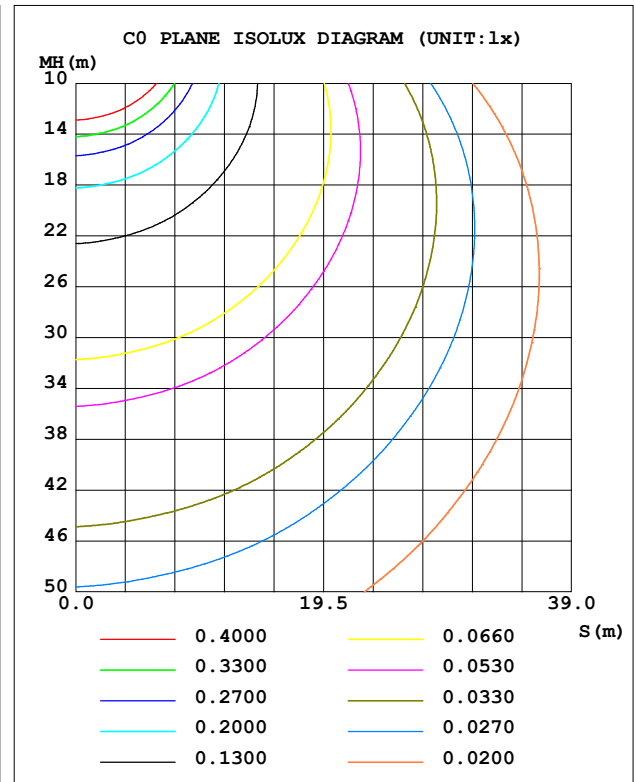
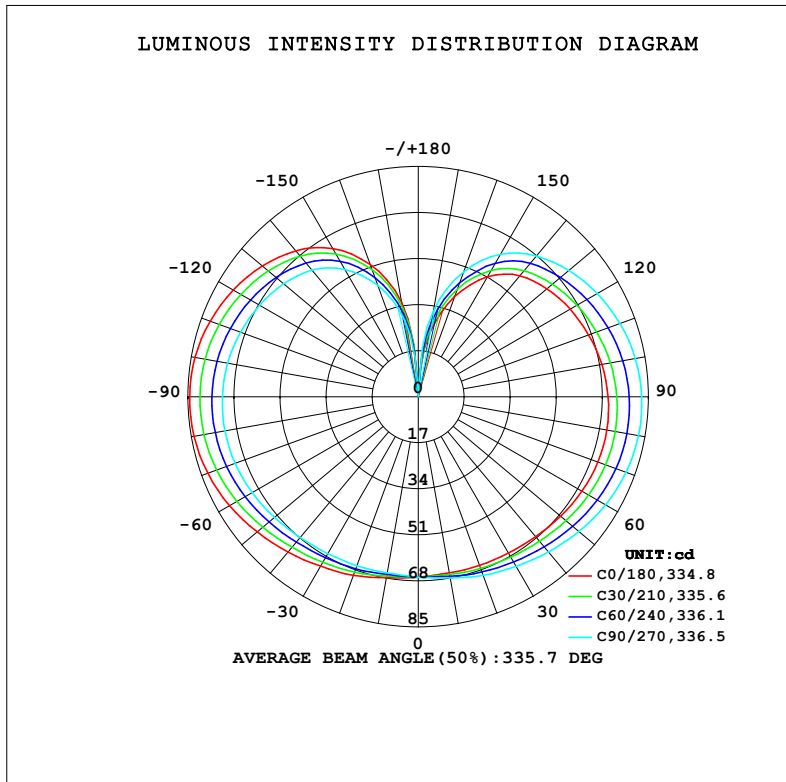


LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 99LED838W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F90	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	99LED838W	I <sub>max</sub> (cd)	86.43	S/MH (C0/180)	1.70
NOMINAL POWER (W)	7.2	LOR (%)	110.8	S/MH (C90/270)	1.56
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	892.65	η UP, DN (C0-180)	27.4, 29.8
NOMINAL FLUX (lm)	806	CIE CLASS	DIFFUSE	η UP, DN (C180-360)	25.6, 28.0
LAMPS INSIDE	1	η up (%)	53.0	CIBSE SHR NOM	1.75
TEST VOLTAGE (V)	230	η down (%)	57.8	CIBSE SHR MAX	1.75



