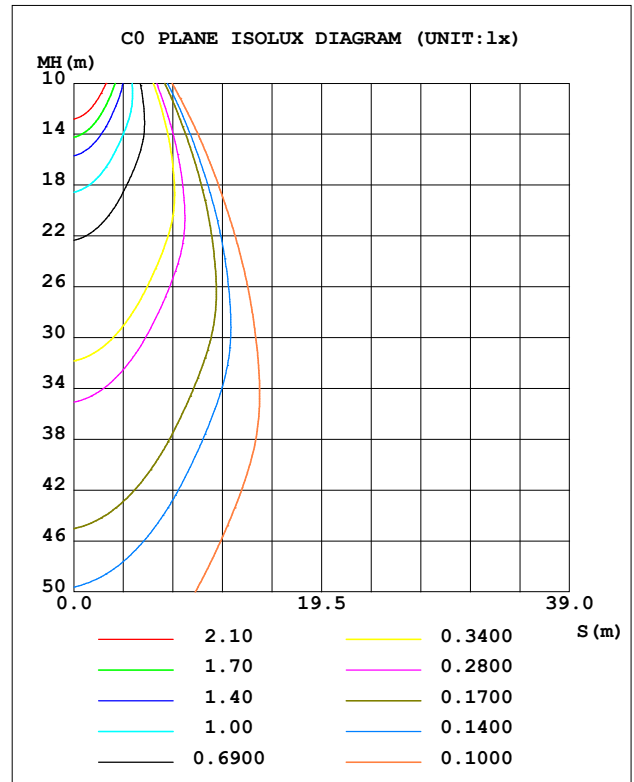
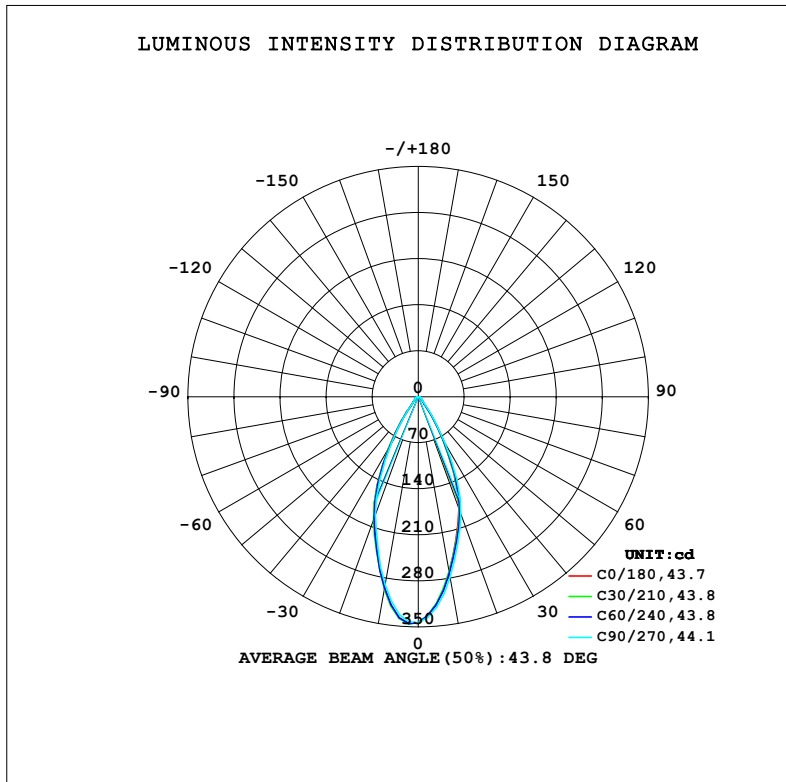


## LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 96GRF3/330220	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F52 x 82	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	96GRF3/330220	Imax (cd)	345.8	S/MH (C0/180)	0.70
NOMINAL POWER (W)	3	LOR (%)	102.2	S/MH (C90/270)	0.68
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	204.32	$\eta$ UP, DN (C0-180)	0.0, 50.8
NOMINAL FLUX (lm)	200	CIE CLASS	DIRECT	$\eta$ UP, DN (C180-360)	0.0, 51.3
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE (V)	230	$\eta$ down (%)	102.2	CIBSE SHR MAX	0.75



