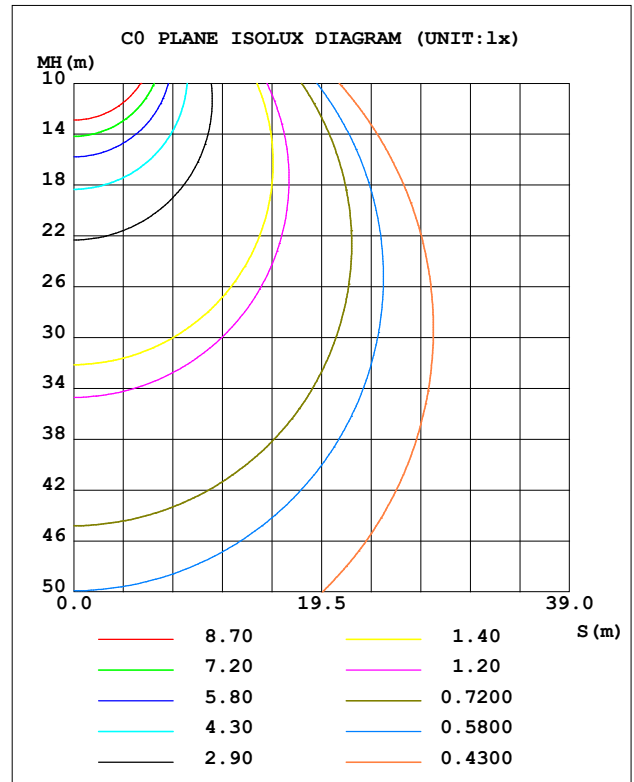
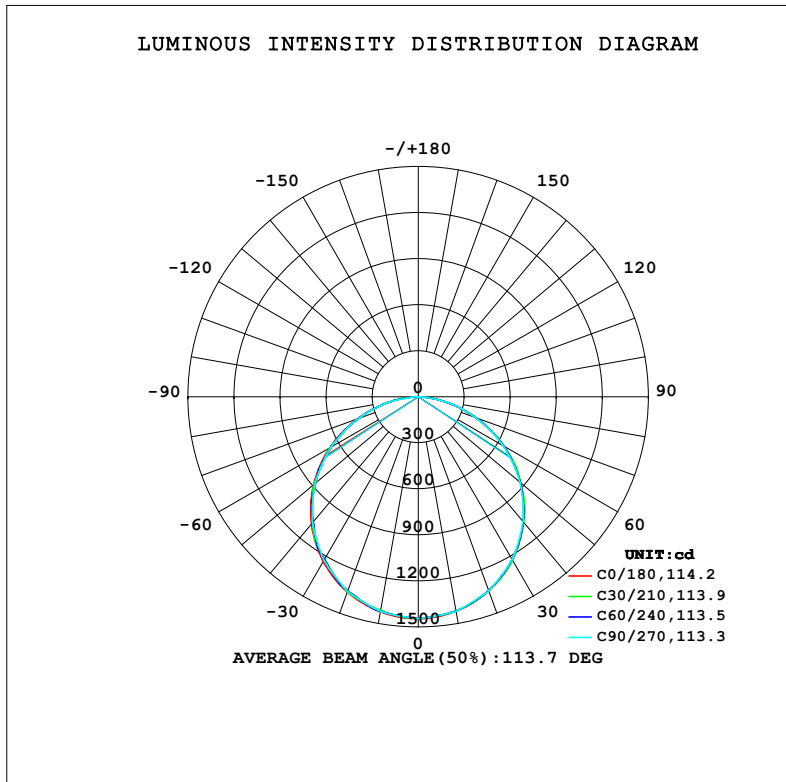


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 99XPanel020CW	TYPE: 99XPanel020CW	WEIGHT: 1
SPEC.:	DIM.: 555 x 555	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99XPanel020CW	Imax(cd)	1446	S/MH(C0/180)	1.27
NOMINAL POWER(W)	48	LOR(%)	96.4	S/MH(C90/270)	1.26
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	4166.2	η UP,DN(C0-180)	0.0,47.9
NOMINAL FLUX(lm)	4320	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,48.5
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	η down (%)	96.4	CIBSE SHR MAX	1.35



