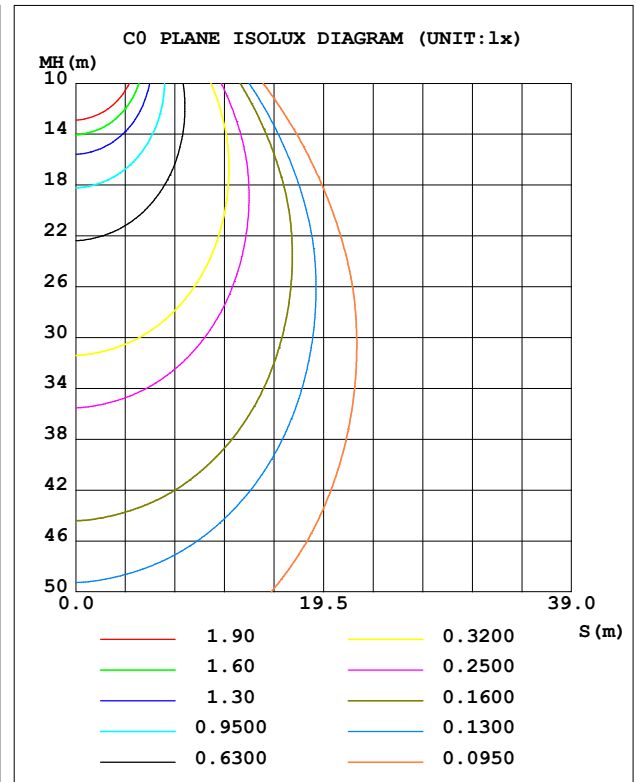
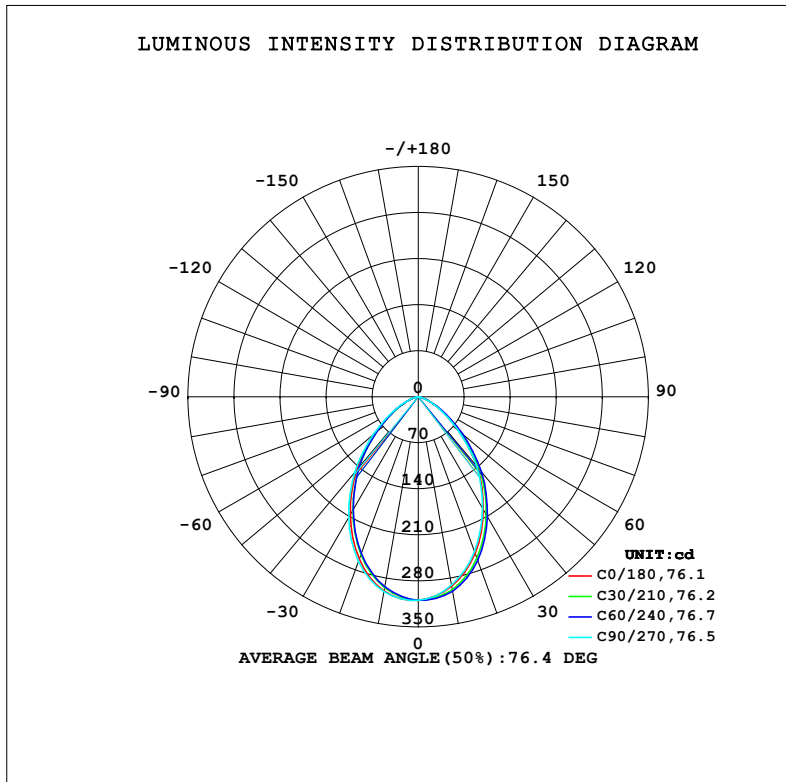


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 95Livial80/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 180	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	95Livial80/GR	Imax(cd)	310.2	S/MH(C0/180)	1.05
NOMINAL POWER(W)	15	LOR(%)	33.0	S/MH(C90/270)	1.06
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	495.75	η UP,DN(C0-180)	0.0,16.5
NOMINAL FLUX(lm)	1500	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,16.6
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE(V)	230	η down (%)	33.0	CIBSE SHR MAX	1.15



