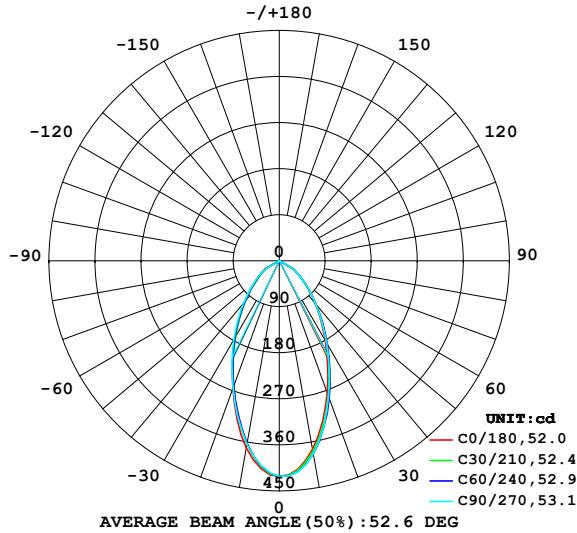


LUMINAIRE PHOTOMETRIC TEST REPORT

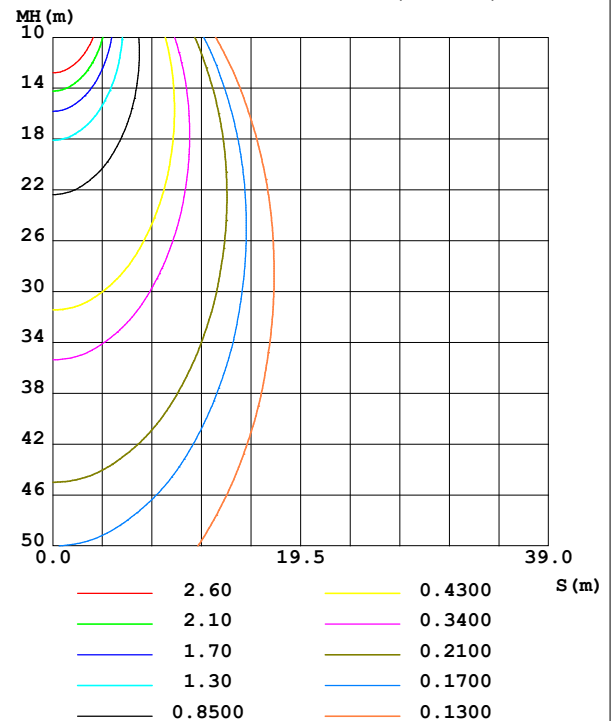
NAME: 95Livia90/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	95Livia90/GR	Imax(cd)	421.9	S/MH (C0/180)	0.76
NOMINAL POWER(W)	6	LOR(%)	97.3	S/MH (C90/270)	0.76
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	427.95	η UP,DN (C0-180)	0.0,49.8
NOMINAL FLUX(lm)	440	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,47.5
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE (V)	230	η down (%)	97.3	CIBSE SHR MAX	0.90

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
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:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	374.3	380.7	383.1	379.3	371.7	362.6	364.0	368.7	0- 10	37.86	37.86	8.85,8.6
20	274.2	284.4	282.4	275.7	266.3	261.0	264.0	270.2	10- 20	90.24	128.1	29.9,29.1
30	180.1	187.2	185.1	180.7	173.0	172.1	178.0	179.1	20- 30	102.5	230.6	53.9,52.4
40	110.2	112.5	112.4	112.5	106.6	103.9	109.2	110.0	30- 40	88.84	319.5	74.7,72.6
50	62.82	61.96	62.40	65.21	60.82	57.06	60.46	62.54	40- 50	64.64	384.1	89.8,87.3
60	31.11	30.24	30.90	33.42	31.06	27.87	28.78	30.57	50- 60	40.18	424.3	99.1,96.4
70	0	0	0	0	0	0	0	0	60- 70	3.665	428.0	100,97.3
80	0	0	0	0	0	0	0	0	70- 80	0	428.0	100,97.3
90	0	0	0	0	0	0	0	0	80- 90	0	428.0	100,97.3
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): 354.99 lm

