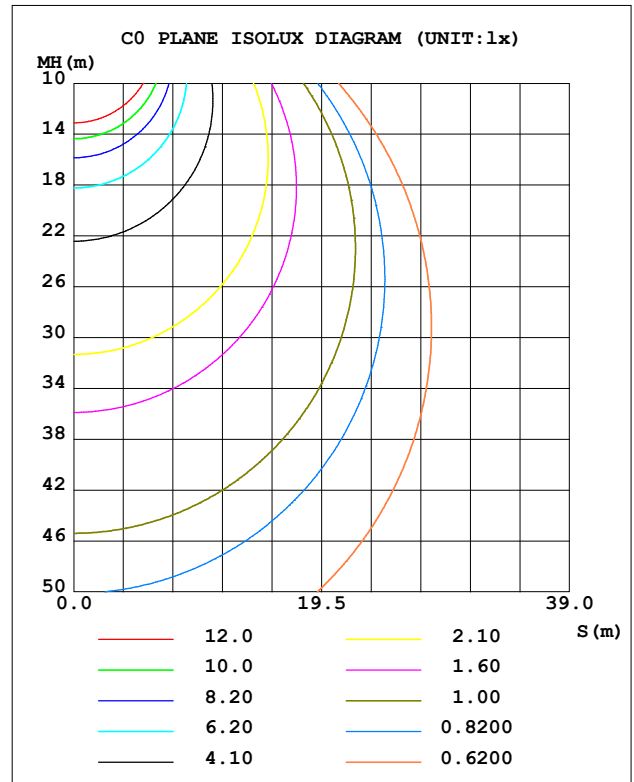
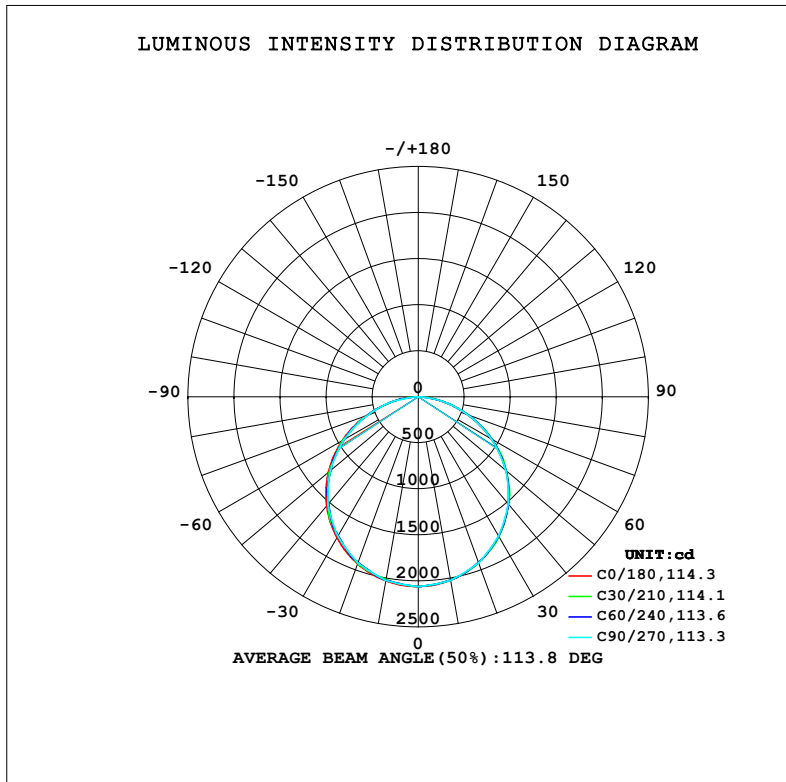


## LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 92Panel031CW	TYPE: 92Panel031CW	WEIGHT: 1
SPEC.:	DIM.: 556 x 556	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	92Panel031CW	Imax(cd)	2061	S/MH(C0/180)	1.27
NOMINAL POWER(W)	60	LOR(%)	99.1	S/MH(C90/270)	1.26
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	5943.2	$\eta$ UP,DN(C0-180)	0.0,49.4
NOMINAL FLUX(lm)	6000	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,49.7
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	$\eta$ down (%)	99.1	CIBSE SHR MAX	1.35



