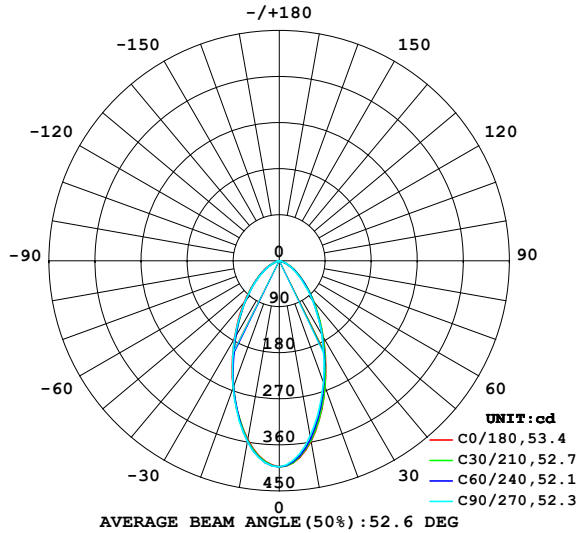


LUMINAIRE PHOTOMETRIC TEST REPORT

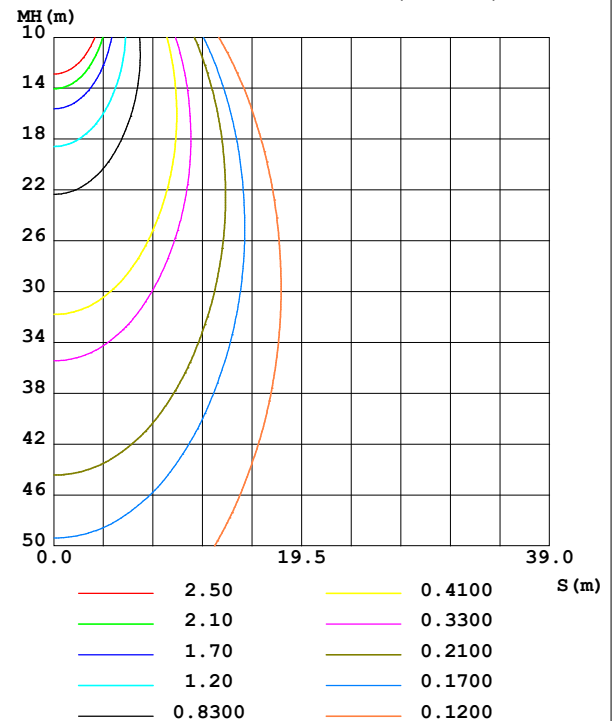
NAME: 95Livia90/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	95Livia90/BL	Imax(cd)	402.8	S/MH(C0/180)	0.79
NOMINAL POWER(W)	6	LOR(%)	96.5	S/MH(C90/270)	0.79
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	424.77	η UP,DN(C0-180)	0.0,48.3
NOMINAL FLUX(lm)	440	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,48.3
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	230	η down (%)	96.5	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 - 90DEG
 γ Interval: 2.0DEG
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	358.8	354.7	348.1	347.7	354.8	356.6	359.3	361.7	0- 10	36.09	36.09	8.5,8.2
20	261.9	258.4	252.7	254.3	264.2	261.3	263.7	264.8	10- 20	86.09	122.2	28.8,27.8
30	172.0	169.4	166.4	170.3	175.3	169.0	173.9	173.1	20- 30	97.87	220.0	51.8,50
40	104.3	104.8	101.4	104.5	107.4	103.0	104.4	103.3	30- 40	84.51	304.6	71.7,69.2
50	59.55	60.37	56.47	58.05	60.26	58.15	56.43	56.37	40- 50	61.13	365.7	86.1,83.1
60	29.93	30.94	28.42	28.55	29.60	28.27	26.18	26.71	50- 60	37.79	403.5	95,91.7
70	9.328	10.74	9.803	9.092	9.210	7.825	6.336	6.819	60- 70	17.67	421.1	99.1,95.7
80	0.4354	0.5925	0.5601	0.5205	0.4364	0.2900	0.2027	0.2334	70- 80	3.534	424.7	100,96.5
90	0.0450	0.0458	0.0410	0.0387	0.0317	0.0310	0.0273	0.0248	80- 90	0.0915	424.8	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): 344.18 lm

