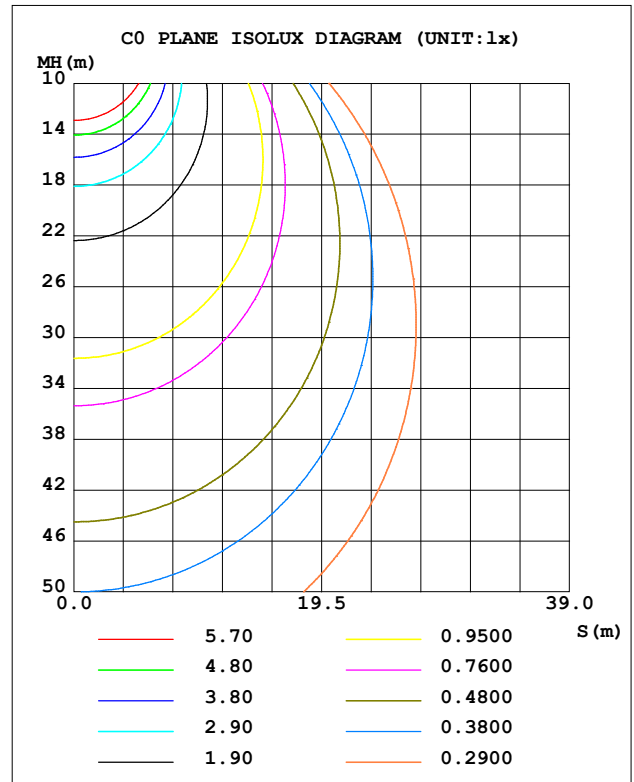
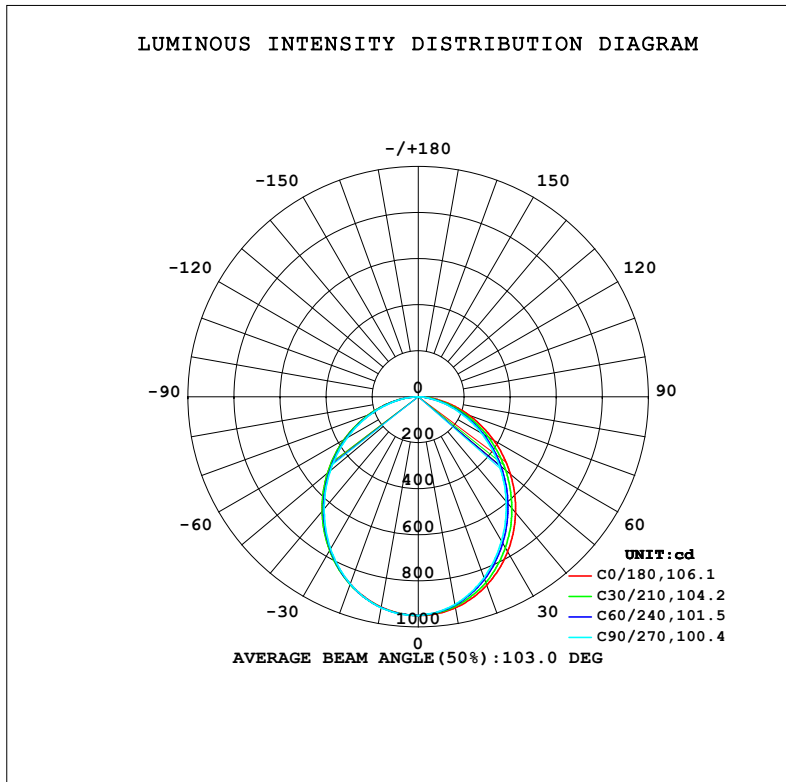


**LUMINAIRE PHOTOMETRIC TEST REPORT**

NAME: 99PFM602440/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 616 x 75 x 35	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99PFM602440/BL	I <sub>max</sub> (cd)	950.4	S/MH (C0/180)	1.21
NOMINAL POWER (W)	24	LOR (%)	112.9	S/MH (C90/270)	1.20
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	2437.9	η UP, DN (C0-180)	0.0, 54.8
NOMINAL FLUX (lm)	2160	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 58.0
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	112.9	CIBSE SHR MAX	1.35



