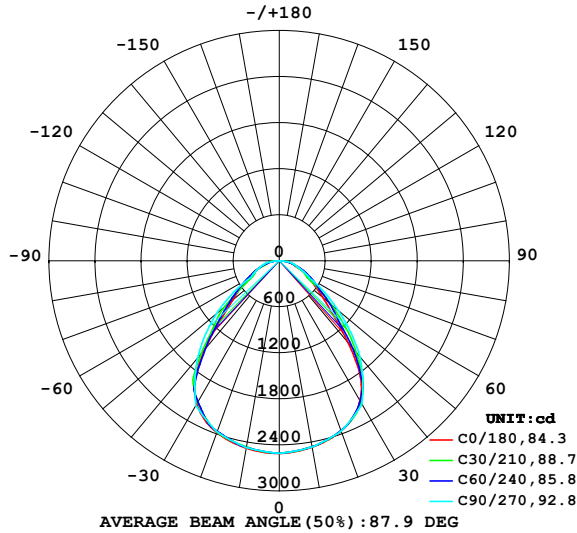


**LUMINAIRE PHOTOMETRIC TEST REPORT**

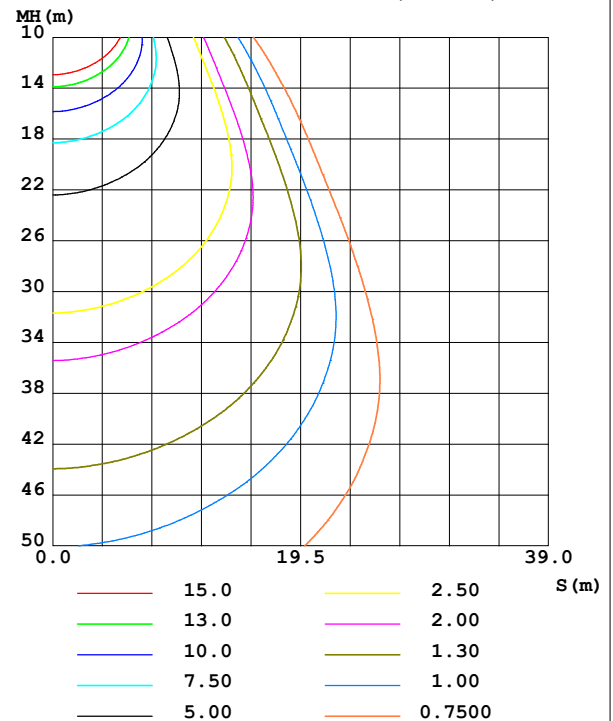
NAME: 92Panel028W	TYPE: 92Panel028W	WEIGHT: 1
SPEC.:	DIM.: 596 x 596	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	92Panel028W	Imax(cd)	2510	S/MH(C0/180)	1.22
NOMINAL POWER(W)	48	LOR(%)	100.0	S/MH(C90/270)	1.26
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	5279.1	$\eta$ UP,DN(C0-180)	0.0,49.8
NOMINAL FLUX(lm)	5280	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,50.2
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	$\eta$ down (%)	100.0	CIBSE SHR MAX	1.30

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



H( $\beta$ ) Range:-90 - 90DEG  
 H( $\beta$ ) Interval: 1.0DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:07 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	2467	2459	2465	2461	2479	2467	2472	2464	0- 10	237.0	237.0	4.49,4.49
20	2363	2355	2363	2350	2383	2357	2372	2363	10- 20	684.1	921.1	17.4,17.4
30	2104	2113	2156	2119	2151	2128	2177	2131	20- 30	1044	1965	37.2,37.2
40	1396	1530	1641	1572	1512	1584	1659	1555	30- 40	1169	3134	59.4,59.4
50	741.0	844.3	993.7	888.5	788.5	888.5	1065	862.4	40- 50	911.9	4046	76.6,76.6
60	429.3	473.9	463.3	493.4	465.8	492.5	421.5	482.7	50- 60	591.7	4638	87.9,87.8
70	243.8	282.0	266.2	291.6	274.2	281.5	280.7	278.4	60- 70	367.8	5006	94.8,94.8
80	123.2	148.6	157.1	152.7	141.5	142.3	168.0	134.5	70- 80	216.2	5222	98.9,98.9
90	0.6456	0	0	0	3.043	0	0	0	80- 90	57.29	5279	100,100
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): 3632.8 lm