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:30 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	292.7	298.9	291.1	295.1	299.7	294.1	300.8	296.4	0- 10	28.89	28.89	5.83,1.93
20	253.0	262.6	250.2	255.6	262.8	254.3	266.1	259.0	10- 20	78.49	107.4	21.7,7.16
30	198.0	208.4	195.5	200.4	207.1	198.7	211.6	204.2	20- 30	106.3	213.7	43.1,14.2
40	139.4	148.5	138.8	141.9	147.1	140.5	151.0	145.0	30- 40	108.2	321.9	64.9,21.5
50	79.94	85.97	79.13	81.60	85.68	81.89	89.17	84.33	40- 50	86.90	408.8	82.5,27.3
60	37.28	40.22	36.66	38.09	40.55	38.93	42.52	39.96	50- 60	53.24	462.0	93.2,30.8
70	13.17	14.03	12.84	13.53	14.56	14.25	15.44	14.27	60- 70	25.03	487.1	98.2,32.5
80	2.022	1.999	1.994	2.143	2.229	2.424	2.444	2.140	70- 80	7.649	494.7	99.8,33
90	0.0881	0.0865	0.0871	0.0853	0.0667	0.0730	0.0735	0.0660	80- 90	1.032	495.7	100,33
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): 369.34 lm

%lum = 74.5%

%lamp = 24.6%

Conical surface Flux(130deg): 477.41 lm

%lum = 96.3%

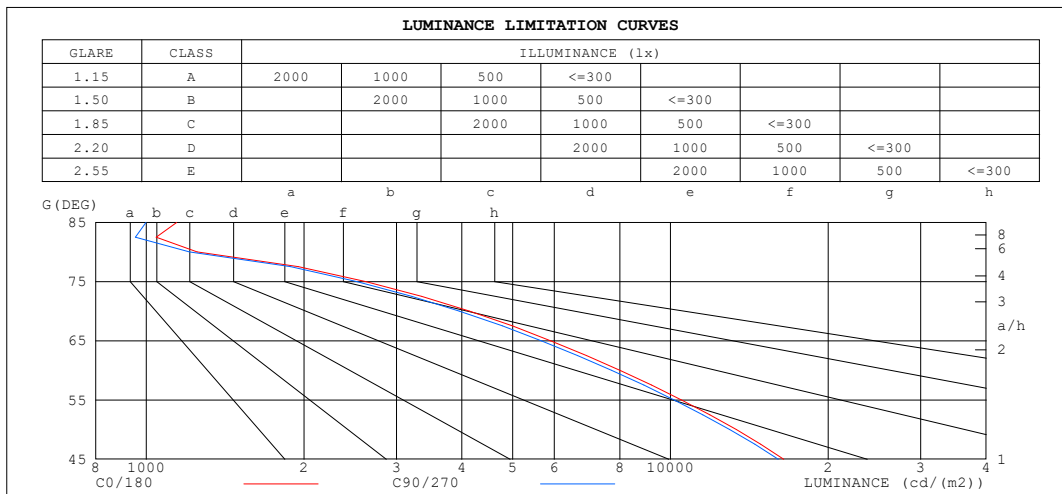
%lamp = 31.8%

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature:25.3°C
 Operators:
 Test Date:30 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: 95Livial80/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 180	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1142	999
80	1250	1209
75	2627	2524
70	4136	3951
65	5906	5669
60	8008	7719
55	10495	10159
50	13356	12961
45	16441	16042

