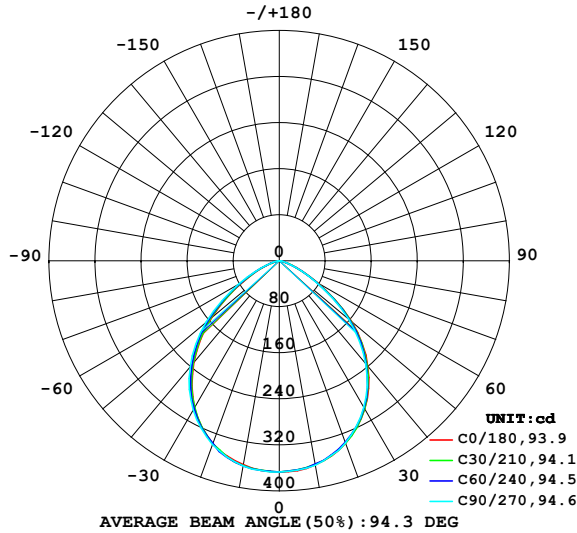


LUMINAIRE PHOTOMETRIC TEST REPORT

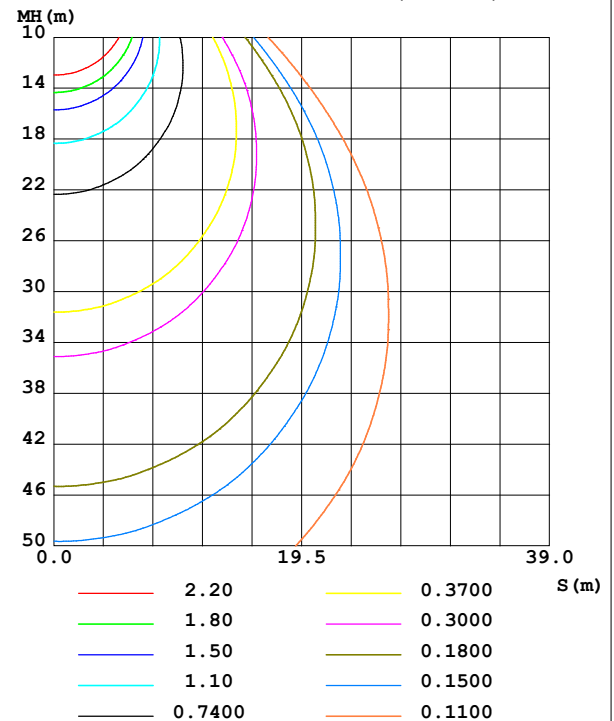
NAME: 95Livial60/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 145 x10	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	95Livial60/GR	Imax(cd)	367.4	S/MH(C0/180)	1.20
NOMINAL POWER(W)	10	LOR(%)	78.3	S/MH(C90/270)	1.21
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	763.77	η UP,DN(C0-180)	0.0,38.7
NOMINAL FLUX(lm)	975	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,39.6
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230	η down (%)	78.3	CIBSE SHR MAX	1.30

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



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

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	360.0	360.0	360.5	358.4	359.4	362.0	362.1	361.0	0- 10	34.73	34.73	4.55,3.56
20	337.2	336.9	336.4	334.0	338.0	338.4	339.5	338.6	10- 20	98.98	133.7	17.5,13.7
30	297.6	295.6	294.0	292.0	294.6	295.0	299.1	299.3	20- 30	146.6	280.3	36.7,28.8
40	239.3	236.7	233.9	230.0	231.1	234.7	240.8	242.7	30- 40	167.4	447.7	58.6,45.9
50	163.2	161.3	157.1	150.9	152.7	158.4	166.3	167.3	40- 50	153.6	601.4	78.7,61.7
60	77.25	74.55	73.43	69.24	72.44	75.96	81.04	79.90	50- 60	103.6	705.0	92.3,72.3
70	23.13	22.18	21.78	21.70	22.24	24.06	25.19	25.63	60- 70	45.74	750.7	98.3,77
80	3.127	2.954	2.971	3.027	3.226	3.365	3.544	3.498	70- 80	11.32	762.0	99.8,78.2
90	0.1729	0.1766	0.1854	0.1870	0.1459	0.1508	0.1581	0.1597	80- 90	1.737	763.8	100,78.3
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): 528.59 lm

