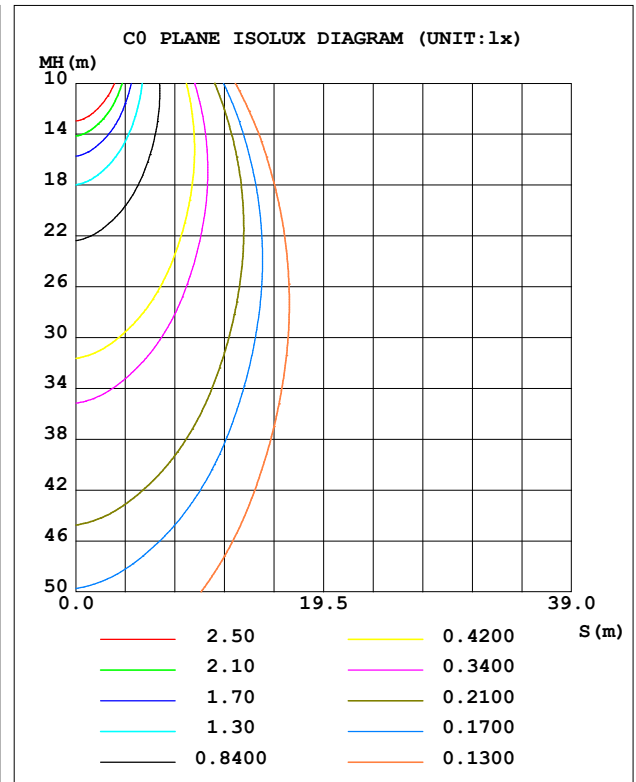
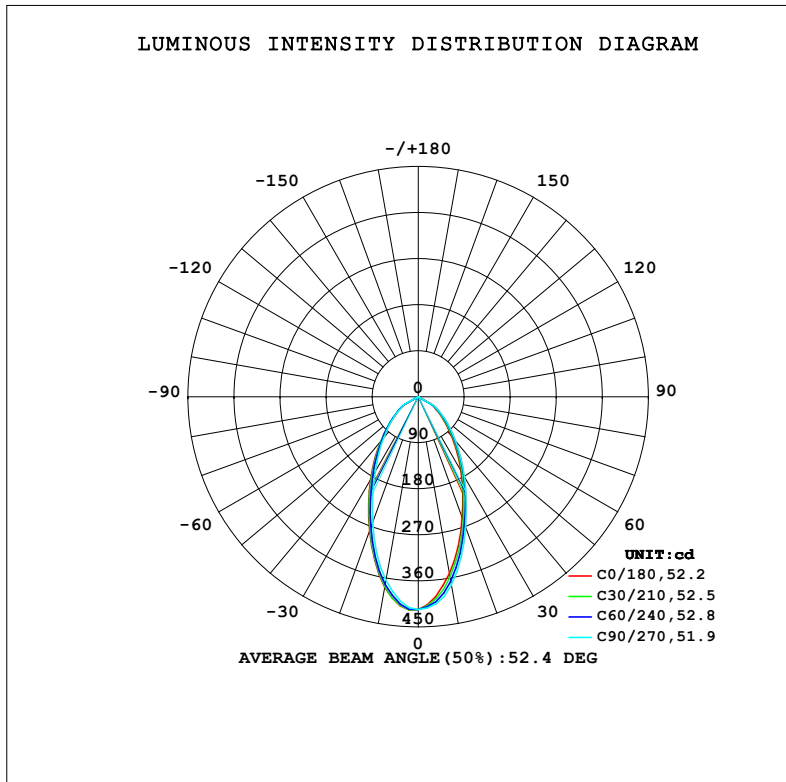


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 95Livia90/WH	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	95Livia90/WH	Imax(cd)	417.2	S/MH(C0/180)	0.80
NOMINAL POWER(W)	6	LOR(%)	96.5	S/MH(C90/270)	0.76
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	424.63	$\eta$ UP,DN(C0-180)	0.0,49.0
NOMINAL FLUX(lm)	440	CIE CLASS	DIRECT	$\eta$ UP,DN(C180-360)	0.0,47.5
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	230	$\eta$ down (%)	96.5	CIBSE SHR MAX	0.90