%lum = 68.8%

%lamp = 68.8%

Conical surface Flux(130deg): 4842.7 lm

%lum = 91.7%

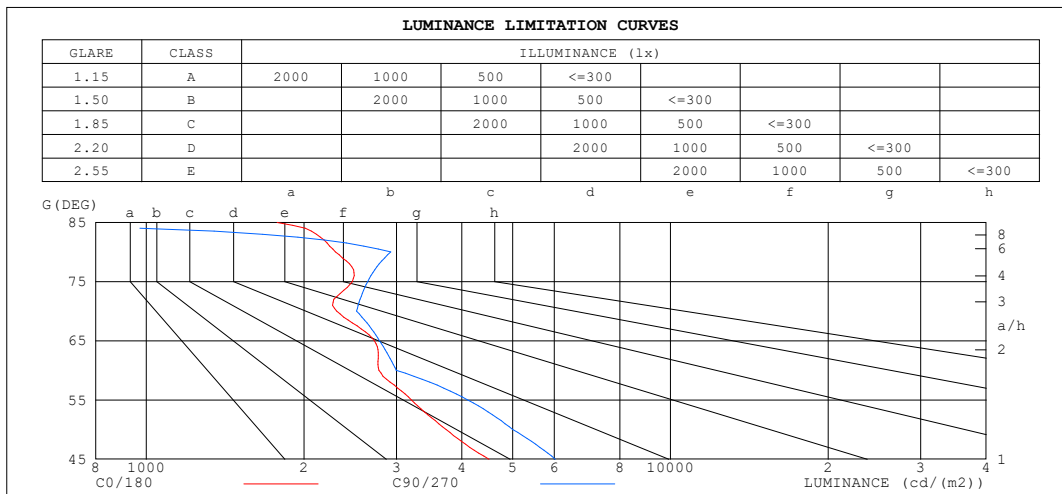
%lamp = 91.7%

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:07 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: 92Panel028W	TYPE: 92Panel028W	WEIGHT: 1
SPEC.:	DIM.: 596 x 596	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