%lum = 81.0%

%lamp = 78.2%

Conical surface Flux(130deg): 416.26 lm

%lum = 98.0%

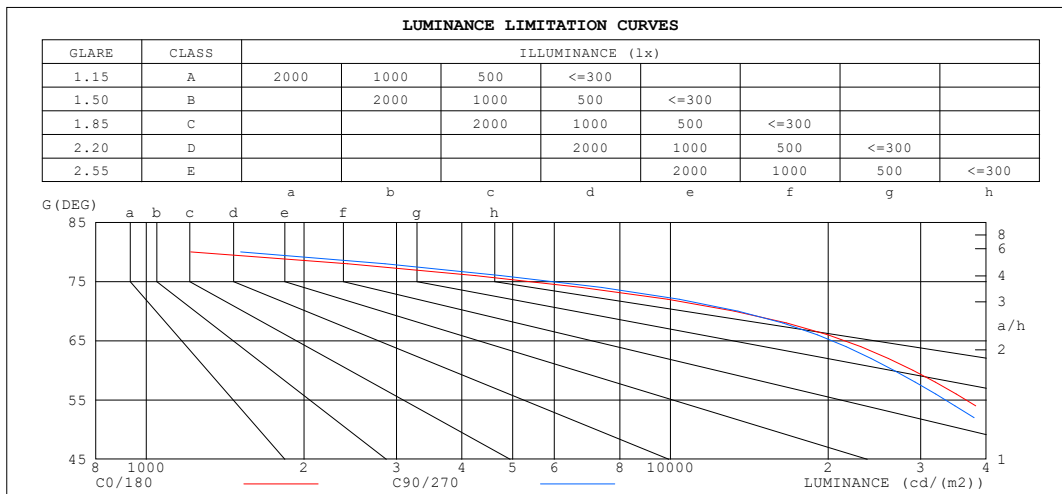
%lamp = 94.6%

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

γ Range: 0 - 90DEG
 γ Interval: 2.0DEG
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: 95Livia90/BL	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	251	221
80	1215	1514
75	7197	7865
70	13222	13450
65	23941	22439
60	29014	26675
55	39162	35764
50	44911	41228
45	57581	53796