H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:05 September 2022

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
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	2023	2019	2025	2017	2029	2018	2026	2020	0- 10	194.5	194.5	3.27, 3.24
20	1917	1917	1918	1908	1931	1910	1920	1918	10- 20	557.8	752.3	12.7, 12.5
30	1748	1747	1746	1747	1767	1750	1749	1748	20- 30	847.8	1600	26.9, 26.7
40	1521	1522	1520	1527	1548	1531	1524	1523	30- 40	1028	2628	44.2, 43.8
50	1241	1242	1240	1255	1274	1262	1246	1244	40- 50	1073	3700	62.3, 61.7
60	916.1	922.9	918.7	930.5	953.3	939.6	927.6	927.0	50- 60	975.2	4676	78.7, 77.9
70	565.1	576.5	571.2	575.8	602.5	587.2	582.8	582.2	60- 70	747.1	5423	91.2, 90.4
80	223.4	241.3	233.4	237.8	257.2	251.1	250.0	250.2	70- 80	430.7	5853	98.5, 97.6
90	1.442	0	0	0	4.327	0	0	0	80- 90	89.80	5943	100, 99.1
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): 3167.4 lm

%lum = 53.3%

%lamp = 52.8%

Conical surface Flux(130deg): 5084.7 lm

%lum = 85.6%

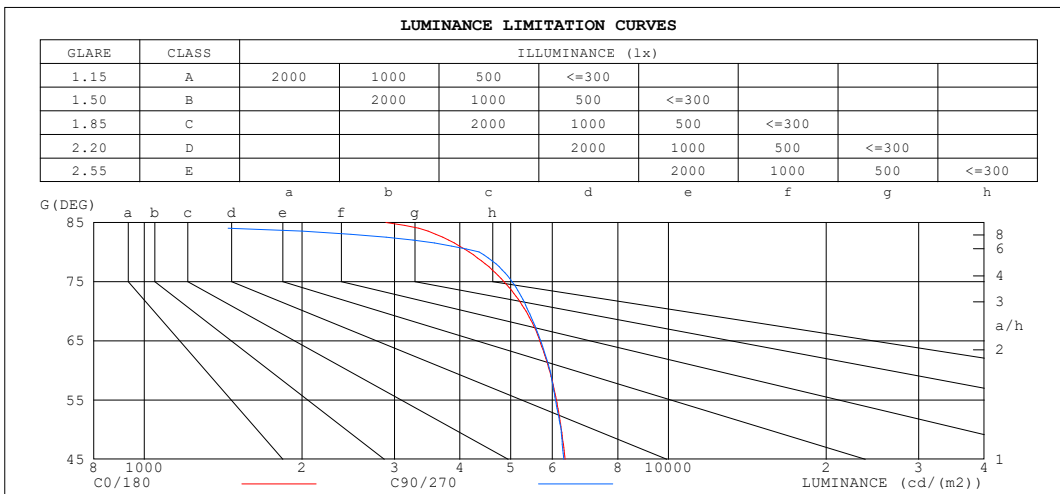
%lamp = 84.7%

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:05 September 2022

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
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: 92Panel031CW	TYPE: 92Panel031CW	WEIGHT: 1
SPEC.:	DIM.: 556 x 556	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2888	0
80	4162	4348
75	4853	5028
70	5344	5402
65	5679	5702
60	5927	5944
55	6112	6086
50	6246	6239
45	6346	6312