H(β) Range: -90 - 90 DEG  
 H(β) Interval: 2.0 DEG  
 Test Speed: HIGH  
 Temperature: 25.3 °C  
 Operators:  
 Test Date: 30 November 2022

V(B) Range: -85 - 85 DEG  
 V(B) Interval: 2.0 DEG  
 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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	930.8	921.1	917.2	919.1	927.7	929.2	931.5	931.0	0- 10	89.46	89.46	3.67,4.14
20	871.0	850.2	836.7	846.6	865.1	866.9	865.7	869.8	10- 20	252.8	342.2	14,15.8
30	777.2	744.5	724.3	739.2	769.3	767.9	762.7	772.0	20- 30	373.5	715.7	29.4,33.1
40	657.8	618.5	594.7	612.4	649.1	645.5	636.3	649.8	30- 40	435.8	1151	47.2,53.3
50	522.6	481.3	457.4	475.2	513.9	508.8	498.6	512.7	40- 50	436.0	1587	65.1,73.5
60	378.8	339.7	317.4	334.4	371.4	366.4	356.9	369.3	50- 60	380.1	1968	80.7,91.1
70	234.5	199.6	180.8	196.2	229.4	225.0	216.7	226.2	60- 70	280.1	2248	92.2,104
80	101.0	72.29	59.57	71.20	98.56	94.41	87.86	93.71	70- 80	155.4	2403	98.6,111
90	1.181	0	0	0	1.383	0	0	0	80- 90	34.87	2438	100,113
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): 1373.2 lm

%lum = 56.3%

%lamp = 63.6%

Conical surface Flux(130deg): 2122.2 lm

%lum = 87.1%

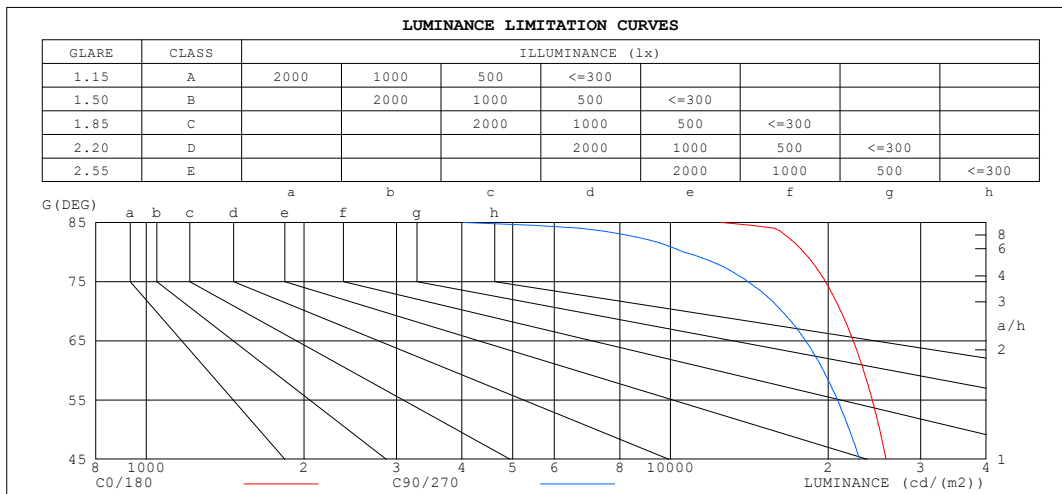
%lamp = 98.3%

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:30 November 2022

V(B) Range:-85 - 85DEG  
V(B) Interval: 2.0DEG  
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: 99PFM602440/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 616 x 75 x 35	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	12504	4031
80	17927	10572
75	19746	14055
70	21127	16294
65	22316	18101
60	23346	19562
55	24256	20810
50	25056	21929
45	25782	22954