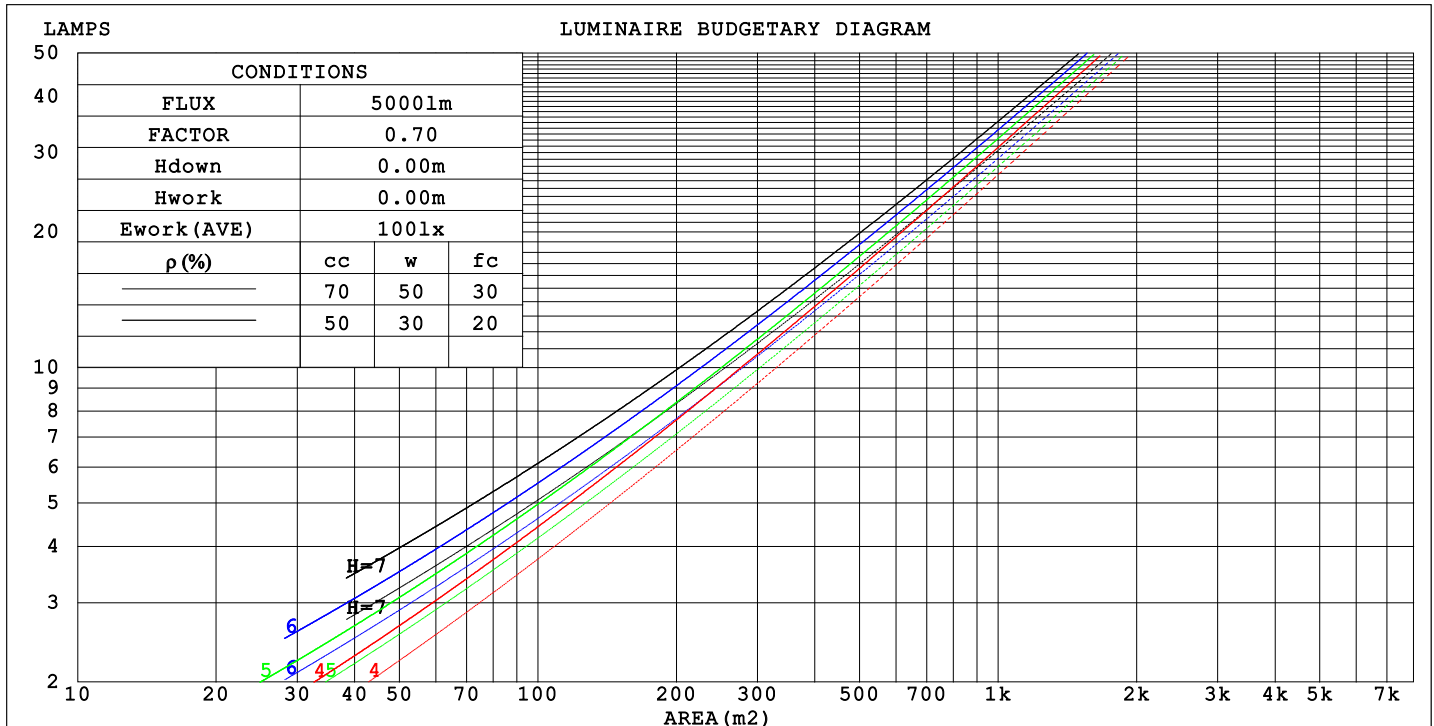
H( $\beta$ ) Range:-90 - 90DEG  
 H( $\beta$ ) Interval: 1.0DEG  
 Test Speed: HIGH  
 Temperature:25.3°C  
 Operators:  
 Test Date:07 September 2022

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:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: 92Panel028W	TYPE: 92Panel028W	WEIGHT: 1
SPEC.:	DIM.: 596 x 596	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															



H(β) Range:-90 - 90DEG  
H(β) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:07 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:

## WEC AND CCEC

NAME: 92Panel028W	TYPE: 92Panel028W	WEIGHT: 1
SPEC.:	DIM.: 596 x 596	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	.263	.150	.047	.256	.146	.046	.243	.139	.045	.231	.133	.043	.220	.127	.041	
2.0	.250	.137	.042	.244	.135	.041	.233	.130	.040	.223	.125	.039	.213	.120	.038	
3.0	.235	.125	.037	.230	.123	.037	.220	.119	.036	.211	.115	.035	.202	.112	.035	
4.0	.220	.114	.034	.215	.112	.033	.206	.109	.033	.198	.106	.032	.191	.104	.032	
5.0	.205	.105	.030	.201	.103	.030	.194	.101	.030	.186	.098	.029	.180	.096	.029	
6.0	.193	.097	.028	.189	.095	.027	.182	.093	.027	.176	.091	.027	.170	.089	.027	
7.0	.181	.089	.025	.178	.088	.025	.171	.087	.025	.166	.085	.025	.160	.083	.024	
8.0	.170	.083	.023	.167	.082	.023	.162	.081	.023	.157	.079	.023	.152	.078	.023	
9.0	.161	.078	.022	.158	.077	.022	.153	.076	.021	.149	.074	.021	.144	.073	.021	
10.0	.152	.073	.020	.150	.072	.020	.145	.071	.020	.141	.070	.020	.137	.069	.020	