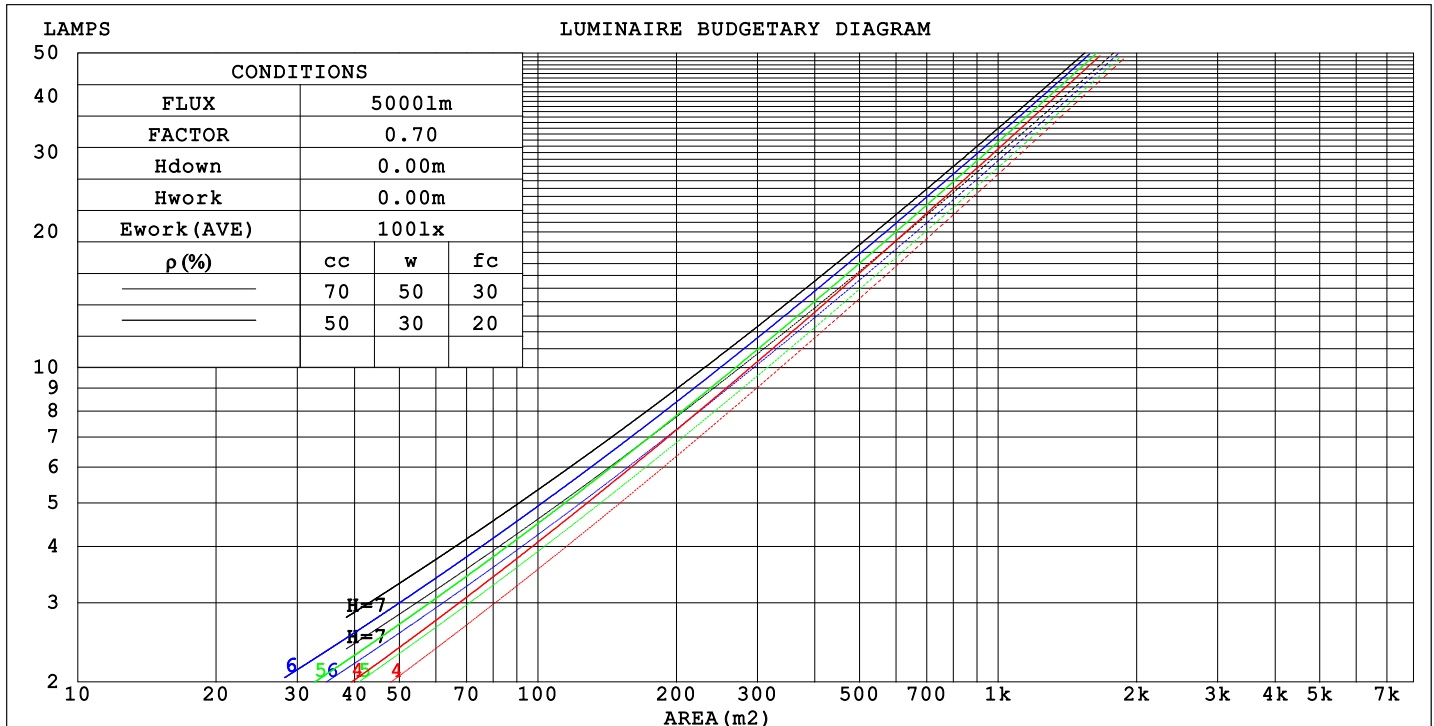
C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 19 December 2022

γ Range: 0 - 90DEG
γ Interval: 2.0DEG
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: 95Livia90/BL	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	.99	.99	.99	.97
1.0	1.05	1.02	.00	1.03	1.00	.98	.99	.97	.95	.95	.94	.92	.92	.91	.89	.88
2.0	.96	.91	.87	.94	.90	.86	.91	.87	.84	.88	.85	.82	.85	.83	.80	.79
3.0	.87	.81	.77	.86	.81	.76	.83	.79	.75	.81	.77	.74	.79	.75	.73	.71
4.0	.80	.74	.69	.79	.73	.68	.77	.71	.67	.75	.70	.67	.73	.69	.66	.64
5.0	.74	.67	.62	.73	.66	.62	.71	.65	.61	.69	.64	.60	.67	.63	.60	.58
6.0	.68	.61	.56	.67	.61	.56	.66	.60	.56	.64	.59	.55	.63	.58	.55	.53
7.0	.63	.56	.51	.62	.56	.51	.61	.55	.51	.60	.55	.51	.59	.54	.50	.49
8.0	.59	.52	.47	.58	.52	.47	.57	.51	.47	.56	.51	.47	.55	.50	.47	.45
9.0	.55	.48	.44	.54	.48	.44	.53	.48	.44	.52	.47	.43	.52	.47	.43	.42
10.0	.52	.45	.41	.51	.45	.41	.50	.45	.41	.49	.44	.41	.49	.44	.40	.39



