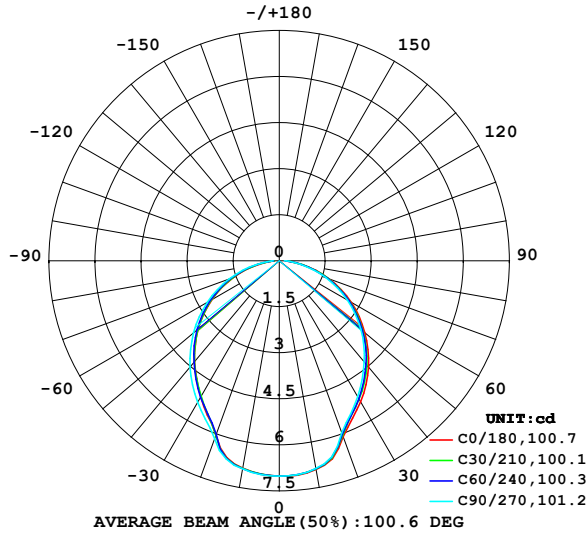


LUMINAIRE PHOTOMETRIC TEST REPORT

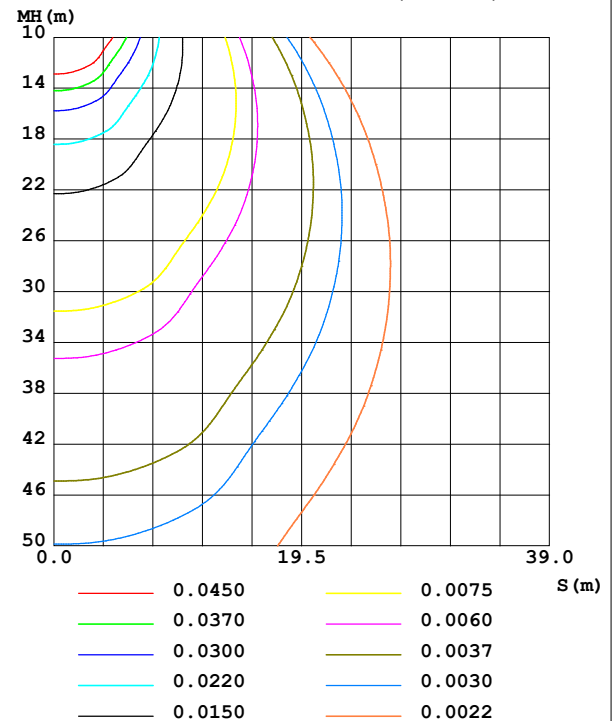
NAME: 98SOL149	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 210 x 380	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Circle	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	98SOL149	Imax(cd)	7.020	S/MH(C0/180)	1.10
NOMINAL POWER(W)	2.5	LOR(%)	7.1	S/MH(C90/270)	1.14
RATED VOLTAGE(V)	0	TOTAL FLUX(lm)	17.734	η UP,DN(C0-180)	0.0,3.5
NOMINAL FLUX(lm)	250	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,3.6
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	0	η down (%)	7.1	CIBSE SHR MAX	1.30

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:26 January 2023

γ Range: 0 - 90DEG
 γ Interval: 2.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.340m [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	6.905	6.876	6.874	6.851	6.863	6.890	6.886	6.920	0- 10	0.6637	0.6637	3.74,0.27
20	6.095	6.023	5.965	6.004	6.034	6.056	6.167	6.149	10- 20	1.853	2.517	14.2,1.01
30	5.309	5.187	5.117	5.105	5.125	5.108	5.319	5.293	20- 30	2.577	5.094	28.7,2.04
40	4.522	4.419	4.305	4.287	4.296	4.310	4.525	4.528	30- 40	3.004	8.098	45.7,3.24
50	3.639	3.552	3.471	3.435	3.445	3.479	3.651	3.649	40- 50	3.066	11.16	63,4.47
60	2.713	2.631	2.564	2.519	2.537	2.583	2.713	2.722	50- 60	2.758	13.92	78.5,5.57
70	1.736	1.670	1.612	1.569	1.586	1.649	1.741	1.760	60- 70	2.123	16.05	90.5,6.42
80	0.7843	0.7435	0.7074	0.6588	0.6630	0.7358	0.7860	0.8126	70- 80	1.255	17.30	97.6,6.92
90	0.2123	0.1962	0.1747	0.1618	0.1573	0.1716	0.2000	0.1965	80- 90	0.4332	17.73	100,7.09
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): 9.6475 lm