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:05 September 2022

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:

```
V(B) Range:-80 - 80DEG
V(B) Interval: 5.0DEG
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: 92Panel031CW	TYPE: 92Panel031CW	WEIGHT: 1
SPEC.:	DIM.: 556 x 556	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	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	.305	.174	.055	.298	.170	.054	.285	.164	.052	.273	.157	.051	.262	.152	.049	
2.0	.289	.158	.049	.283	.156	.048	.271	.151	.047	.261	.146	.046	.251	.142	.045	
3.0	.268	.143	.043	.262	.141	.042	.252	.137	.042	.243	.133	.041	.234	.130	.040	
4.0	.247	.129	.038	.243	.127	.038	.234	.124	.037	.225	.121	.036	.217	.118	.036	
5.0	.229	.117	.034	.225	.115	.034	.216	.113	.033	.209	.110	.033	.202	.108	.032	
6.0	.212	.106	.030	.208	.105	.030	.201	.103	.030	.194	.101	.030	.188	.099	.029	
7.0	.197	.098	.028	.194	.097	.028	.188	.095	.027	.182	.093	.027	.176	.091	.027	
8.0	.184	.090	.025	.181	.089	.025	.176	.088	.025	.170	.086	.025	.165	.085	.025	
9.0	.173	.084	.023	.170	.083	.023	.165	.082	.023	.160	.080	.023	.155	.079	.023	
10.0	.162	.078	.022	.160	.077	.022	.155	.076	.021	.151	.075	.021	.147	.074	.021	

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	.189	.189	.189	.161	.161	.161	.110	.110	.110	.063	.063	.063	.020	.020	.020	
1.0	.178	.155	.133	.153	.133	.115	.104	.091	.079	.060	.053	.046	.019	.017	.015	