%lum = 69.2%
%lamp = 54.2%

Conical surface Flux(130deg): 733.82 lm

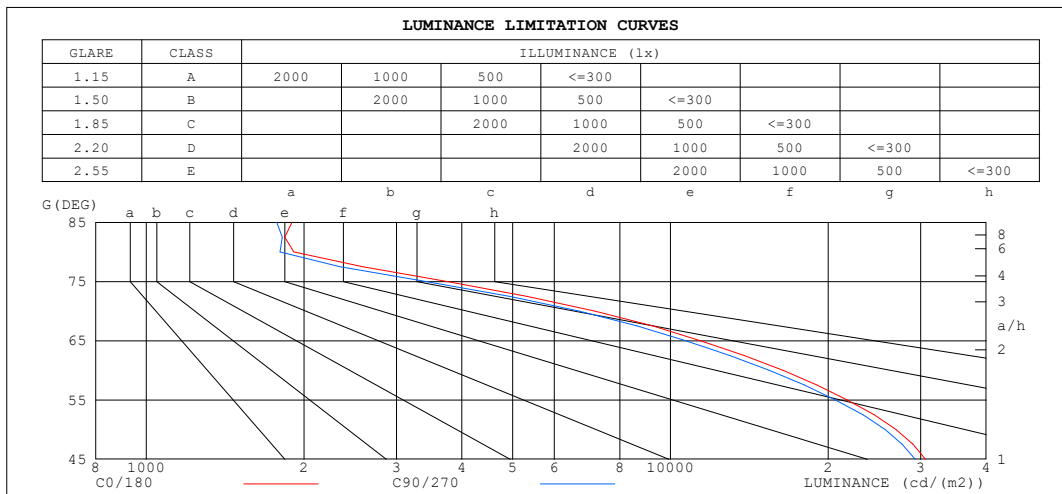
%lum = 96.1%
%lamp = 75.3%

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

LUMINANCE LIMITATION CURVES

NAME: 95Livial60/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 145 x10	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1896	1775
80	1910	1799
75	3762	3431
70	7171	6693
65	11427	10701
60	16384	15436
55	21750	20649
50	26925	25686
45	30633	29304