%lum = 83.0%

%lamp = 80.7%

Conical surface Flux(130deg): 427.95 lm

%lum = 100.0%

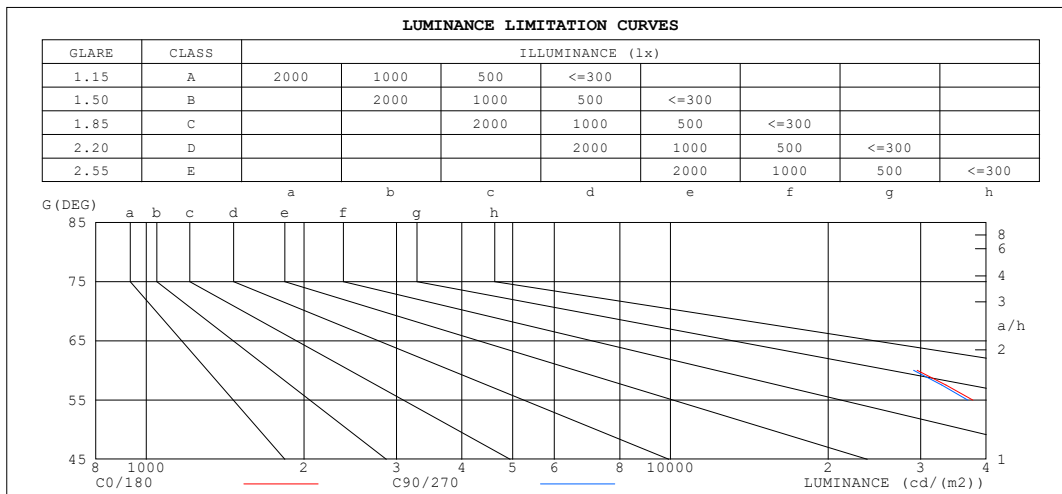
%lamp = 97.3%

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
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:

LUMINANCE LIMITATION CURVES

NAME: 95Livia90/GR	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	29544	29100
55	37713	36871
50	46402	45716
45	56276	56471