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

γ Range: 0 - 90DEG
γ Interval: 2.0DEG
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: 95Livia90/BL	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	.206	.117	.037	.200	.114	.036	.187	.108	.034	.176	.102	.033	.166	.096	.031	
2.0	.201	.110	.034	.195	.108	.033	.185	.103	.032	.175	.098	.031	.166	.094	.030	
3.0	.192	.102	.031	.187	.100	.030	.178	.096	.029	.169	.093	.028	.162	.089	.028	
4.0	.182	.095	.028	.178	.093	.027	.170	.090	.027	.162	.087	.026	.155	.084	.026	
5.0	.172	.088	.025	.168	.086	.025	.161	.084	.025	.155	.082	.024	.149	.079	.024	
6.0	.163	.082	.023	.160	.081	.023	.153	.079	.023	.147	.077	.023	.142	.075	.022	
7.0	.154	.076	.022	.151	.075	.021	.146	.074	.021	.140	.072	.021	.136	.070	.021	
8.0	.146	.071	.020	.144	.071	.020	.139	.069	.020	.134	.068	.020	.129	.066	.019	
9.0	.139	.067	.019	.136	.066	.019	.132	.065	.018	.128	.064	.018	.124	.063	.018	
10.0	.132	.063	.018	.130	.063	.017	.126	.062	.017	.122	.061	.017	.118	.060	.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	.168	.152	.137	.143	.130	.118	.098	.089	.082	.056	.052	.047	.018	.017	.015	
2.0	.156	.128	.104	.133	.110	.090	.091	.076	.063	.053	.044	.037	.017	.014	.012	
3.0	.146	.110	.081	.125	.095	.071	.086	.066	.050	.049	.038	.029	.016	.012	.010	
4.0	.137	.096	.065	.118	.083	.056	.081	.058	.040	.047	.034	.024	.015	.011	.008	
5.0	.129	.085	.053	.111	.074	.046	.077	.052	.033	.044	.030	.019	.014	.010	.006	
6.0	.123	.077	.044	.105	.067	.038	.073	.047	.027	.042	.027	.016	.014	.009	.005	
7.0	.116	.070	.037	.100	.061	.032	.069	.042	.023	.040	.025	.014	.013	.008	.005	
8.0	.111	.064	.032	.095	.056	.028	.066	.039	.020	.038	.023	.012	.012	.008	.004	
9.0	.106	.059	.028	.091	.051	.024	.063	.036	.017	.037	.021	.010	.012	.007	.003	
10.0	.101	.055	.024	.087	.048	.021	.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 - 90DEG
γ Interval: 2.0DEG
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: 95Livia90/BL					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	27.0	28.2	27.2	28.3	28.5	26.6	27.8	26.8	27.9	28.1	
	27.3	28.3	27.5	28.6	28.8	26.9	28.0	27.2	28.2	28.4	
	27.2	28.2	27.5	28.5	28.7	26.9	27.9	27.2	28.1	28.3	
	27.1	28.1	27.4	28.3	28.6	26.8	27.7	27.1	28.0	28.2	
	27.1	28.0	27.4	28.3	28.5	26.7	27.6	27.0	27.9	28.2	
	27.0	27.9	27.4	28.2	28.5	26.7	27.6	27.0	27.8	28.1	
4H 2H	27.2	28.2	27.4	28.4	28.6	26.8	27.8	27.1	28.1	28.3	
	27.5	28.4	27.8	28.7	28.9	27.2	28.1	27.5	28.3	28.6	
	27.5	28.3	27.8	28.6	28.9	27.2	28.0	27.5	28.3	28.6	
	27.4	28.1	27.8	28.4	28.8	27.1	27.8	27.5	28.1	28.5	
	27.3	28.0	27.7	28.3	28.7	27.0	27.7	27.4	28.0	28.4	
	27.3	27.9	27.7	28.3	28.7	27.0	27.6	27.4	28.0	28.3	
8H 4H	27.4	28.0	27.8	28.4	28.8	27.1	27.7	27.5	28.1	28.5	
	27.3	27.8	27.7	28.2	28.6	27.0	27.5	27.4	27.9	28.3	
	27.3	27.7	27.7	28.1	28.6	27.0	27.4	27.4	27.8	28.3	
	27.2	27.6	27.7	28.0	28.5	26.9	27.3	27.4	27.7	28.2	
12H 4H	27.3	27.9	27.8	28.3	28.7	27.0	27.6	27.4	28.0	28.4	
	27.3	27.7	27.7	28.1	28.6	27.0	27.4	27.4	27.8	28.3	
	27.2	27.6	27.7	28.0	28.5	26.9	27.3	27.4	27.7	28.2	
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 0.9 / - 1.3					+ 0.9 / - 1.3					
1.5H	+ 0.6 / - 0.6					+ 0.7 / - 0.8					
2.0H	+ 1.7 / - 1.6					+ 1.6 / - 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 - 90DEG
γ Interval: 2.0DEG
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: 95Livia90/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

