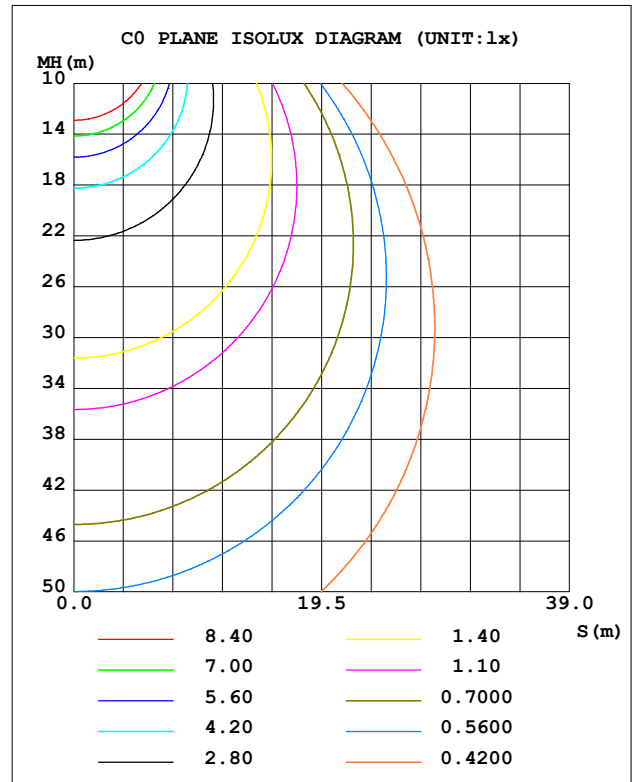
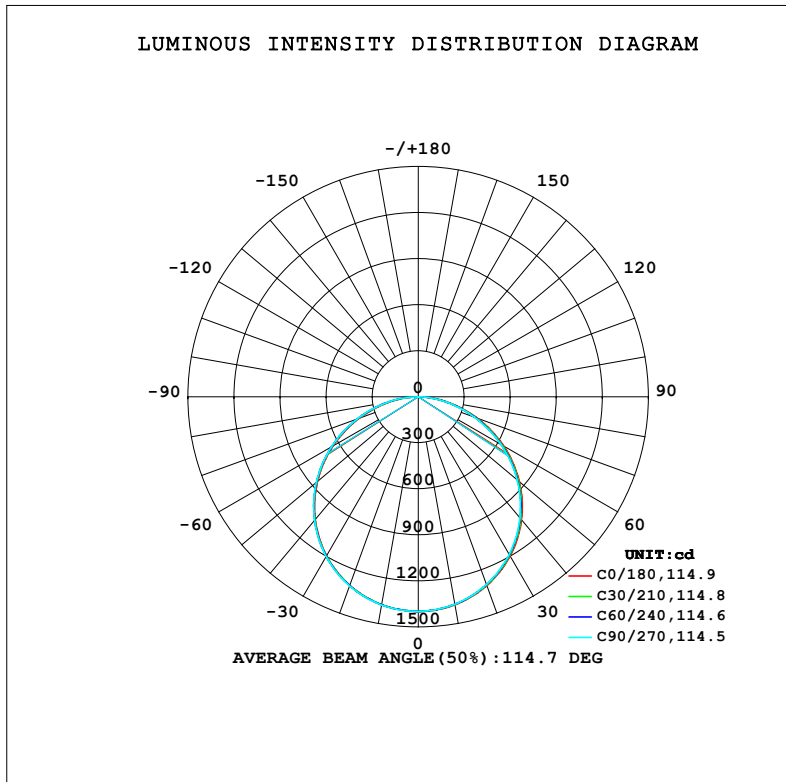


## LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 92Panel023W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 596 x 596 x 40	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	92Panel023W	I <sub>max</sub> (cd)	1399	S/MH (C0/180)	1.27
NOMINAL POWER (W)	30	LOR (%)	97.8	S/MH (C90/270)	1.28
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	4105.5	η UP, DN (C0-180)	0.0, 48.3
NOMINAL FLUX (lm)	4200	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 49.5
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	97.8	CIBSE SHR MAX	1.35