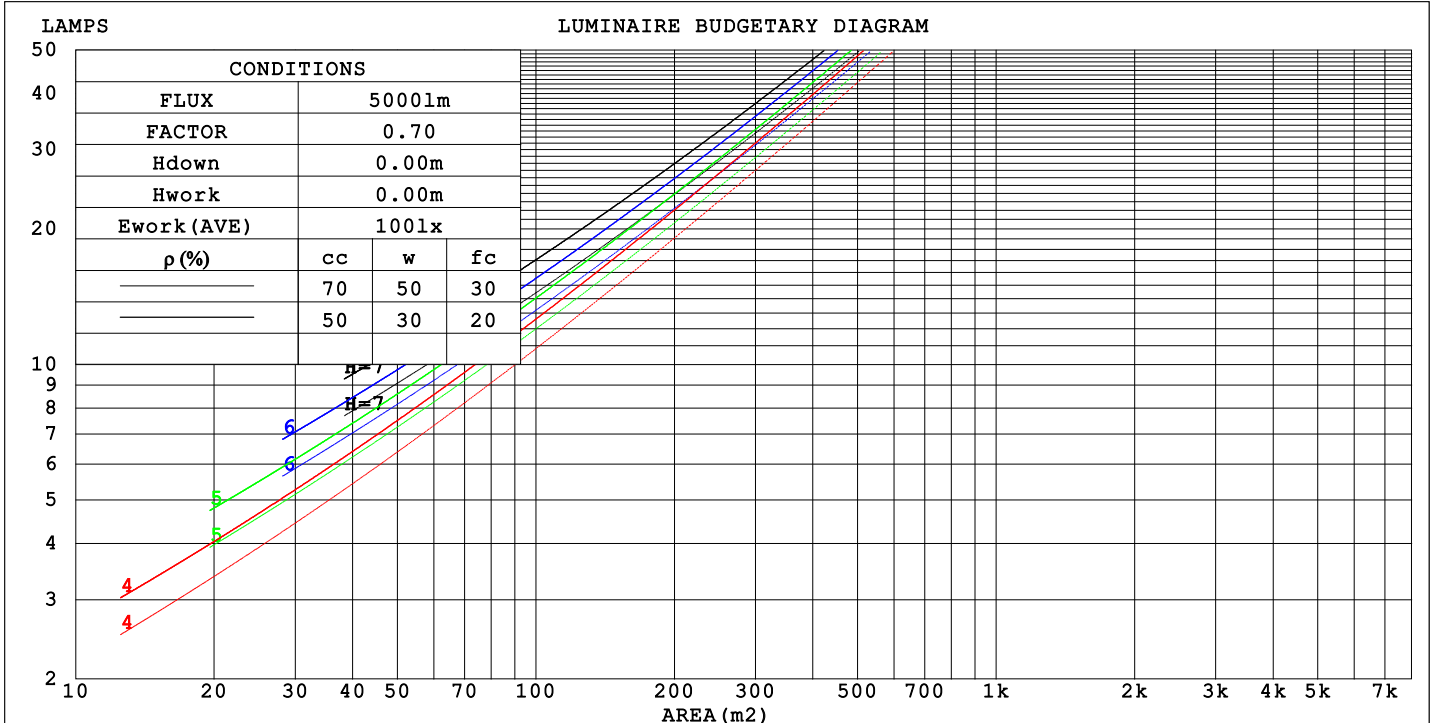
C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature: 25.3°C
 Operators:
 Test Date: 30 December 2022

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: 95Livial80/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 180	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	.39	.39	.39	.38	.38	.38	.37	.37	.37	.35	.35	.35	.34	.34	.34	.33														
1.0	.36	.35	.34	.35	.34	.33	.34	.33	.32	.32	.32	.31	.31	.31	.30	.30														
2.0	.32	.30	.29	.32	.30	.29	.30	.29	.28	.29	.28	.27	.28	.28	.27	.26														
3.0	.29	.27	.25	.29	.27	.25	.28	.26	.25	.27	.25	.24	.26	.25	.24	.23														
4.0	.26	.24	.22	.26	.24	.22	.25	.23	.22	.24	.23	.21	.24	.22	.21	.21														
5.0	.24	.22	.20	.24	.21	.20	.23	.21	.19	.22	.21	.19	.22	.20	.19	.18														
6.0	.22	.19	.18	.22	.19	.18	.21	.19	.17	.21	.19	.17	.20	.18	.17	.17														
7.0	.20	.18	.16	.20	.18	.16	.20	.17	.16	.19	.17	.16	.19	.17	.16	.15														
8.0	.19	.16	.15	.18	.16	.14	.18	.16	.14	.18	.16	.14	.17	.16	.14	.14														
9.0	.17	.15	.13	.17	.15	.13	.17	.15	.13	.16	.15	.13	.16	.14	.13	.13														
10.0	.16	.14	.12	.16	.14	.12	.16	.14	.12	.15	.13	.12	.15	.13	.12	.12														



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:30 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:

WEC AND CCEC

NAME: 95Livial80/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 180	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	.077	.044	.014	.074	.042	.013	.070	.040	.013	.066	.038	.012	.063	.036	.012	
2.0	.075	.041	.013	.073	.040	.012	.069	.038	.012	.066	.037	.012	.062	.035	.011	
3.0	.071	.038	.011	.069	.037	.011	.066	.036	.011	.063	.035	.011	.060	.033	.010	
4.0	.067	.035	.010	.066	.034	.010	.063	.033	.010	.060	.032	.010	.058	.031	.010	
5.0	.063	.032	.009	.062	.032	.009	.060	.031	.009	.057	.030	.009	.055	.029	.009	
6.0	.060	.030	.009	.059	.030	.009	.056	.029	.008	.054	.028	.008	.052	.028	.008	
7.0	.057	.028	.008	.056	.028	.008	.054	.027	.008	.052	.027	.008	.050	.026	.008	
8.0	.054	.026	.007	.053	.026	.007	.051	.025	.007	.049	.025	.007	.048	.024	.007	
9.0	.051	.025	.007	.050	.024	.007	.048	.024	.007	.047	.023	.007	.045	.023	.007	
10.0	.048	.023	.006	.047	.023	.006	.046	.023	.006	.045	.022	.006	.043	.022	.006	

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	.063	.063	.063	.054	.054	.054	.037	.037	.037	.021	.021	.021	.007	.007	.007	
1.0	.058	.052	.046	.049	.044	.040	.034	.031	.028	.019	.018	.016	.006	.006	.005	
2.0	.054	.044	.035	.046	.038	.030	.032	.026	.021	.018	.015	.012	.006	.005	.004	
3.0	.051	.038	.027	.044	.032	.024	.030	.023	.016	.017	.013	.010	.006	.004	.003	
4.0	.048	.033	.022	.041	.029	.019	.028	.020	.013	.016	.012	.008	.005	.004	.003	
5.0	.046	.029	.017	.039	.025	.015	.027	.018	.011	.016	.010	.006	.005	.003	.002	
6.0	.043	.027	.014	.037	.023	.013	.026	.016	.009	.015	.009	.005	.005	.003	.002	
7.0	.041	.024	.012	.036	.021	.011	.025	.015	.008	.014	.009	.004	.005	.003	.001	
8.0	.039	.022	.010	.034	.019	.009	.023	.014	.006	.014	.008	.004	.004	.003	.001	
9.0	.038	.021	.009	.032	.018	.008	.022	.013	.006	.013	.007	.003	.004	.002	.001	
10.0	.036	.019	.008	.031	.017	.007	.021	.012	.005	.013	.007	.003	.004	.002	.001	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:30 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: 95Livial80/GR					TYPE:					WEIGHT: 1				
SPEC.:					DIM.: 220 x 180					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	18.9	20.1	19.1	20.3	20.5	19.0	20.3	19.2	20.4	20.6				
3H	19.1	20.3	19.4	20.5	20.7	19.2	20.4	19.5	20.6	20.8				
4H	19.1	20.2	19.4	20.4	20.7	19.2	20.3	19.5	20.5	20.8				
6H	19.0	20.1	19.4	20.3	20.6	19.1	20.2	19.5	20.4	20.7				
8H	19.0	20.0	19.3	20.3	20.5	19.1	20.1	19.4	20.4	20.6				
12H	19.0	19.9	19.3	20.2	20.5	19.1	20.0	19.4	20.3	20.6				
4H 2H	19.0	20.1	19.3	20.3	20.6	19.1	20.2	19.4	20.4	20.7				
3H	19.3	20.3	19.7	20.6	20.8	19.4	20.4	19.8	20.7	20.9				
4H	19.4	20.2	19.7	20.5	20.8	19.5	20.3	19.8	20.6	20.9				
6H	19.3	20.1	19.7	20.4	20.8	19.4	20.2	19.8	20.5	20.9				
8H	19.3	20.0	19.7	20.3	20.7	19.4	20.1	19.8	20.4	20.8				
12H	19.2	19.9	19.7	20.3	20.6	19.3	20.0	19.7	20.3	20.7				
8H 4H	19.3	20.0	19.7	20.3	20.7	19.4	20.1	19.8	20.4	20.8				
6H	19.3	19.8	19.7	20.2	20.6	19.3	19.9	19.8	20.3	20.7				
8H	19.2	19.7	19.7	20.1	20.6	19.3	19.8	19.8	20.2	20.7				
12H	19.2	19.6	19.7	20.1	20.5	19.3	19.7	19.8	20.2	20.6				
12H 4H	19.3	19.9	19.7	20.3	20.7	19.3	20.0	19.8	20.4	20.8				
6H	19.2	19.7	19.7	20.1	20.6	19.3	19.8	19.8	20.2	20.7				
8H	19.2	19.6	19.7	20.1	20.5	19.3	19.7	19.7	20.1	20.6				
Variations with the observer position at spacings(CIE Pub.117):														
S = 1.0H	+ 1.0 / - 1.4					+ 1.1 / - 1.5								
1.5H	+ 0.6 / - 0.7					+ 0.6 / - 0.9								
2.0H	+ 1.9 / - 2.0					+ 2.0 / - 2.1								