H(β) Range:-90 - 90DEG
H(β) 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:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1419	1415	1419	1414	1423	1416	1421	1417	0- 10	136.3	136.3	3.27, 3.16
20	1345	1344	1345	1337	1354	1340	1348	1346	10- 20	391.2	527.5	12.7, 12.2
30	1226	1224	1224	1223	1238	1228	1230	1228	20- 30	594.7	1122	26.9, 26
40	1066	1064	1063	1069	1083	1076	1072	1069	30- 40	720.5	1843	44.2, 42.7
50	869.9	867.6	866.4	876.1	890.1	886.2	877.6	873.9	40- 50	751.7	2594	62.3, 60.1
60	642.2	642.8	639.4	647.9	666.2	660.3	654.6	651.7	50- 60	683.0	3277	78.7, 75.9
70	395.0	400.3	394.7	399.7	421.1	414.1	411.7	410.5	60- 70	522.7	3800	91.2, 88
80	158.6	168.0	160.8	166.2	182.9	180.0	178.4	178.8	70- 80	302.0	4102	98.5, 95
90	0.7079	0	0	0	3.259	0	0	0	80- 90	64.09	4166	100, 96.4
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): 2221 lm

%lum = 53.3%
%lamp = 51.4%

Conical surface Flux(130deg): 3563.8 lm

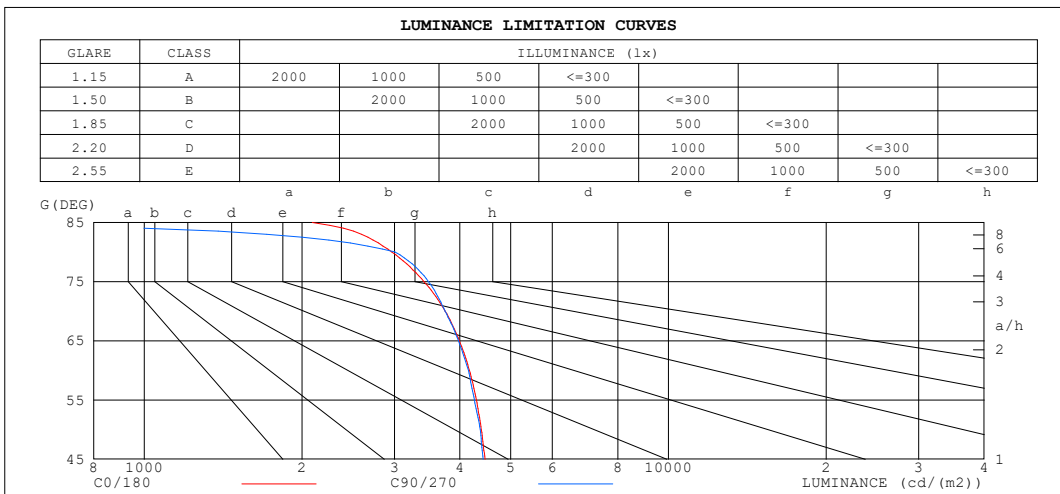
%lum = 85.5%
%lamp = 82.5%

H(β) Range:-90 - 90DEG
H(β) 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: 99XPanel020CW	TYPE: 99XPanel020CW	WEIGHT: 1
SPEC.:	DIM.: 555 x 555	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2091	0
80	2965	3006
75	3417	3484
70	3749	3746
65	3990	3973
60	4170	4152
55	4300	4262
50	4394	4376
45	4464	4428