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 19 December 2022

$\gamma$  Range: 0 - 60DEG  
 $\gamma$  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	351.2	362.3	373.4	375.8	378.0	374.9	364.2	353.2	0- 10	37.28	37.28	8.78, 8.47
20	251.7	262.1	272.0	278.1	279.0	273.1	261.0	250.0	10- 20	88.51	125.8	29.6, 28.6
30	166.9	176.8	180.2	183.7	187.4	180.3	168.6	162.9	20- 30	100.2	226.0	53.2, 51.4
40	102.2	111.1	114.5	114.7	114.5	111.7	105.9	99.73	30- 40	87.73	313.7	73.9, 71.3
50	58.18	64.74	67.99	65.71	64.27	64.69	62.40	57.38	40- 50	65.15	378.8	89.2, 86.1
60	29.94	33.79	35.73	33.66	32.38	32.94	32.50	29.72	50- 60	41.87	420.7	99.1, 95.6
70	0	0	0	0	0	0	0	0	60- 70	3.913	424.6	100, 96.5
80	0	0	0	0	0	0	0	0	70- 80	0	424.6	100, 96.5
90	0	0	0	0	0	0	0	0	80- 90	0	424.6	100, 96.5
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): 349.28 lm

%lum = 82.3%  
%lamp = 79.4%

Conical surface Flux(130deg): 424.63 lm

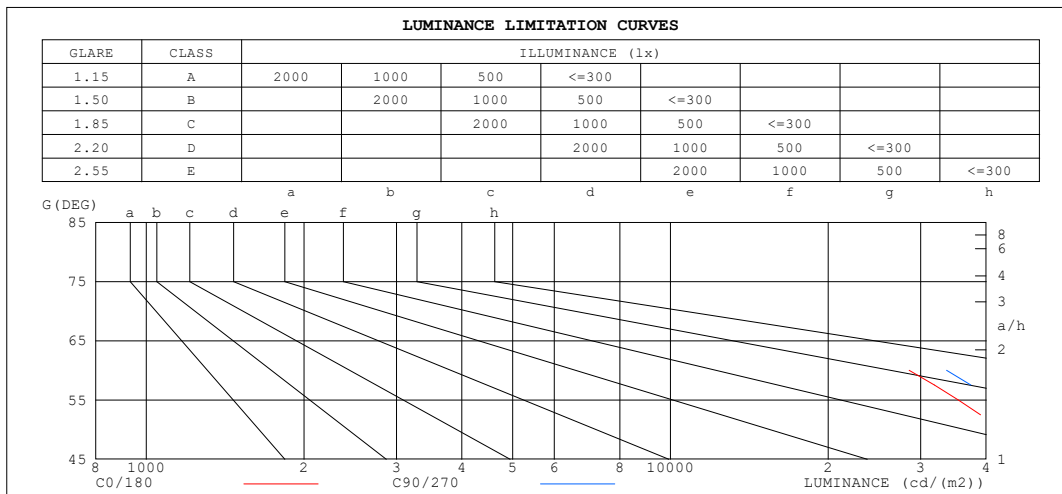
%lum = 100.0%  
%lamp = 96.5%

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:19 December 2022

$\gamma$  Range: 0 - 60DEG  
 $\gamma$  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: 95Livia90/WH	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	0	0
80	0	0
75	0	0
70	0	0
65	0	0
60	28508	33640
55	35398	41402
50	43095	49794
45	52491	59363