CIE Pub.117, 1500 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.4)
Area: 0.0094985 m2

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:30 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: 95Livial80/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 180	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

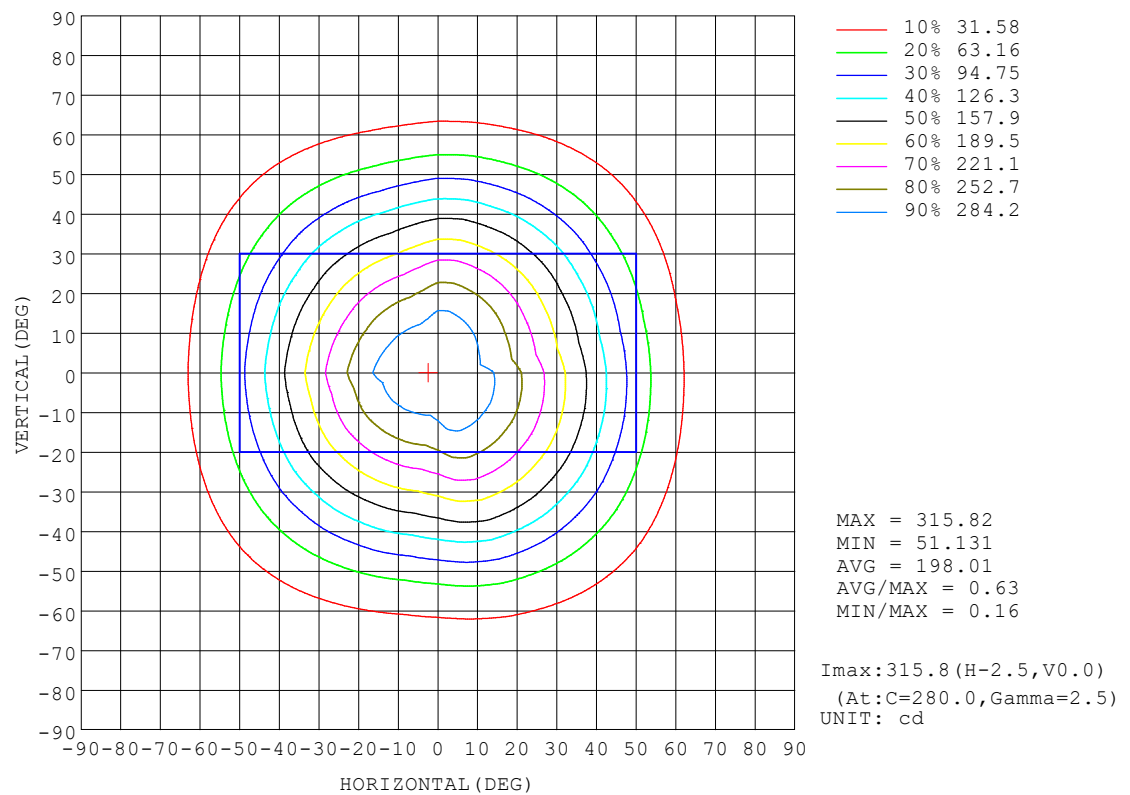
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	23	20	18	23	20	18	22	20	18	16
0.80	26	23	21	26	23	21	25	23	21	19
1.00	29	26	24	28	26	24	28	26	24	22
1.25	31	28	26	30	28	26	30	27	26	24
1.50	32	30	28	32	29	28	31	29	27	25
2.00	34	32	30	33	31	30	32	31	29	27
2.50	35	33	31	34	32	31	33	32	30	28
3.00	35	34	33	35	33	32	34	32	31	29
4.00	36	35	34	36	35	34	34	33	33	30
5.00	37	36	35	36	35	34	35	34	33	31
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: 30 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: 95Livia180/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 180	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