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 06 October 2022

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 2.5DEG  
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	271.0	271.0	279.1	291.0	295.7	296.5	290.3	275.4	0- 10	29.80	29.80	14.6,14.9
20	181.3	183.5	189.7	194.9	197.1	198.1	191.2	181.4	10- 20	65.28	95.08	46.5,47.5
30	73.94	74.66	81.29	88.87	90.51	88.45	81.91	74.85	20- 30	62.04	157.1	76.9,78.6
40	14.43	13.79	16.64	18.71	18.00	17.68	15.57	13.40	30- 40	26.25	183.4	89.7,91.7
50	7.454	7.203	7.668	7.953	7.490	7.310	7.480	7.126	40- 50	8.149	191.5	93.7,95.8
60	5.114	5.066	5.144	5.185	5.112	5.120	5.145	5.043	50- 60	5.536	197.1	96.4,98.5
70	3.194	3.152	3.170	3.277	3.261	3.283	3.286	3.173	60- 70	4.124	201.2	98.5,101
80	1.340	1.301	1.336	1.477	1.480	1.516	1.497	1.362	70- 80	2.438	203.6	99.7,102
90	0.0163	0.0014	0.0436	0.1647	0.2033	0.2082	0.1799	0.0722	80- 90	0.7018	204.3	100,102
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): 188.02 lm

%lum = 92.0%  
%lamp = 94.0%

Conical surface Flux(130deg): 199.31 lm

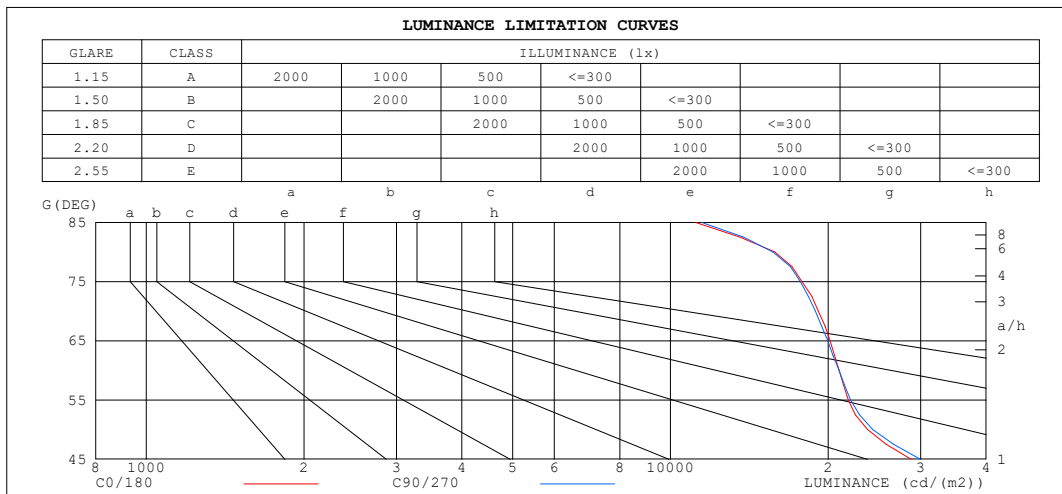
%lum = 97.5%  
%lamp = 99.7%

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:06 October 2022

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 2.5DEG  
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: 96GRF3/330220	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F52 x 82	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	11169	11469
80	15815	15675
75	17807	17697
70	19139	18889
65	20154	19949
60	20958	20962
55	21840	22071
50	23764	24310
45	28784	29985

