	.35	.31	.38	.34	.30	.29
7.0	.39	.32	.28	.38	.32	.28	.37	.32	.27	.36	.31	.27	.35	.31	.27	.26
8.0	.36	.29	.25	.35	.29	.25	.34	.29	.25	.33	.28	.24	.32	.28	.24	.23
9.0	.33	.27	.22	.32	.26	.22	.31	.26	.22	.31	.26	.22	.30	.25	.22	.21
10.0	.30	.24	.20	.30	.24	.20	.29	.24	.20	.28	.24	.20	.28	.23	.20	.19



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 08 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: 93M20FFL1230/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	.239	.136	.043	.233	.133	.042	.223	.128	.041	.214	.123	.040	.205	.119	.038	
2.0	.222	.122	.037	.218	.120	.037	.209	.116	.036	.201	.113	.035	.193	.109	.034	
3.0	.205	.109	.033	.201	.108	.032	.193	.105	.032	.186	.102	.031	.179	.099	.031	
4.0	.189	.098	.029	.185	.097	.029	.178	.094	.028	.172	.092	.028	.166	.090	.027	
5.0	.174	.089	.026	.171	.088	.026	.165	.086	.025	.159	.084	.025	.154	.082	.025	
6.0	.161	.081	.023	.159	.080	.023	.153	.078	.023	.148	.077	.023	.143	.075	.022	
7.0	.150	.074	.021	.148	.074	.021	.143	.072	.021	.138	.071	.021	.134	.070	.020	
8.0	.140	.069	.019	.138	.068	.019	.134	.067	.019	.129	.066	.019	.126	.064	.019	
9.0	.131	.064	.018	.129	.063	.018	.125	.062	.018	.122	.061	.017	.118	.060	.017	
10.0	.124	.059	.016	.122	.059	.016	.118	.058	.016	.115	.057	.016	.112	.056	.016	

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	.144	.144	.144	.123	.123	.123	.084	.084	.084	.048	.048	.048	.015	.015	.015	
1.0	.137	.118	.102	.117	.102	.087	.080	.070	.060	.046	.040	.035	.015	.013	.011	
2.0	.131	.100	.074	.112	.086	.064	.077	.060	.045	.044	.035	.026	.014	.011	.009	
3.0	.125	.087	.056	.107	.075	.049	.073	.052	.034	.042	.030	.020	.014	.010	.007	
4.0	.119	.077	.044	.102	.066	.038	.070	.046	.027	.041	.027	.016	.013	.009	.005	
5.0	.113	.069	.036	.097	.059	.031	.067	.042	.022	.039	.024	.013	.012	.008	.004	
6.0	.108	.062	.030	.093	.054	.026	.064	.038	.018	.037	.022	.011	.012	.007	.004	
7.0	.102	.057	.025	.088	.049	.022	.061	.035	.016	.035	.020	.009	.011	.007	.003	
8.0	.098	.053	.022	.084	.046	.019	.058	.032	.014	.034	.019	.008	.011	.006	.003	
9.0	.093	.049	.019	.080	.042	.017	.055	.030	.012	.032	.018	.007	.010	.006	.002	
10.0	.089	.046	.017	.076	.040	.015	.053	.028	.011	.031	.016	.006	.010	.005	.002	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:08 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: 93M20FFL1230/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	26.3	27.8	26.6	28.0	28.2	26.6	28.1	26.9	28.3	28.5
3H	27.8	29.2	28.1	29.4	29.7	28.1	29.5	28.4	29.8	30.0
4H	28.4	29.7	28.7	30.0	30.2	28.8	30.1	29.1	30.3	30.6
6H	28.9	30.1	29.2	30.4	30.7	29.2	30.5	29.6	30.8	31.0
8H	29.0	30.2	29.4	30.5	30.8	29.4	30.6	29.7	30.9	31.2
12H	29.1	30.3	29.5	30.6	30.9	29.5	30.7	29.8	31.0	31.3
4H 2H	26.9	28.3	27.3	28.5	28.8	27.2	28.5	27.5	28.8	29.0
3H	28.6	29.8	29.0	30.1	30.4	28.9	30.1	29.3	30.4	30.7
4H	29.4	30.5	29.8	30.8	31.1	29.7	30.7	30.0	31.1	31.4
6H	30.0	30.9	30.4	31.3	31.7	30.3	31.2	30.7	31.6	32.0
8H	30.2	31.1	30.6	31.5	31.9	30.5	31.4	30.9	31.8	32.1
12H	30.4	31.2	30.8	31.6	32.0	30.7	31.5	31.1	31.9	32.3
8H 4H	29.7	30.6	30.1	31.0	31.3	30.0	30.8	30.4	31.2	31.6
6H	30.5	31.2	30.9	31.6	32.0	30.7	31.5	31.2	31.9	32.3
8H	30.8	31.4	31.2	31.9	32.3	31.1	31.7	31.5	32.1	32.6
12H	31.1	31.6	31.5	32.1	32.6	31.3	31.9	31.8	32.3	32.8
12H 4H	29.7	30.5	30.1	30.9	31.3	30.0	30.8	30.4	31.2	31.6
6H	30.5	31.2	31.0	31.6	32.1	30.8	31.5	31.3	31.9	32.3
8H	30.9	31.5	31.4	31.9	32.4	31.2	31.7	31.6	32.2	32.7
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.2 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.3					+ 0.2 / - 0.2				