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 21 October 2022

γ Range: 0 - 180DEG  
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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	66.00	66.92	67.87	68.24	67.82	66.93	66.03	65.65	0- 10	6.371	6.371	0.71,0.79
20	66.27	68.15	70.15	70.98	70.11	68.28	66.40	65.48	10- 20	19.17	25.54	2.86,3.17
30	66.65	69.37	72.27	73.52	72.25	69.52	66.86	65.63	20- 30	31.88	57.42	6.43,7.12
40	67.43	70.96	74.79	76.45	74.84	71.28	67.84	66.27	30- 40	44.21	101.6	11.4,12.6
50	68.61	72.75	77.40	79.52	77.65	73.43	69.32	67.36	40- 50	55.97	157.6	17.7,19.6
60	69.77	74.42	79.82	82.41	80.43	75.55	70.83	68.45	50- 60	66.63	224.2	25.1,27.8
70	70.56	75.57	81.63	84.69	82.66	77.23	71.97	69.19	60- 70	75.44	299.7	33.6,37.2
80	70.71	75.97	82.56	86.04	84.06	78.22	72.51	69.38	70- 80	81.58	381.2	42.7,47.3
90	70.09	75.49	82.44	86.24	84.39	78.36	72.32	68.89	80- 90	84.46	465.7	52.2,57.8
100	68.84	74.28	81.36	85.35	83.68	77.68	71.48	67.86	90-100	83.86	549.6	61.6,68.2
110	66.96	72.26	79.25	83.23	81.76	76.01	69.84	66.16	100-110	79.81	629.4	70.5,78.1
120	64.76	69.70	76.29	80.14	78.90	73.61	67.66	64.14	110-120	72.67	702.0	78.6,87.1
130	62.02	66.56	72.55	76.18	75.17	70.47	64.89	61.58	120-130	63.15	765.2	85.7,94.9
140	58.39	62.58	67.91	71.14	70.33	66.20	61.08	57.90	130-140	51.65	816.9	91.5,101
150	51.23	55.40	60.70	63.78	63.24	59.39	54.32	51.11	140-150	38.55	855.4	95.8,106
160	39.35	43.69	49.07	52.18	51.95	48.53	43.82	40.52	150-160	24.24	879.6	98.5,109
170	23.54	26.79	31.99	35.42	35.39	31.98	28.60	24.59	160-170	11.12	890.8	99.8,111
180	0.8674	0.8810	0.8846	0.8770	0.8702	0.8823	0.8873	0.8770	170-180	1.883	892.6	100,111
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 128.19 lm

%lum = 14.4%

%lamp = 15.9%

Conical surface Flux(130deg): 260.99 lm

%lum = 29.2%

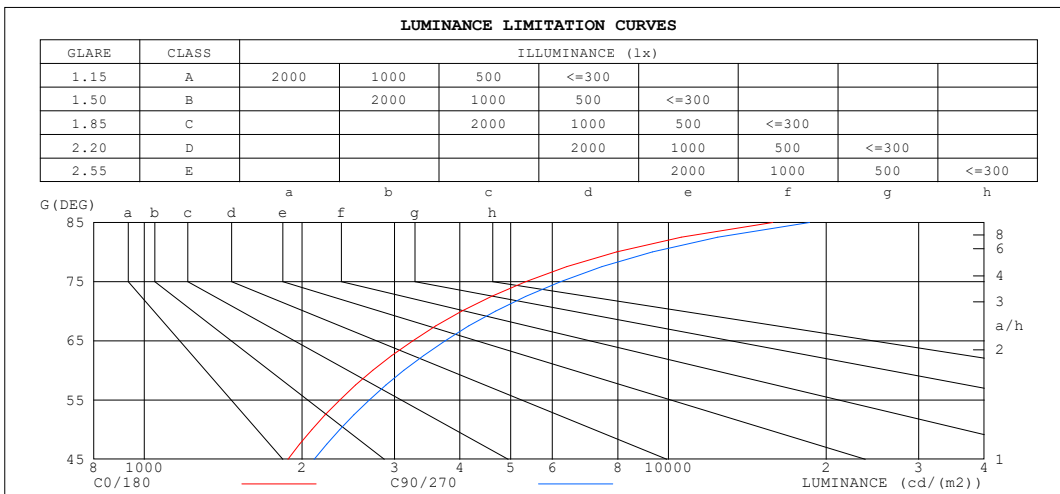
%lamp = 32.4%

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:21 October 2022

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  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: 99LED838W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F90	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	15815	18577
80	7961	9316
75	5342	6224
70	4033	4676
65	3249	3747
60	2728	3128
55	2360	2687
50	2087	2359
45	1880	2109