H (β) Range: -90 - 90 DEG  
H (β) Interval: 2.0 DEG  
Test Speed: MEDIUM  
Temperature: 25.3 °C  
Operators:  
Test Date: 19 December 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	1376	1373	1373	1372	1376	1376	1378	1376	0- 10	132.3	132.3	3.22, 3.15
20	1309	1303	1302	1303	1307	1309	1311	1310	10- 20	379.9	512.2	12.5, 12.2
30	1198	1190	1187	1188	1196	1199	1202	1200	20- 30	578.8	1091	26.6, 26
40	1047	1037	1032	1035	1044	1050	1052	1051	30- 40	702.8	1794	43.7, 42.7
50	859.9	848.3	841.4	846.0	857.0	864.8	867.3	865.6	40- 50	735.1	2529	61.6, 60.2
60	643.9	630.1	622.7	628.0	640.8	650.7	653.7	650.9	50- 60	670.6	3200	77.9, 76.2
70	410.5	395.8	388.4	394.5	407.4	419.8	422.8	419.0	60- 70	518.8	3718	90.6, 88.5
80	179.5	168.9	163.4	168.0	177.9	192.8	196.3	191.5	70- 80	307.9	4026	98.1, 95.9
90	2.216	0	0	0	2.425	0	0	0	80- 90	79.39	4106	100, 97.8
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): 2163.3 lm

%lum = 52.7%

%lamp = 51.5%

Conical surface Flux(130deg): 3482.5 lm

%lum = 84.8%

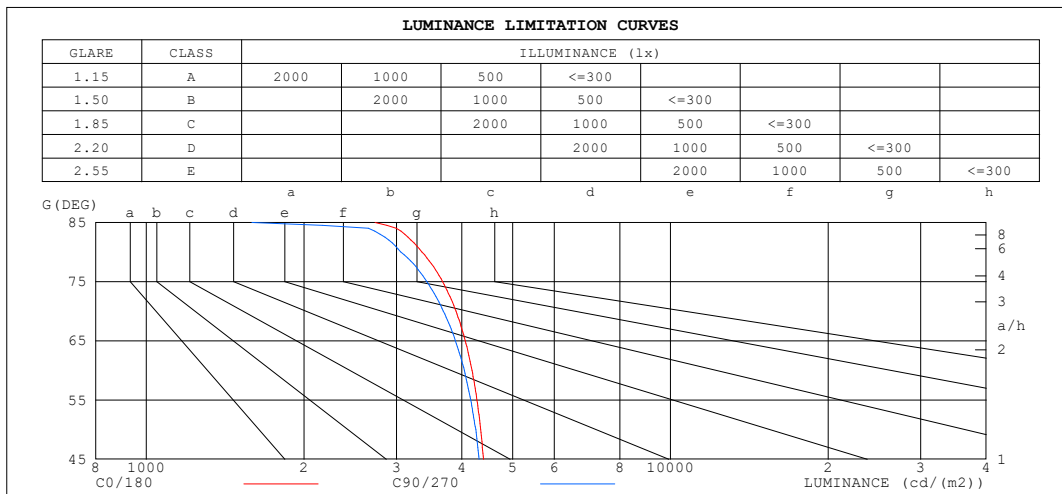
%lamp = 82.9%

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 December 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: 92Panel023W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 596 x 596 x 40	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2730	1590
80	3355	3055
75	3673	3428
70	3896	3687
65	4058	3888
60	4181	4043
55	4273	4157
50	4343	4250
45	4395	4315

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 December 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:

## WEC AND CCEC

NAME: 92Panel023W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 596 x 596 x 40	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	.307	.175	.055	.300	.171	.054	.287	.165	.053	.275	.159	.051	.264	.153	.049	
2.0	.289	.158	.049	.283	.156	.048	.271	.151	.047	.261	.146	.046	.251	.142	.045	
3.0	.267	.142	.043	.261	.140	.042	.251	.136	.041	.242	.133	.041	.233	.129	.040	
4.0	.246	.128	.038	.241	.126	.037	.232	.123	.037	.224	.120	.036	.216	.117	.036	
5.0	.227	.116	.034	.223	.114	.033	.215	.112	.033	.207	.109	.033	.200	.107	.032	
6.0	.210	.105	.030	.207	.104	.030	.200	.102	.030	.193	.100	.029	.187	.098	.029	
7.0	.196	.097	.027	.192	.096	.027	.186	.094	.027	.180	.092	.027	.174	.091	.027	
8.0	.183	.089	.025	.180	.088	.025	.174	.087	.025	.169	.085	.025	.164	.084	.024	
9.0	.171	.083	.023	.168	.082	.023	.163	.081	.023	.158	.079	.023	.154	.078	.023	
10.0	.161	.077	.021	.158	.076	.021	.154	.075	.021	.149	.074	.021	.145	.073	.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	.186	.186	.186	.159	.159	.159	.109	.109	.109	.062	.062	.062	.020	.020	.020	
1.0	.177	.153	.131	.151	.131	.113	.103	.090	.078	.059	.052	.045	.019	.017	.015	
2.0	.169	.129	.095	.145	.111	.082	.099	.077	.058	.057	.045	.034	.018	.014	.011	
3.0	.161	.112	.072	.138	.096	.063	.095	.067	.044	.055	.039	.026	.018	.013	.008	
4.0	.154	.099	.057	.132	.085	.049	.091	.059	.035	.053	.035	.021	.017	.011	.007	
5.0	.147	.089	.046	.126	.077	.040	.087	.054	.028	.050	.031	.017	.016	.010	.006	
6.0	.140	.080	.038	.120	.070	.033	.083	.049	.023	.048	.029	.014	.015	.009	.005	
7.0	.133	.074	.032	.114	.064	.028	.079	.045	.020	.046	.026	.012	.015	.009	.004	
8.0	.127	.068	.028	.109	.059	.024	.075	.041	.017	.044	.024	.010	.014	.008	.003	
9.0	.121	.063	.025	.104	.055	.021	.072	.039	.015	.042	.023	.009	.014	.007	.003	
10.0	.115	.059	.022	.099	.051	.019	.069	.036	.014	.040	.021	.008	.013	.007	.003	

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 December 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: 92Panel023W					TYPE:					WEIGHT: 1				
SPEC.:					DIM.: 596 x 596 x 40					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	12.9	14.5	13.2	14.7	14.9	12.8	14.3	13.1	14.5	14.8				
3H	14.5	15.9	14.8	16.2	16.4	14.3	15.7	14.6	16.0	16.2				
4H	15.2	16.5	15.5	16.8	17.0	14.9	16.3	15.2	16.5	16.8				
6H	15.6	16.9	16.0	17.2	17.5	15.4	16.6	15.7	16.9	17.2				
8H	15.8	17.0	16.1	17.3	17.6	15.5	16.7	15.8	17.0	17.3				
12H	15.8	17.0	16.2	17.3	17.6	15.6	16.7	15.9	17.0	17.3				
4H 2H	13.5	14.9	13.8	15.1	15.4	13.4	14.8	13.8	15.0	15.3				
3H	15.3	16.5	15.7	16.8	17.1	15.1	16.3	15.5	16.6	16.9				
4H	16.1	17.2	16.4	17.5	17.8	15.9	17.0	16.2	17.3	17.6				
6H	16.7	17.6	17.1	18.0	18.3	16.4	17.4	16.8	17.7	18.1				
8H	16.8	17.7	17.3	18.1	18.5	16.6	17.5	17.0	17.9	18.3				
12H	16.9	17.8	17.4	18.1	18.5	16.7	17.5	17.1	17.9	18.3				
8H 4H	16.3	17.2	16.7	17.6	18.0	16.2	17.1	16.6	17.4	17.8				
6H	17.1	17.8	17.5	18.2	18.7	16.9	17.6	17.3	18.0	18.4				
8H	17.3	18.0	17.8	18.4	18.9	17.1	17.8	17.6	18.2	18.7				
12H	17.5	18.1	18.0	18.5	19.0	17.3	17.9	17.8	18.3	18.8				
12H 4H	16.3	17.2	16.8	17.6	18.0	16.2	17.0	16.6	17.4	17.8				
6H	17.1	17.8	17.6	18.2	18.7	16.9	17.6	17.4	18.0	18.5				
8H	17.4	18.0	17.9	18.5	18.9	17.2	17.8	17.7	18.3	18.7				
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 / - 0.2					+ 0.2 / - 0.3								