2.0	.171	.131	.097	.146	.112	.084	.100	.078	.059	.058	.045	.034	.019	.015	.011	
3.0	.163	.113	.074	.140	.098	.064	.096	.068	.045	.055	.040	.026	.018	.013	.009	
4.0	.156	.100	.058	.133	.086	.050	.092	.060	.035	.053	.035	.021	.017	.011	.007	
5.0	.148	.090	.047	.127	.078	.041	.088	.054	.029	.051	.032	.017	.016	.010	.006	
6.0	.141	.081	.039	.121	.071	.034	.084	.049	.024	.049	.029	.014	.016	.009	.005	
7.0	.134	.075	.033	.116	.065	.029	.080	.045	.020	.046	.027	.012	.015	.009	.004	
8.0	.128	.069	.028	.110	.060	.025	.076	.042	.018	.044	.025	.010	.014	.008	.003	
9.0	.122	.064	.025	.105	.056	.022	.073	.039	.015	.042	.023	.009	.014	.008	.003	
10.0	.116	.060	.022	.100	.052	.019	.070	.037	.014	.041	.022	.008	.013	.007	.003	

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:05 September 2022

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
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: 92Panel031CW						TYPE: 92Panel031CW			WEIGHT: 1		
SPEC.:						DIM.: 556 x 556			SERIAL No.: 0		
MFR.: Elmark Industries JSC						SUR.: square			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	13.0	14.6	13.3	14.8	15.0	13.0	14.5	13.2	14.7	14.9	
3H	14.6	16.0	14.9	16.2	16.4	14.5	15.9	14.8	16.1	16.4	
4H	15.1	16.5	15.5	16.7	17.0	15.1	16.4	15.4	16.7	16.9	
6H	15.6	16.8	15.9	17.1	17.4	15.5	16.8	15.8	17.0	17.3	
8H	15.7	16.9	16.0	17.2	17.5	15.6	16.8	15.9	17.1	17.4	