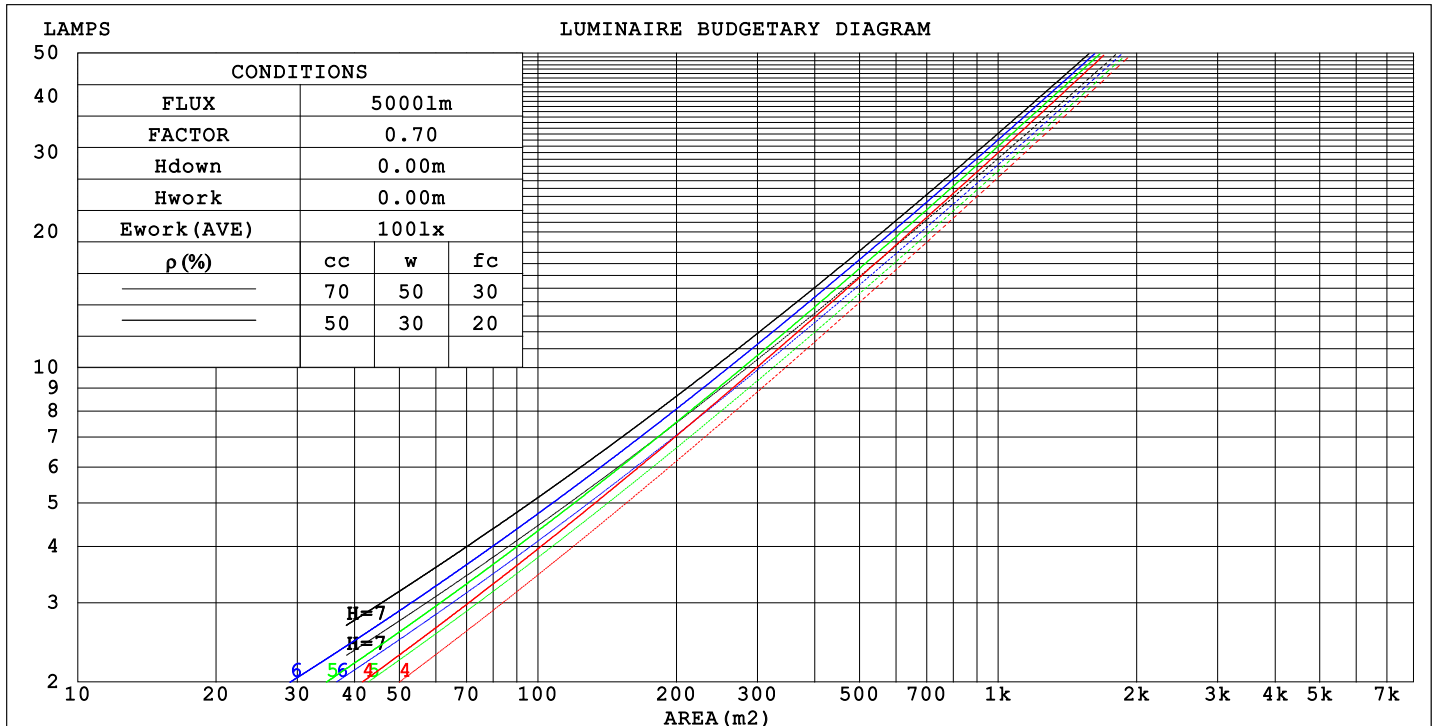
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 19 December 2022

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/GR	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	1.16	1.16	1.16	1.13	1.13	1.13	1.08	1.08	1.08	1.03	1.03	1.03	.99	.99	.99	.97
1.0	1.07	1.04	1.01	1.04	1.02	.00	1.00	.98	.97	.97	.95	.94	.93	.92	.91	.89
2.0	.98	.93	.89	.96	.92	.88	.93	.89	.86	.90	.87	.84	.87	.85	.83	.81
3.0	.89	.84	.79	.88	.83	.79	.85	.81	.77	.83	.79	.76	.81	.78	.75	.73
4.0	.82	.76	.71	.81	.75	.71	.79	.74	.70	.77	.73	.69	.75	.71	.68	.67
5.0	.76	.69	.64	.75	.69	.64	.73	.68	.64	.71	.67	.63	.70	.66	.62	.61
6.0	.70	.63	.59	.69	.63	.58	.68	.62	.58	.66	.61	.58	.65	.61	.57	.56
7.0	.65	.58	.54	.64	.58	.54	.63	.57	.53	.62	.57	.53	.61	.56	.53	.51
8.0	.61	.54	.50	.60	.54	.49	.59	.53	.49	.58	.53	.49	.57	.52	.49	.47
9.0	.57	.50	.46	.56	.50	.46	.55	.50	.46	.54	.49	.45	.53	.49	.45	.44
10.0	.53	.47	.43	.53	.47	.43	.52	.46	.43	.51	.46	.42	.50	.46	.42	.41