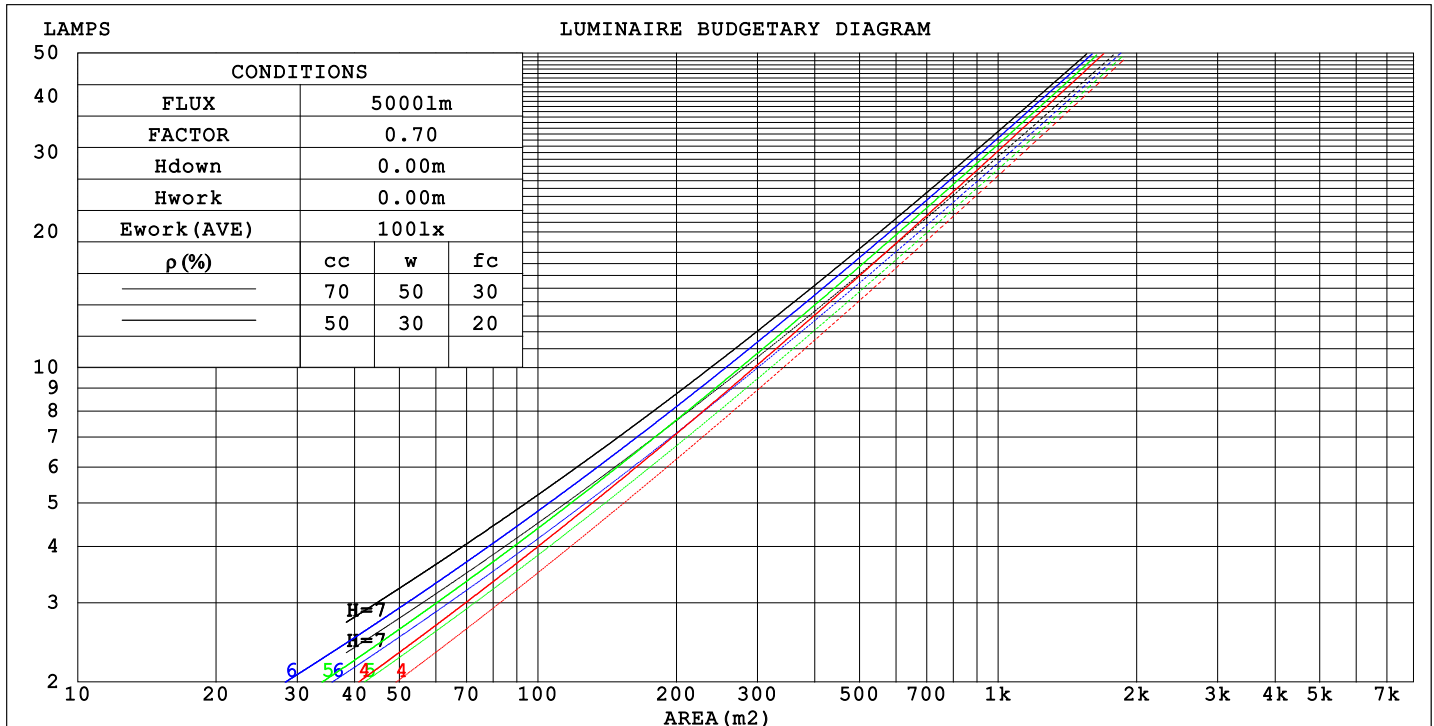
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 19 December 2022

γ Range: 0 - 60DEG  
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: 95Livia90/WH	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	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															Coefficients of Utilization(CU)														
0.0	1.15	1.15	1.15	1.12	1.12	1.12	1.07	1.07	1.07	1.03	1.03	1.03	.98	.98	.98	.97														
1.0	1.06	1.03	1.01	1.04	1.01	.99	.90	.98	.96	.96	.94	.93	.93	.91	.90	.88														
2.0	.97	.92	.88	.95	.91	.87	.92	.88	.85	.89	.86	.84	.86	.84	.82	.80														
3.0	.89	.83	.79	.87	.82	.78	.85	.80	.77	.82	.79	.75	.80	.77	.74	.73														
4.0	.81	.75	.70	.80	.74	.70	.78	.73	.69	.76	.72	.68	.74	.70	.67	.66														
5.0	.75	.68	.64	.74	.68	.63	.72	.67	.63	.70	.66	.62	.69	.65	.62	.60														
6.0	.69	.63	.58	.69	.62	.58	.67	.61	.57	.66	.61	.57	.64	.60	.56	.55														
7.0	.64	.58	.53	.64	.57	.53	.62	.57	.53	.61	.56	.52	.60	.55	.52	.50														
8.0	.60	.53	.49	.59	.53	.49	.58	.53	.48	.57	.52	.48	.56	.52	.48	.47														
9.0	.56	.50	.45	.56	.49	.45	.55	.49	.45	.54	.48	.45	.53	.48	.45	.43														
10.0	.53	.46	.42	.52	.46	.42	.51	.46	.42	.50	.45	.42	.50	.45	.42	.40														