CIE Pub.117, 4200 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 5.0)  
Area: 0.308025 m2

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 December 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: 92Panel023W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 596 x 596 x 40	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

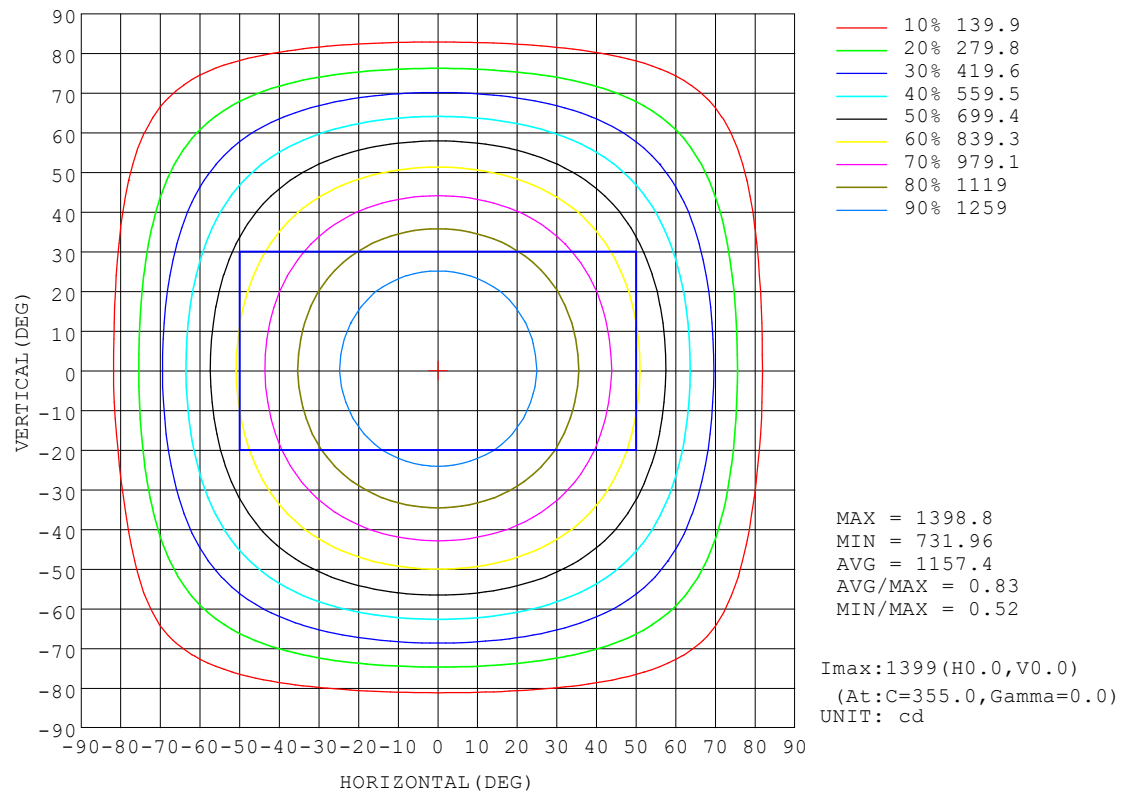
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	56	44	37	55	44	37	54	44	37	31
0.80	66	54	47	65	54	47	63	53	46	39
1.00	74	63	56	73	62	55	70	64	55	48
1.25	81	70	63	79	70	63	77	68	62	55
1.50	86	76	69	84	75	68	81	73	67	60
2.00	92	84	78	91	83	77	87	81	75	68
2.50	96	89	83	94	87	82	91	85	80	72
3.00	100	93	87	98	91	86	94	88	84	76
4.00	104	98	93	101	96	92	97	93	89	81
5.00	106	101	97	104	99	96	99	96	93	84
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: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 December 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: 92Panel1023W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 596 x 596 x 40	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