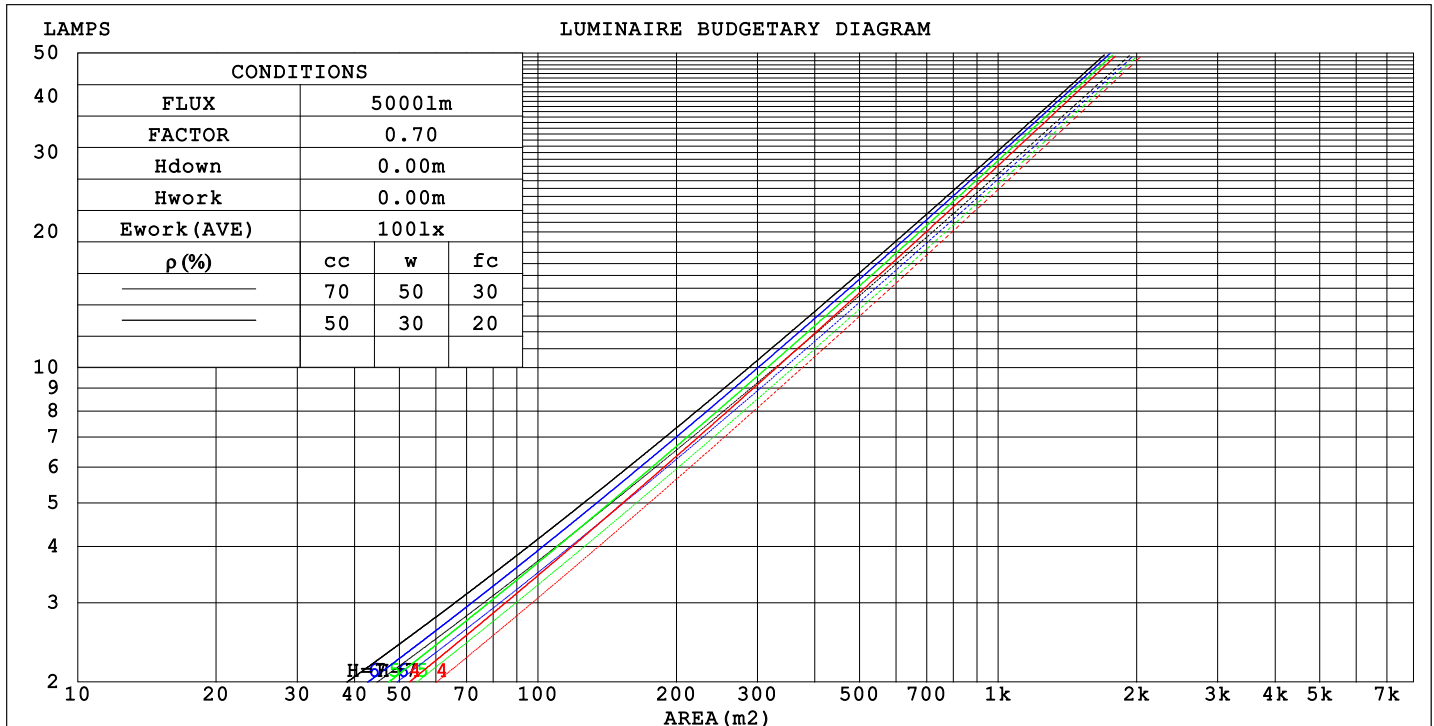
C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 06 October 2022

γ Range: 0 - 90DEG  
 γ Interval: 2.5DEG  
 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: 96GRF3/330220	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F52 x 82	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	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															



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:06 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
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: 96GRF3/330220	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F52 x 82	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	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	.188	.107	.034	.181	.103	.033	.168	.097	.031	.156	.090	.029	.146	.084	.027	
2.0	.178	.097	.030	.172	.095	.029	.161	.089	.028	.151	.085	.026	.142	.080	.025	
3.0	.167	.089	.027	.162	.087	.026	.153	.083	.025	.144	.079	.024	.136	.075	.023	
4.0	.157	.082	.024	.153	.080	.024	.145	.077	.023	.138	.074	.022	.131	.071	.022	
5.0	.149	.076	.022	.145	.074	.022	.138	.072	.021	.132	.069	.021	.126	.067	.020	
6.0	.141	.071	.020	.138	.070	.020	.132	.067	.020	.126	.065	.019	.121	.063	.019	
7.0	.134	.066	.019	.131	.065	.019	.126	.064	.018	.121	.062	.018	.116	.060	.018	
8.0	.127	.062	.018	.125	.062	.017	.120	.060	.017	.116	.059	.017	.111	.057	.017	
9.0	.122	.059	.016	.119	.058	.016	.115	.057	.016	.111	.056	.016	.107	.055	.016	
10.0	.116	.056	.015	.114	.055	.015	.111	.054	.015	.107	.053	.015	.103	.052	.015	