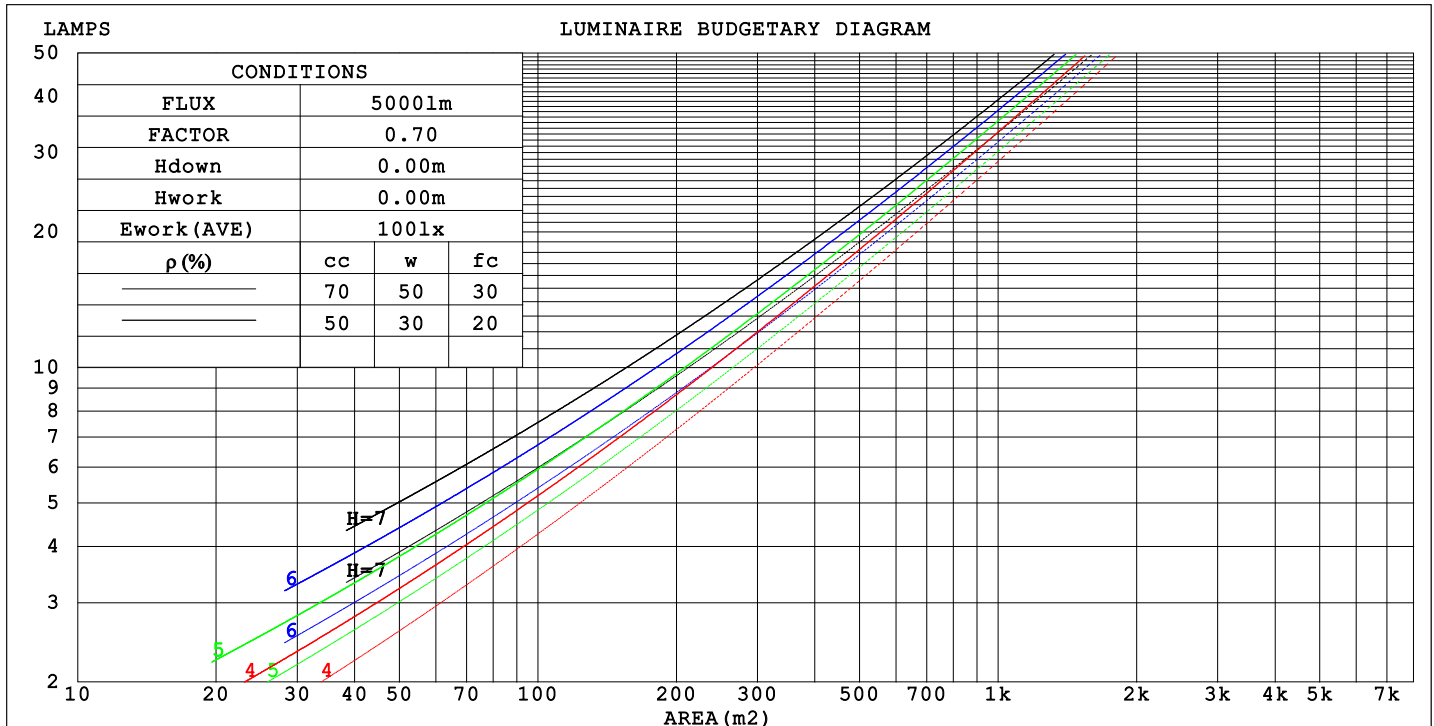
H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:05 September 2022

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: 99XPanel020CW	TYPE: 99XPanel020CW	WEIGHT: 1
SPEC.:	DIM.: 555 x 555	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: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:

WEC AND CCEC

NAME: 99XPanel020CW	TYPE: 99XPanel020CW	WEIGHT: 1
SPEC.:	DIM.: 555 x 555	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	.297	.169	.054	.291	.166	.053	.278	.159	.051	.266	.153	.049	.255	.148	.048	
2.0	.281	.154	.047	.275	.152	.047	.264	.147	.046	.254	.142	.045	.244	.138	.044	
3.0	.261	.139	.042	.256	.137	.041	.246	.133	.040	.236	.130	.040	.228	.126	.039	
4.0	.241	.125	.037	.236	.124	.037	.227	.121	.036	.219	.118	.035	.211	.115	.035	
5.0	.223	.114	.033	.219	.112	.033	.211	.110	.032	.203	.107	.032	.197	.105	.032	
6.0	.207	.104	.030	.203	.102	.029	.196	.100	.029	.189	.098	.029	.183	.096	.029	
7.0	.192	.095	.027	.189	.094	.027	.183	.092	.027	.177	.091	.026	.171	.089	.026	
8.0	.180	.088	.025	.177	.087	.025	.171	.085	.024	.166	.084	.024	.161	.083	.024	
9.0	.168	.081	.023	.166	.081	.023	.161	.079	.023	.156	.078	.022	.151	.077	.022	
10.0	.158	.076	.021	.156	.075	.021	.151	.074	.021	.147	.073	.021	.143	.072	.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	.184	.184	.184	.157	.157	.157	.107	.107	.107	.062	.062	.062	.020	.020	.020	
1.0	.174	.151	.130	.149	.129	.112	.102	.089	.077	.059	.051	.045	.019	.017	.015	
2.0	.166	.127	.095	.142	.110	.082	.098	.076	.057	.056	.044	.033	.018	.014	.011	
3.0	.159	.110	.072	.136	.095	.062	.093	.066	.044	.054	.039	.026	.017	.013	.008	
4.0	.151	.097	.056	.130	.084	.049	.089	.059	.034	.052	.034	.020	.017	.011	.007	
5.0	.144	.087	.045	.124	.076	.039	.085	.053	.028	.049	.031	.017	.016	.010	.005	
6.0	.137	.079	.038	.118	.069	.033	.081	.048	.023	.047	.028	.014	.015	.009	.005	
7.0	.131	.073	.032	.113	.063	.028	.078	.044	.020	.045	.026	.012	.015	.009	.004	
8.0	.125	.067	.028	.107	.058	.024	.074	.041	.017	.043	.024	.010	.014	.008	.003	
9.0	.119	.062	.024	.102	.054	.021	.071	.038	.015	.041	.022	.009	.013	.007	.003	
10.0	.113	.058	.022	.098	.051	.019	.068	.036	.013	.039	.021	.008	.013	.007	.003	

H(β) Range:-90 - 90DEG
H(β) 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: 99XPanel020CW					TYPE: 99XPanel020CW					WEIGHT: 1				
SPEC.:					DIM.: 555 x 555					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	14.4	13.2	14.7	14.9	12.8	14.4	13.1	14.6	14.8				
3H	14.4	15.9	14.7	16.1	16.3	14.3	15.7	14.6	16.0	16.2				
4H	15.0	16.4	15.4	16.6	16.9	14.9	16.3	15.3	16.5	16.8				
6H	15.5	16.7	15.8	17.0	17.3	15.3	16.6	15.7	16.9	17.2				
8H	15.6	16.8	15.9	17.1	17.4	15.4	16.6	15.8	16.9	17.2				
12H	15.6	16.8	15.9	17.1	17.4	15.4	16.6	15.7	16.9	17.2				
4H 2H	13.5	14.9	13.8	15.1	15.4	13.5	14.8	13.8	15.1	15.3				
3H	15.2	16.4	15.6	16.7	17.0	15.1	16.3	15.5	16.6	16.9				
4H	16.0	17.0	16.3	17.4	17.7	15.9	16.9	16.2	17.3	17.6				
6H	16.5	17.4	16.9	17.8	18.2	16.4	17.4	16.8	17.7	18.1				
8H	16.6	17.5	17.1	17.9	18.3	16.5	17.4	16.9	17.8	18.1				
12H	16.7	17.5	17.1	17.9	18.3	16.5	17.3	16.9	17.7	18.1				
8H 4H	16.2	17.1	16.6	17.5	17.9	16.1	17.0	16.5	17.4	17.8				
6H	16.9	17.6	17.3	18.0	18.5	16.8	17.5	17.3	18.0	18.4				
8H	17.1	17.8	17.6	18.2	18.7	17.0	17.6	17.4	18.1	18.5				
12H	17.3	17.8	17.7	18.3	18.7	17.0	17.5	17.5	18.0	18.5				
12H 4H	16.2	17.0	16.6	17.4	17.8	16.1	17.0	16.6	17.3	17.8				
6H	17.0	17.6	17.4	18.0	18.5	16.9	17.5	17.3	17.9	18.4				
8H	17.2	17.8	17.7	18.2	18.7	17.1	17.6	17.5	18.1	18.5				
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, 4320 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 5.1)
Area: 0.308025 m2