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
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/GR	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	.196	.111	.035	.189	.108	.034	.177	.101	.032	.165	.095	.031	.155	.090	.029	
2.0	.191	.105	.032	.186	.102	.031	.175	.097	.030	.165	.093	.029	.156	.088	.028	
3.0	.184	.098	.029	.179	.096	.029	.170	.092	.028	.161	.088	.027	.154	.085	.026	
4.0	.175	.091	.027	.171	.090	.026	.163	.087	.026	.156	.084	.025	.149	.081	.025	
5.0	.167	.085	.025	.163	.084	.024	.156	.081	.024	.150	.079	.023	.144	.077	.023	
6.0	.159	.080	.023	.155	.078	.023	.149	.076	.022	.143	.074	.022	.138	.073	.022	
7.0	.151	.075	.021	.148	.074	.021	.142	.072	.021	.137	.070	.020	.132	.069	.020	
8.0	.144	.070	.020	.141	.069	.020	.136	.068	.019	.131	.067	.019	.127	.065	.019	
9.0	.137	.066	.018	.134	.065	.018	.130	.064	.018	.126	.063	.018	.122	.062	.018	
10.0	.130	.062	.017	.128	.062	.017	.124	.061	.017	.120	.060	.017	.117	.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	.185	.185	.185	.158	.158	.158	.108	.108	.108	.062	.062	.062	.020	.020	.020	
1.0	.168	.153	.139	.144	.131	.120	.098	.090	.083	.057	.052	.048	.018	.017	.016	
2.0	.155	.129	.107	.133	.111	.092	.091	.077	.064	.053	.045	.038	.017	.014	.012	
3.0	.145	.111	.083	.124	.095	.072	.085	.066	.051	.049	.039	.030	.016	.013	.010	
4.0	.136	.097	.067	.117	.084	.058	.080	.058	.041	.046	.034	.024	.015	.011	.008	
5.0	.128	.086	.054	.110	.074	.047	.076	.052	.033	.044	.030	.020	.014	.010	.007	
6.0	.122	.077	.045	.105	.067	.039	.072	.047	.028	.042	.028	.017	.014	.009	.005	
7.0	.116	.070	.038	.099	.061	.033	.069	.043	.024	.040	.025	.014	.013	.008	.005	
8.0	.110	.064	.033	.095	.056	.028	.066	.039	.020	.038	.023	.012	.012	.008	.004	
9.0	.105	.059	.028	.091	.051	.025	.063	.036	.018	.037	.021	.010	.012	.007	.003	
10.0	.100	.055	.025	.087	.048	.022	.060	.034	.015	.035	.020	.009	.011	.007	.003	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
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/GR					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	26.9	28.0	27.1	28.2	28.4	26.9	28.0	27.1	28.1	28.3	
	26.7	27.7	27.0	28.0	28.2	26.7	27.7	26.9	27.9	28.1	
	26.6	27.6	26.9	27.8	28.1	26.6	27.5	26.9	27.8	28.0	
	26.5	27.4	26.8	27.7	27.9	26.5	27.4	26.8	27.6	27.9	
	26.5	27.4	26.8	27.6	27.9	26.4	27.3	26.7	27.6	27.8	
	26.4	27.3	26.8	27.5	27.8	26.4	27.2	26.7	27.5	27.8	
4H 2H	26.9	27.8	27.1	28.0	28.3	26.8	27.8	27.1	28.0	28.2	
	26.7	27.5	27.0	27.8	28.1	26.6	27.4	26.9	27.7	28.0	
	26.6	27.3	26.9	27.6	27.9	26.5	27.3	26.9	27.6	27.9	
	26.5	27.1	26.9	27.5	27.8	26.4	27.1	26.8	27.4	27.8	
	26.4	27.0	26.8	27.4	27.8	26.4	27.0	26.8	27.3	27.7	
	26.4	26.9	26.8	27.3	27.7	26.3	26.9	26.7	27.3	27.7	
8H 4H	26.4	27.0	26.8	27.4	27.8	26.4	27.0	26.8	27.3	27.7	
	26.3	26.8	26.8	27.2	27.6	26.3	26.8	26.7	27.2	27.6	
	26.3	26.7	26.7	27.1	27.6	26.2	26.7	26.7	27.1	27.5	
	26.2	26.6	26.7	27.0	27.5	26.2	26.6	26.7	27.0	27.5	
12H 4H	26.4	26.9	26.8	27.3	27.7	26.3	26.9	26.7	27.3	27.7	
	26.3	26.7	26.7	27.1	27.6	26.2	26.7	26.7	27.1	27.5	
	26.2	26.6	26.7	27.0	27.5	26.2	26.6	26.7	27.0	27.5	
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 2.0 / - 3.2					+ 1.9 / - 3.3					
1.5H	+ 0.7 / - 1.1					+ 0.8 / - 1.1					
2.0H	+ 3.0 / - 1.5					+ 3.0 / - 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: MEDIUM
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/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