CIE Pub.117, 750.0 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -1.0)
Area: 0.0044 m2

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:08 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: 93M20FFL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	Shielding Angle:

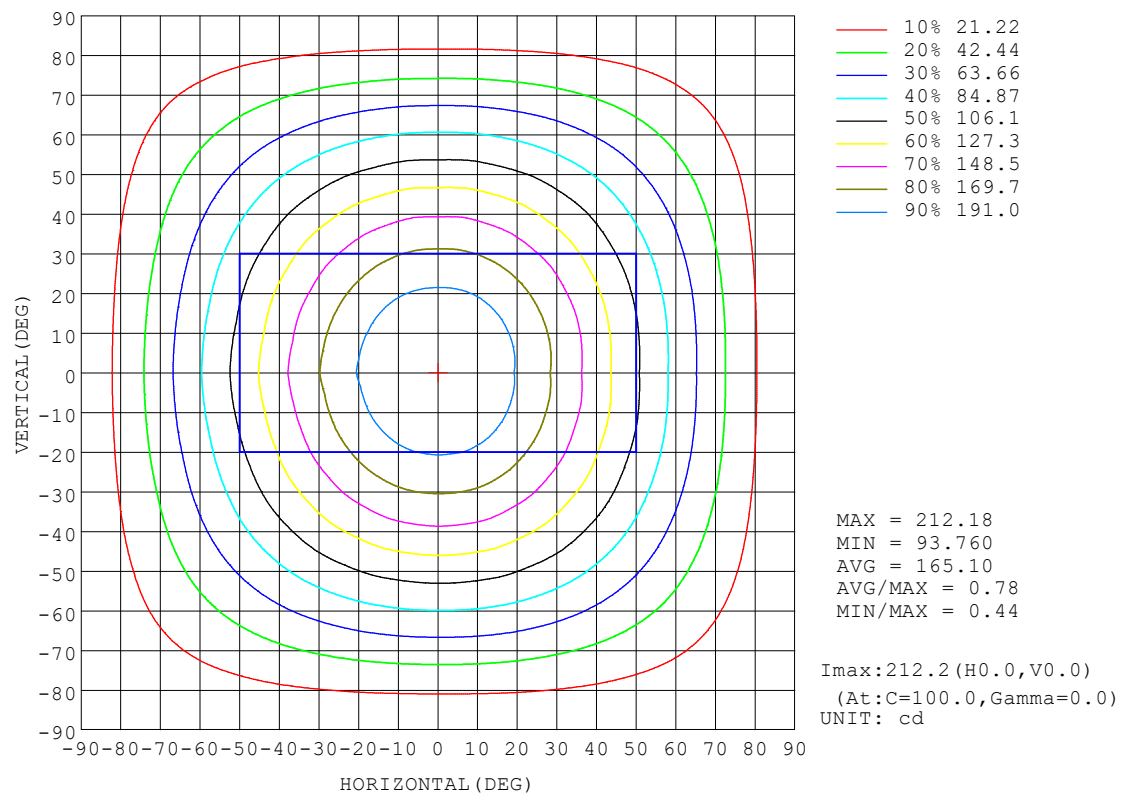
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	44	35	30	43	35	30	43	35	30	25
0.80	52	43	37	51	42	37	49	42	37	32
1.00	58	49	44	57	49	44	55	50	43	38
1.25	63	55	50	62	55	49	60	54	49	43
1.50	67	59	54	66	59	54	63	57	53	47
2.00	72	65	61	71	65	60	68	63	59	53
2.50	75	69	64	73	68	64	70	66	62	56
3.00	77	72	68	76	71	67	73	69	66	59
4.00	80	76	73	79	75	71	75	72	69	63
5.00	82	79	75	80	77	74	77	74	72	65
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: 08 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: 93M20FFL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	Shielding Angle:

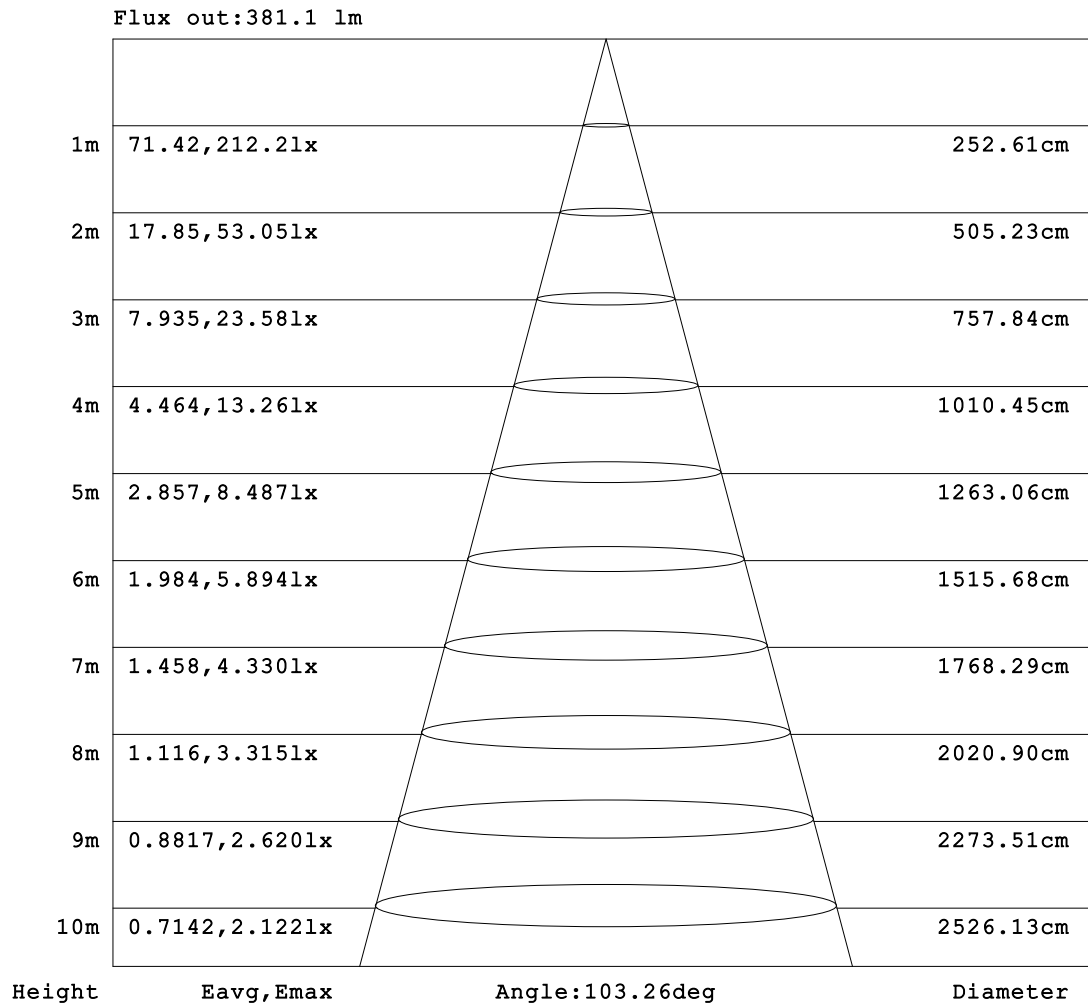


C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:08 November 2022

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: 93M20FFL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	Shielding Angle:



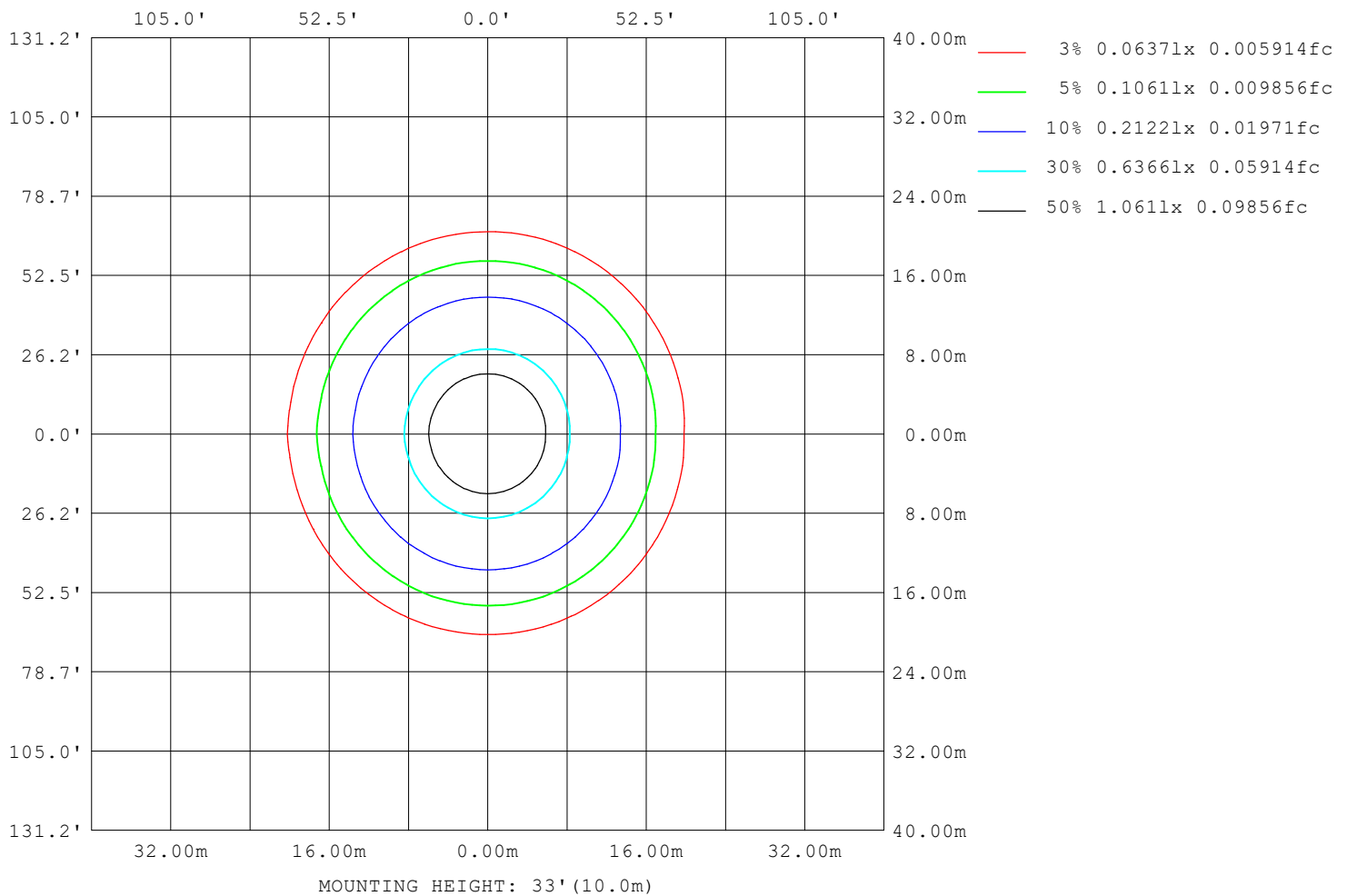
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature: 25.3°C
 Operators:
 Test Date: 08 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: 93M20FFL1230/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: 08 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: 93M20FFL1230/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 108 x 20	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: paralelepiped	Shielding Angle:

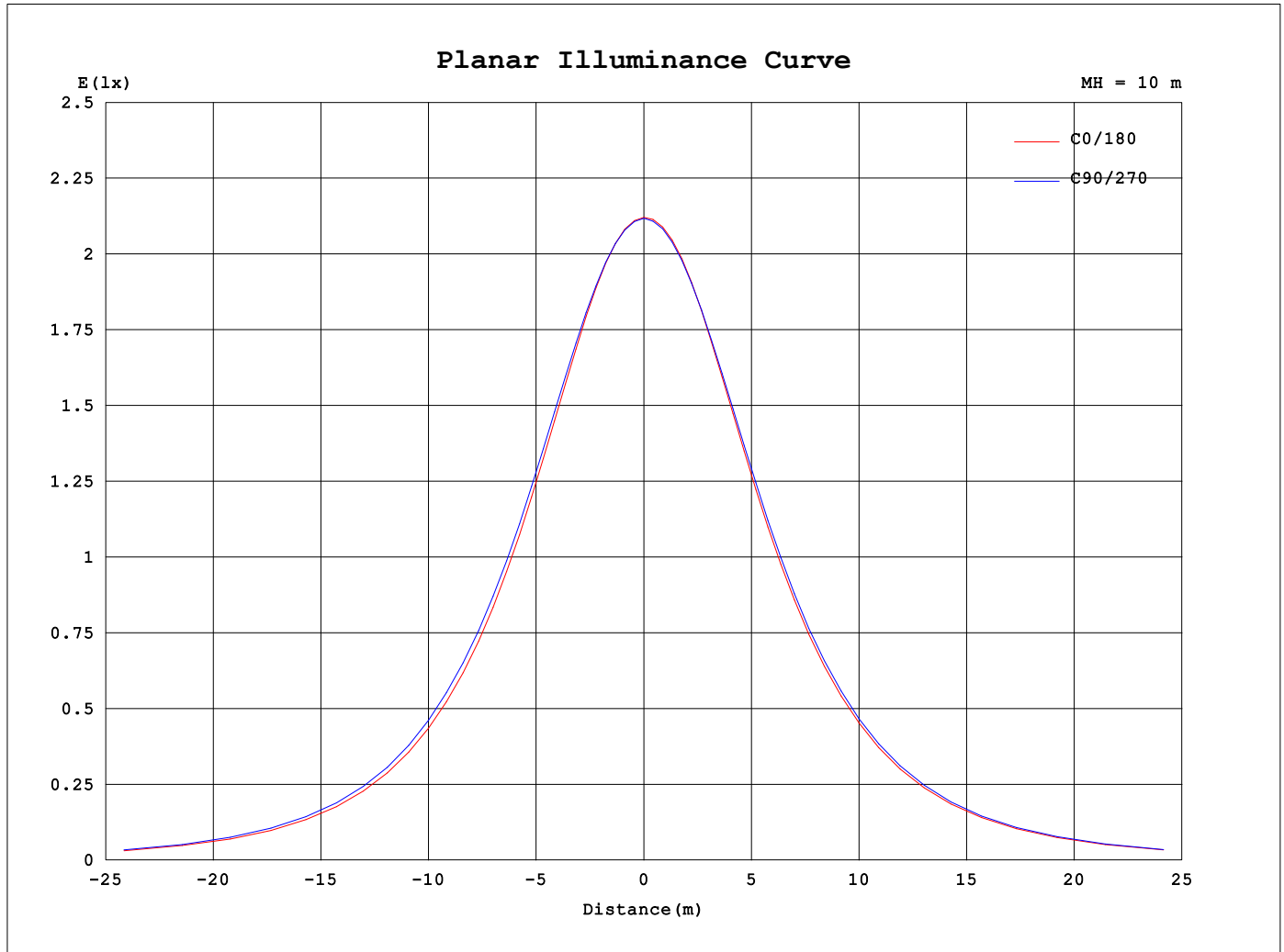
AvgL	cd/m2
L_0~180 (65) av	35781
L_0~180 (75) av	33140
L_0~180 (85) av	33022
L_90~270 (65) av	37670
L_90~270 (75) av	34295
L_90~270 (85) av	31006
L_45 (65) av	36958
L_45 (75) av	34133
L_45 (85) av	33101

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:08 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: 08 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:

```

```

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:

```