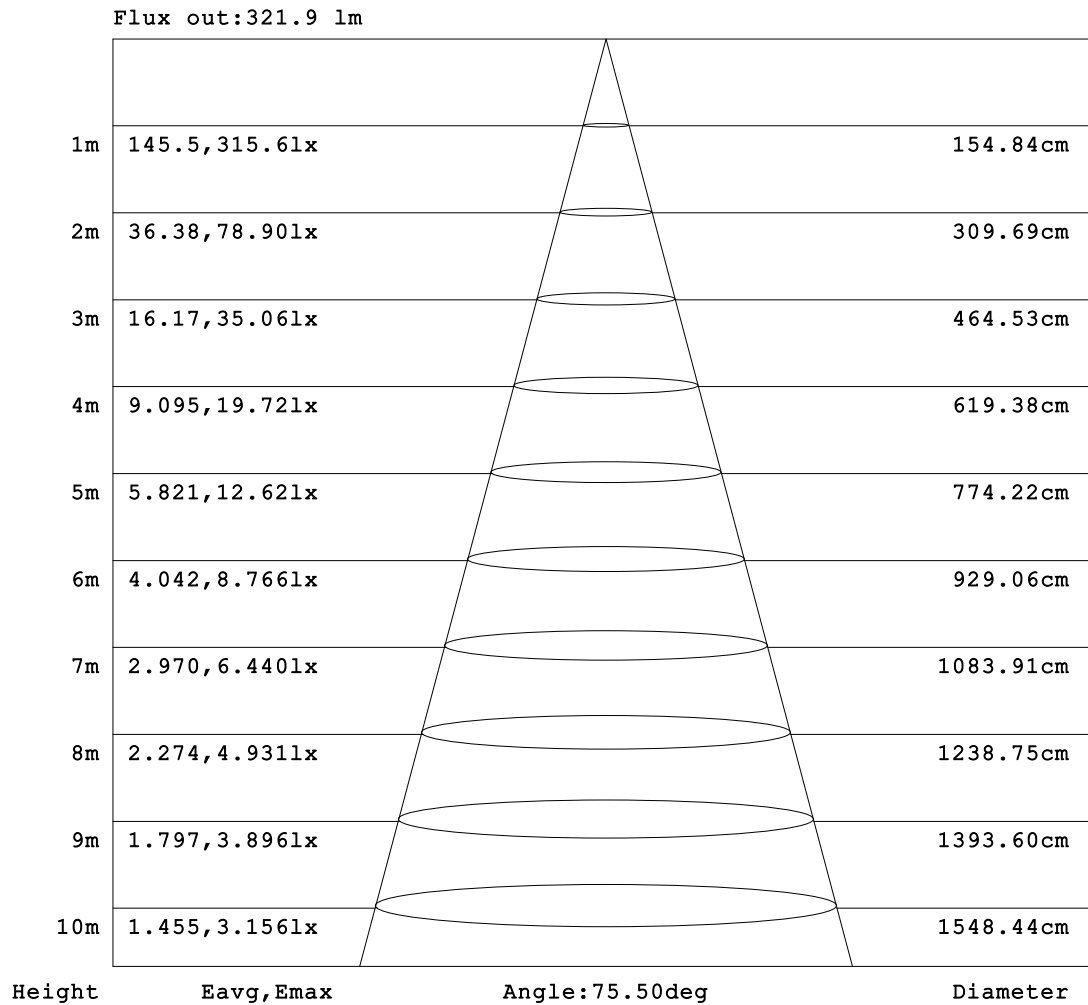


C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature:25.3°C
 Operators:
 Test Date:30 December 2022

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: 95Livia180/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 180	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:



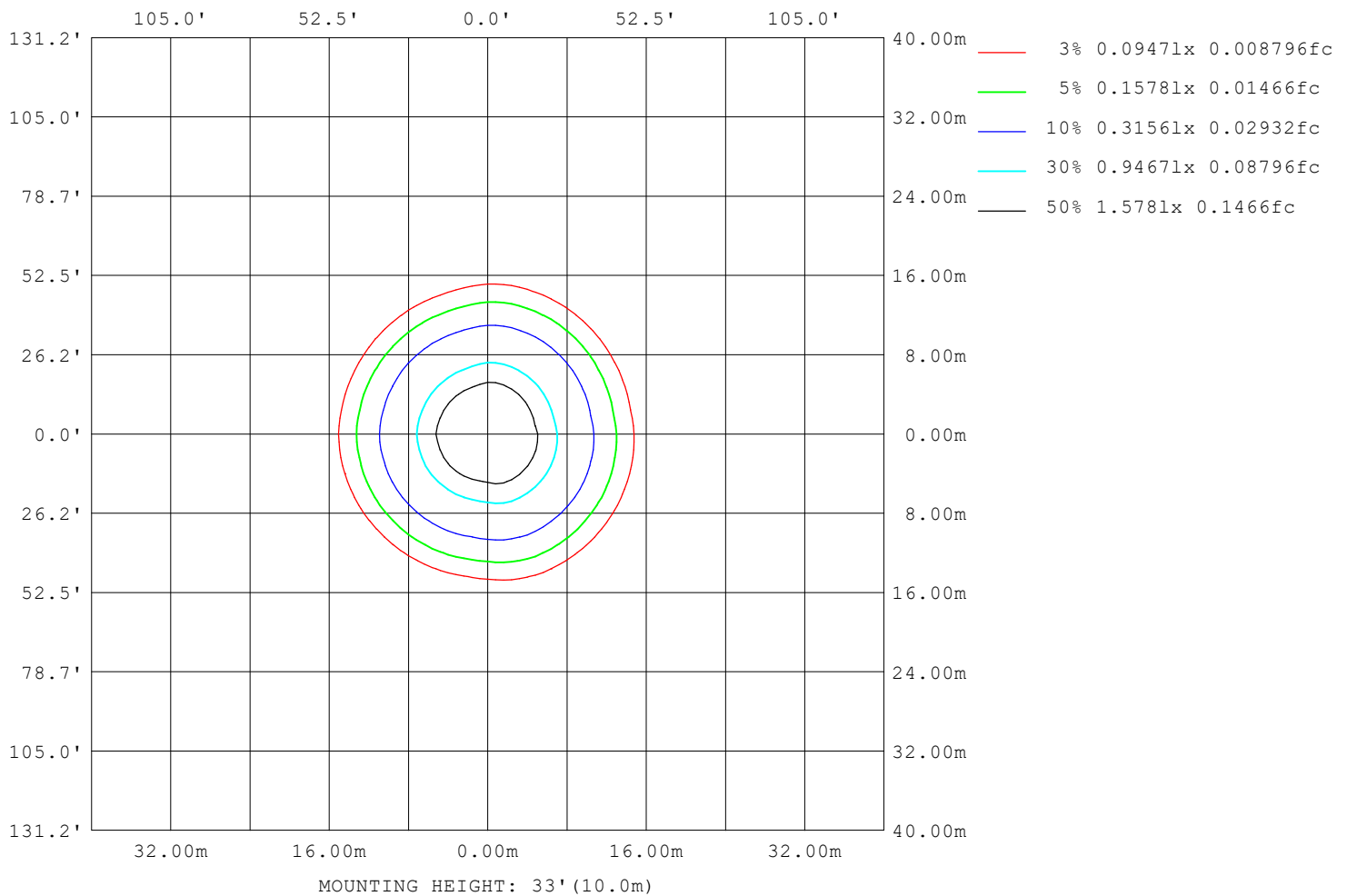
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: MEDIUM
 Temperature: 25.3°C
 Operators:
 Test Date: 30 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: 95Livia180/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 180	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: 30 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: 95Livial80/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 220 x 180	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

