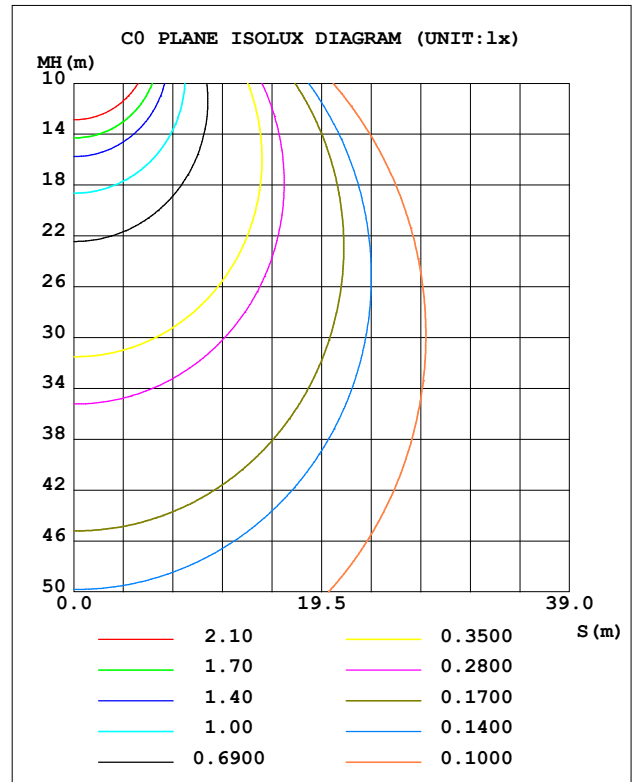
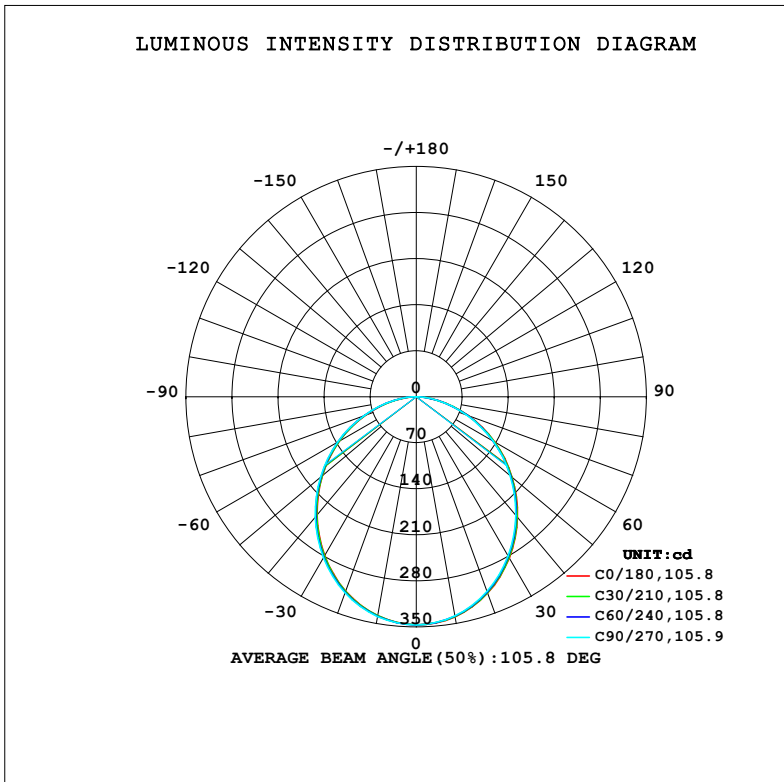