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

```

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: 95Livial60/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 145 x10	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	.190	.108	.034	.184	.105	.033	.174	.100	.032	.165	.095	.031	.156	.091	.029	
2.0	.186	.102	.031	.181	.100	.031	.172	.096	.030	.164	.092	.029	.157	.089	.028	
3.0	.177	.094	.028	.173	.093	.028	.166	.090	.027	.158	.087	.027	.152	.084	.026	
4.0	.168	.087	.026	.164	.086	.025	.157	.083	.025	.151	.081	.024	.145	.079	.024	
5.0	.158	.081	.023	.155	.080	.023	.149	.078	.023	.143	.076	.022	.138	.074	.022	
6.0	.149	.075	.021	.146	.074	.021	.141	.072	.021	.136	.071	.021	.131	.069	.021	
7.0	.141	.069	.020	.138	.069	.020	.133	.067	.019	.129	.066	.019	.125	.065	.019	
8.0	.133	.065	.018	.130	.064	.018	.126	.063	.018	.122	.062	.018	.118	.061	.018	
9.0	.126	.061	.017	.123	.060	.017	.120	.059	.017	.116	.058	.017	.113	.057	.017	
10.0	.119	.057	.016	.117	.057	.016	.114	.056	.016	.110	.055	.016	.107	.054	.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
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.149	.149	.149	.128	.128	.128	.087	.087	.087	.050	.050	.050	.016	.016	.016	