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	.195	.195	.195	.166	.166	.166	.114	.114	.114	.065	.065	.065	.021	.021	.021	
1.0	.175	.161	.147	.150	.138	.127	.103	.095	.088	.059	.055	.051	.019	.018	.017	
2.0	.160	.135	.115	.137	.117	.099	.094	.081	.069	.054	.047	.041	.017	.015	.013	
3.0	.147	.116	.091	.126	.100	.079	.087	.070	.056	.050	.041	.033	.016	.013	.011	
4.0	.136	.101	.074	.117	.087	.064	.080	.061	.045	.047	.036	.027	.015	.012	.009	
5.0	.127	.089	.061	.109	.077	.053	.075	.054	.038	.044	.032	.022	.014	.010	.007	
6.0	.119	.080	.051	.102	.069	.045	.071	.048	.032	.041	.028	.019	.013	.009	.006	
7.0	.112	.072	.043	.096	.062	.038	.067	.044	.027	.039	.026	.016	.013	.008	.005	
8.0	.106	.065	.037	.091	.057	.032	.063	.040	.023	.037	.023	.014	.012	.008	.005	
9.0	.101	.060	.032	.087	.052	.028	.060	.037	.020	.035	.022	.012	.011	.007	.004	
10.0	.096	.055	.028	.083	.048	.025	.057	.034	.018	.033	.020	.011	.011	.007	.003	

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:06 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
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: 96GRF3/330220					TYPE:			WEIGHT: 1			
SPEC.:					DIM.: F52 x 82			SERIAL No.: 0			
MFR.: Elmark Industries JSC					SUR.: round			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	24.8	25.7	25.0	25.8	26.0	25.0	26.0	25.3	26.1	26.3
	3H	25.7	26.6	26.0	26.8	27.0	25.9	26.8	26.2	27.0	27.2
	4H	26.1	27.0	26.4	27.2	27.4	26.3	27.1	26.6	27.3	27.6
	6H	26.5	27.2	26.8	27.5	27.7	26.6	27.4	26.9	27.6	27.9
	8H	26.5	27.3	26.8	27.5	27.8	26.7	27.4	27.0	27.7	27.9
	12H	26.5	27.3	26.9	27.5	27.8	26.7	27.4	27.0	27.7	28.0
4H	2H	25.1	25.9	25.3	26.1	26.3	25.3	26.1	25.6	26.4	26.6
	3H	26.3	27.0	26.6	27.2	27.5	26.4	27.1	26.7	27.4	27.7
	4H	26.8	27.5	27.2	27.8	28.1	26.9	27.6	27.3	27.9	28.2
	6H	27.2	27.8	27.6	28.2	28.5	27.4	27.9	27.7	28.3	28.6
	8H	27.4	27.9	27.7	28.2	28.6	27.5	28.0	27.9	28.4	28.7
	12H	27.4	27.9	27.8	28.2	28.6	27.5	28.0	27.9	28.4	28.8
8H	4H	27.0	27.5	27.4	27.9	28.2	27.1	27.6	27.5	28.0	28.4
	6H	27.5	28.0	28.0	28.4	28.8	27.6	28.1	28.1	28.5	28.9
	8H	27.7	28.1	28.1	28.5	28.9	27.8	28.2	28.2	28.6	29.0
	12H	27.8	28.1	28.2	28.5	29.0	27.9	28.2	28.3	28.7	29.1
12H	4H	27.0	27.5	27.4	27.8	28.2	27.1	27.6	27.5	28.0	28.4
	6H	27.6	27.9	28.0	28.4	28.8	27.7	28.0	28.1	28.5	28.9
	8H	27.7	28.1	28.2	28.5	29.0	27.8	28.2	28.3	28.6	29.1
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 0.6 / - 0.4					+ 0.8 / - 0.5				
1.5H		+ 1.1 / - 0.4					+ 1.7 / - 0.4				
2.0H		+ 0.4 / - 0.3					+ 0.4 / - 0.3				