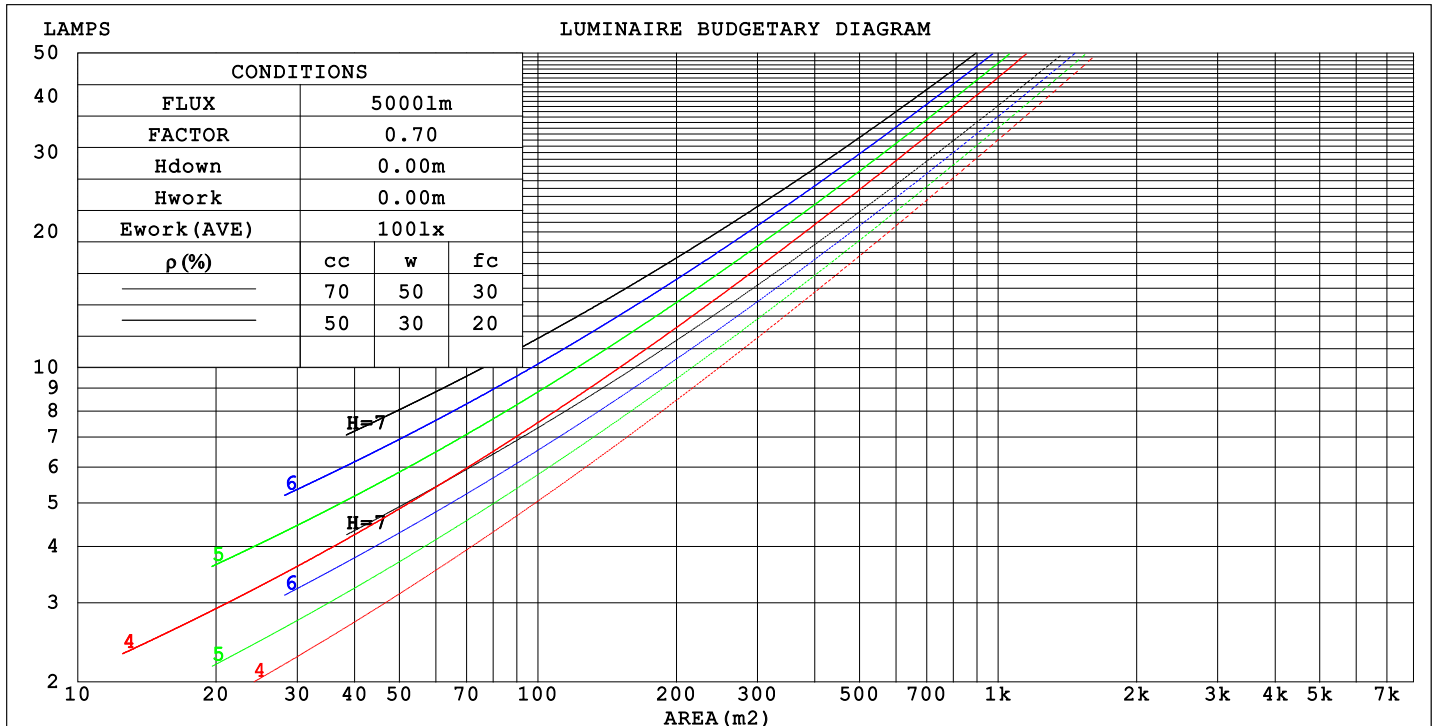
C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 21 October 2022

γ Range: 0 - 180DEG  
 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: 99LED838W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F90	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	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															



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:21 October 2022

γ Range: 0 - 180DEG  
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: 99LED838W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F90	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	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	.451	.257	.081	.427	.244	.077	.382	.219	.070	.341	.196	.063	.302	.175	.056	
2.0	.377	.207	.063	.355	.196	.060	.314	.175	.054	.276	.155	.048	.241	.136	.043	
3.0	.329	.175	.052	.309	.166	.050	.272	.147	.045	.237	.130	.040	.204	.113	.035	
4.0	.293	.152	.045	.275	.144	.043	.240	.127	.038	.208	.112	.034	.178	.097	.030	
5.0	.265	.135	.039	.248	.127	.037	.216	.113	.033	.186	.098	.029	.159	.085	.025	
6.0	.241	.121	.035	.226	.114	.033	.197	.101	.029	.169	.088	.026	.143	.076	.022	
7.0	.222	.110	.031	.208	.103	.029	.180	.091	.026	.155	.079	.023	.131	.068	.020	
8.0	.205	.100	.028	.192	.094	.027	.167	.083	.024	.143	.072	.021	.121	.062	.018	
9.0	.191	.092	.026	.178	.087	.024	.155	.077	.022	.133	.067	.019	.112	.057	.016	
10.0	.178	.085	.024	.167	.080	.022	.145	.071	.020	.124	.062	.018	.104	.053	.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
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients (CCEC)									
0.0	.615	.615	.615	.525	.525	.525	.358	.358	.358	.206	.206	.206	.066	.066	.066	
1.0	.614	.579	.547	.525	.497	.471	.359	.342	.326	.207	.198	.189	.066	.064	.061	
2.0	.608	.555	.512	.520	.478	.442	.357	.331	.308	.206	.192	.181	.066	.062	.059	
3.0	.600	.539	.490	.514	.465	.425	.353	.323	.298	.204	.189	.176	.066	.061	.058	
4.0	.592	.526	.476	.508	.454	.413	.349	.317	.291	.202	.185	.172	.065	.060	.057	
5.0	.583	.516	.466	.501	.446	.405	.345	.312	.286	.200	.183	.170	.064	.060	.056	
6.0	.576	.508	.459	.495	.440	.400	.341	.308	.283	.198	.181	.168	.064	.059	.056	
7.0	.568	.501	.454	.489	.434	.396	.338	.304	.280	.196	.179	.167	.063	.059	.055	
8.0	.561	.495	.450	.483	.429	.392	.334	.302	.278	.194	.178	.166	.063	.058	.055	
9.0	.554	.490	.447	.477	.425	.390	.331	.299	.277	.193	.177	.165	.062	.058	.055	
10.0	.548	.486	.445	.472	.422	.388	.328	.297	.276	.191	.176	.165	.062	.058	.055	