1.0	.138	.123	.109	.118	.105	.094	.081	.072	.065	.046	.042	.038	.015	.014	.012	
2.0	.129	.104	.082	.111	.089	.071	.076	.062	.049	.044	.036	.029	.014	.012	.009	
3.0	.122	.089	.063	.105	.077	.055	.072	.054	.038	.042	.031	.023	.013	.010	.007	
4.0	.116	.078	.050	.100	.068	.043	.069	.047	.030	.040	.028	.018	.013	.009	.006	
5.0	.110	.070	.040	.095	.061	.035	.065	.042	.025	.038	.025	.015	.012	.008	.005	
6.0	.105	.063	.033	.090	.055	.029	.062	.038	.021	.036	.023	.012	.012	.007	.004	
7.0	.100	.058	.028	.086	.050	.024	.060	.035	.017	.035	.021	.010	.011	.007	.003	
8.0	.096	.053	.024	.082	.046	.021	.057	.032	.015	.033	.019	.009	.011	.006	.003	
9.0	.091	.049	.021	.079	.043	.018	.055	.030	.013	.032	.018	.008	.010	.006	.003	
10.0	.087	.046	.019	.075	.040	.016	.052	.028	.012	.031	.017	.007	.010	.005	.002	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:19 December 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: 95Livial60/GR					TYPE:			WEIGHT: 1			
SPEC.:					DIM.: 145 x10			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	23.1	24.5	23.4	24.7	24.9	23.0	24.3	23.2	24.5	24.7	
	23.3	24.6	23.6	24.8	25.0	23.1	24.4	23.4	24.6	24.8	