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 19 December 2022

γ Range: 0 - 60DEG  
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: 95Livia90/WH	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	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	.195	.111	.035	.189	.108	.034	.176	.101	.032	.165	.095	.031	.155	.090	.029	
2.0	.191	.105	.032	.185	.102	.031	.175	.097	.030	.165	.093	.029	.156	.088	.028	
3.0	.183	.098	.029	.179	.096	.029	.170	.092	.028	.161	.088	.027	.153	.085	.026	
4.0	.175	.091	.027	.171	.089	.026	.163	.086	.026	.156	.084	.025	.149	.081	.025	
5.0	.167	.085	.025	.163	.084	.024	.156	.081	.024	.149	.079	.023	.143	.077	.023	
6.0	.158	.079	.023	.155	.078	.023	.149	.076	.022	.143	.074	.022	.138	.073	.022	
7.0	.151	.074	.021	.148	.074	.021	.142	.072	.021	.137	.070	.020	.132	.069	.020	
8.0	.143	.070	.020	.141	.069	.020	.136	.068	.019	.131	.066	.019	.127	.065	.019	
9.0	.136	.066	.018	.134	.065	.018	.130	.064	.018	.125	.063	.018	.121	.062	.018	
10.0	.130	.062	.017	.128	.062	.017	.124	.061	.017	.120	.060	.017	.116	.059	.017	

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	.167	.152	.138	.143	.130	.119	.098	.090	.082	.056	.052	.048	.018	.017	.015	
2.0	.154	.128	.106	.132	.110	.091	.090	.076	.064	.052	.044	.037	.017	.014	.012	
3.0	.144	.110	.083	.123	.095	.072	.085	.066	.050	.049	.038	.030	.016	.012	.010	
4.0	.135	.096	.066	.116	.083	.057	.080	.058	.040	.046	.034	.024	.015	.011	.008	
5.0	.128	.085	.054	.110	.074	.047	.076	.052	.033	.044	.030	.020	.014	.010	.006	
6.0	.121	.077	.045	.104	.066	.039	.072	.046	.028	.042	.027	.016	.013	.009	.005	
7.0	.115	.070	.038	.099	.060	.033	.068	.042	.023	.040	.025	.014	.013	.008	.005	
8.0	.110	.064	.032	.094	.055	.028	.065	.039	.020	.038	.023	.012	.012	.008	.004	
9.0	.105	.059	.028	.090	.051	.024	.062	.036	.017	.036	.021	.010	.012	.007	.003	
10.0	.100	.055	.025	.086	.048	.022	.060	.033	.015	.035	.020	.009	.011	.006	.003	

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:19 December 2022

γ Range: 0 - 60DEG  
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: 95Livia90/WH					TYPE:			WEIGHT: 1			
SPEC.:					DIM.: 105 x 96			SERIAL No.: 0			
MFR.: Elmark Industries JSC					SUR.: cilinder			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	26.8	27.9	27.1	28.1	28.3	27.4	28.5	27.6	28.7	28.9
	3H	26.6	27.7	26.9	27.9	28.1	27.2	28.2	27.5	28.5	28.7
	4H	26.5	27.5	26.8	27.7	28.0	27.1	28.1	27.4	28.3	28.6
	6H	26.4	27.3	26.7	27.6	27.9	27.0	27.9	27.3	28.2	28.4
	8H	26.4	27.3	26.7	27.5	27.8	27.0	27.9	27.3	28.1	28.4
	12H	26.3	27.2	26.7	27.5	27.7	26.9	27.8	27.3	28.0	28.3
4H	2H	26.8	27.8	27.1	28.0	28.3	27.3	28.3	27.6	28.6	28.8
	3H	26.6	27.5	27.0	27.7	28.0	27.2	28.0	27.5	28.3	28.6
	4H	26.5	27.3	26.9	27.6	27.9	27.1	27.8	27.4	28.1	28.4
	6H	26.4	27.1	26.8	27.4	27.8	27.0	27.6	27.4	28.0	28.3
	8H	26.4	27.0	26.8	27.4	27.7	26.9	27.5	27.3	27.9	28.3
	12H	26.4	26.9	26.8	27.3	27.7	26.9	27.4	27.3	27.8	28.2
8H	4H	26.4	27.0	26.8	27.4	27.7	26.9	27.5	27.3	27.9	28.3
	6H	26.3	26.8	26.7	27.2	27.6	26.8	27.3	27.3	27.7	28.1
	8H	26.3	26.7	26.7	27.1	27.6	26.8	27.2	27.2	27.6	28.1
	12H	26.2	26.6	26.7	27.0	27.5	26.7	27.1	27.2	27.5	28.0
12H	4H	26.4	26.9	26.8	27.3	27.7	26.9	27.4	27.3	27.8	28.2
	6H	26.3	26.7	26.7	27.1	27.6	26.8	27.2	27.2	27.6	28.1
	8H	26.2	26.6	26.7	27.0	27.5	26.7	27.1	27.2	27.5	28.0
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 2.2 / - 3.6					+ 2.5 / - 3.0					
1.5H	+ 1.0 / - 1.3					+ 1.0 / - 1.3					
2.0H	+ 3.2 / - 1.5					+ 3.3 / - 1.5					