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:21 October 2022

γ Range: 0 - 180DEG  
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: 99LED838W					TYPE:			WEIGHT: 1		
SPEC.:					DIM.: F90			SERIAL No.: 0		
MFR.: Elmark Industries JSC					SUR.: round			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	13.4	14.5	14.3	15.4	16.5	14.0	15.1	14.9	16.0	17.1
3H	16.6	17.6	17.5	18.5	19.7	17.3	18.3	18.2	19.2	20.4
4H	18.4	19.4	19.3	20.3	21.4	19.2	20.2	20.1	21.1	22.2
6H	20.4	21.3	21.3	22.2	23.4	21.3	22.2	22.2	23.1	24.3
8H	21.6	22.4	22.5	23.3	24.5	22.5	23.3	23.4	24.3	25.5
12H	22.8	23.7	23.8	24.6	25.8	23.8	24.6	24.7	25.6	26.8
4H 2H	14.5	15.5	15.4	16.4	17.6	14.9	15.9	15.8	16.8	17.9
3H	17.8	18.6	18.7	19.6	20.8	18.4	19.2	19.3	20.1	21.3
4H	19.7	20.5	20.7	21.4	22.7	20.4	21.1	21.3	22.1	23.3
6H	21.9	22.6	22.8	23.5	24.8	22.6	23.3	23.6	24.3	25.5
8H	23.1	23.7	24.0	24.7	26.0	23.9	24.5	24.9	25.5	26.8
12H	24.5	25.0	25.4	26.0	27.3	25.3	25.9	26.3	26.9	28.2
8H 4H	20.5	21.2	21.5	22.1	23.4	21.0	21.7	22.0	22.6	23.9
6H	22.9	23.5	23.9	24.5	25.8	23.5	24.1	24.5	25.1	26.4
8H	24.3	24.8	25.3	25.8	27.1	25.0	25.5	26.0	26.5	27.8
12H	25.9	26.3	26.9	27.3	28.7	26.6	27.1	27.6	28.1	29.4
12H 4H	20.8	21.4	21.7	22.3	23.6	21.2	21.8	22.2	22.8	24.0
6H	23.3	23.8	24.3	24.8	26.1	23.8	24.3	24.8	25.3	26.6
8H	24.8	25.2	25.8	26.2	27.5	25.4	25.8	26.4	26.8	28.1
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.4					+ 0.3 / - 0.4				

CIE Pub.117, 806.0 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -0.7)  
Area: 0.0510446 m2

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:21 October 2022

γ Range: 0 - 180DEG  
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: 99LED838W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F90	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