H(β) Range:-90 - 90DEG
H(β) 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: 99XPanel020CW	TYPE: 99XPanel020CW	WEIGHT: 1
SPEC.:	DIM.: 555 x 555	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

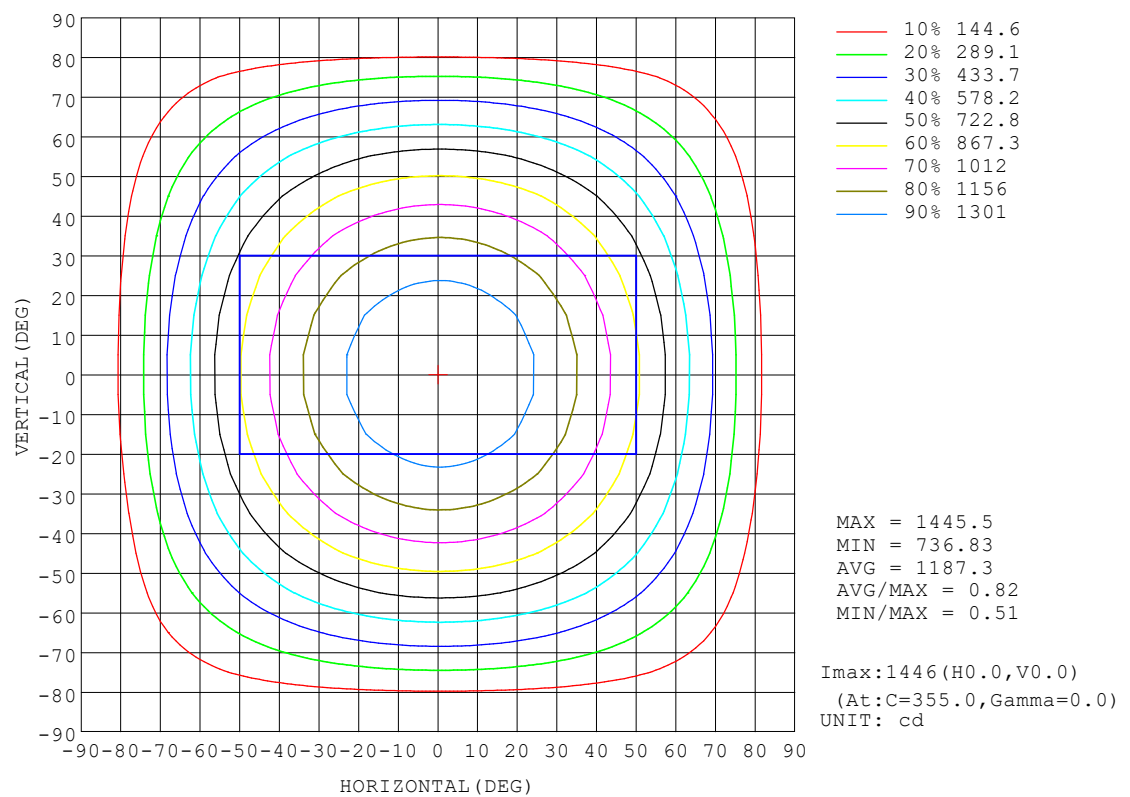
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	55	44	37	55	44	37	53	43	37	31
0.80	65	54	47	64	53	46	62	53	46	39
1.00	73	62	55	72	62	55	70	63	54	48
1.25	80	70	63	79	69	63	76	68	62	55
1.50	85	75	68	83	74	68	80	73	67	60
2.00	92	83	77	90	82	76	86	80	75	67
2.50	95	88	82	93	86	81	90	84	79	71
3.00	99	92	87	97	90	86	93	88	84	75
4.00	102	97	93	100	95	91	96	92	89	80
5.00	105	100	96	102	98	95	98	95	92	83
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

H(β) Range:-90 - 90DEG
H(β) 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: 99XPanel1020CW	TYPE: 99XPanel1020CW	WEIGHT: 1
SPEC.:	DIM.: 555 x 555	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