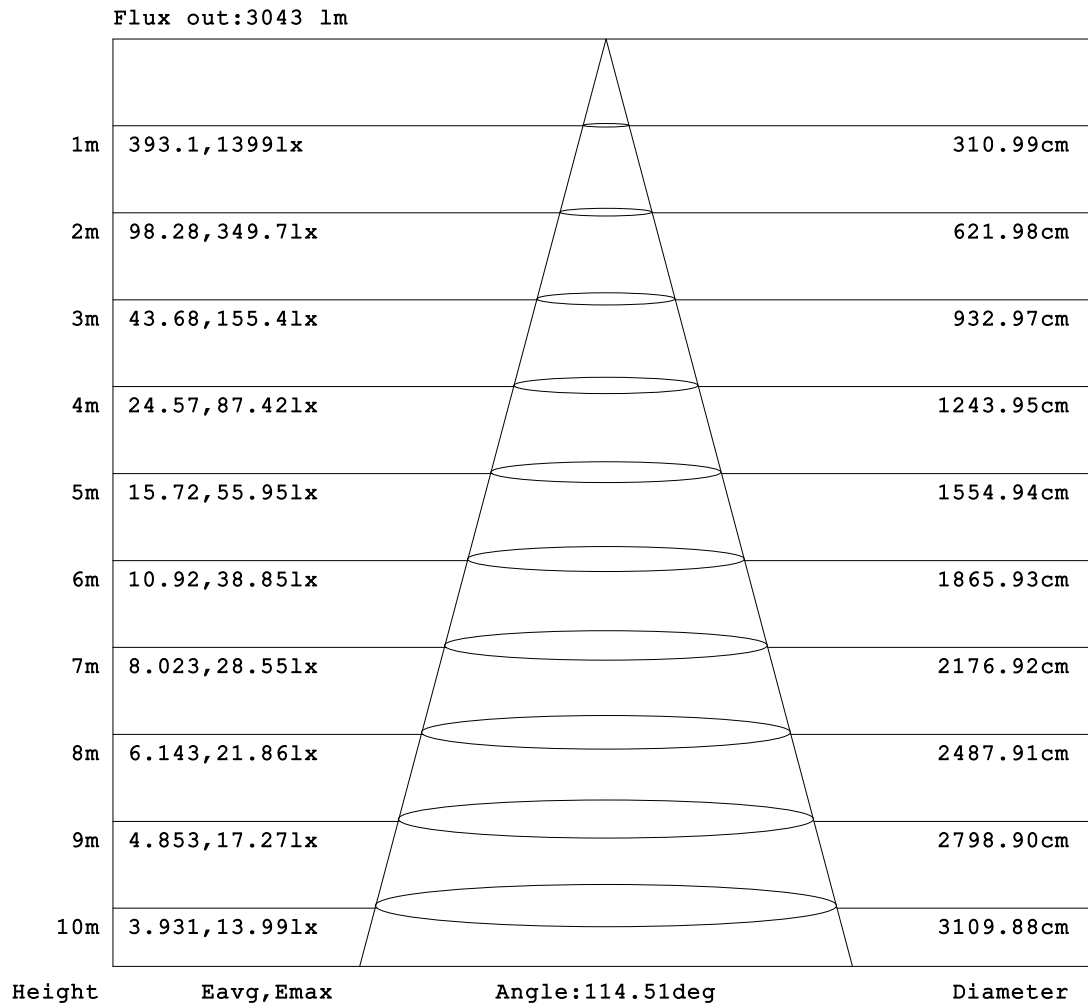


H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 December 2022

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: 92Panel023W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 596 x 596 x 40	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