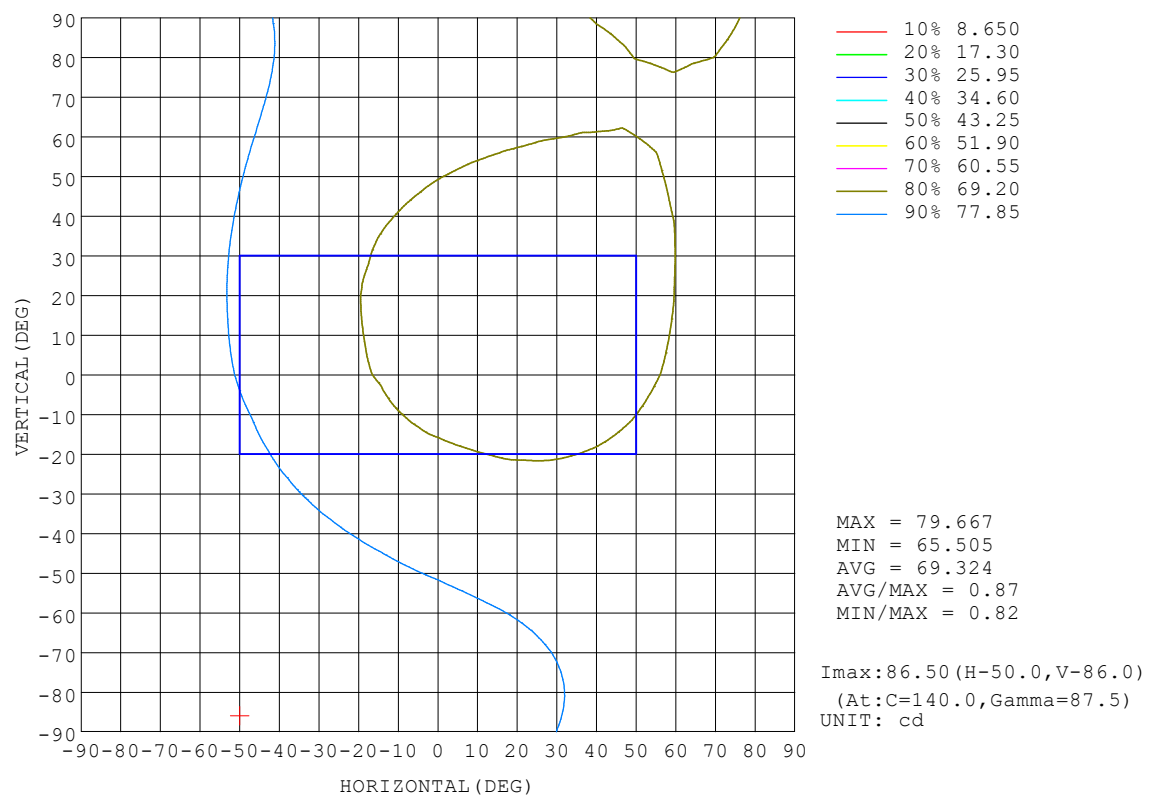
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	41	27	19	39	26	18	35	24	17	9
0.80	50	35	26	47	33	25	42	30	23	12
1.00	58	43	33	55	40	31	48	38	28	16
1.25	66	50	40	61	47	38	53	42	34	19
1.50	72	56	46	67	53	43	57	47	39	22
2.00	80	66	56	74	62	52	64	54	46	26
2.50	86	73	62	79	68	59	68	59	51	29
3.00	90	78	68	83	73	64	71	63	56	32
4.00	96	86	77	89	80	72	75	68	62	36
5.00	100	91	83	92	84	77	78	72	66	39
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: 21 October 2022

γ Range: 0 - 180DEG  
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: 99LED838W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F90	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



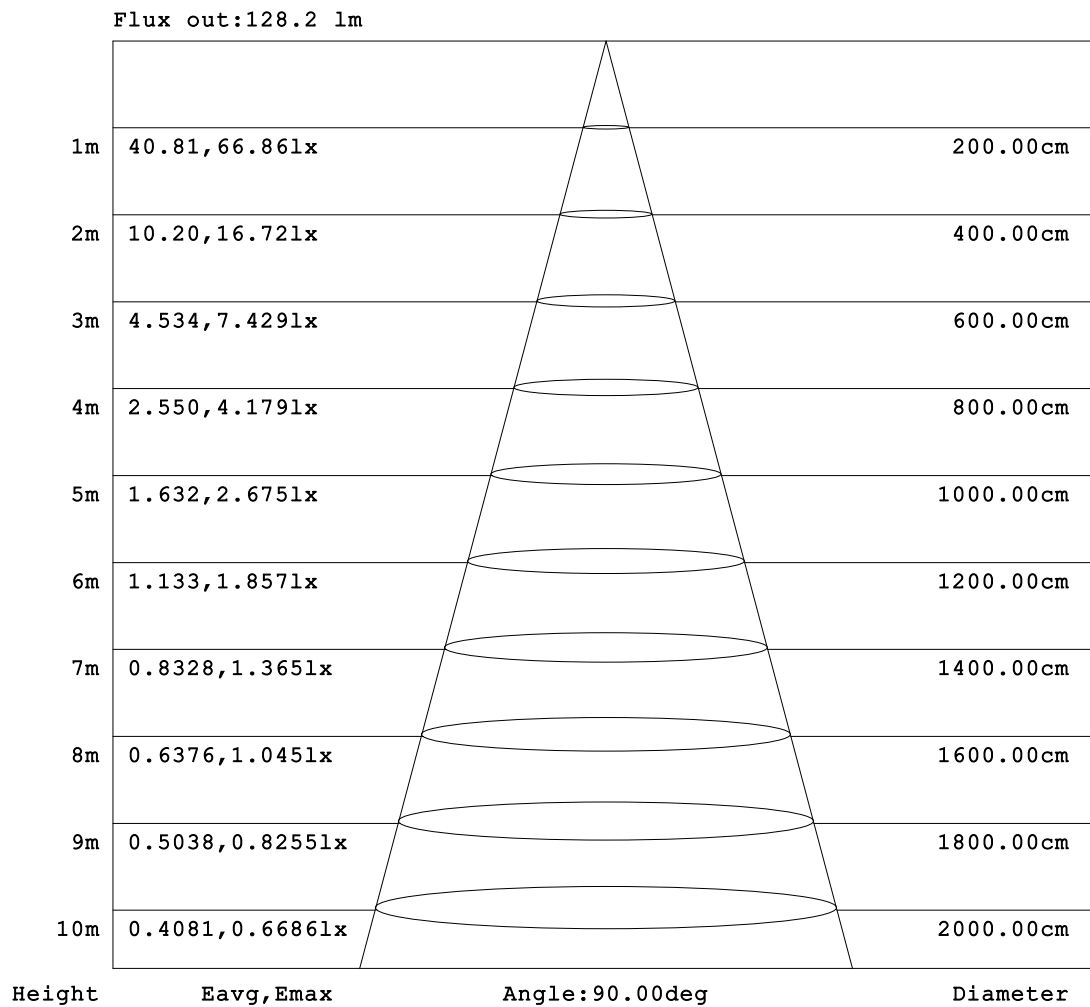
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 21 October 2022