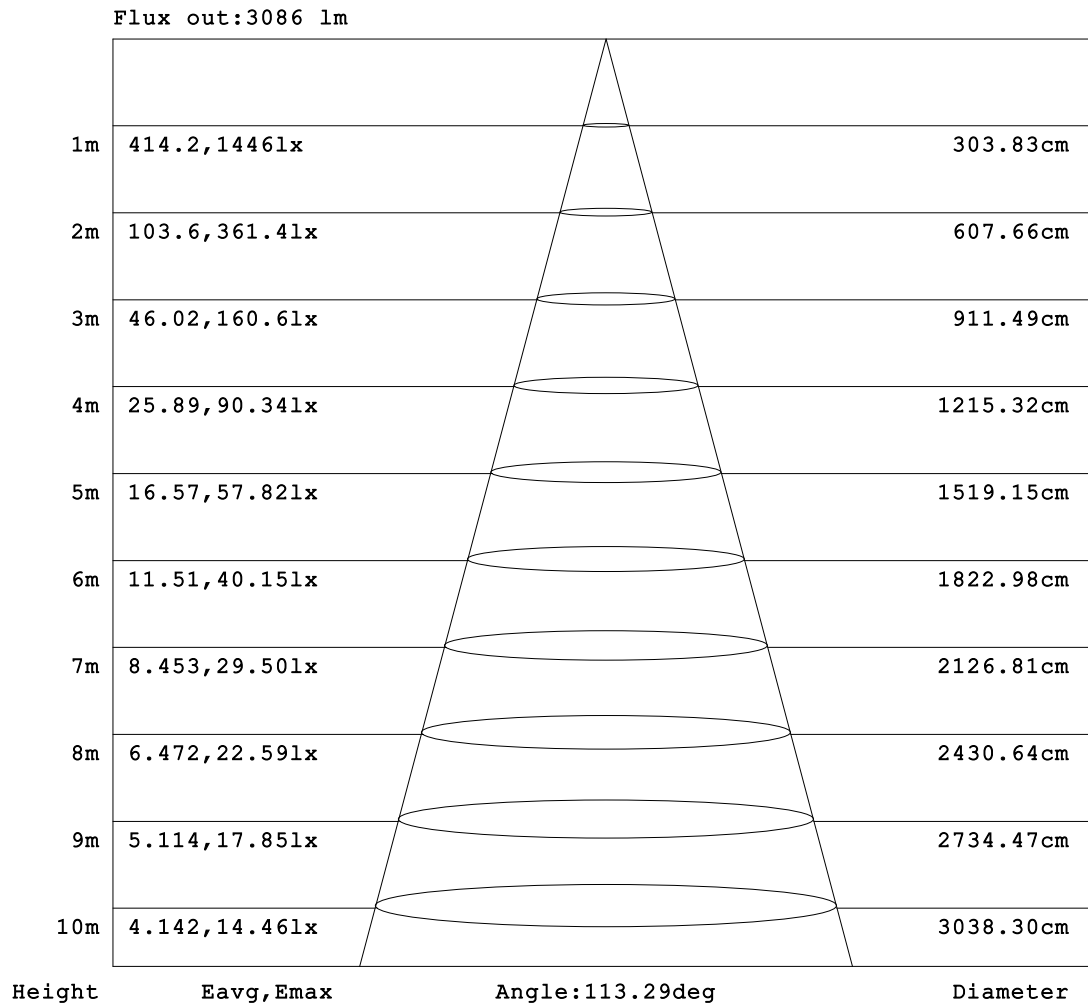


H(β) Range:-90 - 90DEG
H(β) Interval: 1.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:05 September 2022

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: 99XPanel020CW	TYPE: 99XPanel020CW	WEIGHT: 1
SPEC.:	DIM.: 555 x 555	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