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.177	.157	.138	.151	.134	.119	.104	.092	.082	.060	.053	.048	.019	.017	.015	
2.0	.167	.132	.103	.143	.114	.089	.098	.079	.062	.056	.046	.036	.018	.015	.012	
3.0	.158	.114	.079	.135	.098	.069	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.150	.100	.063	.128	.087	.054	.088	.060	.038	.051	.035	.023	.016	.012	.007	
5.0	.142	.090	.051	.122	.078	.044	.084	.054	.031	.049	.032	.019	.016	.010	.006	
6.0	.135	.081	.042	.116	.070	.037	.080	.049	.026	.046	.029	.015	.015	.009	.005	
7.0	.129	.074	.036	.111	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.123	.068	.031	.106	.059	.027	.073	.041	.019	.042	.024	.011	.014	.008	.004	
9.0	.117	.063	.027	.101	.055	.023	.070	.039	.017	.041	.023	.010	.013	.007	.003	
10.0	.112	.059	.024	.096	.051	.021	.067	.036	.015	.039	.021	.009	.013	.007	.003	

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:07 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: 92Panel028W					TYPE: 92Panel028W					WEIGHT: 1				
SPEC.:					DIM.: 596 x 596					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	10.7	12.0	10.9	12.2	12.4	11.1	12.4	11.3	12.6	12.8				
3H	11.5	12.7	11.7	12.9	13.2	11.9	13.2	12.2	13.4	13.6				
4H	11.8	13.0	12.1	13.3	13.5	12.3	13.5	12.6	13.8	14.0				
6H	12.2	13.3	12.5	13.6	13.8	12.8	13.9	13.1	14.2	14.4				
8H	12.3	13.4	12.6	13.7	13.9	12.9	14.0	13.2	14.2	14.5				
12H	12.4	13.4	12.7	13.7	14.0	12.9	13.9	13.2	14.2	14.5				
4H 2H	11.0	12.2	11.3	12.4	12.7	11.4	12.5	11.7	12.8	13.0				
3H	12.0	13.0	12.3	13.3	13.6	12.5	13.5	12.8	13.8	14.1				
4H	12.5	13.5	12.9	13.8	14.1	13.0	14.0	13.4	14.3	14.6				
6H	13.0	13.9	13.4	14.2	14.6	13.6	14.4	14.0	14.8	15.2				
8H	13.2	14.0	13.6	14.4	14.7	13.8	14.5	14.2	14.9	15.3				
12H	13.3	14.0	13.7	14.4	14.8	13.8	14.5	14.2	14.9	15.3				
8H 4H	12.8	13.6	13.2	13.9	14.3	13.2	14.0	13.6	14.3	14.7				
6H	13.5	14.1	13.9	14.5	15.0	13.9	14.6	14.4	15.0	15.4				
8H	13.8	14.4	14.3	14.8	15.3	14.2	14.7	14.6	15.1	15.6				
12H	14.0	14.5	14.5	15.0	15.4	14.2	14.6	14.6	15.1	15.6				
12H 4H	12.8	13.5	13.2	13.9	14.3	13.2	13.9	13.7	14.3	14.7				
6H	13.6	14.1	14.0	14.6	15.0	14.0	14.6	14.5	15.0	15.4				
8H	14.0	14.4	14.4	14.9	15.4	14.2	14.7	14.7	15.2	15.6				
Variations with the observer position at spacings(CIE Pub.117):														
S = 1.0H	+ 0.6 / - 0.7					+ 0.3 / - 0.4								
1.5H	+ 0.4 / - 0.5					+ 0.2 / - 0.3								
2.0H	+ 0.7 / - 0.6					+ 0.9 / - 0.8								

CIE Pub.117, 5280 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 5.8)  
Area: 0.309136 m2

H( $\beta$ ) Range:-90 - 90DEG  
H( $\beta$ ) Interval: 1.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:07 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: 92Panel028W	TYPE: 92Panel028W	WEIGHT: 1
SPEC.:	DIM.: 596 x 596	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