γ Range: 0 - 180DEG  
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: 99LED838W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F90	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



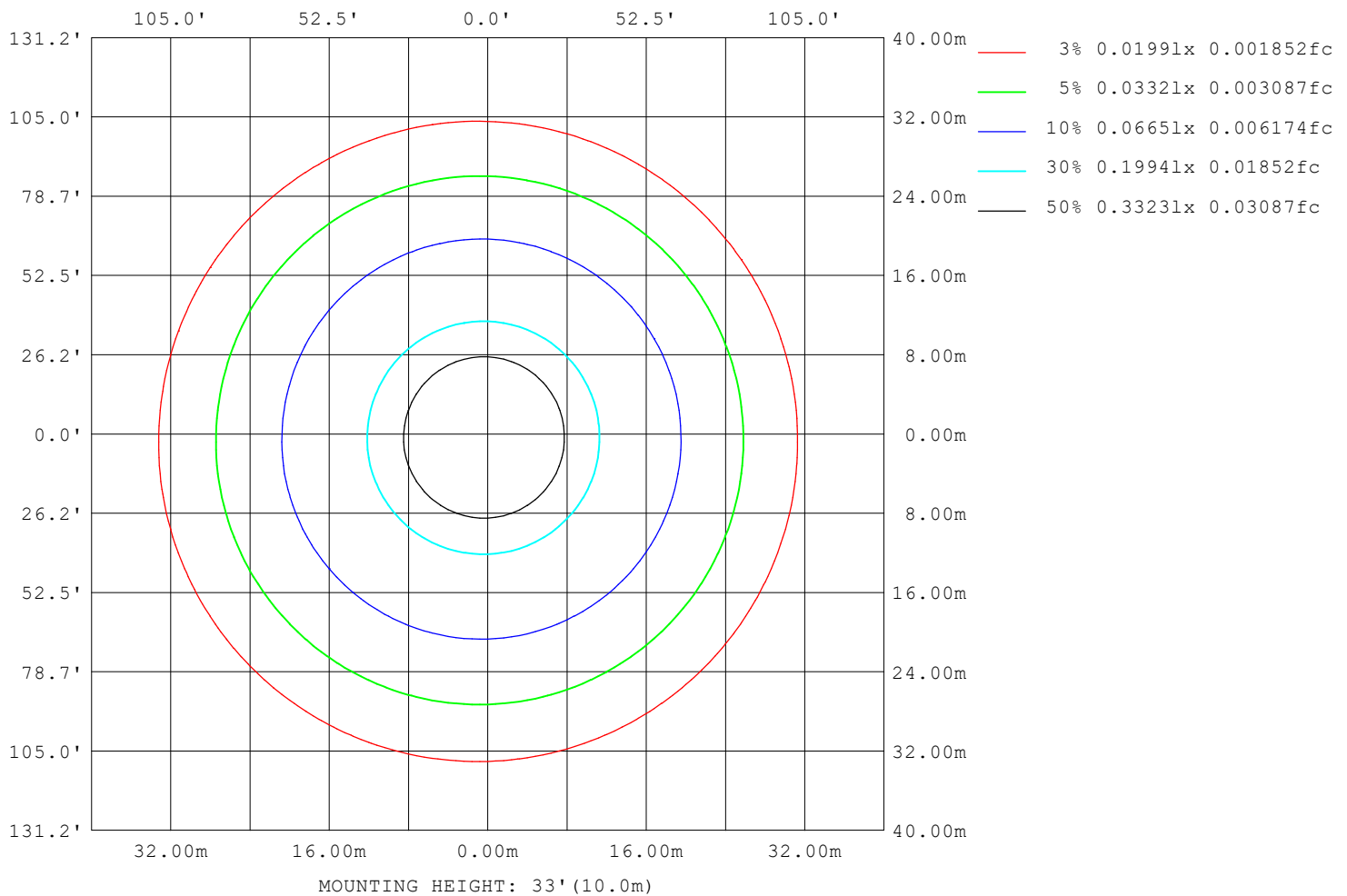
**Note:** The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 21 October 2022