CIE Pub.117, 200.0 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -5.6)  
Area: 0.00049 m2

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:06 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
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: 96GRF3/330220	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F52 x 82	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

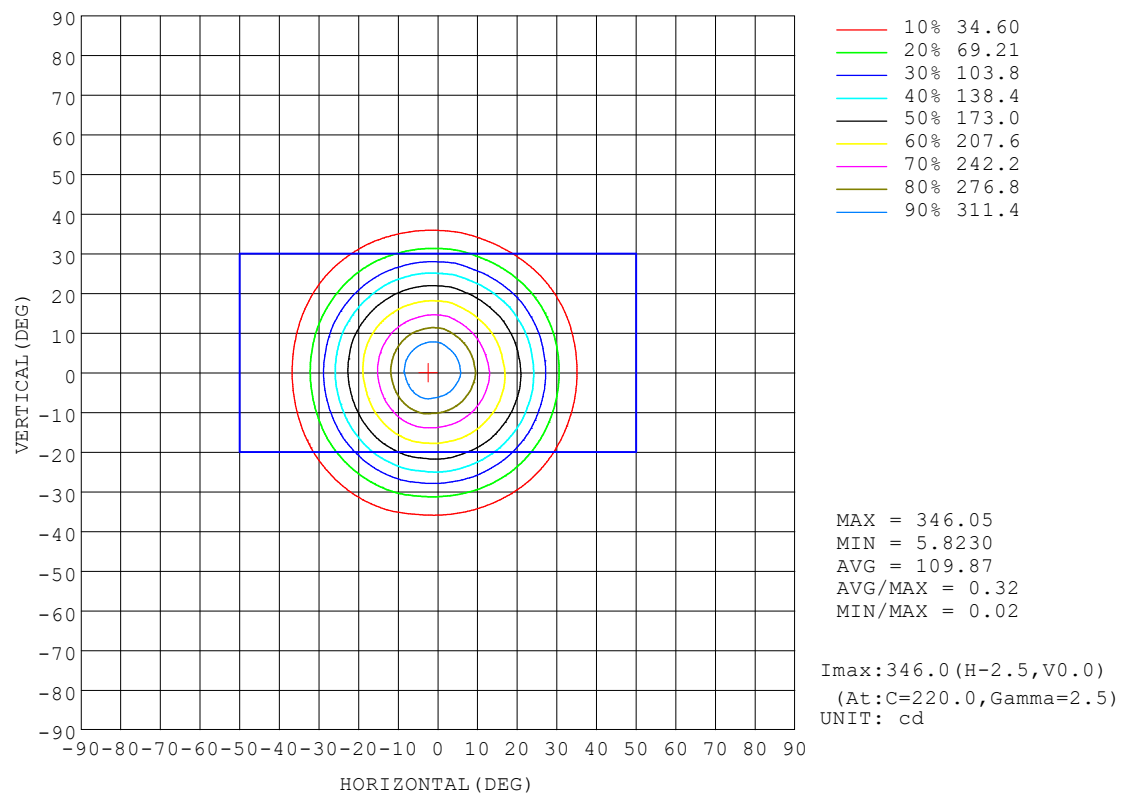
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	80	76	87	80	76	86	80	76	72
0.80	95	88	84	94	88	84	93	87	84	80
1.00	99	93	89	99	93	89	97	93	88	84
1.25	104	98	94	103	97	94	101	96	93	88
1.50	107	101	98	105	101	97	103	99	96	91
2.00	110	105	101	108	104	101	105	102	99	94
2.50	112	107	104	110	106	103	107	104	101	95
3.00	113	109	106	111	108	105	108	105	103	96
4.00	116	112	110	113	111	109	110	108	106	98
5.00	117	114	112	115	113	111	111	109	108	100
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 06 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 6.265m [K=1.0000]  
Remarks:

# ISOCANDELA DIAGRAM

NAME: 96GRF3/330220	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F52 x 82	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