12H	15.7	16.9	16.0	17.2	17.5	15.5	16.7	15.9	17.0	17.3	
4H 2H	13.6	15.0	13.9	15.2	15.5	13.6	14.9	13.9	15.2	15.4	
3H	15.3	16.5	15.7	16.8	17.1	15.3	16.5	15.6	16.8	17.1	
4H	16.1	17.1	16.4	17.5	17.8	16.0	17.1	16.4	17.4	17.7	
6H	16.6	17.6	17.0	17.9	18.3	16.6	17.5	17.0	17.9	18.2	
8H	16.7	17.6	17.2	18.0	18.4	16.7	17.6	17.1	17.9	18.3	
12H	16.8	17.6	17.2	18.0	18.4	16.6	17.5	17.1	17.8	18.3	
8H 4H	16.3	17.2	16.7	17.6	18.0	16.3	17.2	16.7	17.5	17.9	
6H	17.0	17.7	17.4	18.1	18.6	17.0	17.7	17.4	18.1	18.5	
8H	17.2	17.9	17.7	18.3	18.8	17.1	17.8	17.6	18.2	18.7	
12H	17.4	17.9	17.8	18.4	18.8	17.1	17.7	17.6	18.1	18.6	
12H 4H	16.3	17.2	16.8	17.5	17.9	16.3	17.1	16.7	17.5	17.9	
6H	17.1	17.7	17.5	18.1	18.6	17.0	17.7	17.5	18.1	18.5	
8H	17.3	17.9	17.8	18.3	18.8	17.2	17.8	17.7	18.2	18.7	
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 / - 0.4					+ 0.1 / - 0.3					
2.0H	+ 0.2 / - 0.4					+ 0.2 / - 0.3					

CIE Pub.117, 6000 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 6.2)  
Area: 0.309136 m2

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:05 September 2022

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
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: 92Panel031CW	TYPE: 92Panel031CW	WEIGHT: 1
SPEC.:	DIM.: 556 x 556	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

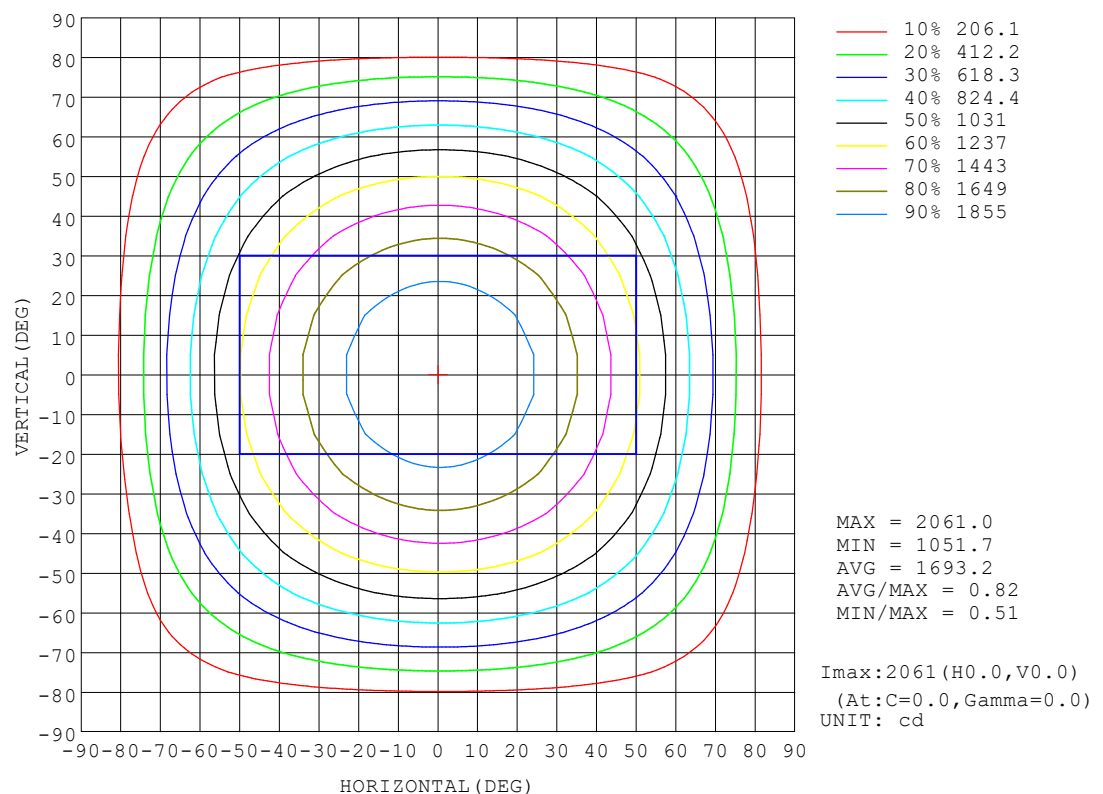
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	57	45	38	56	45	38	55	44	38	32