CIE Pub.117, 440.0 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -2.9)  
Area: 0.00212264 m2

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:19 December 2022

γ Range: 0 - 60DEG  
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: 95Livia90/WH	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

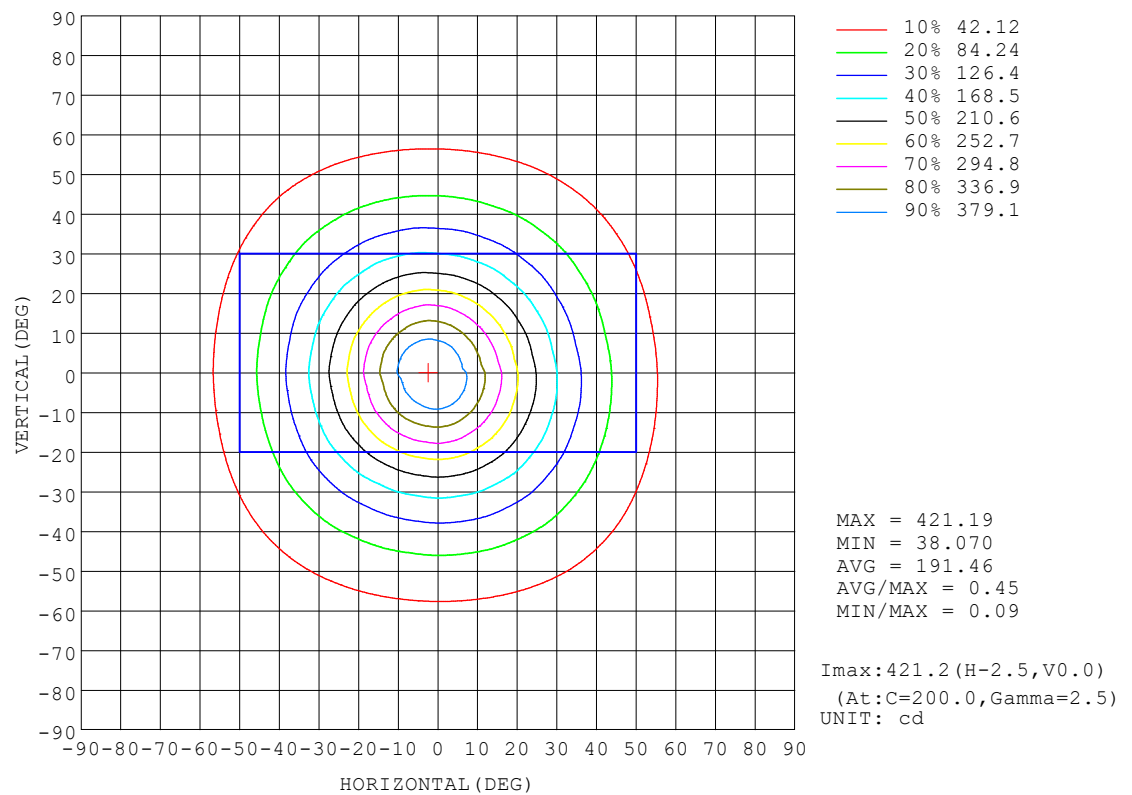
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	72	63	58	71	63	58	70	63	58	53
0.80	81	73	68	80	73	68	79	72	68	63
1.00	88	81	76	87	80	76	85	81	75	70
1.25	94	87	82	92	86	82	90	85	81	76
1.50	97	91	87	96	90	86	93	89	85	80
2.00	101	96	92	100	95	92	97	93	90	84
2.50	103	99	95	102	98	94	99	95	92	86
3.00	105	101	98	104	100	97	100	97	95	88
4.00	108	104	101	106	103	100	102	100	98	90
5.00	109	106	104	107	104	102	103	101	99	91
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: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 19 December 2022