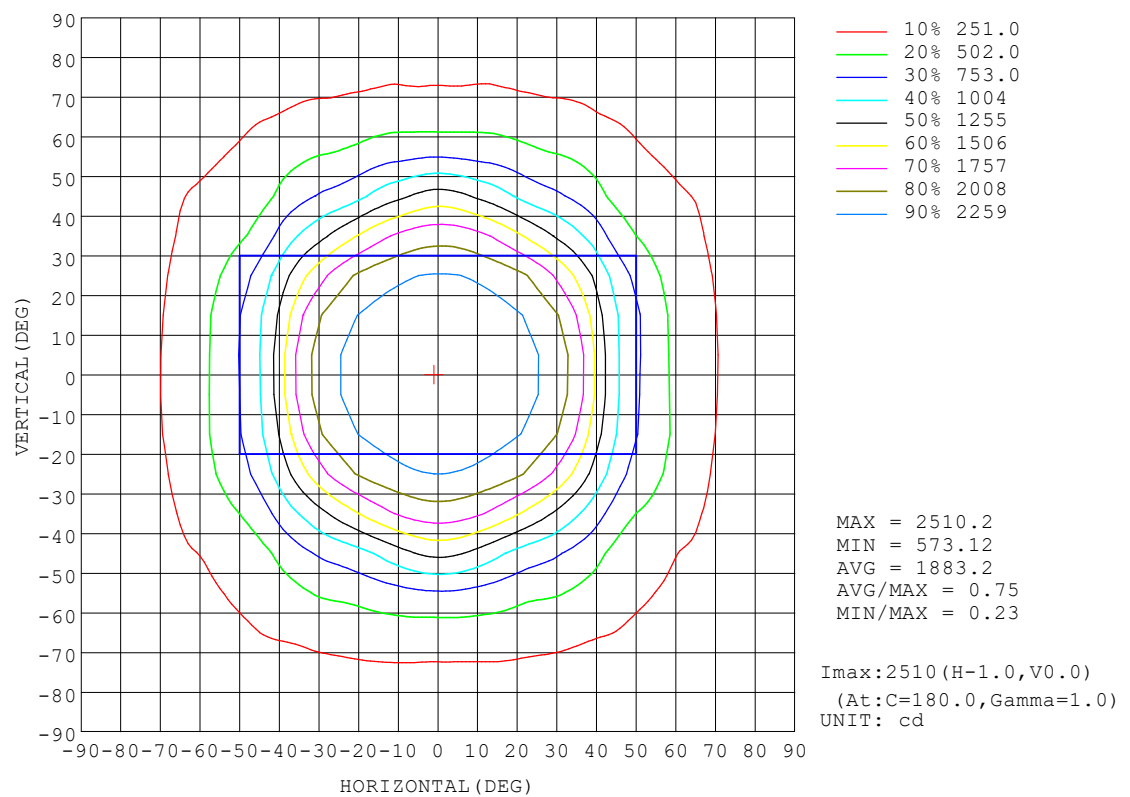
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	66	56	50	66	56	50	65	55	50	44
0.80	76	66	60	75	66	60	73	65	59	53
1.00	84	74	68	82	74	68	80	75	67	61
1.25	90	81	75	89	80	75	86	79	74	68
1.50	94	86	80	93	85	80	90	84	79	72
2.00	100	93	87	98	92	87	95	89	85	78
2.50	103	96	91	101	95	91	97	93	89	81
3.00	106	100	95	104	98	94	100	96	92	84
4.00	109	104	100	107	102	99	103	99	96	88
5.00	111	107	103	108	105	102	104	101	99	90
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:07 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: 92Panel028W	TYPE: 92Panel028W	WEIGHT: 1
SPEC.:	DIM.: 596 x 596	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