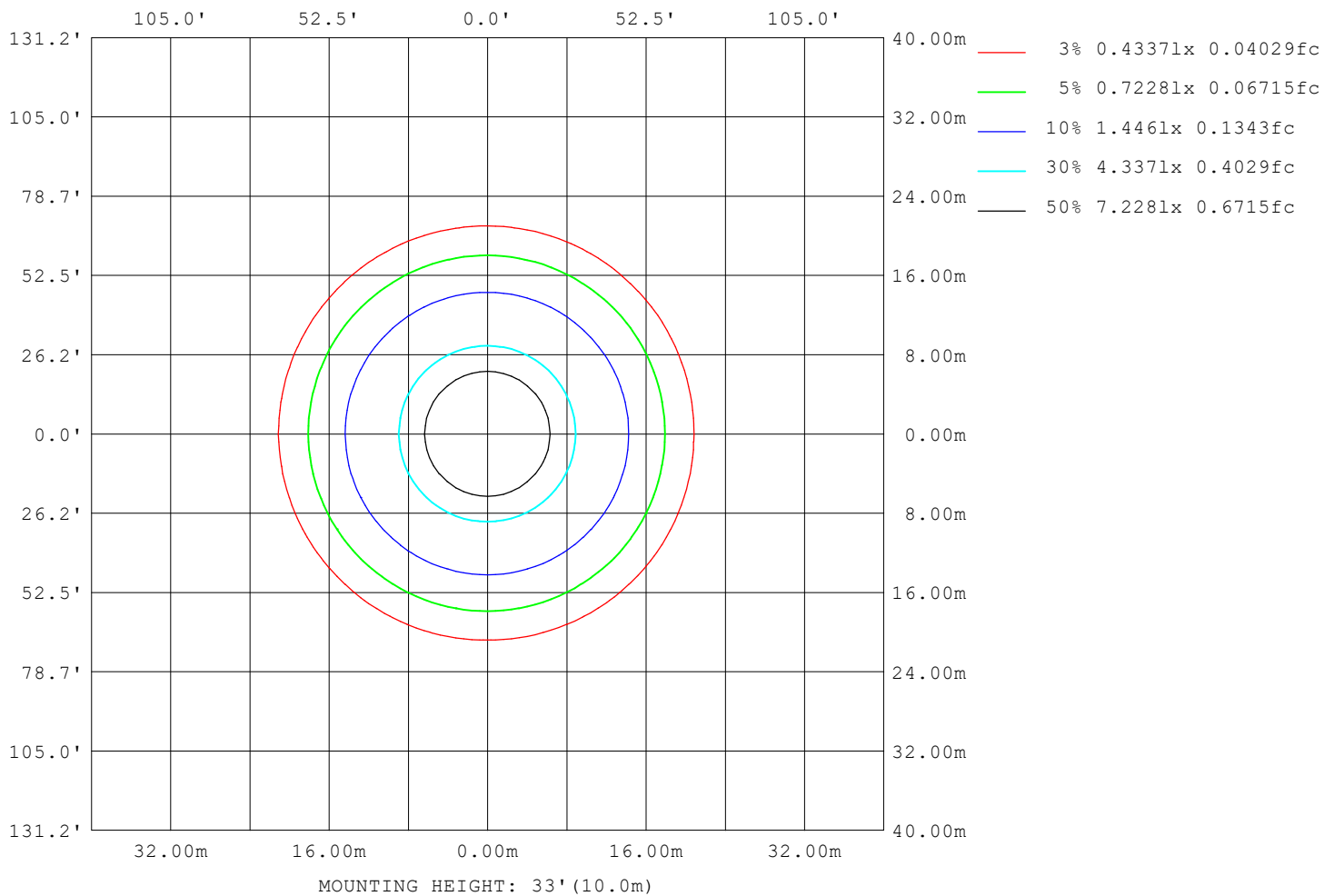
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

H(β) Range:-90 - 90DEG
H(β) 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: 99XPanel1020CW	TYPE: 99XPanel1020CW	WEIGHT: 1
SPEC.:	DIM.: 555 x 555	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:



H(β) Range:-90 - 90DEG
H(β) 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: 99XPanel020CW	TYPE: 99XPanel020CW	WEIGHT: 1
SPEC.:	DIM.: 555 x 555	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: square	Shielding Angle:

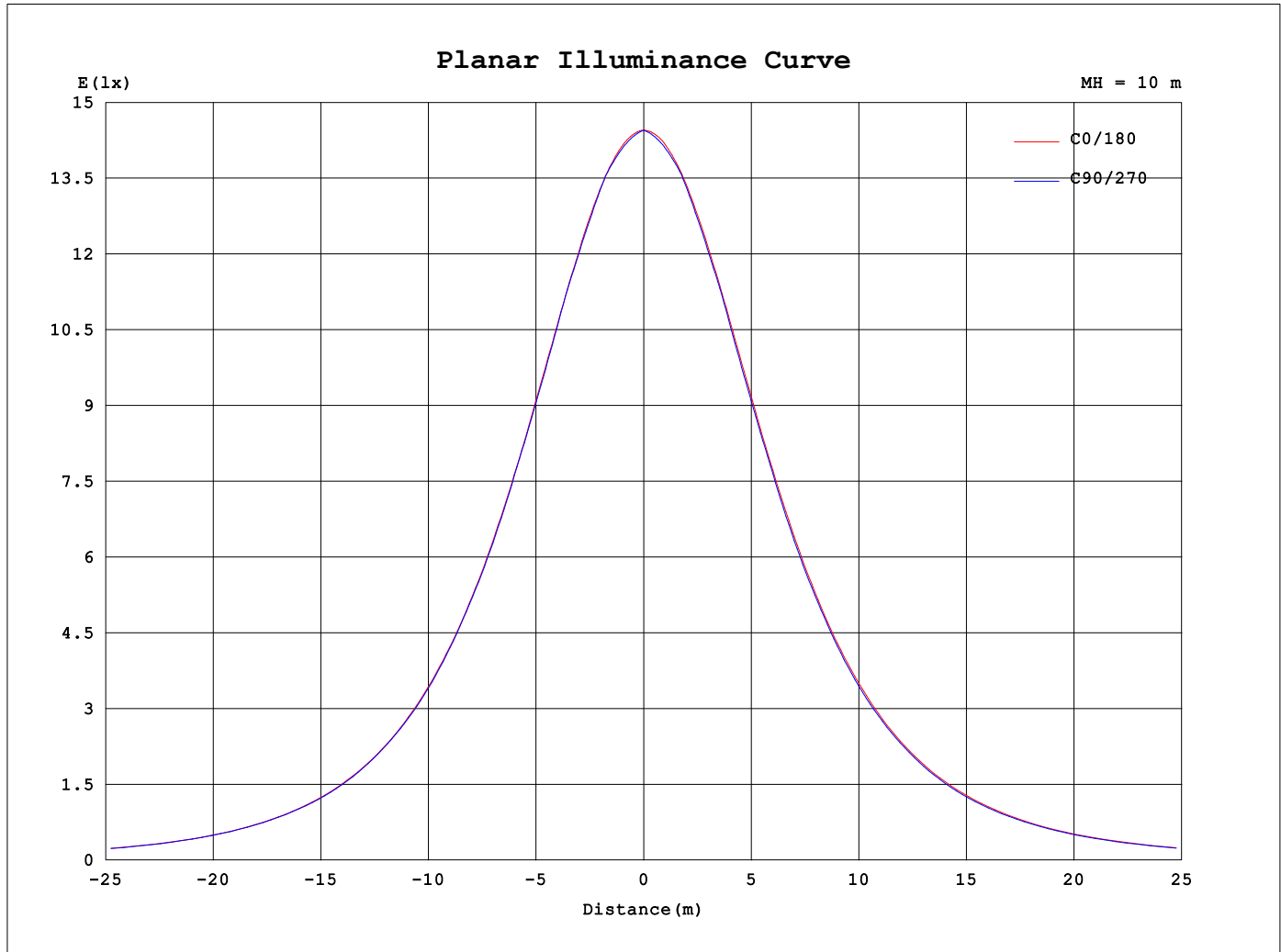
AvgL	cd/m2
L_0~180 (65) av	4087
L_0~180 (75) av	3579
L_0~180 (85) av	2538
L_90~270 (65) av	4034
L_90~270 (75) av	3593
L_90~270 (85) av	0
L_45 (65) av	4060
L_45 (75) av	3563
L_45 (85) av	1688

Standard: GB/T 29293-2012

H(β) Range:-90 - 90DEG
H(β) 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(β) Range:-90 - 90DEG
H(β) 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:
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```
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:
```