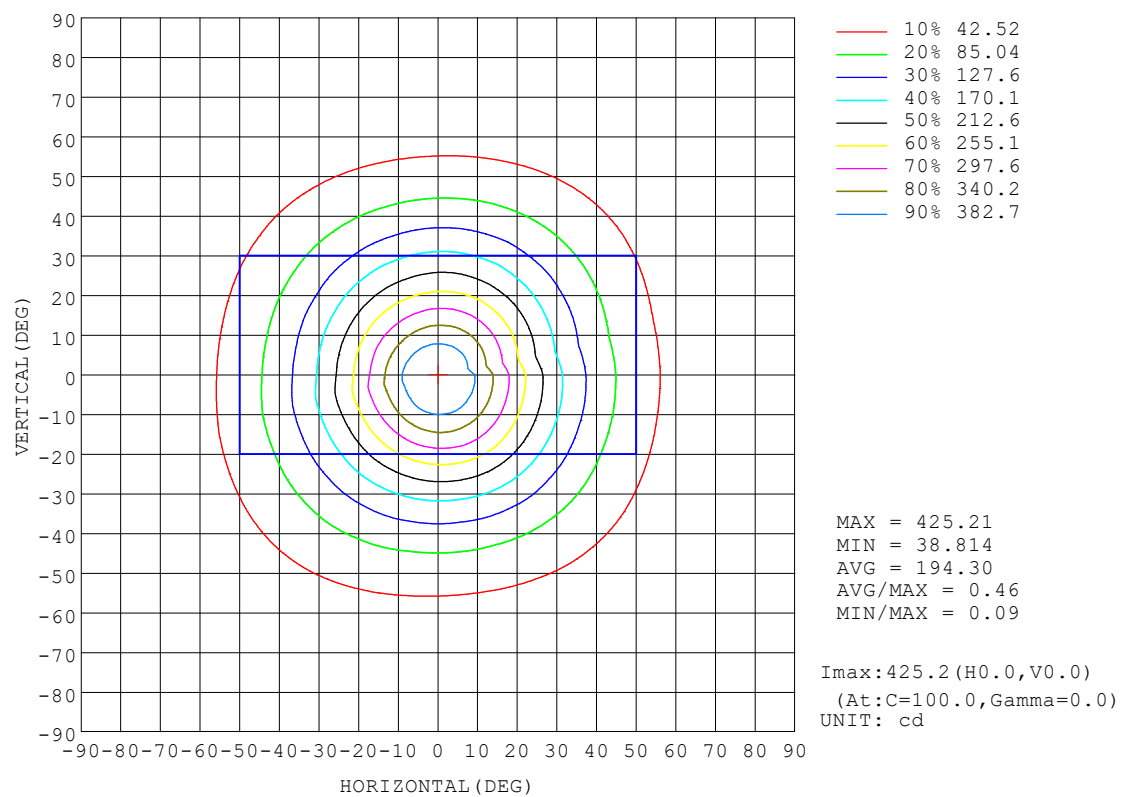
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	73	64	59	72	64	59	71	64	59	55
0.80	82	74	69	81	74	69	80	73	69	64
1.00	89	82	77	88	81	77	86	82	76	71
1.25	95	88	84	93	87	83	91	86	82	77
1.50	98	92	88	97	91	87	94	90	86	81
2.00	102	97	93	101	96	93	98	94	91	85
2.50	104	100	96	103	98	95	100	96	93	87
3.00	106	102	99	105	101	98	101	98	96	89
4.00	109	105	102	107	104	101	103	100	98	91
5.00	110	107	105	108	105	103	104	102	100	92
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: 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/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