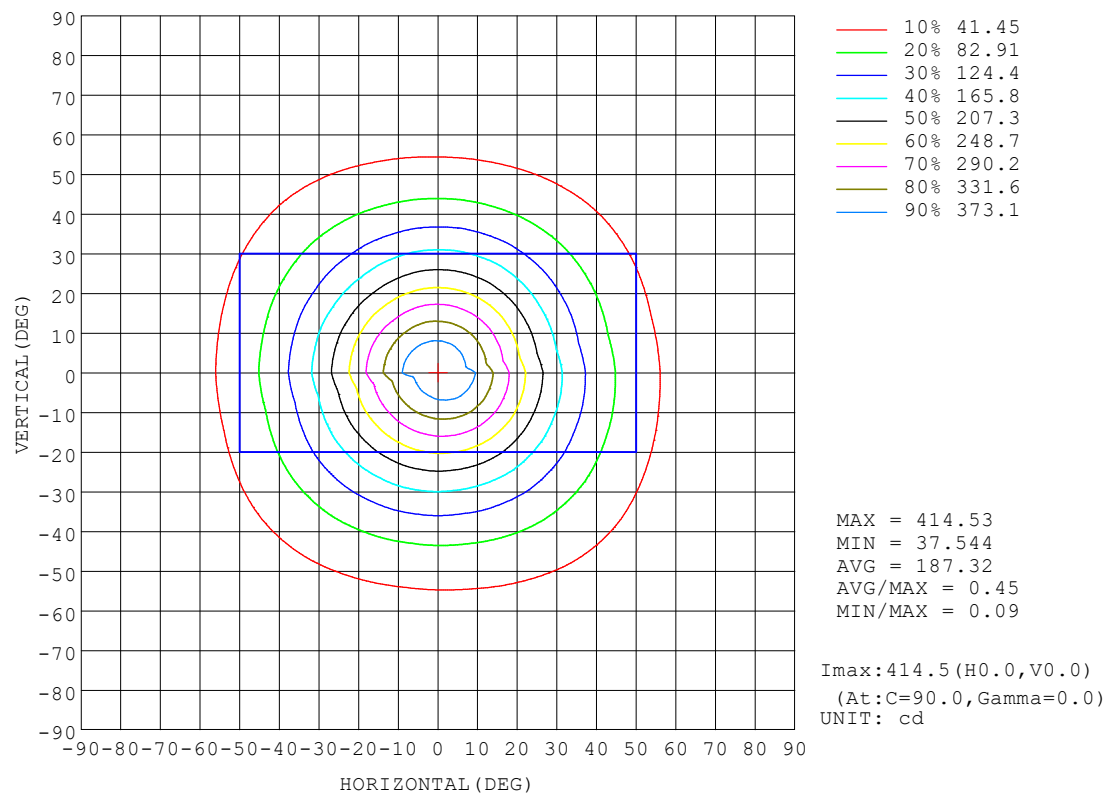
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	71	62	57	70	62	57	69	62	57	52
0.80	80	72	67	79	71	67	78	71	66	61
1.00	87	79	74	86	79	74	84	79	73	68
1.25	92	85	80	91	85	80	89	83	79	74
1.50	96	89	85	94	89	84	92	87	83	78
2.00	100	95	91	99	94	90	96	92	88	82
2.50	103	98	94	101	96	93	98	94	91	85
3.00	105	100	97	103	99	96	99	96	94	87
4.00	107	104	101	105	102	99	102	99	97	89
5.00	109	106	103	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: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 19 December 2022

γ Range: 0 - 90DEG
γ Interval: 2.0DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity: 65.0%
Test Distance: 6.265m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