γ Range: 0 - 180DEG  
 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: 99LED838W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F90	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:



C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 21 October 2022

γ Range: 0 - 180DEG  
 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: 99LED838W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F90	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

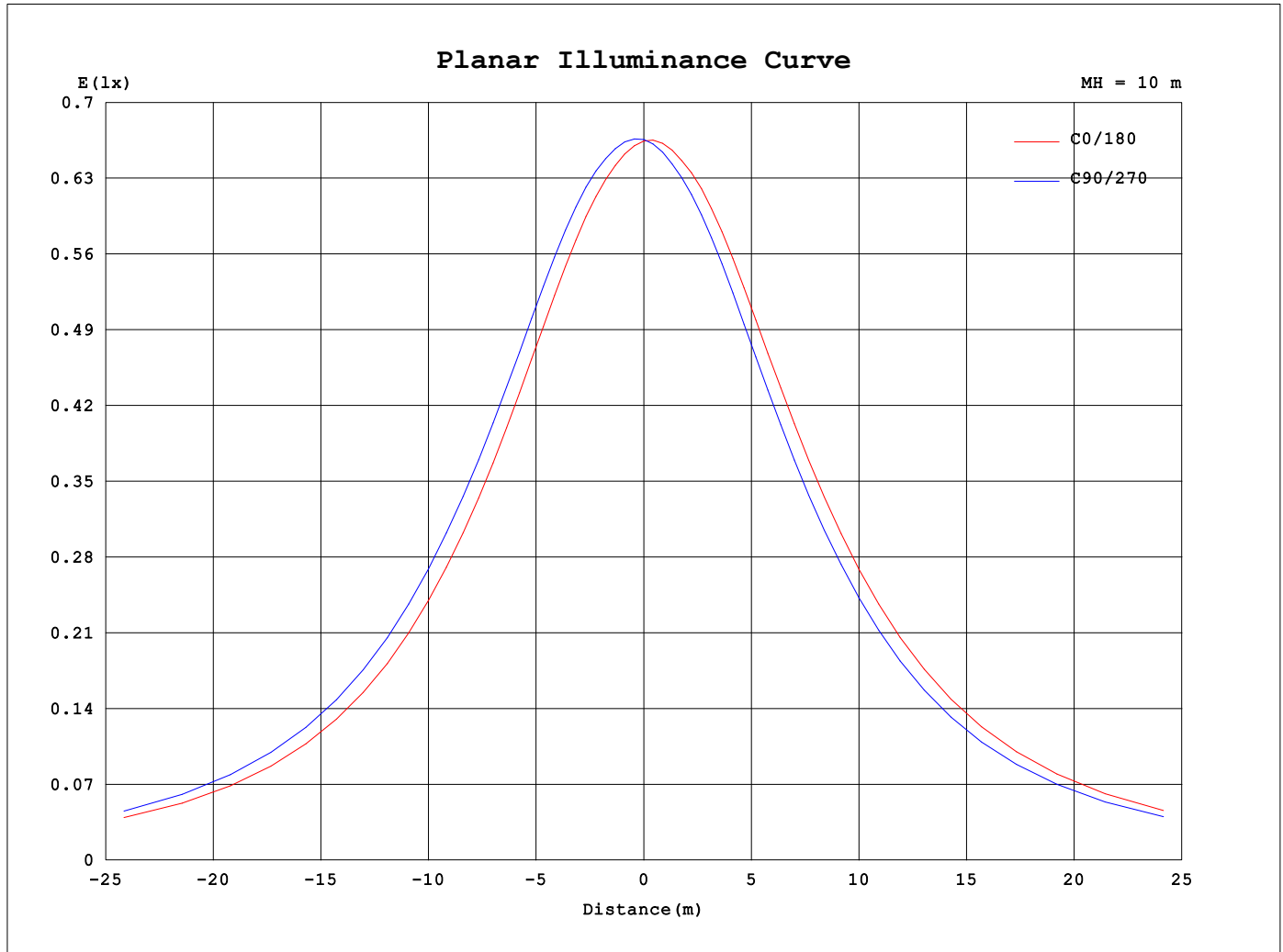
AvgL	cd/m2
L_0~180 (65) av	3520
L_0~180 (75) av	5836
L_0~180 (85) av	17406
L_90~270 (65) av	3530
L_90~270 (75) av	5849
L_90~270 (85) av	17437
L_45 (65) av	3524
L_45 (75) av	5839
L_45 (85) av	17405