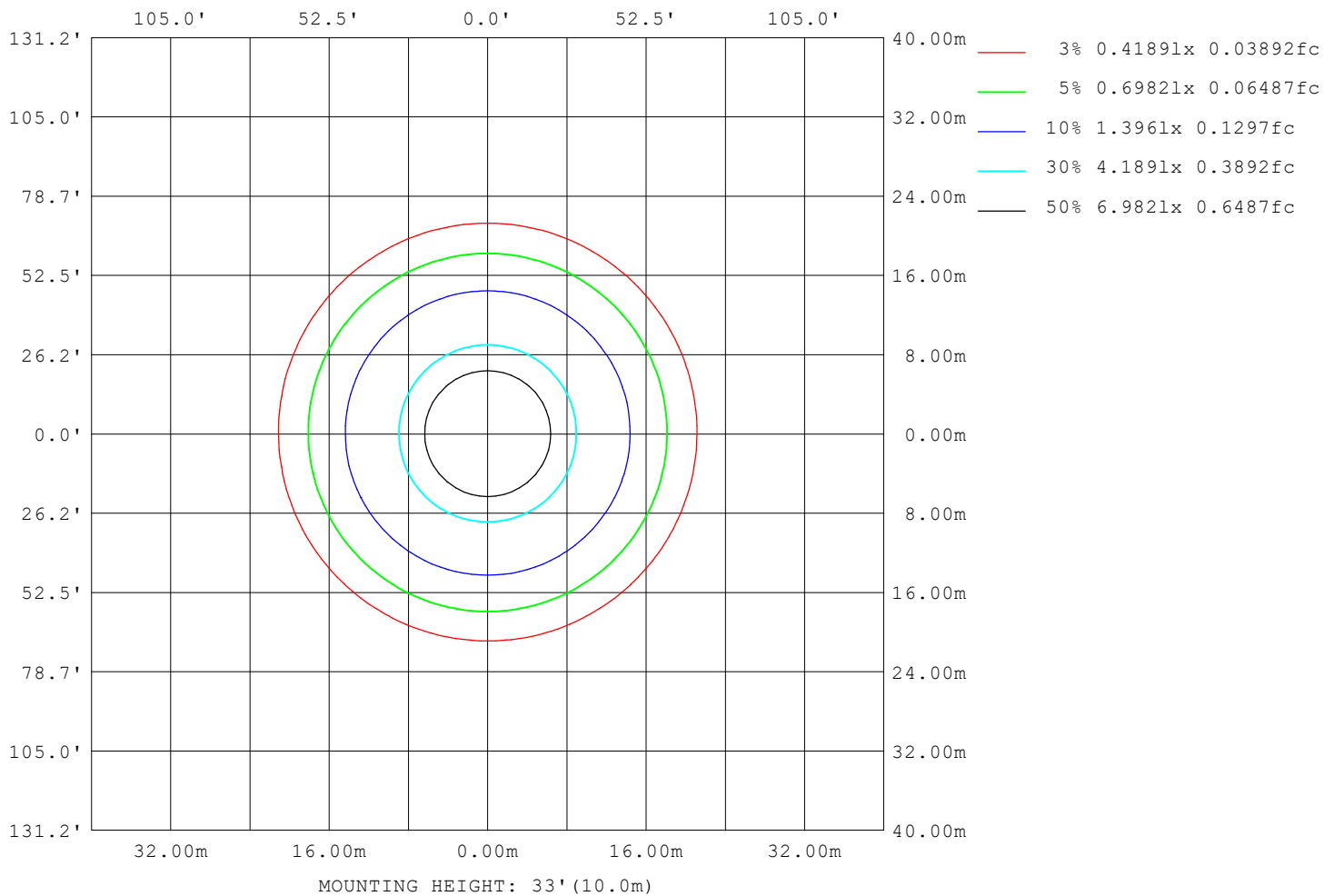
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 December 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: 92Panel023W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 596 x 596 x 40	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



H( $\beta$ ) Range:-90 - 90DEG  
 H( $\beta$ ) Interval: 2.0DEG  
 Test Speed: MEDIUM  
 Temperature:25.3°C  
 Operators:  
 Test Date:19 December 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: 92Panel023W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 596 x 596 x 40	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