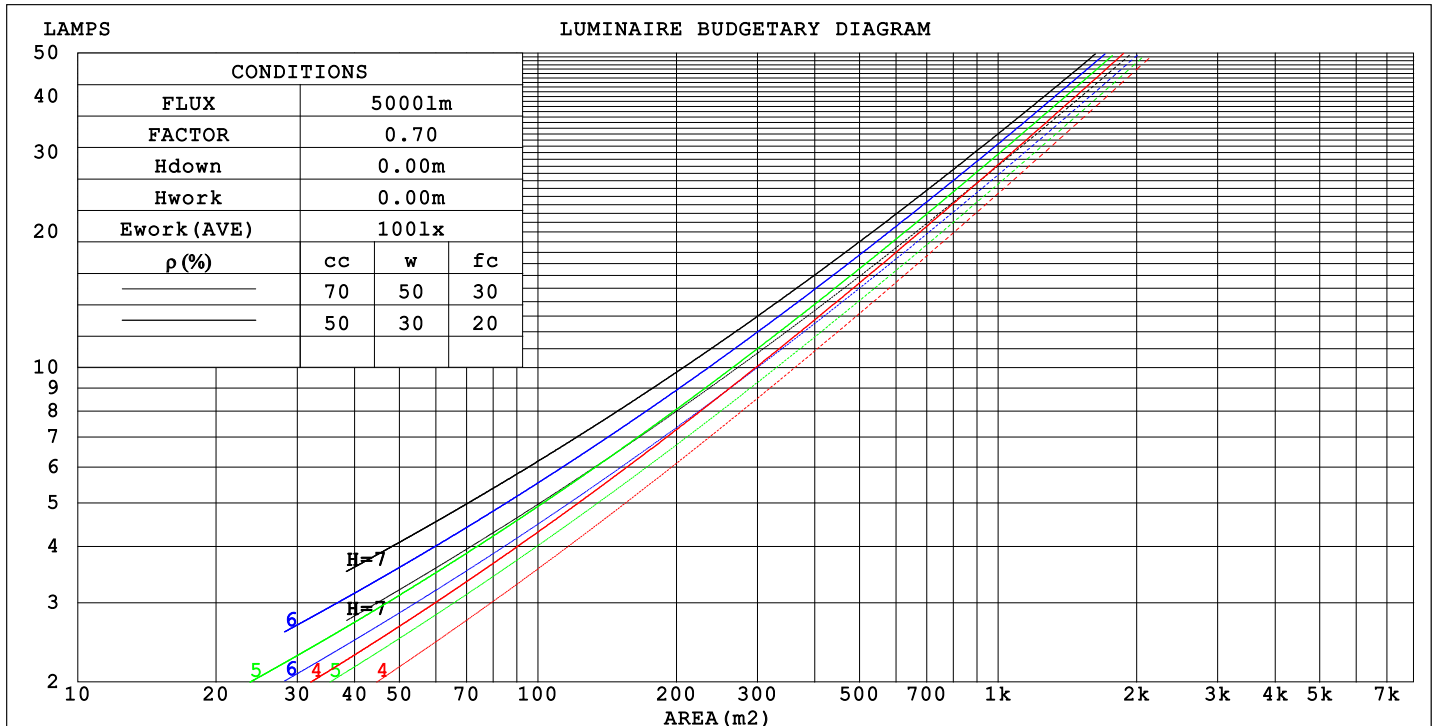
H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:30 November 2022

V(B) Range:-85 - 85DEG  
V(B) Interval: 2.0DEG  
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: 99PFM602440/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 616 x 75 x 35	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.:	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															



H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:30 November 2022

V(B) Range:-85 - 85DEG  
V(B) Interval: 2.0DEG  
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: 99PFM602440/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 616 x 75 x 35	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.:	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	.336	.191	.061	.328	.187	.059	.313	.180	.057	.300	.173	.055	.287	.166	.054	
2.0	.319	.175	.054	.312	.172	.053	.299	.166	.052	.287	.161	.050	.275	.156	.049	
3.0	.296	.158	.047	.290	.155	.047	.279	.151	.046	.268	.147	.045	.258	.143	.044	
4.0	.274	.143	.042	.269	.141	.042	.259	.137	.041	.249	.134	.040	.240	.131	.040	
5.0	.254	.130	.038	.249	.128	.037	.240	.125	.037	.232	.122	.036	.224	.120	.036	
6.0	.236	.118	.034	.232	.117	.034	.224	.115	.033	.216	.112	.033	.209	.110	.033	
7.0	.220	.109	.031	.217	.108	.031	.209	.106	.030	.203	.104	.030	.196	.102	.030	
8.0	.206	.101	.028	.203	.100	.028	.196	.098	.028	.190	.096	.028	.184	.095	.028	
9.0	.193	.094	.026	.190	.093	.026	.185	.091	.026	.179	.090	.026	.174	.088	.026	
10.0	.182	.087	.024	.179	.087	.024	.174	.085	.024	.169	.084	.024	.164	.083	.024	