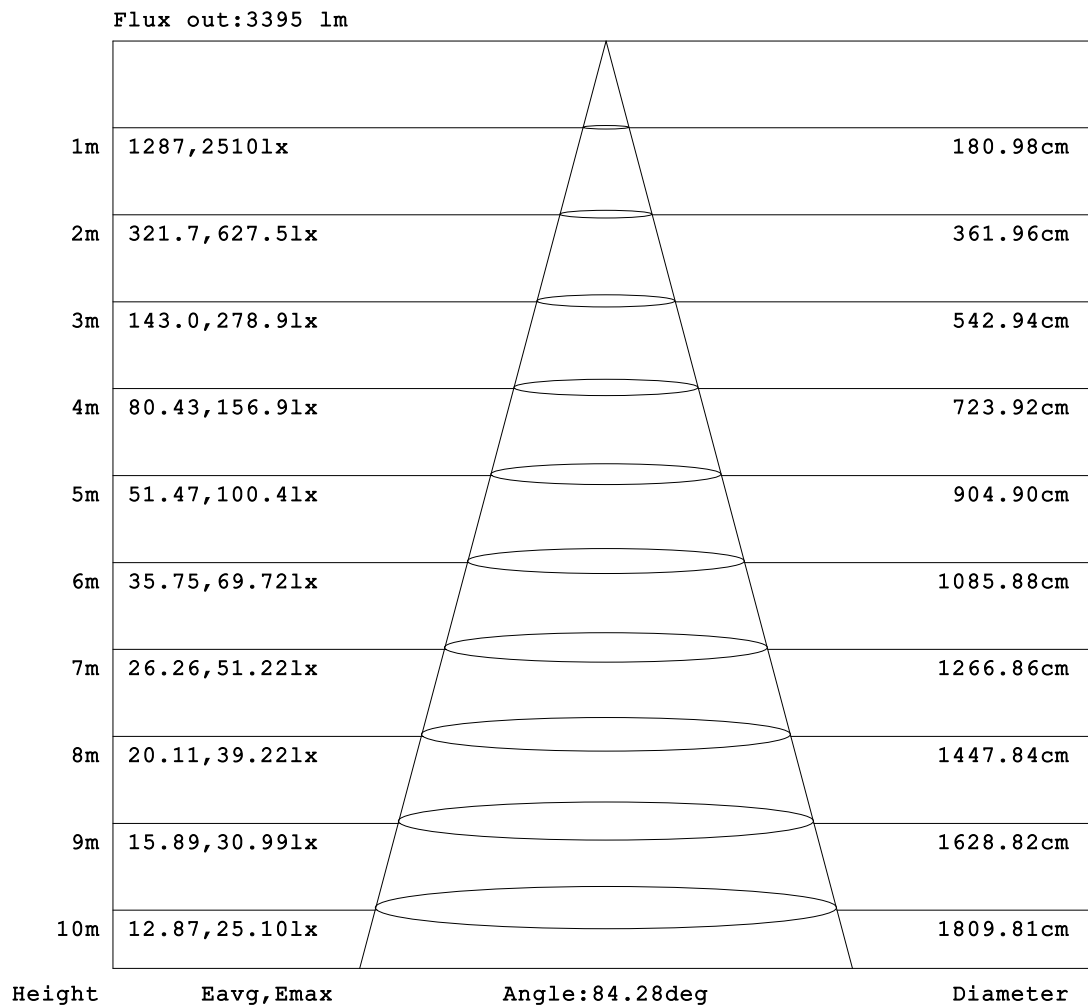
H( $\beta$ ) Range: -90 - 90DEG  
 H( $\beta$ ) Interval: 1.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 07 September 2022

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: 92Panel028W	TYPE: 92Panel028W	WEIGHT: 1
SPEC.:	DIM.: 596 x 596	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: 07 September 2022