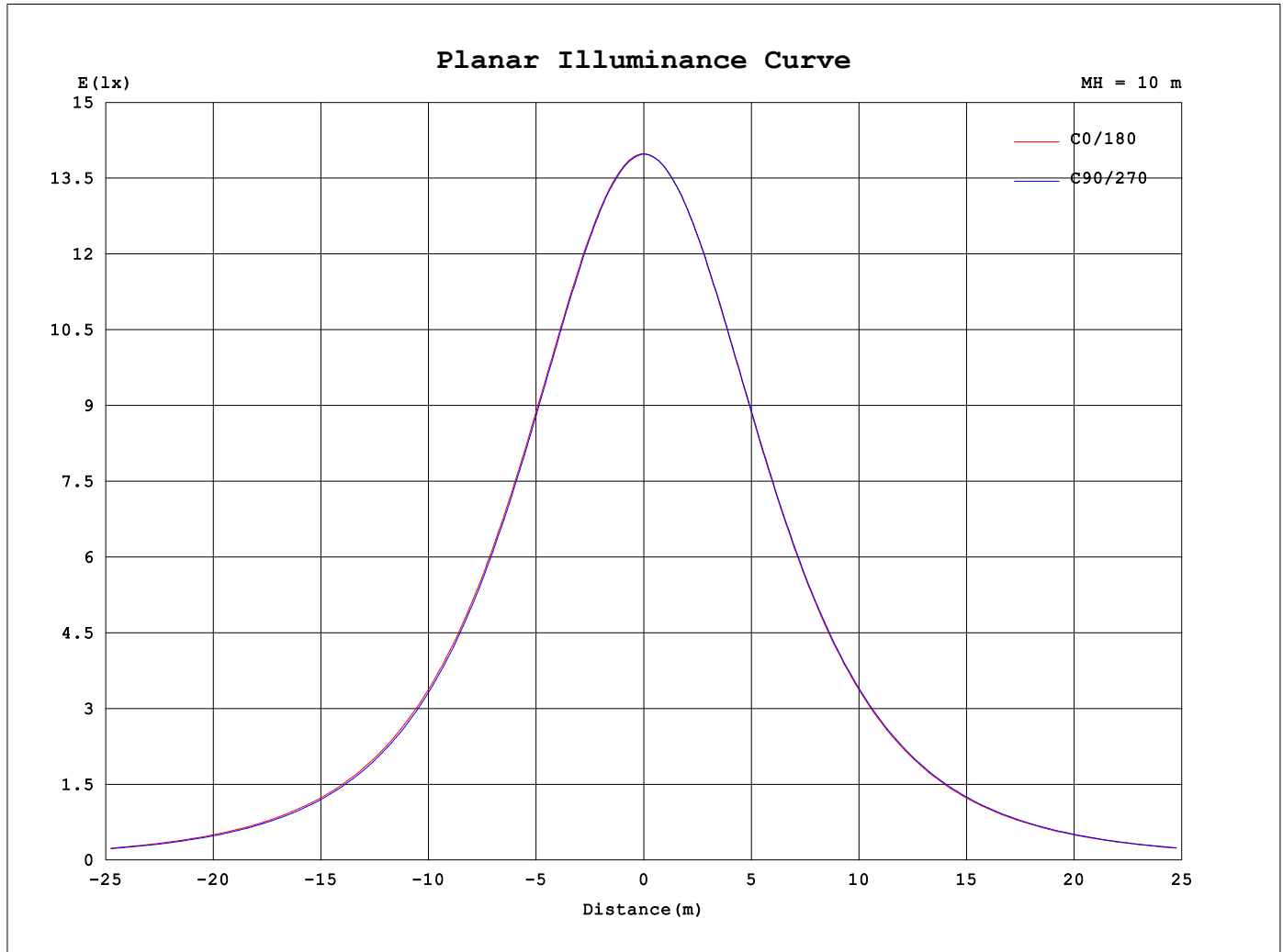
AvgL	cd/m2
L_0~180 (65) av	4047
L_0~180 (75) av	3657
L_0~180 (85) av	2650
L_90~270 (65) av	4015
L_90~270 (75) av	3643
L_90~270 (85) av	1890
L_45 (65) av	4029
L_45 (75) av	3654
L_45 (85) av	2978

Standard: GB/T 29293-2012

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 2.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 December 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: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 December 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:
```