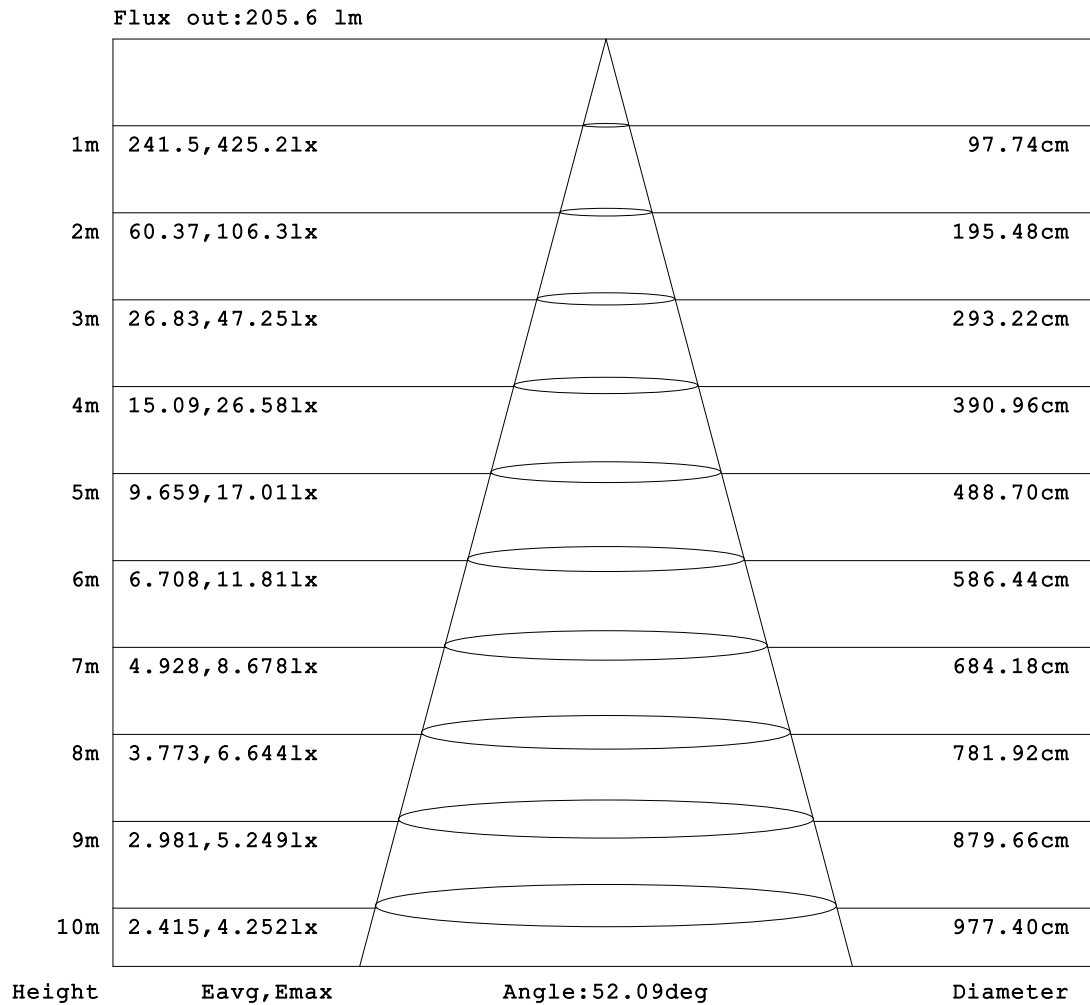


C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:19 December 2022

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



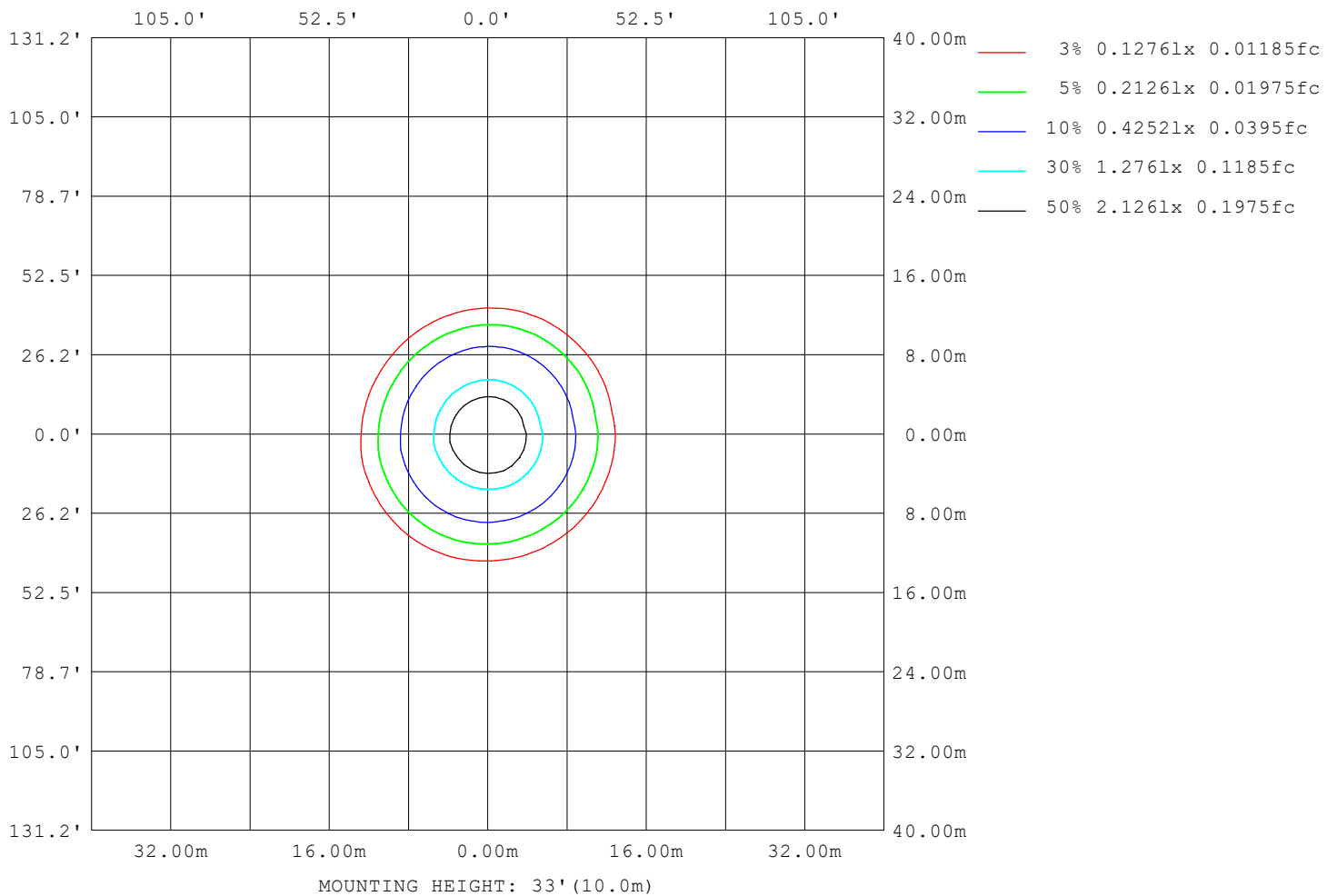
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
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/GR	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: MEDIUM
 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/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