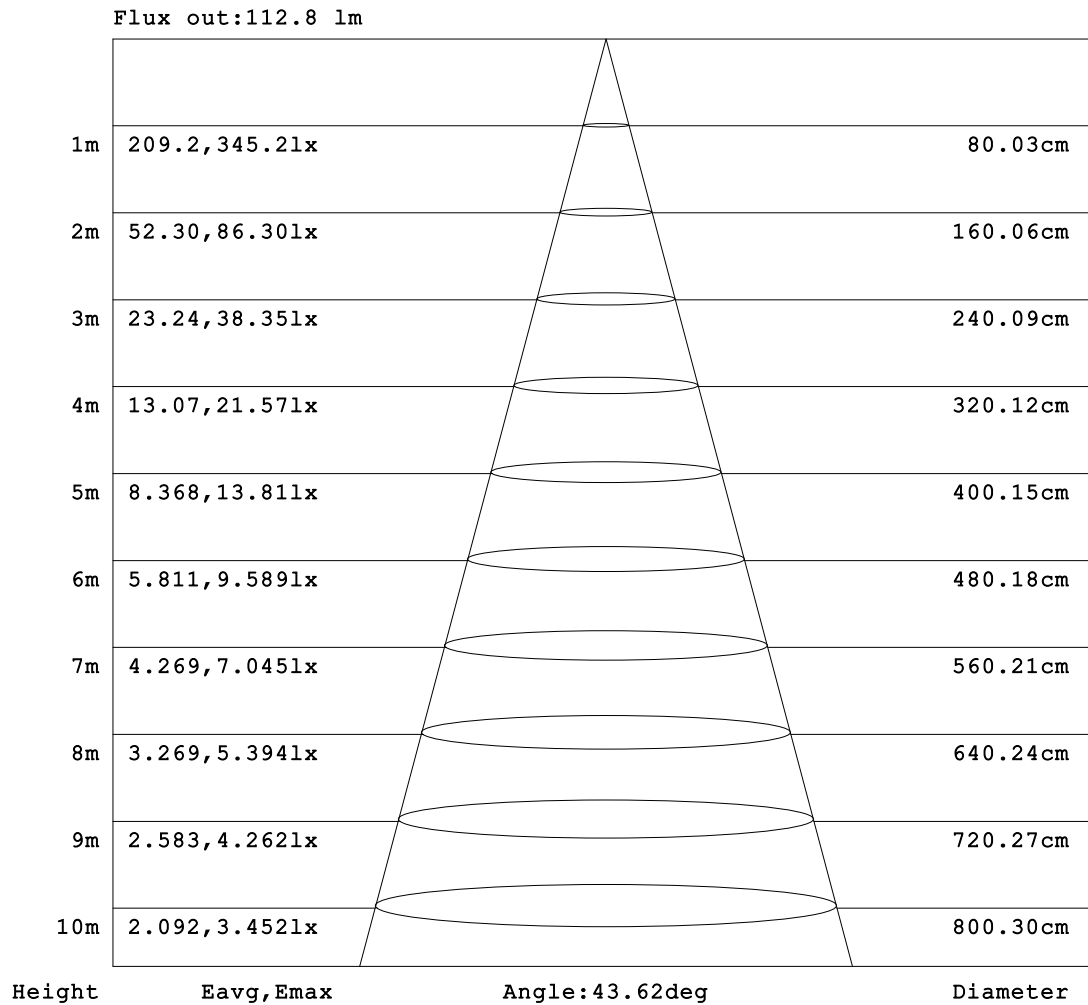
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 06 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 6.265m [K=1.0000]  
Remarks:



**AAI Figure**

NAME: 96GRF3/330220	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F52 x 82	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