γ Range: 0 - 60DEG  
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: 95Livia90/WH	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:



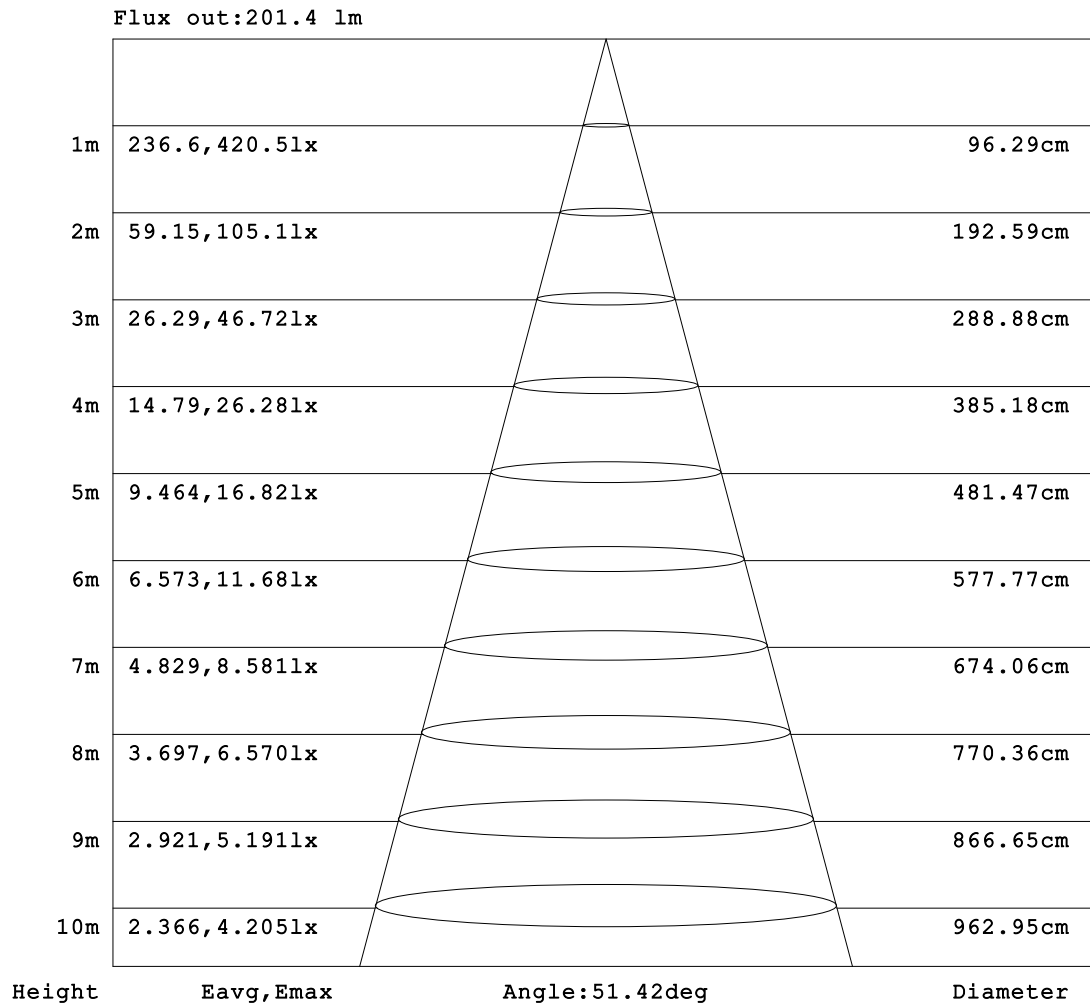
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 19 December 2022

γ Range: 0 - 60DEG  
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: 95Livia90/WH	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:



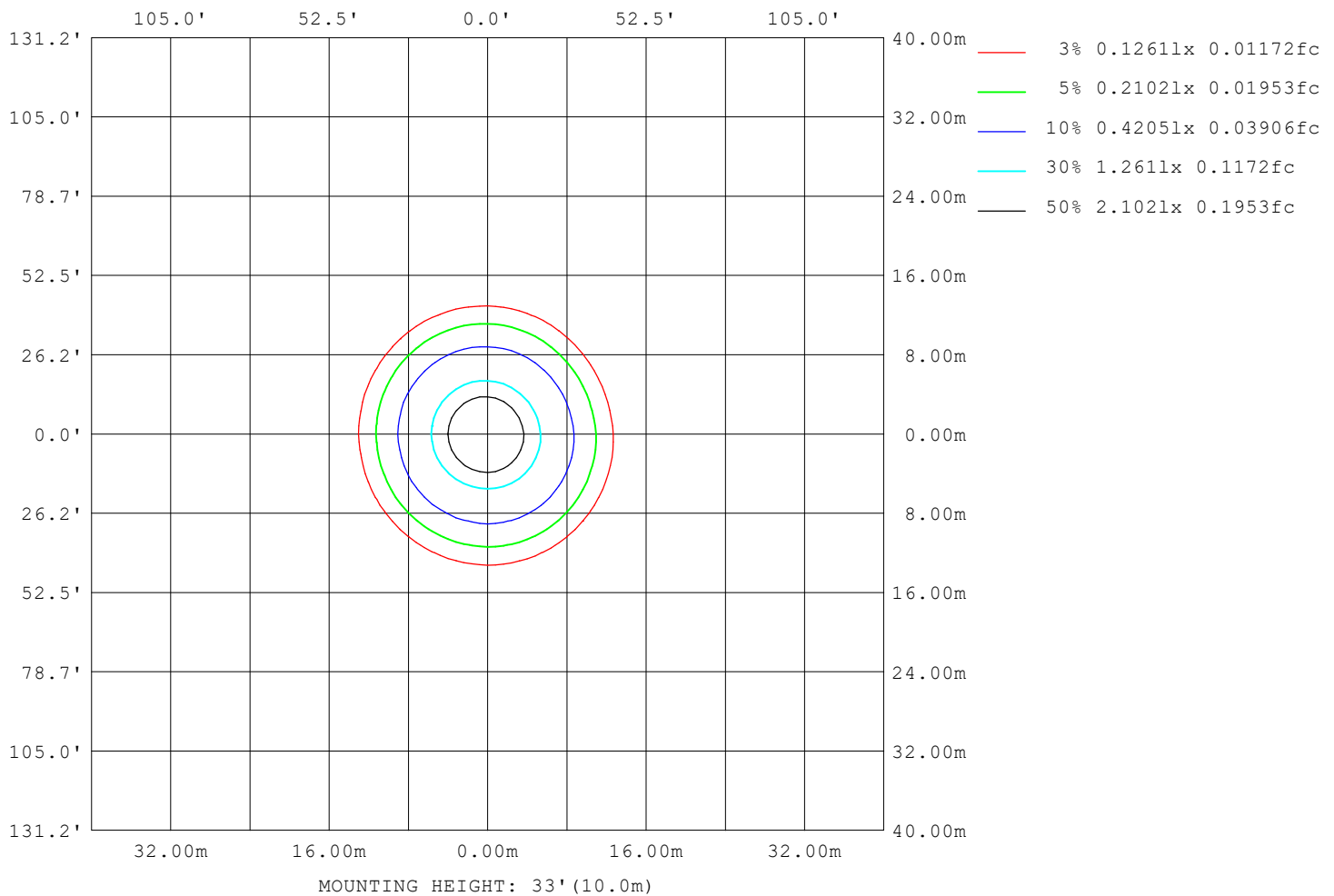
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 19 December 2022

γ Range: 0 - 60DEG  
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: 95Livia90/WH	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:



C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 19 December 2022

γ Range: 0 - 60DEG  
 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: 95Livia90/WH	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