0.80	67	55	48	66	55	48	64	54	47	40
1.00	75	64	57	74	63	56	72	65	56	49
1.25	82	72	65	81	71	64	78	70	63	56
1.50	87	77	70	85	76	70	82	75	69	61
2.00	94	86	79	92	84	78	89	82	77	69
2.50	98	90	84	96	89	83	92	86	81	73
3.00	101	94	89	99	93	88	95	90	86	77
4.00	105	100	95	103	98	94	99	95	91	82
5.00	108	103	99	105	101	97	101	97	94	85
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:05 September 2022

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:

# ISOCANDELA DIAGRAM

NAME: 92Panel031CW	TYPE: 92Panel031CW	WEIGHT: 1
SPEC.:	DIM.: 556 x 556	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



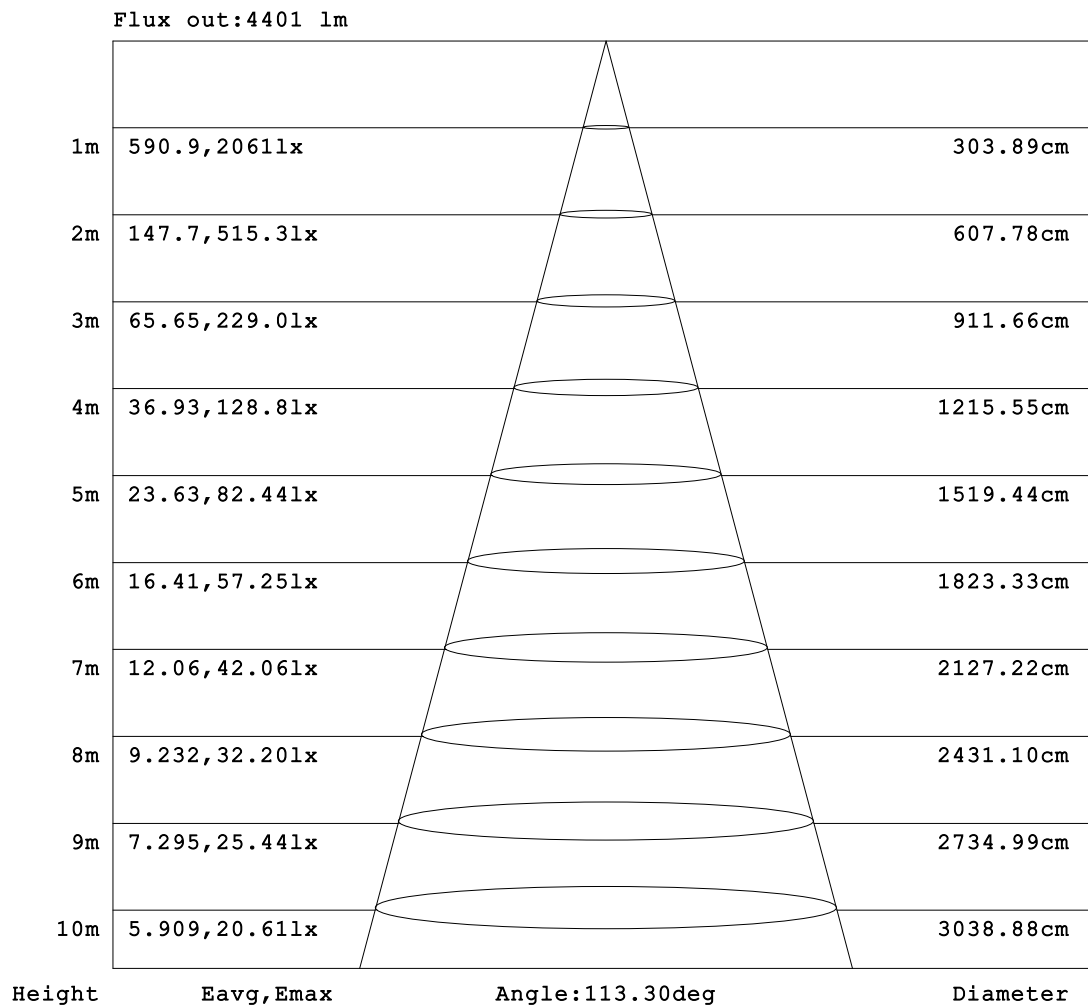
H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:05 September 2022

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:



**AAI Figure**

NAME: 92Panel031CW	TYPE: 92Panel031CW	WEIGHT: 1
SPEC.:	DIM.: 556 x 556	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



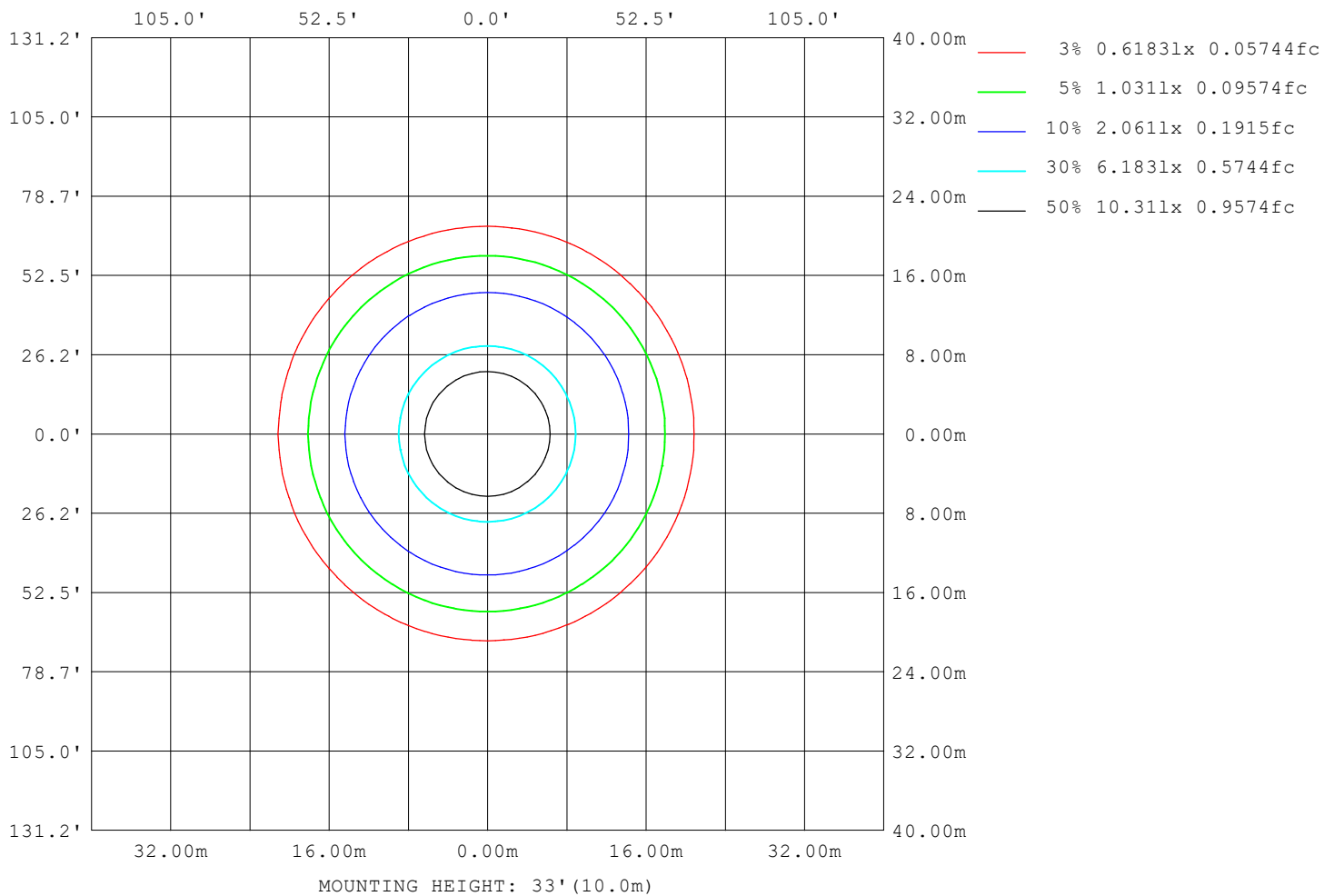
**Note:** The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

H( $\beta$ ) Range: -90 - 90DEG  
 H( $\beta$ ) Interval: 1.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 05 September 2022

V(B) Range: -80 - 80DEG  
 V(B) Interval: 5.0DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
 Humidity: 65.0%  
 Test Distance: 6.265m [K=1.0000]  
 Remarks:

**ISOLUX DIAGRAM**

NAME: 92Panel031CW	TYPE: 92Panel031CW	WEIGHT: 1