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	.215	.215	.215	.184	.184	.184	.125	.125	.125	.072	.072	.072	.023	.023	.023	
1.0	.203	.176	.153	.173	.151	.131	.119	.104	.091	.068	.060	.053	.022	.019	.017	
2.0	.193	.149	.112	.165	.128	.097	.113	.089	.067	.065	.052	.040	.021	.017	.013	
3.0	.184	.129	.085	.158	.111	.074	.108	.077	.052	.063	.045	.030	.020	.015	.010	
4.0	.175	.114	.067	.150	.098	.058	.103	.069	.041	.060	.040	.024	.019	.013	.008	
5.0	.167	.102	.054	.143	.088	.047	.099	.062	.033	.057	.036	.020	.018	.012	.006	
6.0	.159	.093	.045	.137	.080	.039	.094	.056	.028	.055	.033	.016	.018	.011	.005	
7.0	.151	.085	.038	.130	.073	.033	.090	.051	.023	.052	.030	.014	.017	.010	.005	
8.0	.144	.078	.033	.124	.068	.029	.086	.048	.020	.050	.028	.012	.016	.009	.004	
9.0	.137	.073	.029	.118	.063	.025	.082	.044	.018	.048	.026	.011	.015	.009	.004	
10.0	.131	.068	.026	.113	.059	.022	.078	.041	.016	.046	.024	.009	.015	.008	.003	

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:30 November 2022

V(B) Range:-85 - 85DEG  
V(B) Interval: 2.0DEG  
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: 99PFM602440/BL					TYPE:					WEIGHT: 1				
SPEC.:					DIM.: 616 x 75 x 35					SERIAL No.: 0				
MFR.: Elmark Industries JSC					SUR.:					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	21.1	22.6	21.4	22.8	23.0	20.4	21.9	20.7	22.1	22.3				
3H	22.6	24.0	22.9	24.2	24.4	21.6	23.0	21.9	23.3	23.5				
4H	23.2	24.5	23.5	24.8	25.0	22.1	23.4	22.4	23.6	23.9				
6H	23.6	24.9	24.0	25.1	25.4	22.3	23.6	22.7	23.8	24.1				
8H	23.8	25.0	24.1	25.2	25.5	22.4	23.6	22.7	23.8	24.1				
12H	23.9	25.0	24.2	25.3	25.6	22.3	23.5	22.7	23.8	24.1				
4H 2H	21.6	22.9	21.9	23.1	23.4	21.0	22.3	21.3	22.6	22.8				
3H	23.2	24.4	23.6	24.7	25.0	22.4	23.6	22.8	23.9	24.2				
4H	24.0	25.0	24.3	25.3	25.7	23.0	24.0	23.4	24.3	24.7				
6H	24.5	25.4	24.9	25.8	26.2	23.3	24.2	23.7	24.6	25.0				
8H	24.7	25.6	25.1	25.9	26.3	23.4	24.2	23.8	24.6	25.0				
12H	24.8	25.6	25.3	26.0	26.4	23.4	24.2	23.8	24.6	25.0				
8H 4H	24.1	25.0	24.5	25.3	25.7	23.2	24.1	23.6	24.5	24.8				
6H	24.8	25.5	25.2	25.9	26.3	23.7	24.4	24.1	24.8	25.2				
8H	25.1	25.7	25.5	26.1	26.6	23.8	24.4	24.3	24.8	25.3				
12H	25.2	25.8	25.7	26.2	26.7	23.8	24.4	24.3	24.8	25.3				
12H 4H	24.1	24.9	24.5	25.3	25.7	23.2	24.0	23.7	24.4	24.8				
6H	24.8	25.4	25.3	25.9	26.3	23.7	24.4	24.2	24.8	25.2				
8H	25.1	25.6	25.6	26.1	26.6	23.9	24.4	24.3	24.8	25.3				
Variations with the observer position at spacings(CIE Pub.117):														
S = 1.0H	+ 0.2 / - 0.2					+ 0.2 / - 0.3								
1.5H	+ 0.1 / - 0.2					+ 0.2 / - 0.3								
2.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.4								