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 99LED961	TYPE: 99LED961	WEIGHT: 1
SPEC.:	DIM.: F138	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99LED961	I _{max} (cd)	346.6	S/MH (C0/180)	1.20
NOMINAL POWER (W)	12	LOR (%)	90.4	S/MH (C90/270)	1.22
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	922.45	η UP, DN (C0-180)	0.0, 44.9
NOMINAL FLUX (lm)	1020	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 45.5
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	90.4	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 25.3°C
 Operators:
 Test Date: 10 August 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	339.7	339.0	338.2	337.7	337.8	338.5	339.3	339.8	0- 10	32.71	32.71	3.55,3.21
20	317.6	316.4	315.0	313.9	314.2	315.5	317.1	318.1	10- 20	92.78	125.5	13.6,12.3
30	283.0	281.3	279.5	278.2	278.7	280.4	282.4	283.7	20- 30	138.0	263.5	28.6,25.8
40	239.4	237.5	235.6	234.3	234.9	236.8	239.0	240.3	30- 40	162.5	426.1	46.2,41.8
50	190.3	188.3	186.5	185.4	186.2	188.0	190.1	191.3	40- 50	164.5	590.5	64,57.9
60	137.9	136.2	134.7	133.9	135.0	136.6	138.2	139.3	50- 60	145.4	735.9	79.8,72.1
70	84.52	82.94	81.71	81.40	82.49	84.03	85.35	85.84	60- 70	108.8	844.7	91.6,82.8
80	34.59	33.43	32.53	32.38	33.39	34.70	35.51	35.61	70- 80	61.32	906.1	98.2,88.8
90	0.5243	0.4856	0.4822	0.4877	0.4265	0.4625	0.5094	0.4981	80- 90	16.39	922.4	100,90.4
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): 509.43 lm

%lum = 55.2%

%lamp = 49.9%

Conical surface Flux(130deg): 795.8 lm

%lum = 86.3%

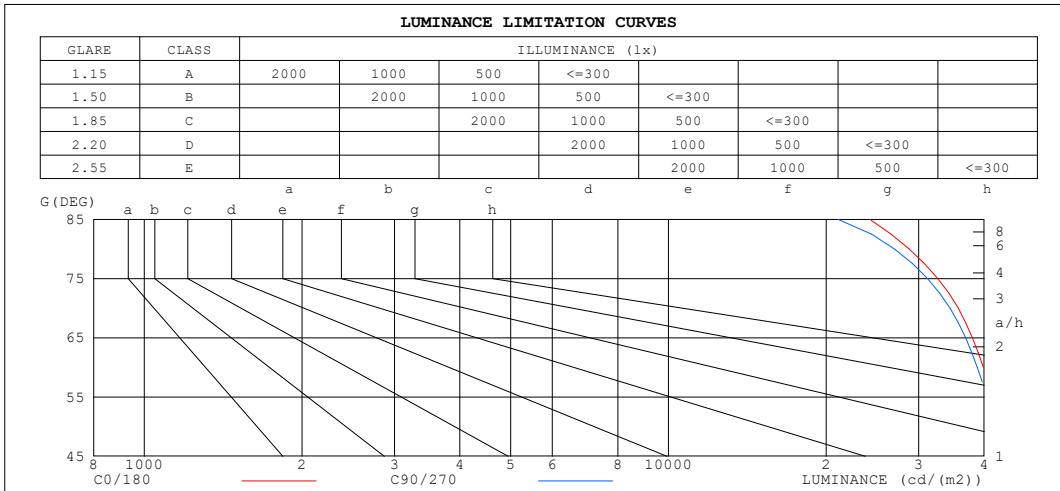
%lamp = 78.0%

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:10 August 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: 99LED961	TYPE: 99LED961	WEIGHT: 1
SPEC.:	DIM.: F138	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	24230	21089
80	28776	26983
75	32630	31196
70	35702	34418
65	37987	36877
60	39837	38815
55	41407	40399
50	42761	41789
45	44002	43085

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 25.3°C
 Operators:
 Test Date: 10 August 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: 99LED961	TYPE: 99LED961	WEIGHT: 1
SPEC.:	DIM.: F138	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	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	.275	.156	.050	.269	.153	.049	.257	.147	.047	.246	.142	.045	.236	.137	.044	
2.0	.259	.142	.044	.254	.140	.043	.243	.135	.042	.234	.131	.041	.225	.127	.040	
3.0	.241	.128	.038	.236	.126	.038	.226	.123	.037	.218	.119	.037	.210	.116	.036	
4.0	.222	.116	.034	.218	.114	.034	.210	.111	.033	.202	.108	.033	.195	.106	.032	
5.0	.206	.105	.030	.202	.104	.030	.195	.101	.030	.188	.099	.029	.181	.097	.029	
6.0	.191	.096	.027	.188	.095	.027	.181	.093	.027	.175	.091	.027	.169	.089	.026	
7.0	.178	.088	.025	.175	.087	.025	.169	.085	.025	.164	.084	.024	.158	.082	.024	
8.0	.166	.081	.023	.164	.081	.023	.158	.079	.023	.153	.078	.022	.149	.076	.022	
9.0	.156	.075	.021	.153	.075	.021	.149	.074	.021	.144	.072	.021	.140	.071	.021	
10.0	.147	.070	.020	.144	.070	.019	.140	.069	.019	.136	.068	.019	.133	.067	.019	