V(B) Range: -80 - 80DEG

V(B) Interval: 5.0DEG

Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456

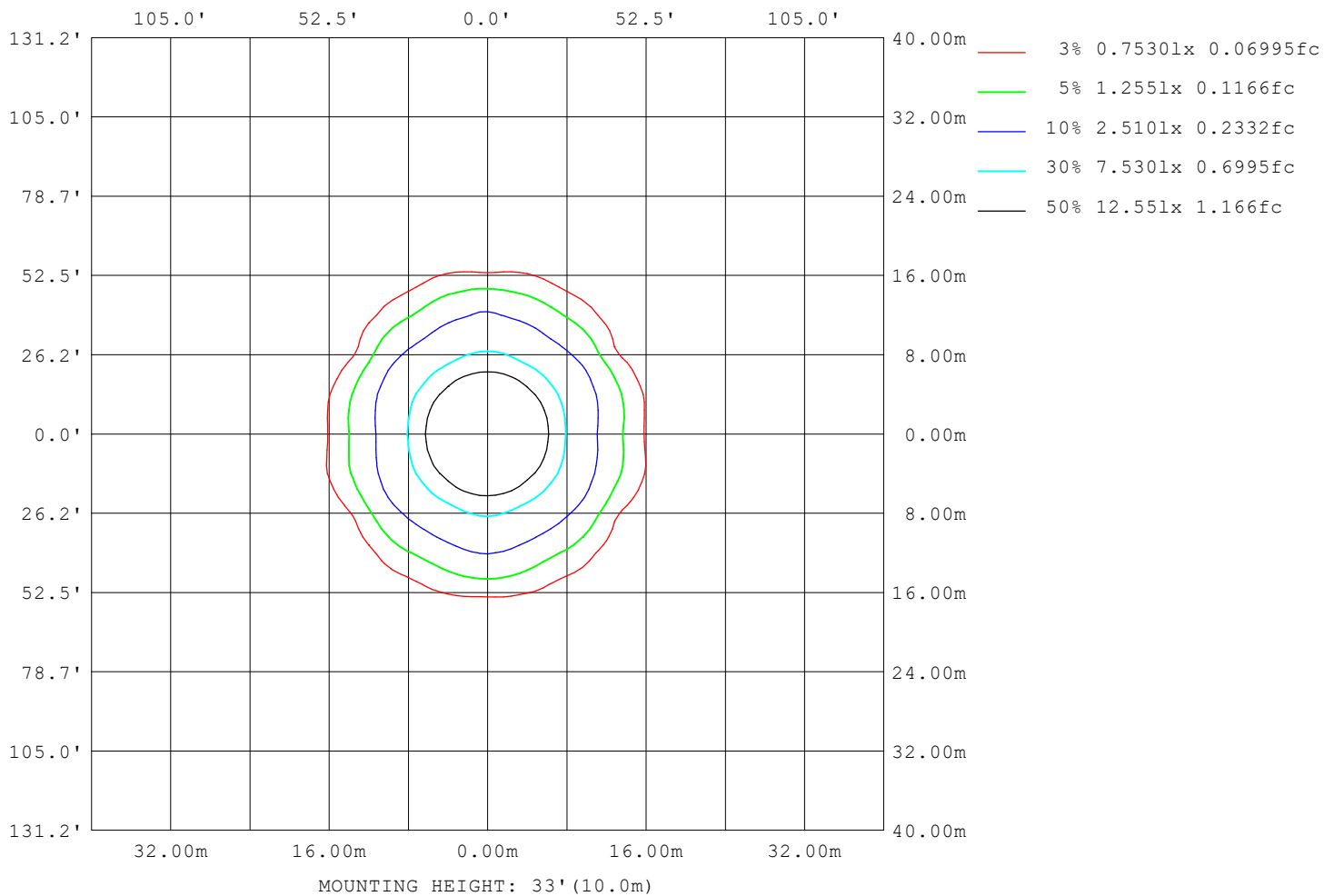
Humidity: 65.0%

Test Distance: 6.265m [K=1.0000]

Remarks:

**ISOLUX DIAGRAM**

NAME: 92Panel028W	TYPE: 92Panel028W	WEIGHT: 1
SPEC.:	DIM.: 596 x 596	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:07 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: 92Panel028W	TYPE: 92Panel028W	WEIGHT: 1
SPEC.:	DIM.: 596 x 596	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