CIE Pub.117, 2160 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 2.7)  
Area: 0.03245 m2

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:30 November 2022

V(B) Range:-85 - 85DEG  
V(B) Interval: 2.0DEG  
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: 99PFM602440/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 616 x 75 x 35	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.:	Shielding Angle:

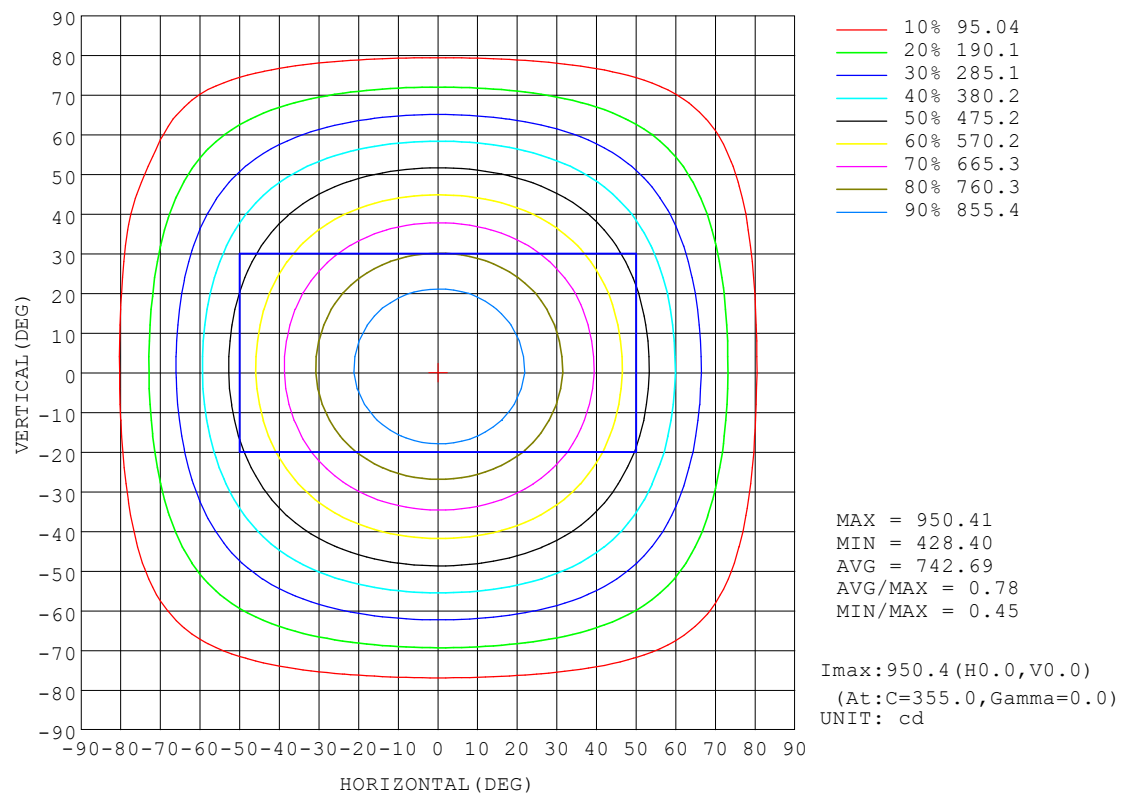
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	67	54	46	66	54	46	64	53	46	39
0.80	78	65	57	77	65	57	75	64	56	49
1.00	87	75	67	86	74	67	83	76	66	58
1.25	95	84	76	94	83	75	91	81	75	67
1.50	101	90	82	99	89	82	96	87	81	72
2.00	108	99	92	106	98	91	102	95	89	81
2.50	113	104	97	110	103	96	106	100	94	85
3.00	116	109	103	114	107	102	109	104	99	90
4.00	121	114	109	118	112	108	113	109	105	95
5.00	123	118	114	120	116	112	115	112	108	98
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:30 November 2022

V(B) Range:-85 - 85DEG  
V(B) Interval: 2.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:

# ISOCANDELA DIAGRAM

NAME: 99PFM602440/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 616 x 75 x 35	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.:	Shielding Angle:



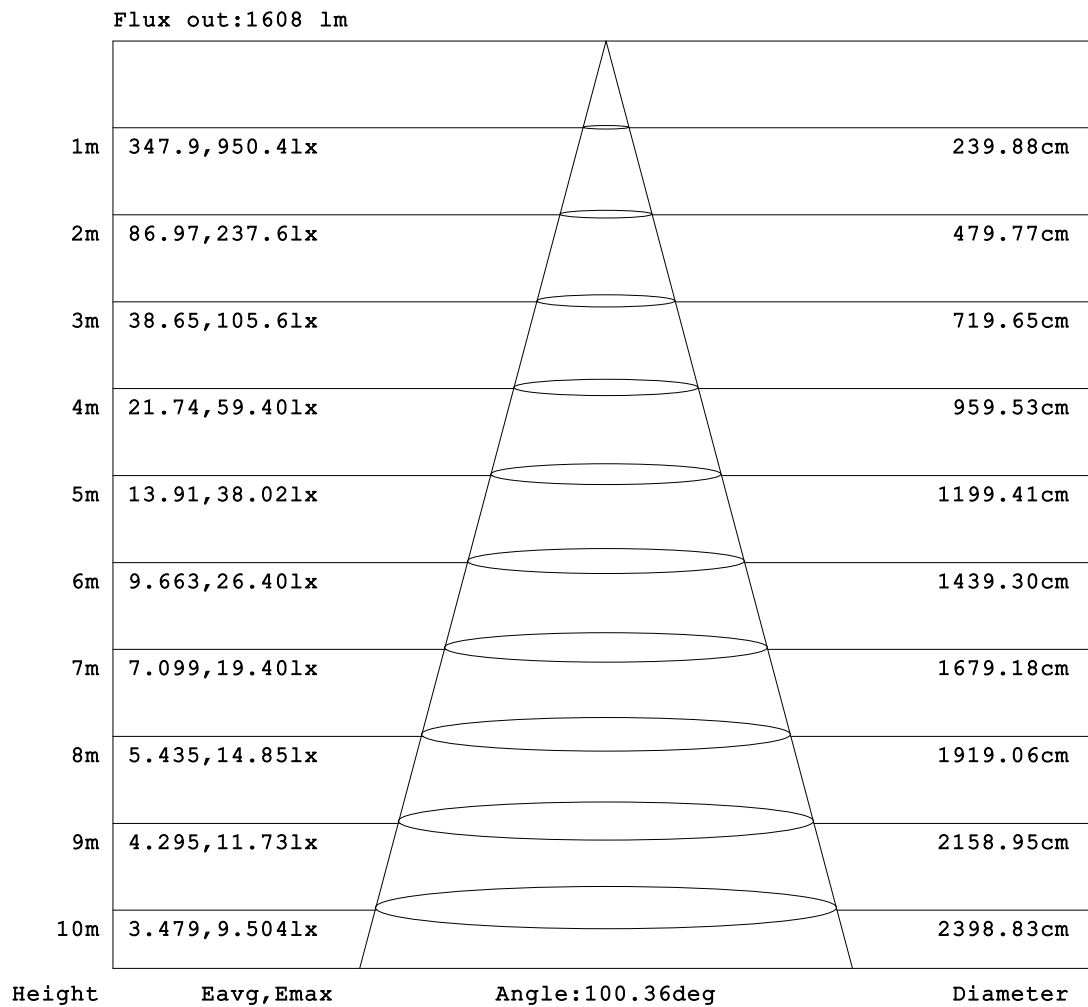
H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 30 November 2022

V(B) Range:-85 - 85DEG  
V(B) Interval: 2.0DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 6.265m [K=1.0000]  
Remarks:



**AAI Figure**

NAME: 99PFM602440/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 616 x 75 x 35	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.:	Shielding Angle:



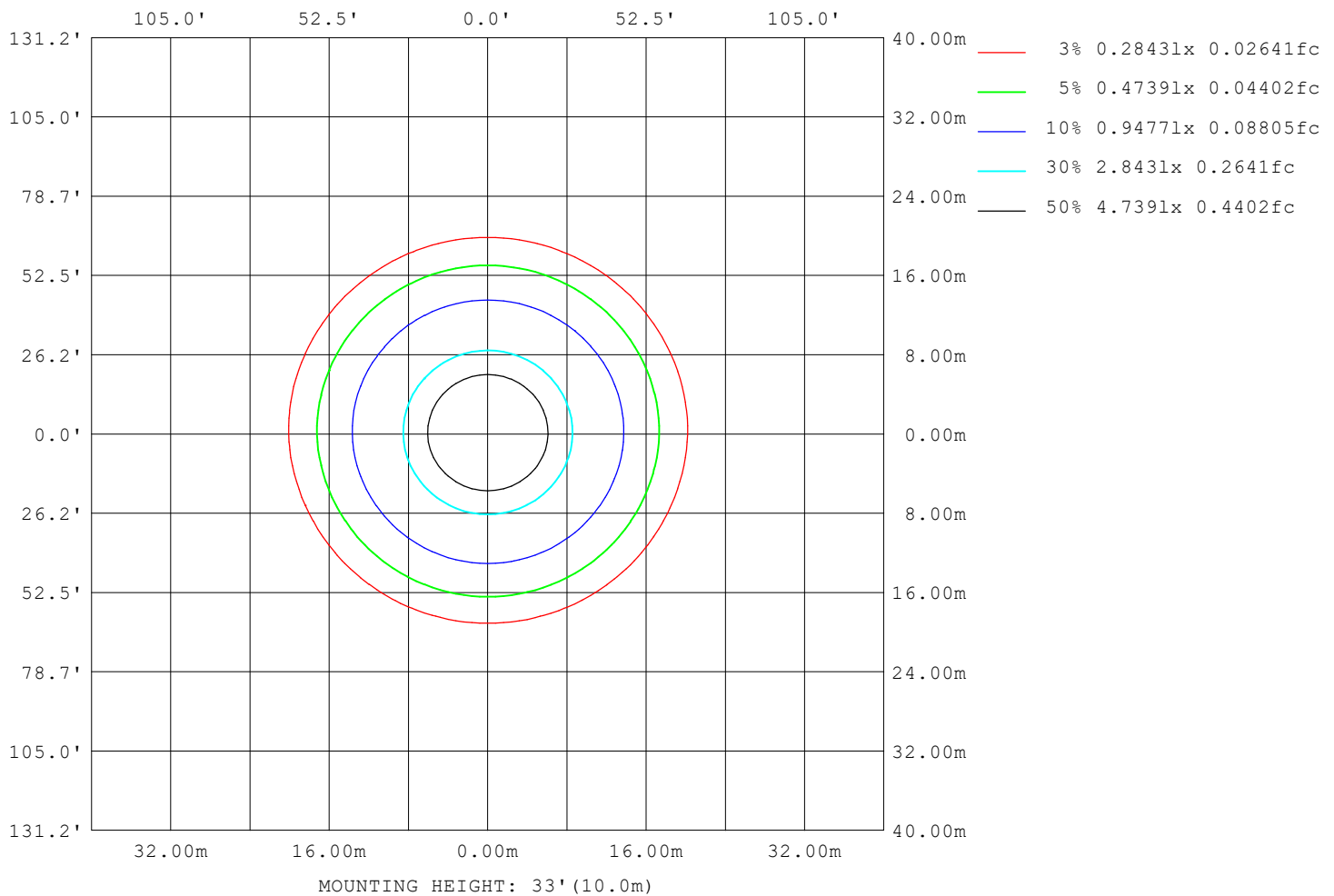
**Note:**The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

H( $\beta$ ) Range:-90 - 90DEG  
 H( $\beta$ ) Interval: 2.0DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:30 November 2022

V(B) Range:-85 - 85DEG  
 V(B) Interval: 2.0DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
 Humidity:65.0%  
 Test Distance:6.265m [K=1.0000]  
 Remarks:

## ISOLUX DIAGRAM

NAME: 99PFM602440/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 616 x 75 x 35	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.:	Shielding Angle:



H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:30 November 2022

V(B) Range:-85 - 85DEG  
V(B) Interval: 2.0DEG  
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: 99PFM602440/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 616 x 75 x 35	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.:	Shielding Angle:

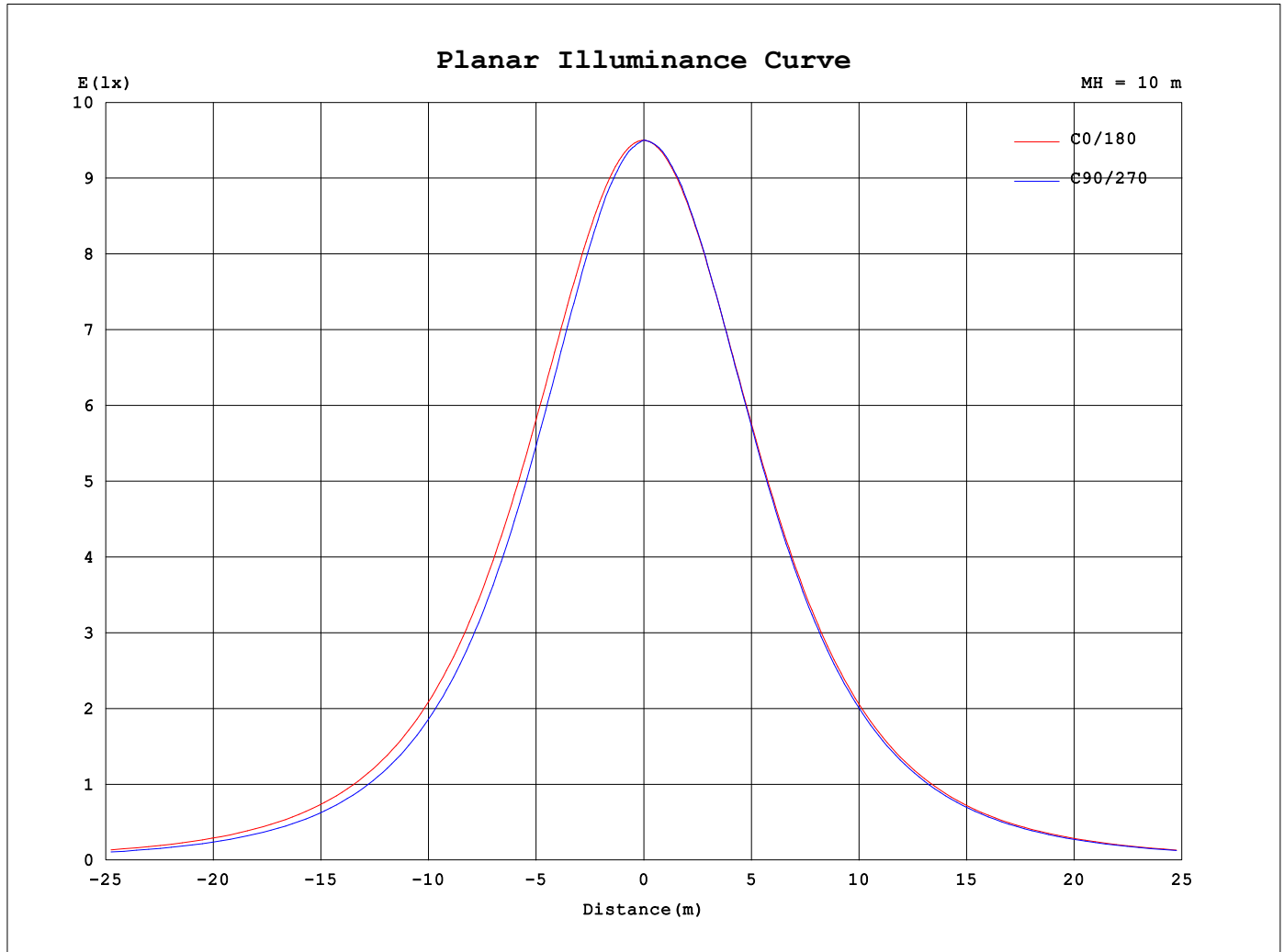
AvgL	cd/m2
L_0~180 (65) av	22087
L_0~180 (75) av	19508
L_0~180 (85) av	12510
L_90~270 (65) av	19489
L_90~270 (75) av	16001
L_90~270 (85) av	5948
L_45 (65) av	20524
L_45 (75) av	17255
L_45 (85) av	10187

Standard: GB/T 29293-2012

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:30 November 2022

V(B) Range:-85 - 85DEG  
V(B) Interval: 2.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:

# Planar Illuminance Curve



H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:30 November 2022

V(B) Range:-85 - 85DEG  
V(B) Interval: 2.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:

```
V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:
```

```
V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:
```

```
V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:
```

```
V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:
```