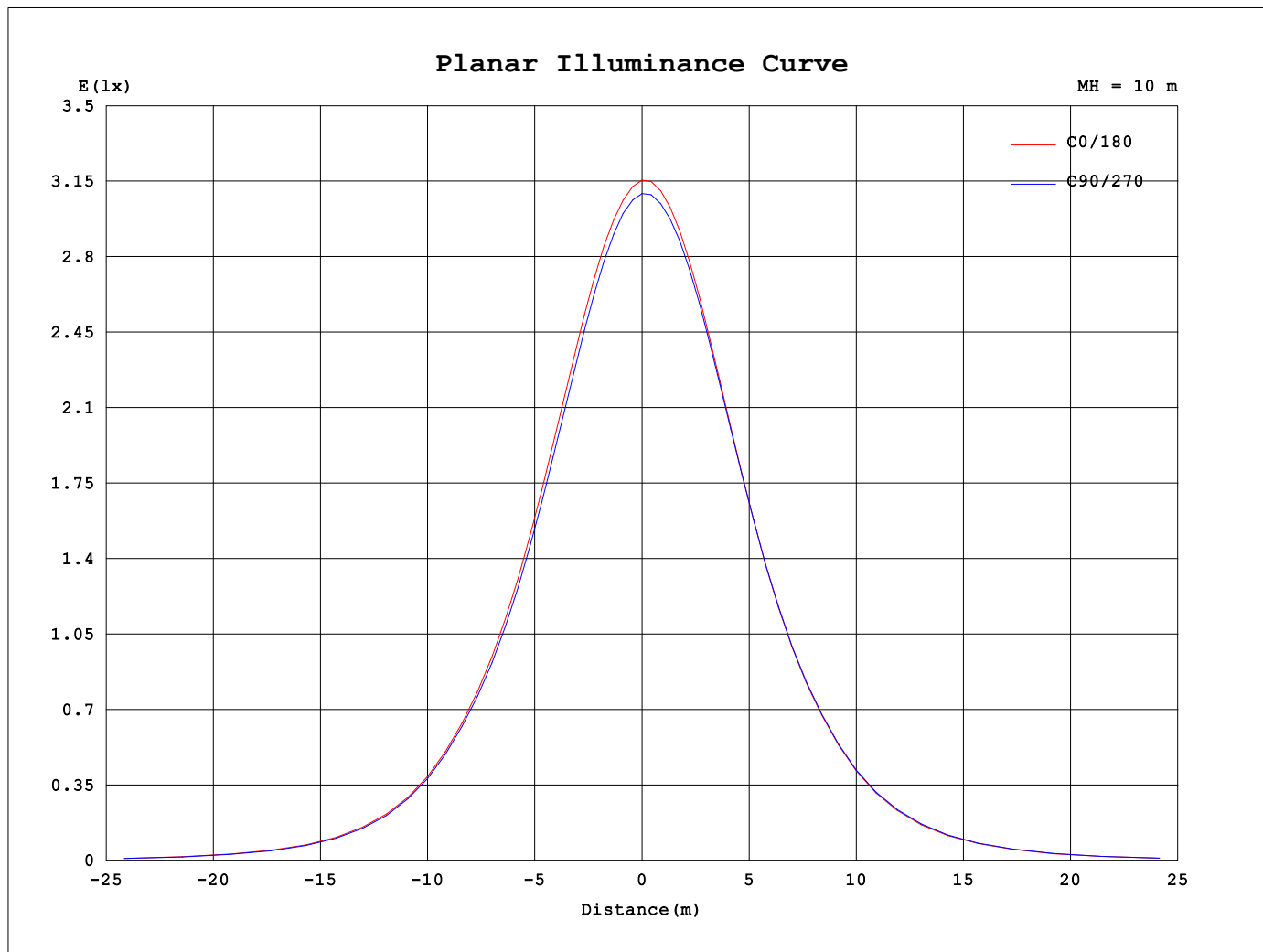
AvgL	cd/m2
L_0~180 (65) av	6066
L_0~180 (75) av	2725
L_0~180 (85) av	1121
L_90~270 (65) av	6182
L_90~270 (75) av	2780
L_90~270 (85) av	1122
L_45 (65) av	6133
L_45 (75) av	2754
L_45 (85) av	1123

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:30 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: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 30 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:

```

```

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:

```