SPEC.:	DIM.: 556 x 556	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



H( $\beta$ ) Range:-90 - 90DEG  
 H( $\beta$ ) Interval: 1.0DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:05 September 2022

V(B) Range:-80 - 80DEG  
 V(B) Interval: 5.0DEG  
 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: 92Panel031CW	TYPE: 92Panel031CW	WEIGHT: 1
SPEC.:	DIM.: 556 x 556	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

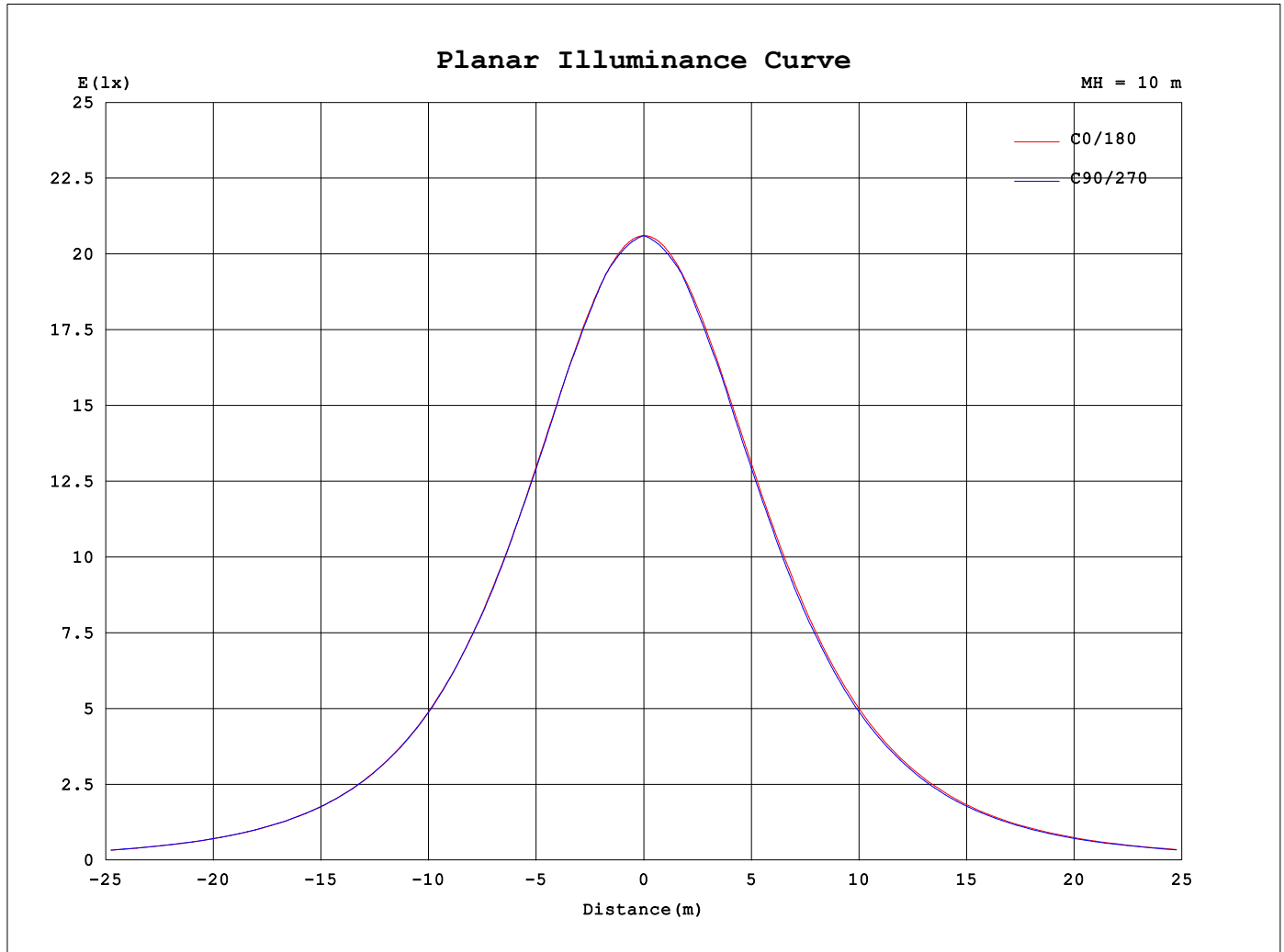
AvgL	cd/m2
L_0~180 (65) av	5826
L_0~180 (75) av	5085
L_0~180 (85) av	3469
L_90~270 (65) av	5742
L_90~270 (75) av	5117
L_90~270 (85) av	0
L_45 (65) av	5782
L_45 (75) av	5064
L_45 (85) av	2349

Standard: GB/T 29293-2012

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:05 September 2022

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
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: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:05 September 2022

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:

```
V(B) Range:-80 - 80DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:
```

V(B) Range:-80 - 80DEG  
V(B) Interval: 5.0DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:

```
V(B) Range:-80 - 80DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:
```

```
V(B) Range:-80 - 80DEG
V(B) Interval: 5.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:
```