%lum = 54.4%

%lamp = 3.9%

Conical surface Flux(130deg): 15.081 lm

%lum = 85.0%

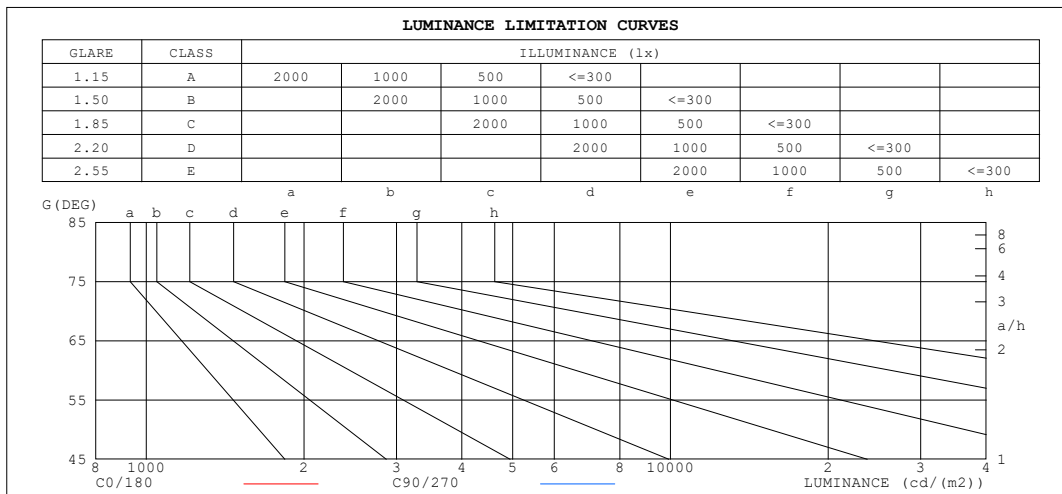
%lamp = 6.0%

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:26 January 2023

γ Range: 0 - 90DEG
 γ Interval: 2.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.340m [K=1.0000]
Remarks:

LUMINANCE LIMITATION CURVES

NAME: 98SOL149	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 210 x 380	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Circle	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	199	173
80	206	173
75	219	188
70	232	200
65	240	211
60	248	218
55	253	224
50	258	229
45	264	234

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature: 25.3°C
 Operators:
 Test Date: 26 January 2023

γ Range: 0 - 90DEG
 γ Interval: 2.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.456
 Humidity: 65.0%
 Test Distance: 6.340m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

NAME: 98SOL149	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 210 x 380	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Circle	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															

LAMPS		LUMINAIRE BUDGETARY DIAGRAM																	
50	CONDITIONS																		
40	FLUX	5000lm																	
30	FACTOR	0.70																	
	Hdown	0.00m																	
	Hwork	0.00m																	
20	Ework (AVE)	100lx																	
	ρ (%)	cc	w	fc															
		70	50	30															
		50	30	20															
10																			
9																			
8																			
7																			
6																			
5																			
4																			
3																			
2																			
	10	20	30	40	50	70	100	200	300	500	700	1k	2k	3k	4k	5k	7k		
	AREA (m2)																		

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:26 January 2023

γ Range: 0 - 90DEG
γ Interval: 2.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.340m [K=1.0000]
Remarks:

WEC AND CCEC

NAME: 98SOL149	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 210 x 380	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Circle	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	.022	.013	.004	.022	.012	.004	.021	.012	.004	.020	.011	.004	.019	.011	.004	
2.0	.021	.011	.003	.020	.011	.003	.019	.011	.003	.019	.010	.003	.018	.010	.003	
3.0	.019	.010	.003	.019	.010	.003	.018	.010	.003	.017	.009	.003	.017	.009	.003	
4.0	.018	.009	.003	.017	.009	.003	.017	.009	.003	.016	.009	.003	.015	.008	.003	
5.0	.016	.008	.002	.016	.008	.002	.015	.008	.002	.015	.008	.002	.014	.008	.002	
6.0	.015	.008	.002	.015	.007	.002	.014	.007	.002	.014	.007	.002	.013	.007	.002	
7.0	.014	.007	.002	.014	.007	.002	.013	.007	.002	.013	.007	.002	.012	.006	.002	
8.0	.013	.006	.002	.013	.006	.002	.012	.006	.002	.012	.006	.002	.012	.006	.002	
9.0	.012	.006	.002	.012	.006	.002	.012	.006	.002	.011	.006	.002	.011	.006	.002	
10.0	.012	.006	.002	.011	.005	.002	.011	.005	.002	.011	.005	.002	.010	.005	.002	