	23.3	24.5	23.6	24.7	24.9	23.1	24.2	23.4	24.5	24.7	
	23.2	24.3	23.5	24.6	24.8	23.0	24.1	23.3	24.3	24.6	
	23.2	24.2	23.5	24.5	24.8	23.0	24.0	23.3	24.3	24.6	
	23.1	24.1	23.5	24.4	24.7	22.9	23.9	23.3	24.2	24.5	
4H	2H	23.2	24.4	23.5	24.6	24.9	23.1	24.2	23.4	24.5	24.7
	3H	23.5	24.5	23.8	24.8	25.1	23.3	24.3	23.7	24.6	24.9
	4H	23.5	24.4	23.8	24.7	25.0	23.3	24.2	23.7	24.5	24.8
	6H	23.4	24.2	23.8	24.5	24.9	23.2	24.0	23.6	24.4	24.7
	8H	23.4	24.1	23.8	24.5	24.8	23.2	23.9	23.6	24.3	24.7
	12H	23.3	24.0	23.8	24.4	24.8	23.2	23.8	23.6	24.2	24.6
8H	4H	23.4	24.1	23.8	24.5	24.8	23.2	23.9	23.6	24.3	24.7
	6H	23.3	23.9	23.8	24.3	24.7	23.1	23.7	23.6	24.1	24.6
	8H	23.3	23.8	23.7	24.2	24.7	23.1	23.6	23.6	24.1	24.5
	12H	23.3	23.7	23.7	24.2	24.6	23.1	23.5	23.6	24.0	24.5
12H	4H	23.3	24.0	23.8	24.4	24.8	23.2	23.8	23.6	24.2	24.6
	6H	23.3	23.8	23.7	24.2	24.7	23.1	23.6	23.6	24.1	24.5
	8H	23.3	23.7	23.7	24.2	24.6	23.1	23.5	23.6	24.0	24.4
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 0.8 / - 1.0					+ 0.9 / - 1.1					
1.5H	+ 0.5 / - 0.5					+ 0.4 / - 0.4					
2.0H	+ 1.7 / - 2.5					+ 1.7 / - 2.5					

CIE Pub.117, 975.0 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.1)