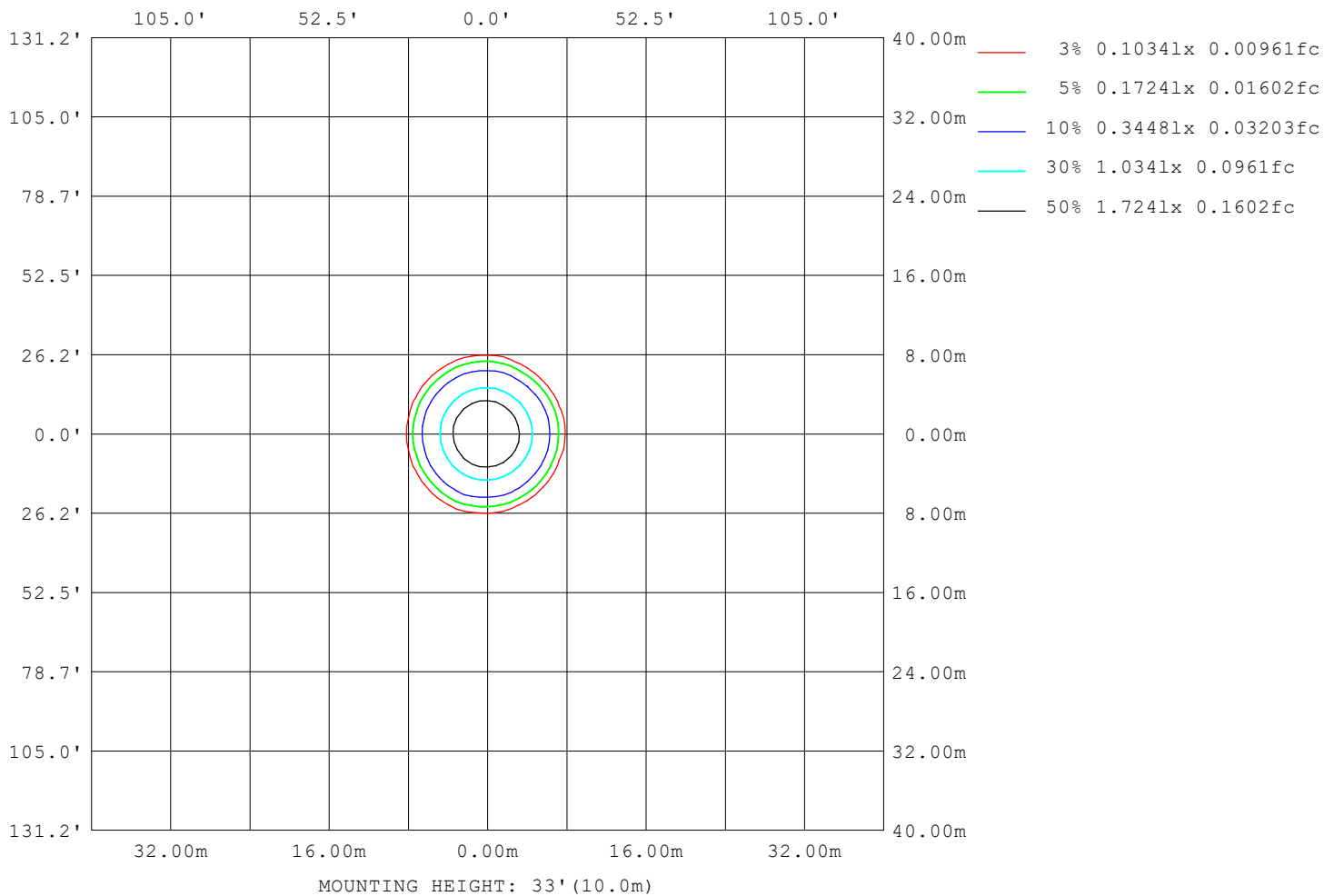
**Note:** The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 06 October 2022

γ Range: 0 - 90DEG  
 γ Interval: 2.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
 Humidity: 65.0%  
 Test Distance: 6.265m [K=1.0000]  
 Remarks:

## ISOLUX DIAGRAM

NAME: 96GRF3/330220	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F52 x 82	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 06 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
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: 96GRF3/330220	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F52 x 82	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