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

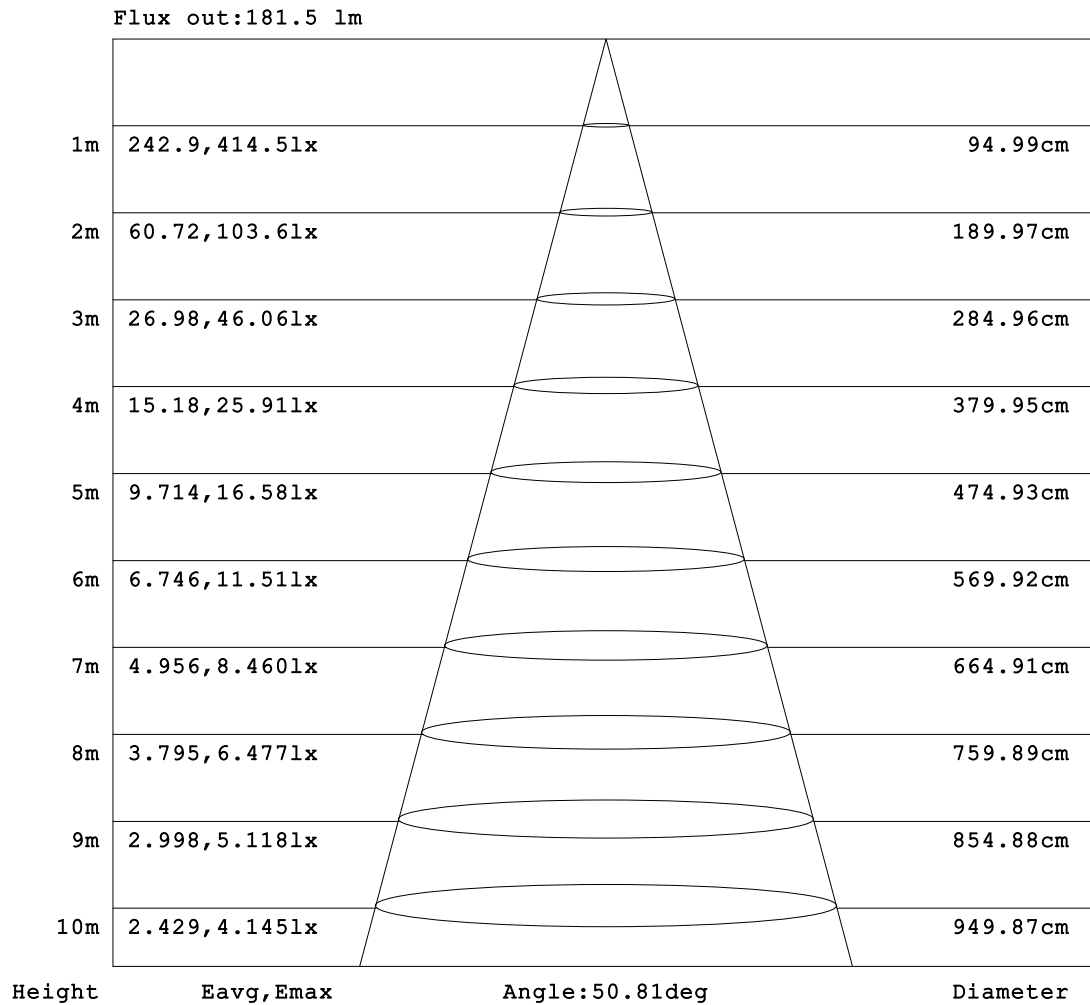


C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature:25.3°C
 Operators:
 Test Date:19 December 2022

γ Range: 0 - 90DEG
 γ Interval: 2.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
 Humidity:65.0%
 Test Distance:6.265m [K=1.0000]
 Remarks:

AAI Figure

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



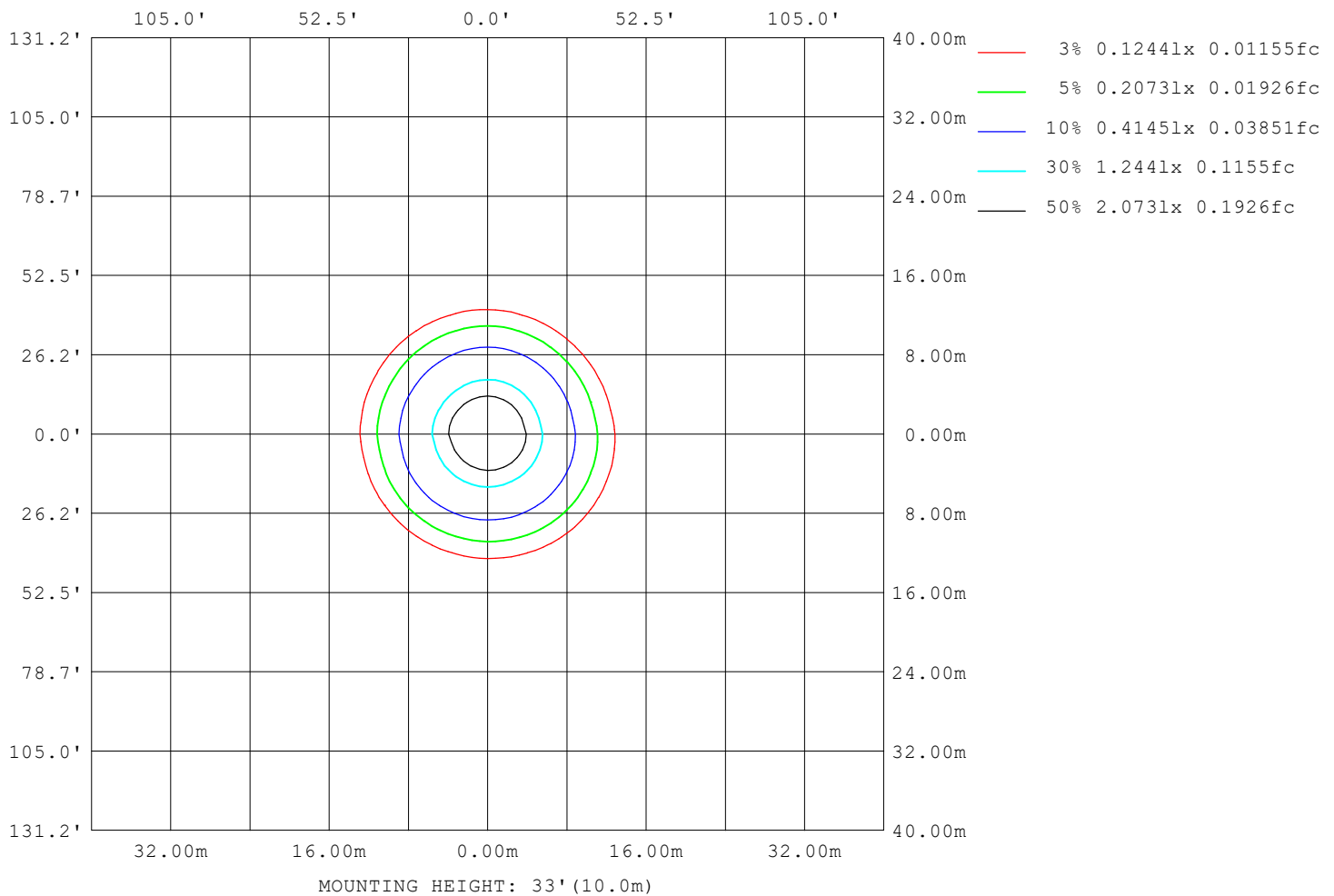
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

γ Range: 0 - 90DEG
 γ Interval: 2.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.456
 Humidity: 65.0%
 Test Distance: 6.265m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

NAME: 95Livia90/BL	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 - 90DEG
γ Interval: 2.0DEG
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: 95Livia90/BL	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 105 x 96	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