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	.014	.014	.014	.012	.012	.012	.008	.008	.008	.005	.005	.005	.001	.001	.001	
1.0	.013	.011	.010	.011	.010	.008	.007	.007	.006	.004	.004	.003	.001	.001	.001	
2.0	.012	.009	.007	.010	.008	.006	.007	.006	.004	.004	.003	.002	.001	.001	.001	
3.0	.012	.008	.005	.010	.007	.005	.007	.005	.003	.004	.003	.002	.001	.001	.001	
4.0	.011	.007	.004	.010	.006	.004	.007	.004	.003	.004	.003	.002	.001	.001	.000	
5.0	.011	.006	.003	.009	.006	.003	.006	.004	.002	.004	.002	.001	.001	.001	.000	
6.0	.010	.006	.003	.009	.005	.002	.006	.004	.002	.003	.002	.001	.001	.001	.000	
7.0	.010	.005	.002	.008	.005	.002	.006	.003	.001	.003	.002	.001	.001	.001	.000	
8.0	.009	.005	.002	.008	.004	.002	.005	.003	.001	.003	.002	.001	.001	.001	.000	
9.0	.009	.005	.002	.007	.004	.002	.005	.003	.001	.003	.002	.001	.001	.001	.000	
10.0	.008	.004	.002	.007	.004	.001	.005	.003	.001	.003	.002	.001	.001	.001	.000	

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:26 January 2023

γ Range: 0 - 90DEG
γ Interval: 2.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.340m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

NAME: 98SOL149					TYPE:			WEIGHT: 1			
SPEC.:					DIM.: F 210 x 380			SERIAL No.: 0			
MFR.: Elmark Industries JSC					SUR.: Circle			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	12.9	14.4	13.2	14.6	14.8	12.4	14.0	12.7	14.2	14.4
	3H	14.5	15.9	14.8	16.2	16.4	14.0	15.3	14.2	15.6	15.8
	4H	15.2	16.5	15.5	16.8	17.0	14.6	15.9	14.9	16.1	16.4
	6H	15.7	16.9	16.0	17.2	17.5	15.0	16.2	15.3	16.5	16.8
	8H	15.9	17.1	16.2	17.3	17.6	15.1	16.3	15.5	16.6	16.9
	12H	16.0	17.1	16.3	17.4	17.7	15.2	16.4	15.6	16.7	17.0
4H	2H	13.5	14.8	13.8	15.1	15.3	13.1	14.5	13.4	14.7	15.0
	3H	15.3	16.4	15.6	16.7	17.0	14.8	16.0	15.2	16.3	16.6
	4H	16.1	17.1	16.4	17.5	17.8	15.5	16.6	15.9	16.9	17.3
	6H	16.7	17.7	17.1	18.0	18.4	16.1	17.1	16.5	17.4	17.8
	8H	16.9	17.8	17.3	18.2	18.6	16.3	17.2	16.7	17.6	17.9
	12H	17.1	17.9	17.5	18.3	18.7	16.4	17.3	16.9	17.6	18.1
8H	4H	16.3	17.2	16.7	17.6	18.0	15.9	16.8	16.3	17.1	17.5
	6H	17.1	17.9	17.6	18.3	18.7	16.6	17.3	17.0	17.7	18.2
	8H	17.4	18.1	17.9	18.5	19.0	16.9	17.5	17.3	17.9	18.4
	12H	17.7	18.3	18.2	18.7	19.2	17.1	17.7	17.6	18.1	18.6
12H	4H	16.3	17.1	16.8	17.5	17.9	15.9	16.7	16.3	17.1	17.5
	6H	17.2	17.8	17.6	18.3	18.7	16.7	17.3	17.1	17.7	18.2
	8H	17.5	18.1	18.0	18.6	19.0	17.0	17.6	17.5	18.0	18.5
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 0.1 / - 0.2					+ 0.2 / - 0.2					
1.5H	+ 0.1 / - 0.2					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					