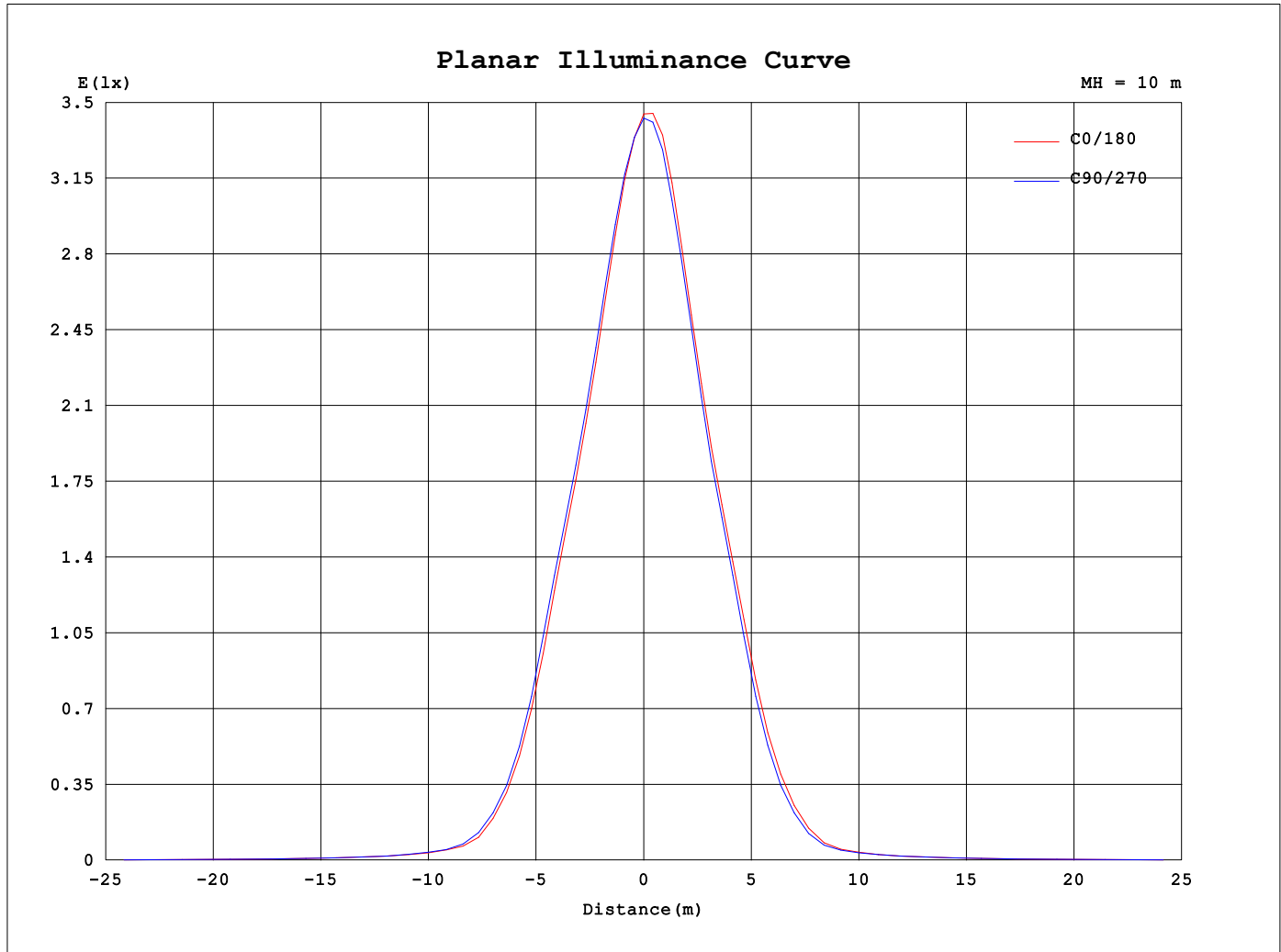
AvgL	cd/m2
L_0~180 (65) av	20134
L_0~180 (75) av	18111
L_0~180 (85) av	13263
L_90~270 (65) av	20169
L_90~270 (75) av	18224
L_90~270 (85) av	13438
L_45 (65) av	20065
L_45 (75) av	18139
L_45 (85) av	13322

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:06 October 2022

γ Range: 0 - 90DEG  
γ Interval: 2.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity:65.0%  
Test Distance:6.265m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 06 October 2022

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 2.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
Humidity: 65.0%  
Test Distance: 6.265m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 2.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:

```