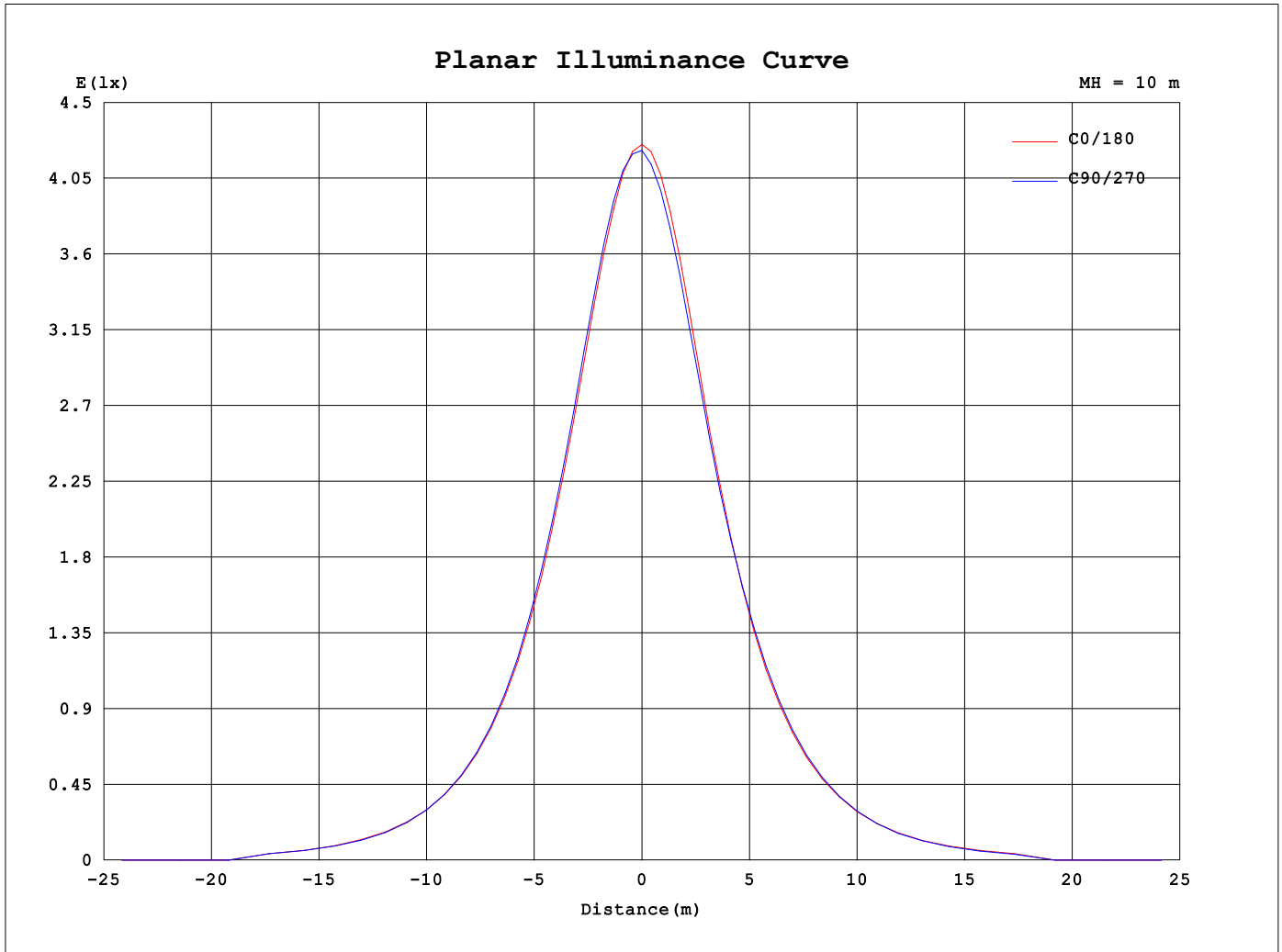
AvgL	cd/m2
L_0~180 (65) av	0
L_0~180 (75) av	0
L_0~180 (85) av	0
L_90~270 (65) av	0
L_90~270 (75) av	0
L_90~270 (85) av	0
L_45 (65) av	0
L_45 (75) av	0
L_45 (85) av	0

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
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: MEDIUM
 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:

```

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:

```