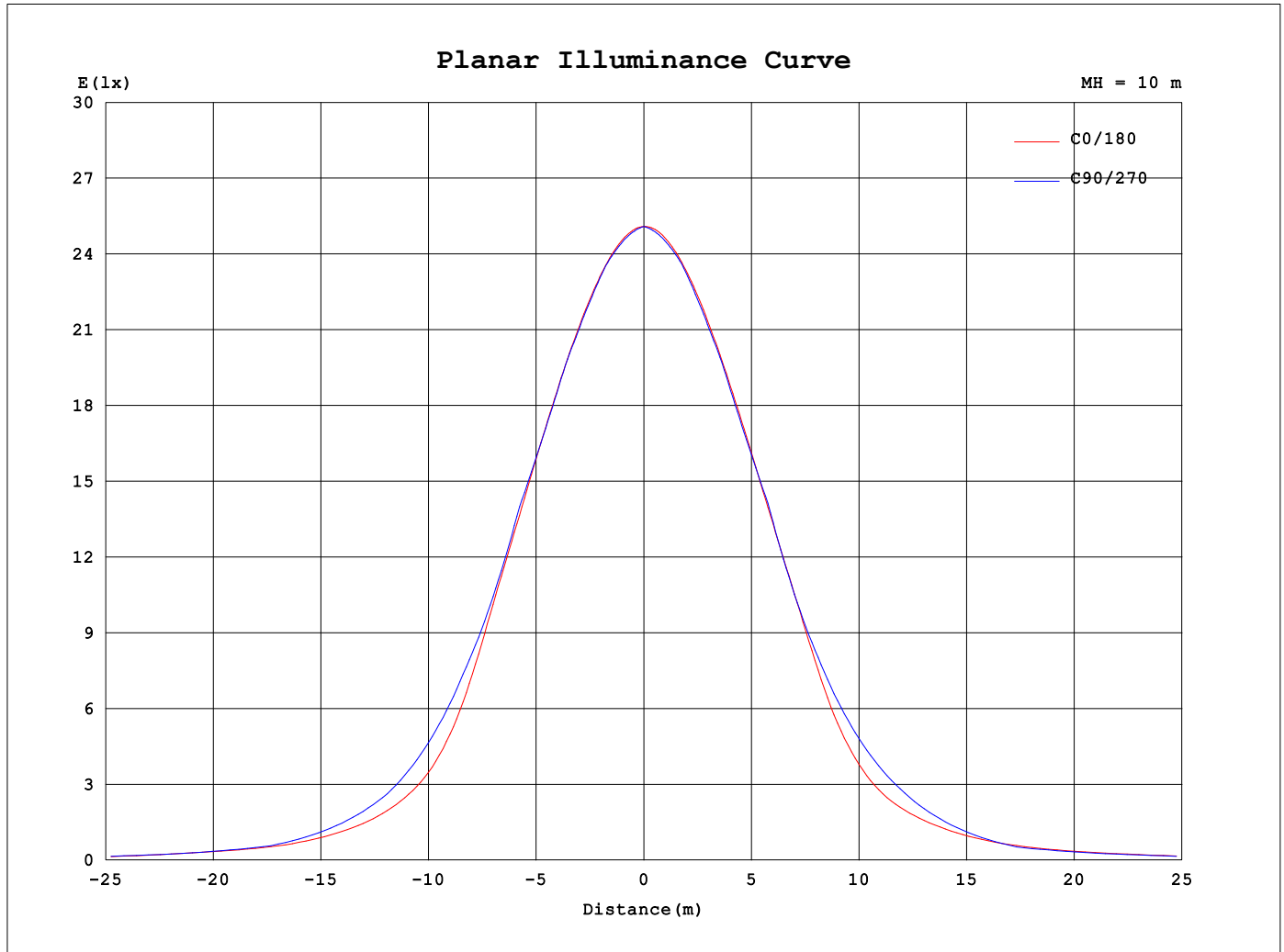
AvgL	cd/m2
L_0~180 (65) av	2817
L_0~180 (75) av	2509
L_0~180 (85) av	2154
L_90~270 (65) av	2739
L_90~270 (75) av	2729
L_90~270 (85) av	0
L_45 (65) av	2883
L_45 (75) av	2680
L_45 (85) av	1521

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:07 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:07 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:
```