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	.172	.172	.172	.147	.147	.147	.100	.100	.100	.058	.058	.058	.018	.018	.018	
1.0	.163	.141	.122	.139	.121	.105	.095	.083	.073	.055	.048	.042	.018	.016	.014	
2.0	.155	.119	.089	.133	.103	.077	.091	.071	.054	.053	.041	.032	.017	.013	.010	
3.0	.148	.103	.068	.127	.089	.059	.087	.062	.041	.050	.036	.024	.016	.012	.008	
4.0	.141	.091	.053	.121	.079	.046	.083	.055	.033	.048	.032	.019	.015	.010	.006	
5.0	.134	.082	.043	.115	.071	.037	.079	.049	.026	.046	.029	.016	.015	.009	.005	
6.0	.128	.074	.036	.110	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
7.0	.122	.068	.030	.105	.059	.026	.072	.041	.019	.042	.024	.011	.014	.008	.004	
8.0	.116	.063	.026	.100	.054	.023	.069	.038	.016	.040	.023	.010	.013	.007	.003	
9.0	.110	.058	.023	.095	.051	.020	.066	.036	.014	.038	.021	.008	.012	.007	.003	
10.0	.105	.054	.020	.091	.047	.018	.063	.033	.013	.037	.020	.008	.012	.006	.003	

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:10 August 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: 99LED961					TYPE: 99LED961			WEIGHT: 1			
SPEC.:					DIM.: F138			SERIAL No.: 0			
MFR.: Elmark Industries JSC					SUR.: circular			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	25.7	27.2	25.9	27.4	27.6	25.6	27.1	25.8	27.3	27.5
	3H	27.1	28.5	27.4	28.8	29.0	27.0	28.4	27.3	28.6	28.8
	4H	27.7	29.0	28.0	29.3	29.5	27.5	28.8	27.8	29.1	29.3
	6H	28.1	29.3	28.4	29.6	29.9	27.9	29.1	28.2	29.4	29.7
	8H	28.2	29.4	28.5	29.7	30.0	28.0	29.2	28.3	29.5	29.8
	12H	28.3	29.4	28.6	29.7	30.0	28.0	29.2	28.4	29.5	29.8
4H	2H	26.2	27.6	26.6	27.8	28.1	26.2	27.5	26.5	27.7	28.0
	3H	27.9	29.0	28.2	29.3	29.6	27.8	28.9	28.1	29.2	29.5
	4H	28.6	29.6	28.9	29.9	30.3	28.4	29.5	28.8	29.8	30.1
	6H	29.1	30.0	29.5	30.4	30.7	28.9	29.8	29.3	30.2	30.5
	8H	29.2	30.1	29.7	30.5	30.9	29.0	29.9	29.5	30.3	30.7
	12H	29.4	30.2	29.8	30.5	30.9	29.1	29.9	29.6	30.3	30.7
8H	4H	28.8	29.7	29.2	30.0	30.4	28.7	29.5	29.1	29.9	30.3
	6H	29.4	30.2	29.9	30.6	31.0	29.3	30.0	29.7	30.4	30.8
	8H	29.7	30.3	30.2	30.8	31.2	29.5	30.1	30.0	30.6	31.0
	12H	29.9	30.4	30.3	30.9	31.3	29.6	30.2	30.1	30.6	31.1
12H	4H	28.8	29.6	29.2	30.0	30.4	28.7	29.5	29.1	29.9	30.3
	6H	29.5	30.1	29.9	30.6	31.0	29.3	30.0	29.8	30.4	30.8
	8H	29.8	30.3	30.3	30.8	31.3	29.6	30.1	30.1	30.6	31.1
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 0.2 / - 0.2					+ 0.2 / - 0.2				
1.5H		+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.2 / - 0.2					+ 0.2 / - 0.3				