CIE Pub.117, 250.0 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -4.8)
Area: 0.0233 m2

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:26 January 2023

γ Range: 0 - 90DEG
γ Interval: 2.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.340m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

NAME: 98SOL149	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 210 x 380	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Circle	Shielding Angle:

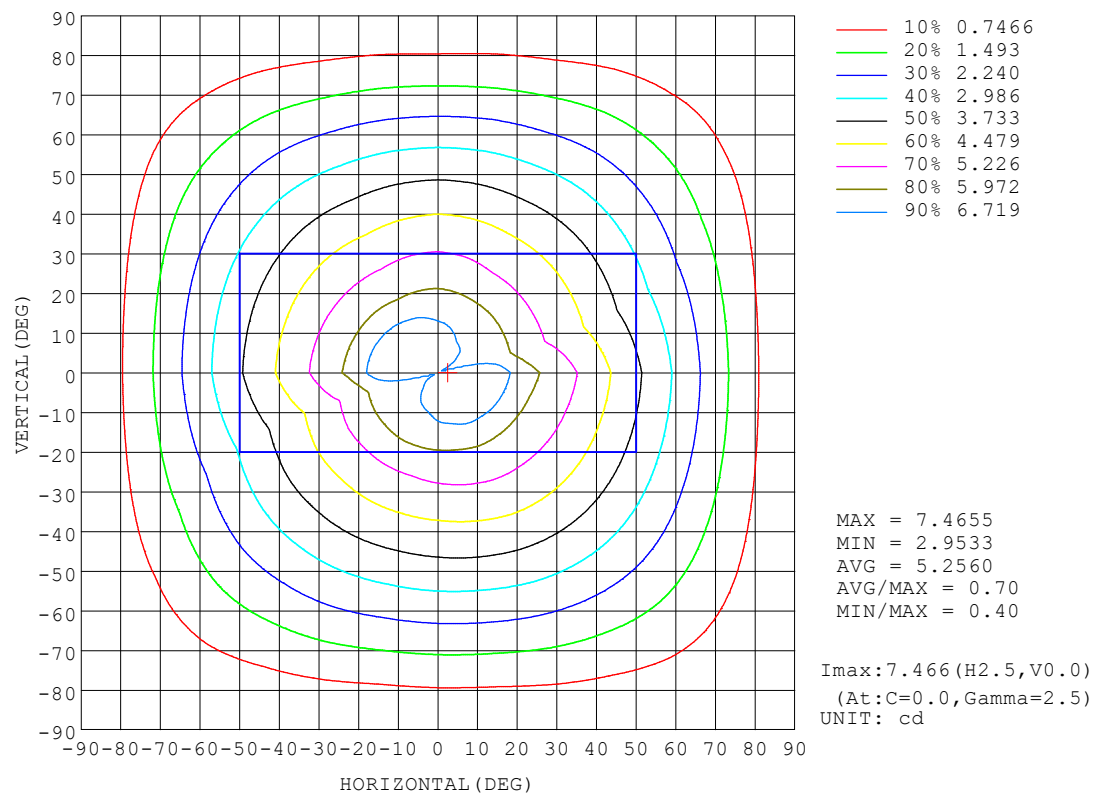
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	4	3	3	4	3	3	4	3	3	2
0.80	5	4	3	5	4	3	5	4	3	3
1.00	5	5	4	5	5	4	5	5	4	4
1.25	6	5	5	6	5	5	6	5	5	4
1.50	6	6	5	6	5	5	6	5	5	4
2.00	7	6	6	7	6	6	6	6	6	5
2.50	7	6	6	7	6	6	7	6	6	5
3.00	7	7	6	7	7	6	7	6	6	6
4.00	8	7	7	7	7	7	7	7	7	6
5.00	8	7	7	8	7	7	7	7	7	6
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 26 January 2023

γ Range: 0 - 90DEG
γ Interval: 2.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity: 65.0%
Test Distance: 6.340m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

NAME: 98SOL149	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 210 x 380	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Circle	Shielding Angle:

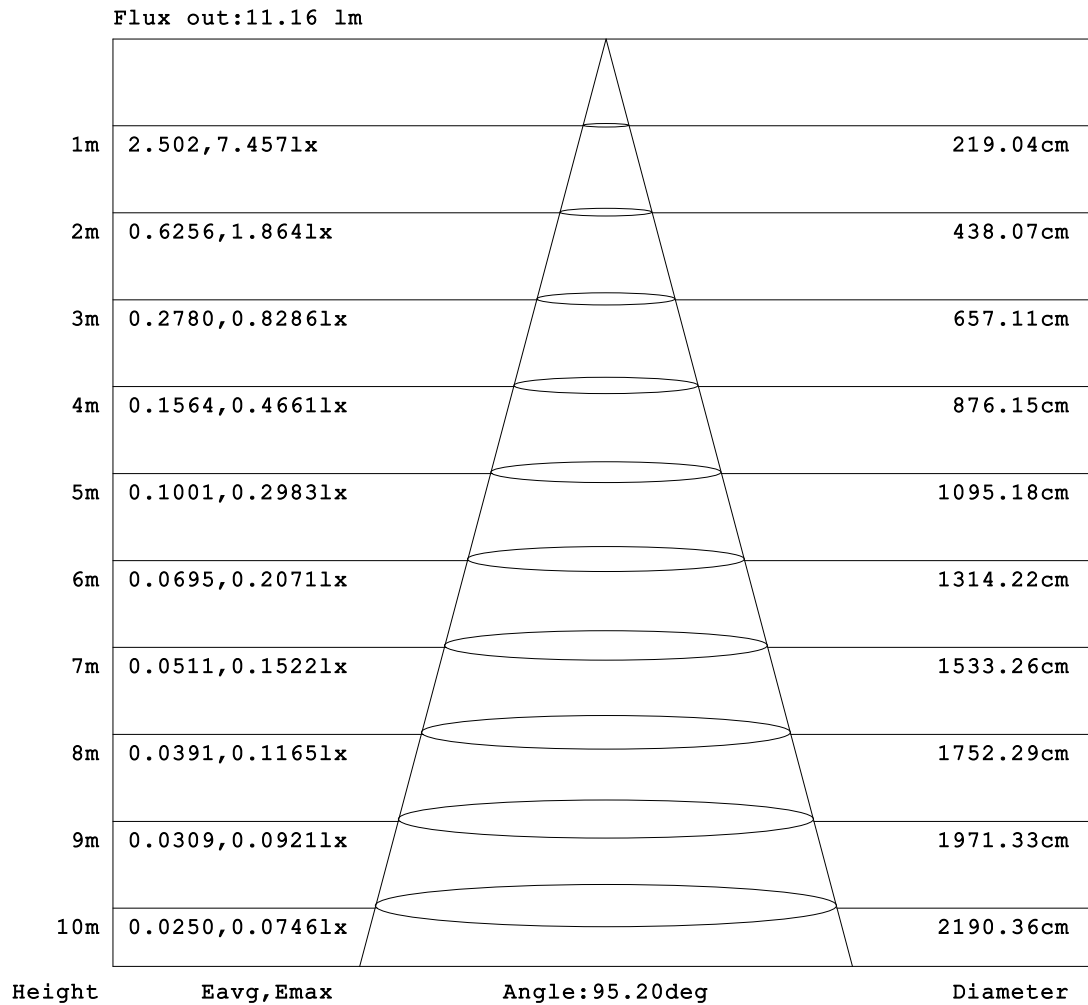


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 26 January 2023

γ Range: 0 - 90DEG
γ Interval: 2.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity: 65.0%
Test Distance: 6.340m [K=1.0000]
Remarks:

AAI Figure

NAME: 98SOL149	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 210 x 380	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Circle	Shielding Angle:



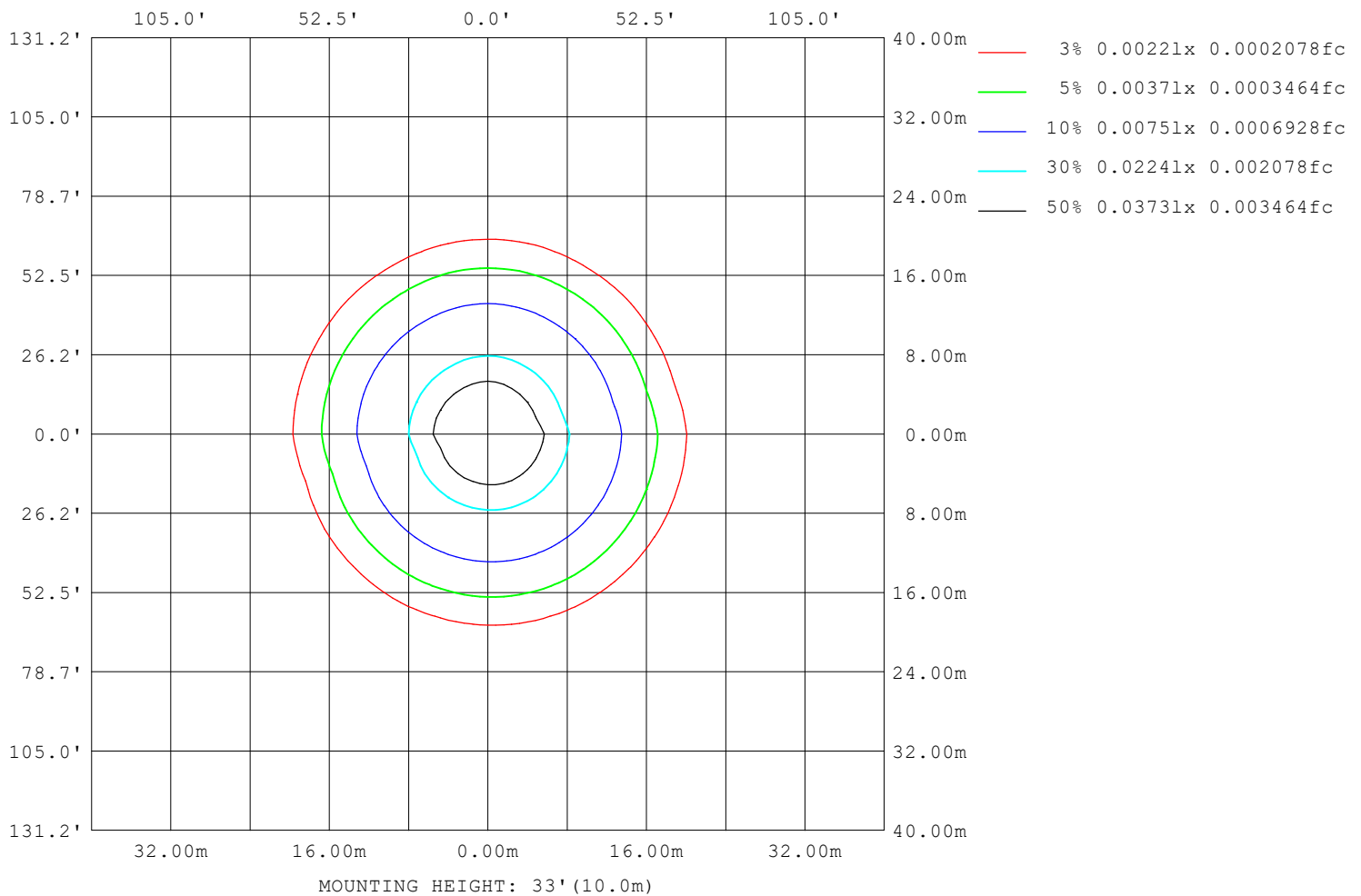
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 15.0DEG
 Test Speed: MEDIUM
 Temperature: 25.3°C
 Operators:
 Test Date: 26 January 2023

γ Range: 0 - 90DEG
 γ Interval: 2.5DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.456
 Humidity: 65.0%
 Test Distance: 6.340m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

NAME: 98SOL149	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 210 x 380	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Circle	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 26 January 2023

γ Range: 0 - 90DEG
γ Interval: 2.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity: 65.0%
Test Distance: 6.340m [K=1.0000]
Remarks:

LED Avg.L Report

NAME: 98SOL149	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F 210 x 380	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: Circle	Shielding Angle:

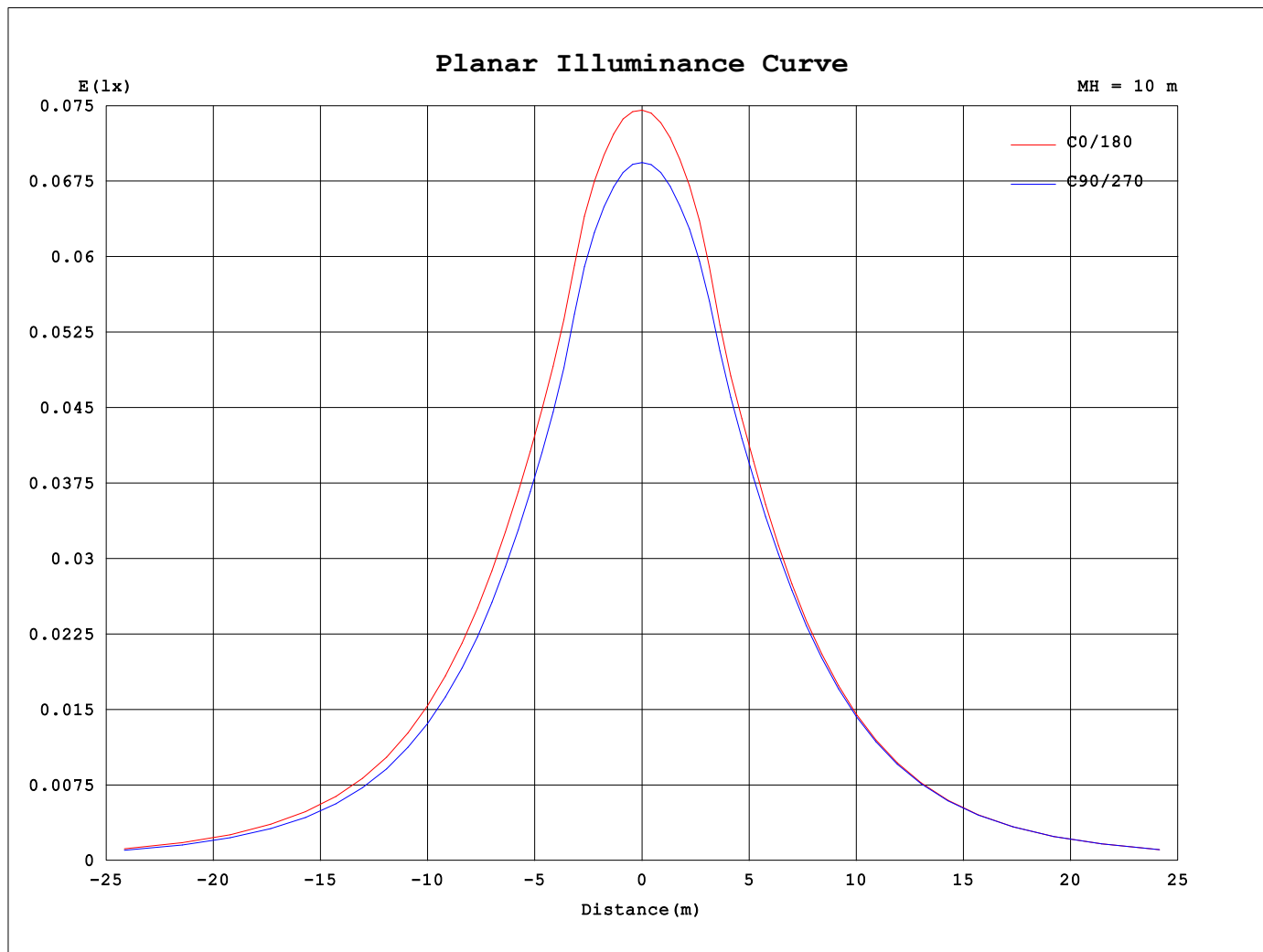
AvgL	cd/m2
L_0~180 (65) av	218
L_0~180 (75) av	195
L_0~180 (85) av	165
L_90~270 (65) av	220
L_90~270 (75) av	198
L_90~270 (85) av	186
L_45 (65) av	218
L_45 (75) av	197
L_45 (85) av	176

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature:25.3°C
Operators:
Test Date:26 January 2023

γ Range: 0 - 90DEG
γ Interval: 2.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:6.340m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: MEDIUM
Temperature: 25.3°C
Operators:
Test Date: 26 January 2023

γ Range: 0 - 90DEG
 γ Interval: 2.5DEG
Test System: EVERFINE GO-2000A_V1 SYSTEM V2.00.456
Humidity: 65.0%
Test Distance: 6.340m [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:6.340m [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:6.340m [K=1.0000]
Remarks:

```