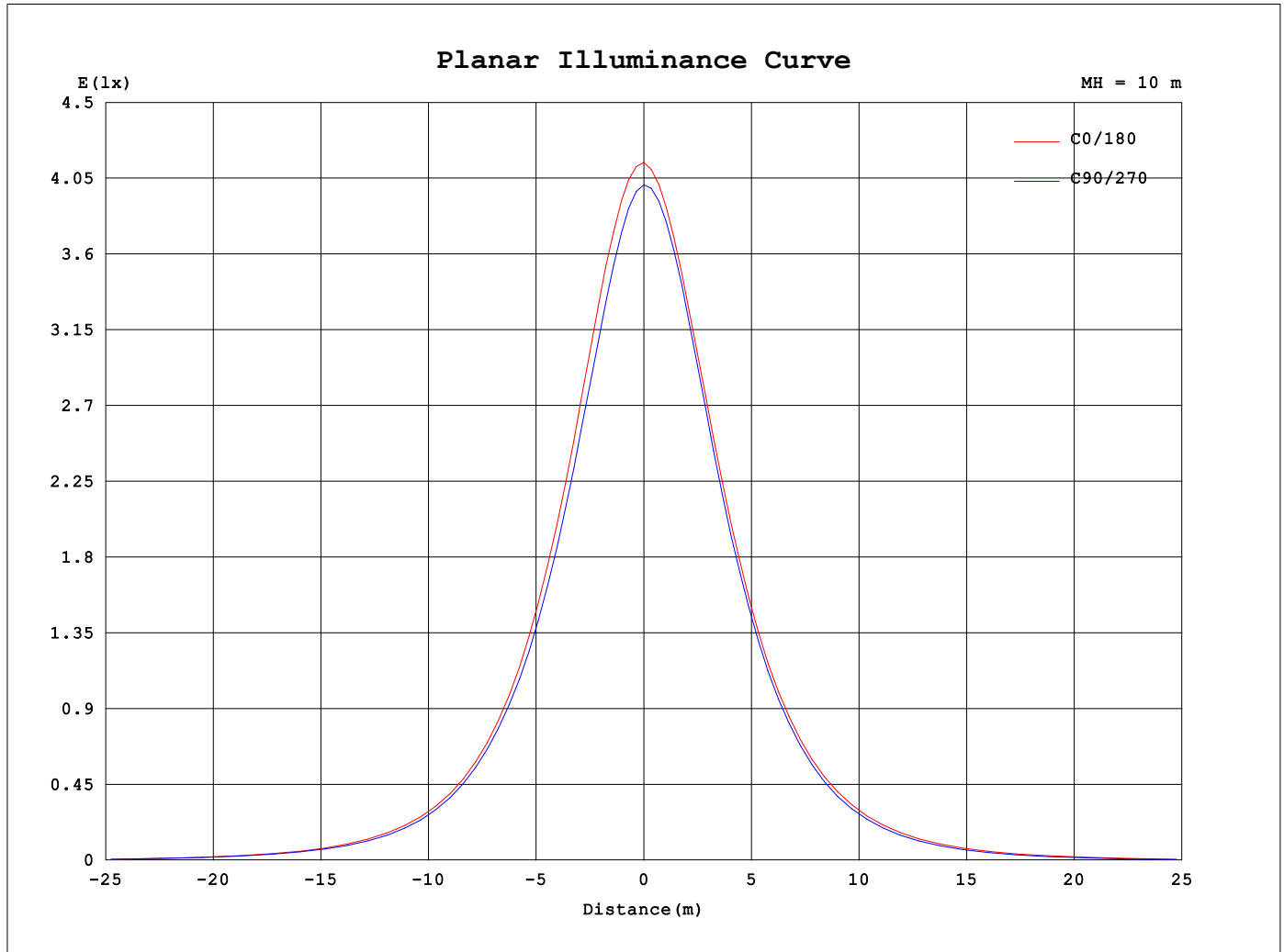
AvgL	cd/m2
L_0~180 (65) av	20702
L_0~180 (75) av	5261
L_0~180 (85) av	189
L_90~270 (65) av	18498
L_90~270 (75) av	4541
L_90~270 (85) av	164
L_45 (65) av	19585
L_45 (75) av	4911
L_45 (85) av	169

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 - 90DEG
γ Interval: 2.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:

Planar Illuminance Curve



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

γ Range: 0 - 90DEG
 γ Interval: 2.0DEG
 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: 2.0DEG
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: 2.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.265m [K=1.0000]
Remarks:

```