CIE Pub.117, 1020 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.1)
Area: 0.00693626 m2

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:10 August 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: 99LED961	TYPE: 99LED961	WEIGHT: 1
SPEC.:	DIM.: F138	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:

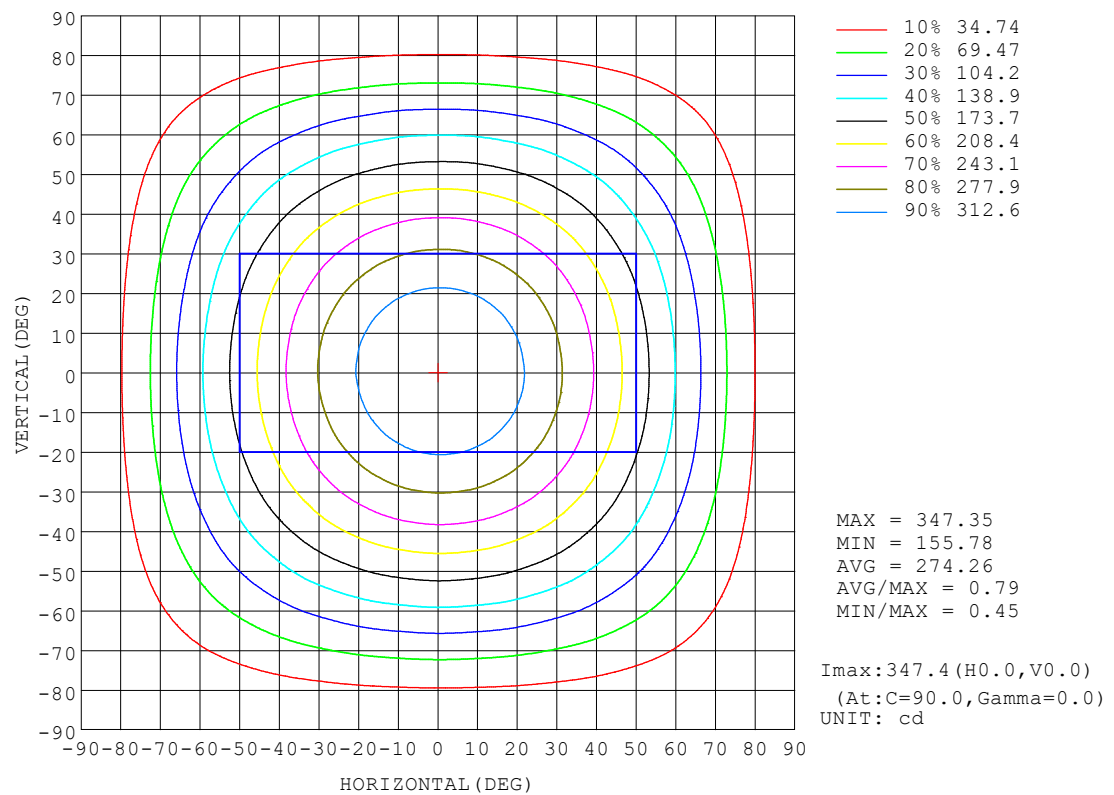
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	53	42	36	52	42	36	51	42	36	30
0.80	62	52	45	61	51	45	59	50	44	38
1.00	69	60	53	68	59	53	66	60	52	46
1.25	76	66	60	74	66	60	72	65	59	53
1.50	80	71	65	79	71	65	76	69	64	57
2.00	86	79	73	85	78	72	82	76	71	64
2.50	90	83	78	88	82	77	85	79	75	68
3.00	93	87	82	91	85	81	87	83	79	71
4.00	96	91	87	94	90	86	90	87	83	76
5.00	98	94	91	96	92	89	92	89	86	78
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: 10 August 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: 99LED961	TYPE: 99LED961	WEIGHT: 1
SPEC.:	DIM.: F138	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:

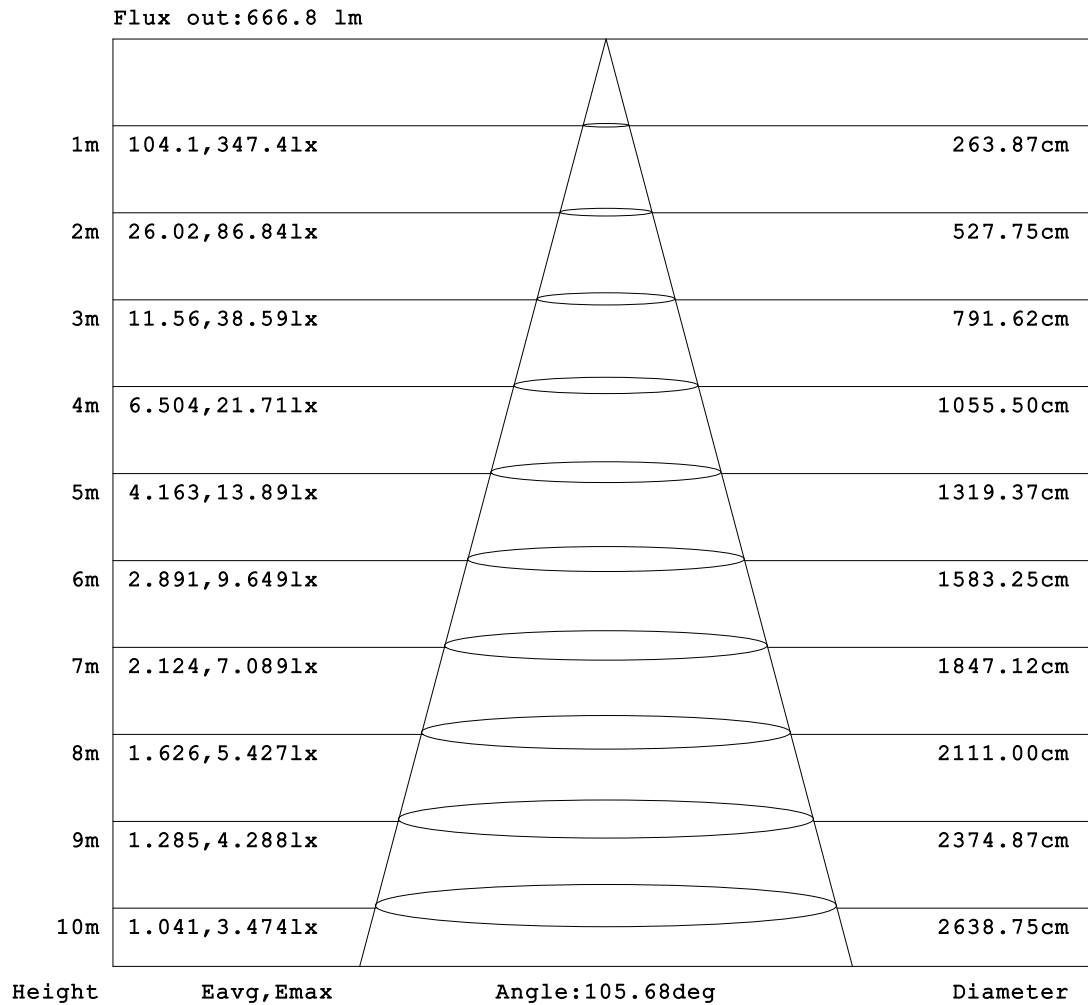


C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators:
Test Date: 10 August 2022

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: 99LED961	TYPE: 99LED961	WEIGHT: 1
SPEC.:	DIM.: F138	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:



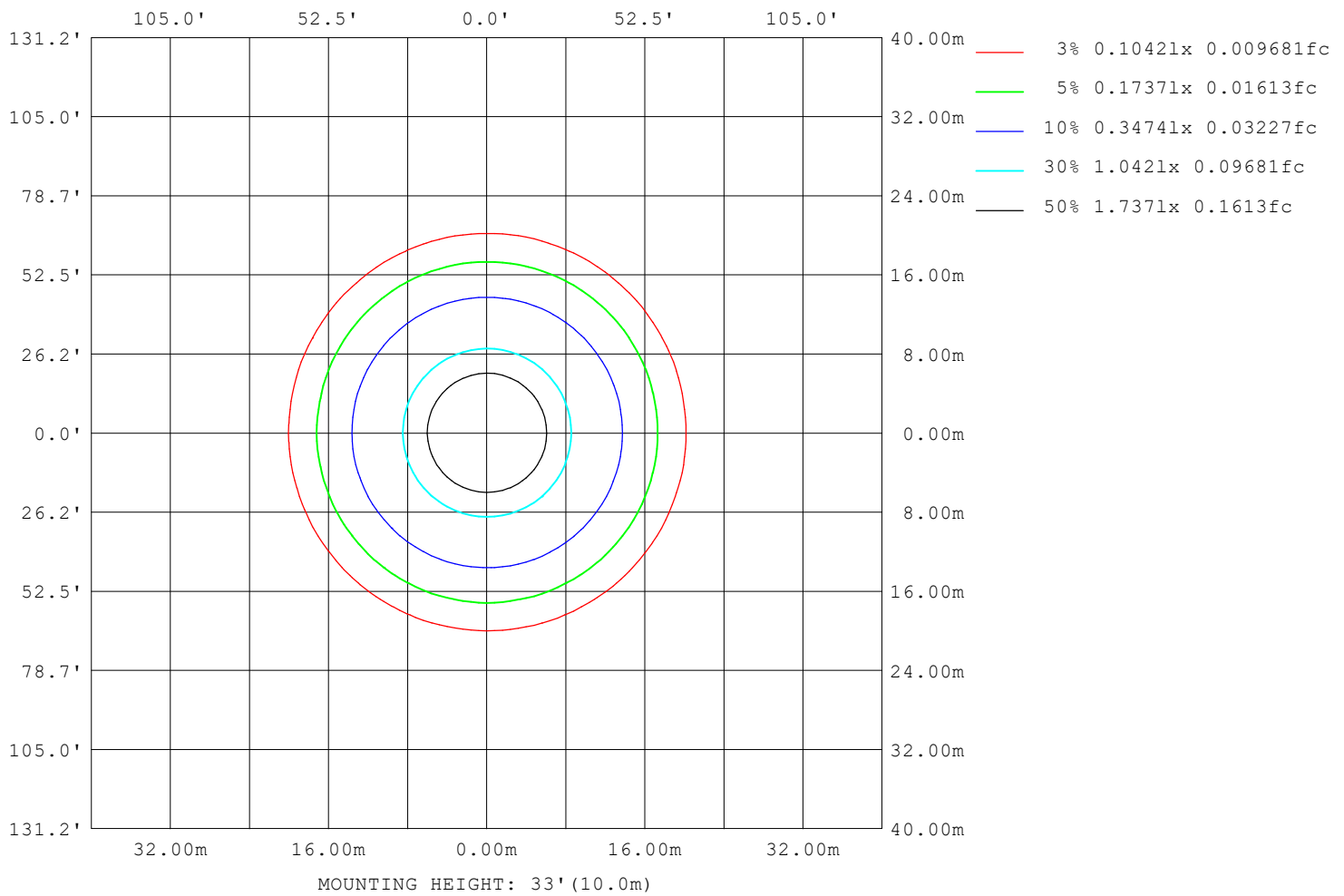
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 10.0DEG
 Test Speed: HIGH
 Temperature: 25.3°C
 Operators:
 Test Date: 10 August 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: 99LED961	TYPE: 99LED961	WEIGHT: 1
SPEC.:	DIM.: F138	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators:
Test Date: 10 August 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: 99LED961	TYPE: 99LED961	WEIGHT: 1
SPEC.:	DIM.: F138	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: circular	Shielding Angle:

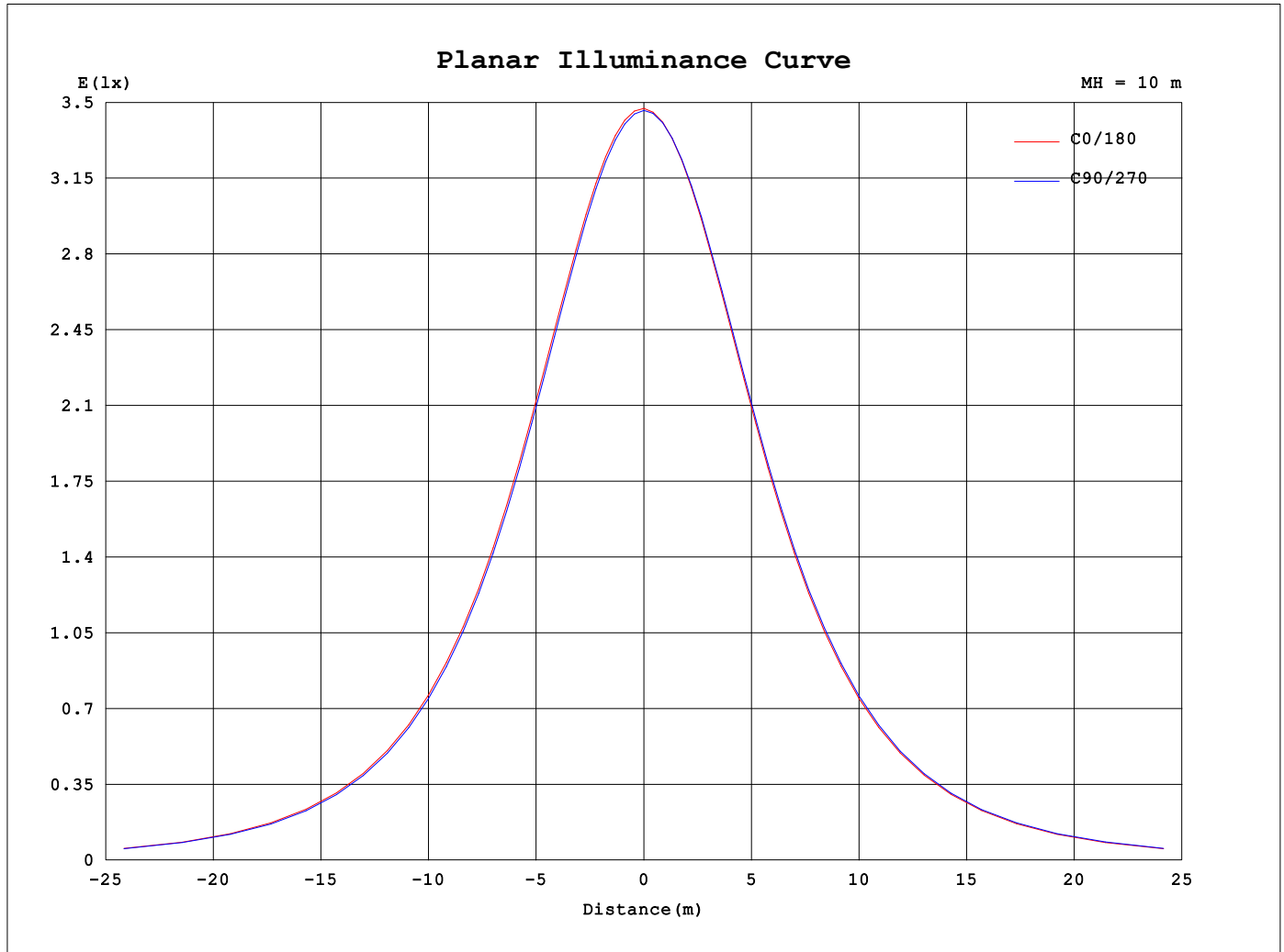
AvgL	cd/m2
L_0~180 (65) av	37499
L_0~180 (75) av	32150
L_0~180 (85) av	23347
L_90~270 (65) av	37515
L_90~270 (75) av	32184
L_90~270 (85) av	23333
L_45 (65) av	37512
L_45 (75) av	32185
L_45 (85) av	23550

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 10.0DEG
Test Speed: HIGH
Temperature:25.3°C
Operators:
Test Date:10 August 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: 10 August 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:

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