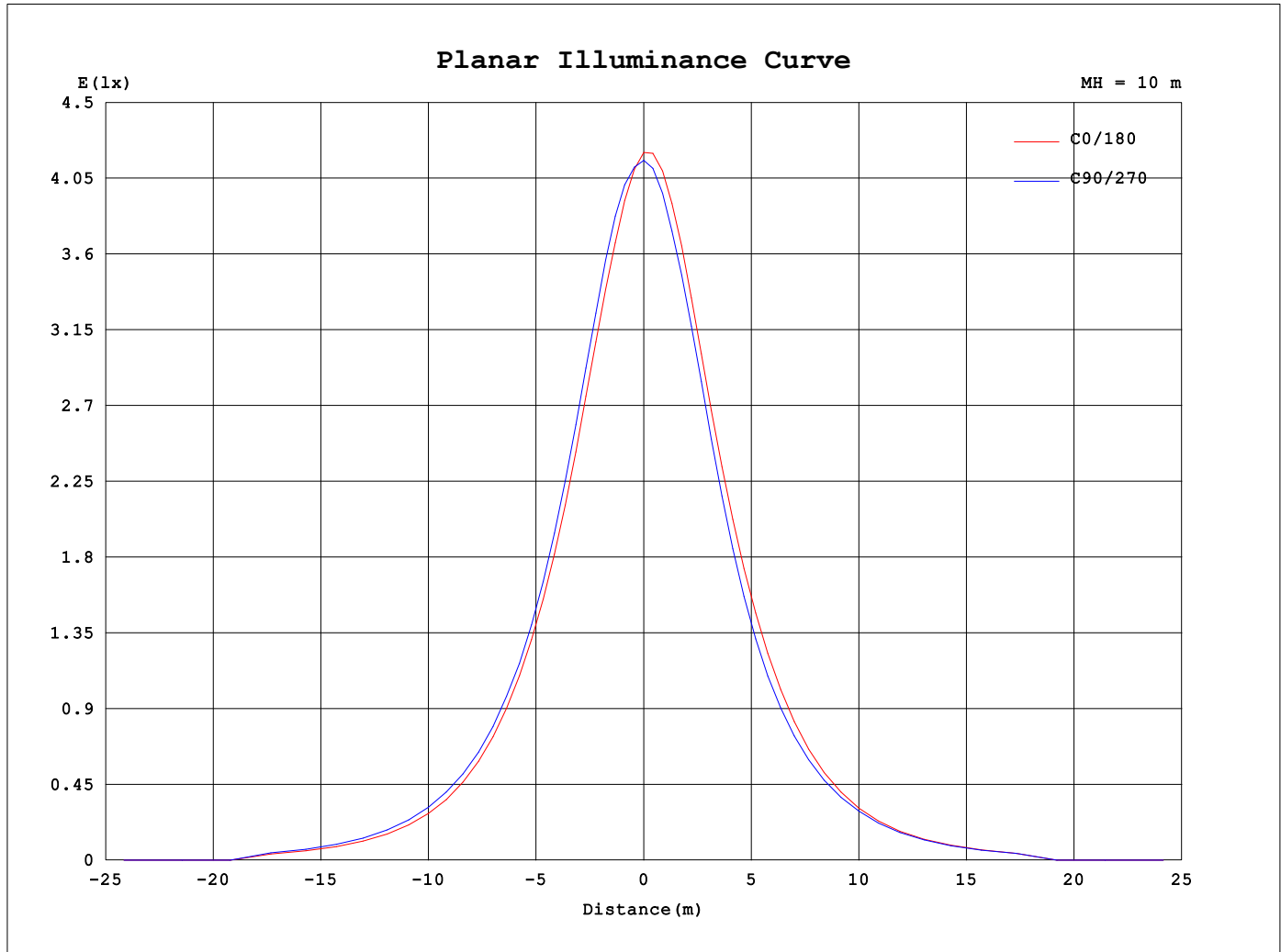
AvgL	cd/m2
L_0~180 (65) av	0
L_0~180 (75) av	0
L_0~180 (85) av	0
L_90~270 (65) av	0
L_90~270 (75) av	0
L_90~270 (85) av	0
L_45 (65) av	0
L_45 (75) av	0
L_45 (85) av	0

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: HIGH  
Temperature:25.3°C  
Operators:  
Test Date:19 December 2022

γ Range: 0 - 60DEG  
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: HIGH  
Temperature: 25.3°C  
Operators:  
Test Date: 19 December 2022

$\gamma$  Range: 0 - 60DEG  
 $\gamma$  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 - 60DEG
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:

```

```

γ Range: 0 - 60DEG
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:

```