Area: 0.0094985 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 - 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: 95Livial60/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 145 x10	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

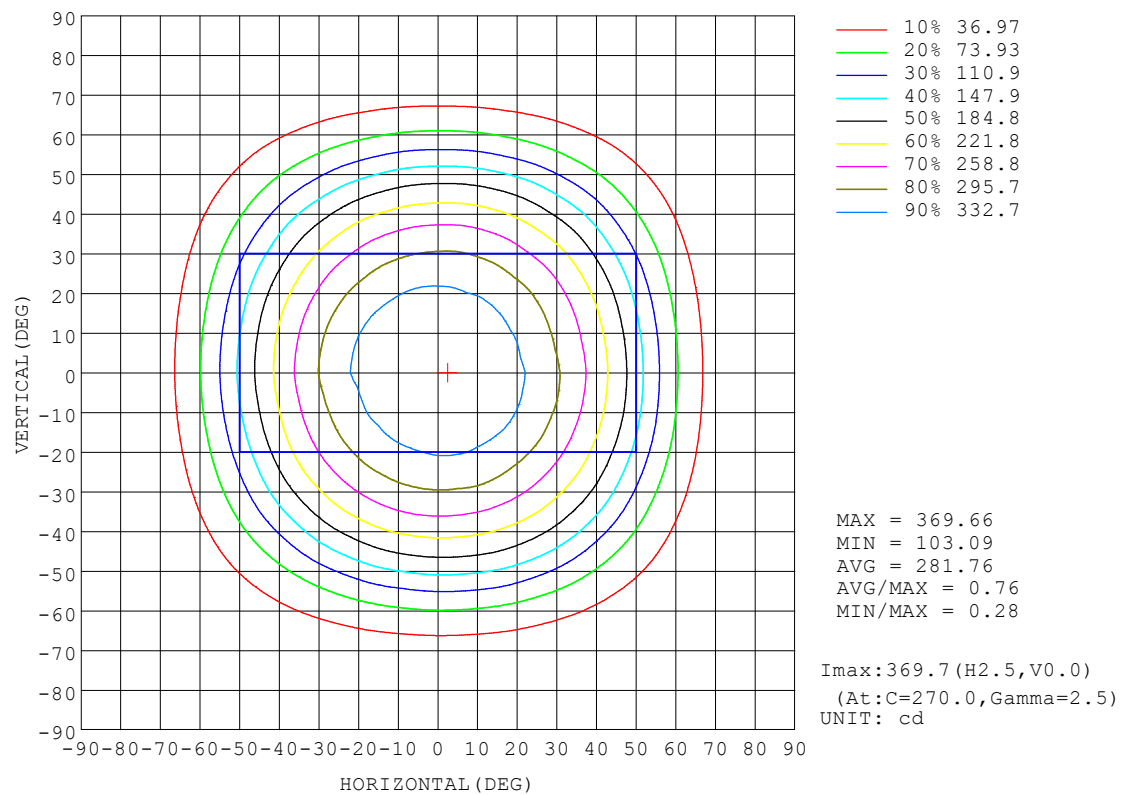
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	51	43	38	50	43	38	50	42	38	33
0.80	59	51	46	58	51	46	57	50	46	41
1.00	66	59	54	65	58	54	63	59	53	48
1.25	71	64	60	70	64	59	68	63	59	54
1.50	74	68	64	73	68	64	71	66	63	58
2.00	79	74	70	78	73	69	75	71	68	63
2.50	81	77	73	80	76	72	77	74	71	65
3.00	83	79	76	82	78	75	79	76	73	67
4.00	86	82	80	84	81	78	81	78	76	70
5.00	87	84	82	85	83	81	82	80	78	71
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 - 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: 95Livia160/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 145 x10	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

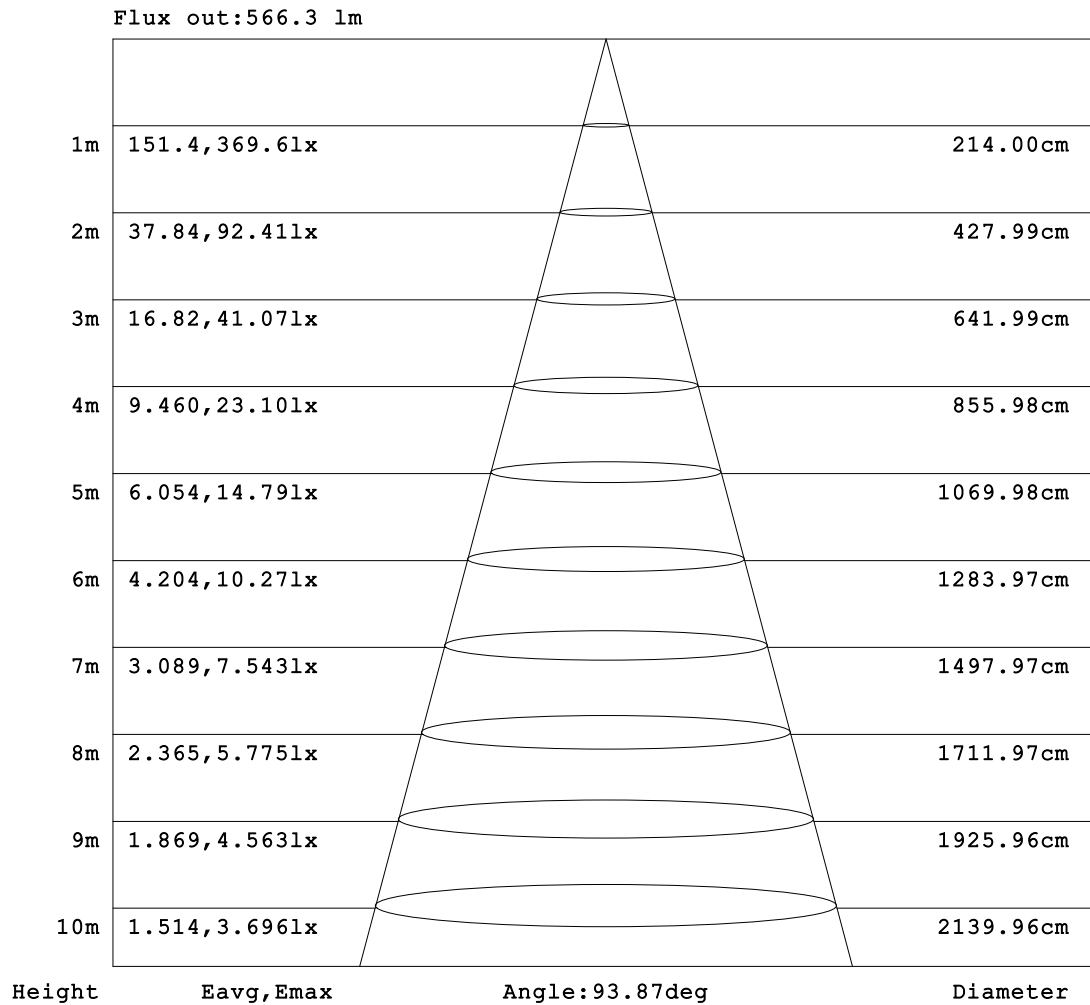


C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators:
Test Date: 19 December 2022

γ Range: 0 - 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: 95Livial60/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 145 x10	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:



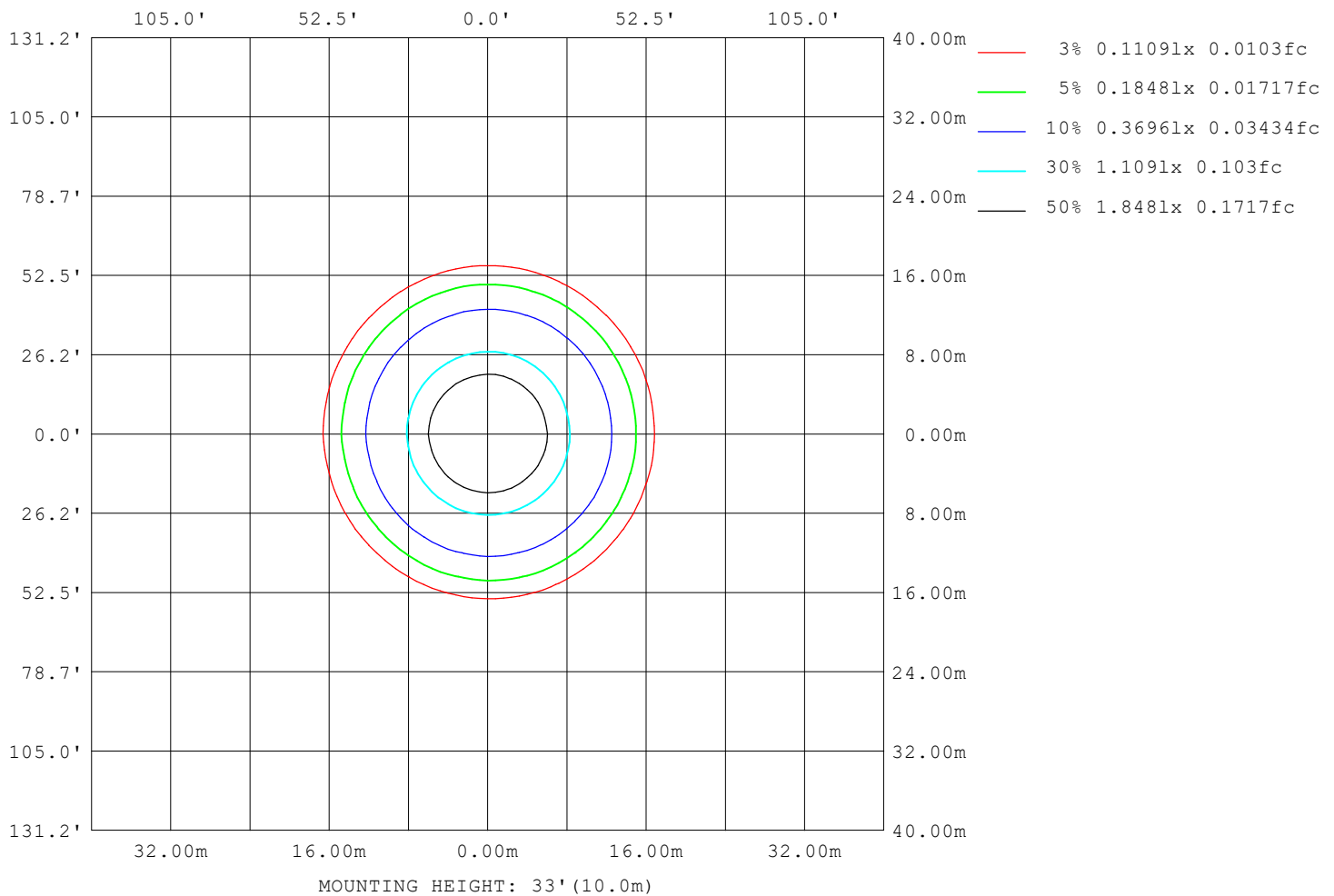
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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

γ Range: 0 - 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: 95Livial60/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 145 x10	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 - 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: 95Livial60/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 145 x10	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

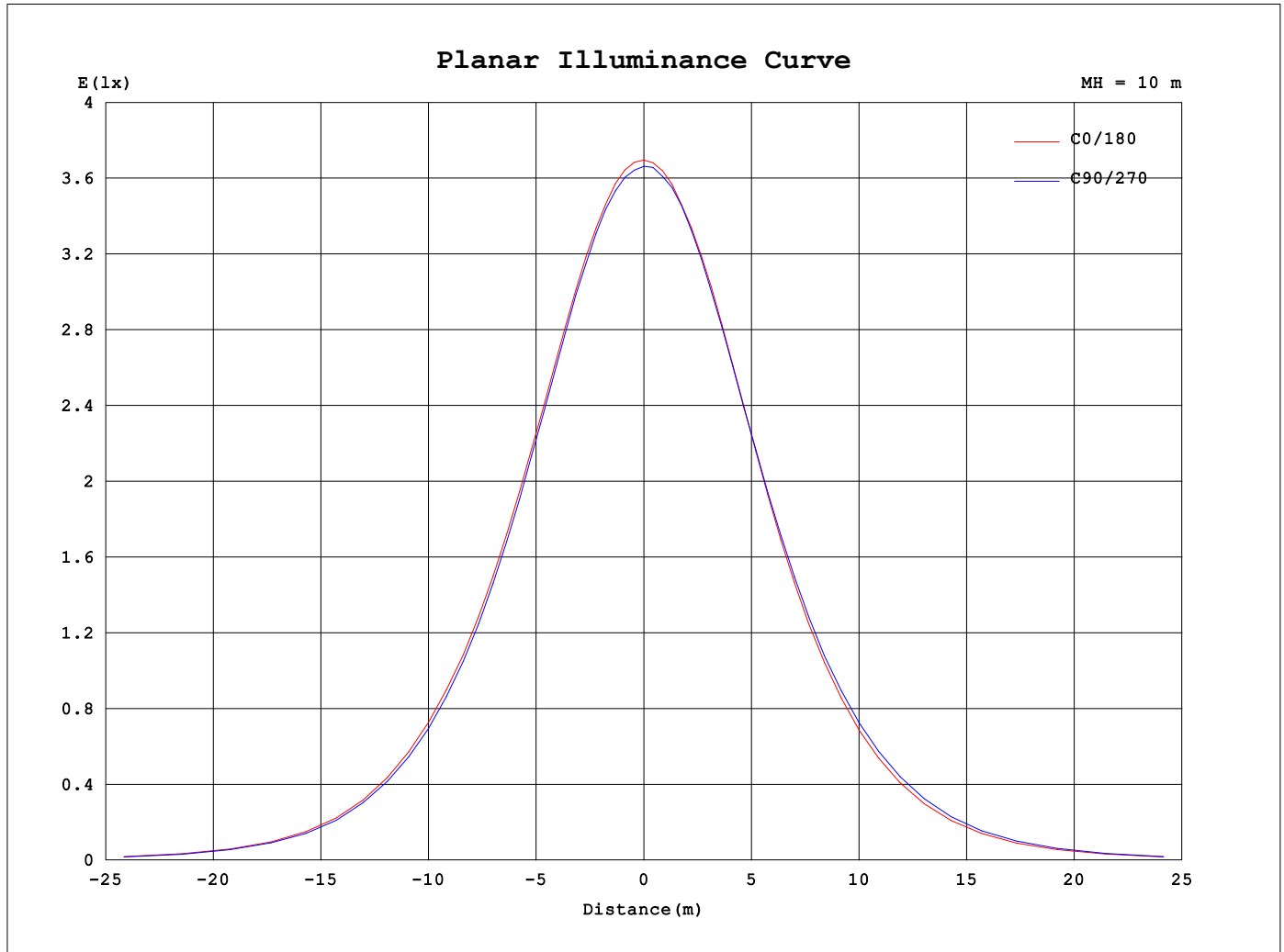
AvgL	cd/m2
L_0~180 (65) av	11036
L_0~180 (75) av	3721
L_0~180 (85) av	1919
L_90~270 (65) av	11388
L_90~270 (75) av	3879
L_90~270 (85) av	1942
L_45 (65) av	11001
L_45 (75) av	3718
L_45 (85) av	1924

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 - 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: HIGH
 Temperature: 25.3°C
 Operators:
 Test Date: 19 December 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:

```

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:

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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:

```