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:21 October 2022

γ Range: 0 - 180DEG  
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: 21 October 2022

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 2.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.00.456  
 Humidity: 65.0%  
 Test Distance: 6.265m [K=1.0000]  
 Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: 99LED838W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F90	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6
5	66.2	66.2	66.3	66.5	66.6	66.7	66.8	66.9	67.0	67.1	67.2	67.3	67.3	67.4	67.4	67.3	67.3	67.2	67.2
10	66.0	66.2	66.4	66.6	66.8	67.0	67.3	67.5	67.7	67.9	68.0	68.1	68.2	68.2	68.2	68.2	68.1	68.0	67.8
15	66.1	66.4	66.7	67.0	67.4	67.7	68.1	68.4	68.7	69.0	69.2	69.4	69.5	69.6	69.6	69.5	69.4	69.2	69.0
20	66.3	66.6	67.0	67.5	67.9	68.4	68.8	69.3	69.7	70.2	70.5	70.7	70.9	71.0	71.0	70.9	70.7	70.5	70.1
25	66.4	66.8	67.3	67.8	68.4	69.0	69.6	70.2	70.7	71.2	71.6	71.9	72.2	72.3	72.3	72.1	71.9	71.6	71.2
30	66.6	67.1	67.7	68.3	69.0	69.7	70.4	71.1	71.7	72.3	72.7	73.1	73.4	73.5	73.5	73.4	73.1	72.8	72.2
35	66.9	67.5	68.1	68.9	69.7	70.5	71.3	72.1	72.8	73.5	74.1	74.5	74.8	75.0	75.0	74.8	74.6	74.1	73.6
40	67.4	68.1	68.8	69.6	70.5	71.4	72.3	73.2	74.0	74.8	75.4	75.9	76.3	76.4	76.5	76.3	75.9	75.5	74.8
45	68.0	68.7	69.5	70.4	71.4	72.4	73.4	74.4	75.3	76.1	76.8	77.4	77.8	78.0	78.0	77.8	77.5	76.9	76.2
50	68.6	69.3	70.2	71.2	72.2	73.3	74.4	75.5	76.5	77.4	78.2	78.8	79.3	79.5	79.5	79.3	79.0	78.4	77.7
55	69.2	70.0	70.9	71.9	73.0	74.2	75.4	76.5	77.7	78.7	79.5	80.2	80.7	81.0	81.0	80.8	80.5	79.9	79.1
60	69.8	70.6	71.5	72.6	73.8	75.0	76.3	77.5	78.7	79.8	80.7	81.5	82.0	82.3	82.5	82.3	81.9	81.2	80.4
65	70.2	71.1	72.1	73.2	74.4	75.7	77.1	78.4	79.7	80.8	81.8	82.6	83.2	83.6	83.7	83.5	83.1	82.5	81.6
70	70.6	71.4	72.4	73.6	74.9	76.3	77.6	79.0	80.4	81.6	82.7	83.6	84.2	84.6	84.8	84.6	84.2	83.5	82.7
75	70.7	71.6	72.6	73.8	75.2	76.6	78.1	79.5	80.9	82.2	83.3	84.3	85.0	85.4	85.6	85.4	85.0	84.4	83.5
80	70.7	71.6	72.6	73.9	75.2	76.7	78.2	79.7	81.2	82.6	83.7	84.7	85.5	86.0	86.1	86.0	85.6	84.9	84.1
85	70.5	71.4	72.4	73.7	75.1	76.6	78.1	79.7	81.2	82.6	83.9	84.9	85.7	86.2	86.4	86.3	85.9	85.2	84.4
90	70.1	70.9	72.0	73.3	74.7	76.3	77.9	79.4	81.0	82.4	83.7	84.8	85.6	86.1	86.4	86.3	85.9	85.2	84.4
95	69.5	70.4	71.5	72.8	74.2	75.8	77.4	79.0	80.6	82.0	83.3	84.4	85.3	85.8	86.1	86.0	85.7	85.0	84.2
100	68.8	69.7	70.8	72.0	73.5	75.0	76.7	78.3	79.9	81.4	82.7	83.8	84.7	85.2	85.5	85.5	85.1	84.5	83.7
105	68.0	68.8	69.9	71.1	72.6	74.1	75.7	77.3	78.9	80.4	81.8	82.8	83.7	84.3	84.6	84.6	84.3	83.7	82.9
110	67.0	67.8	68.8	70.1	71.5	73.0	74.6	76.2	77.8	79.3	80.6	81.6	82.5	83.1	83.4	83.4	83.1	82.5	81.8
115	65.9	66.6	67.7	68.9	70.3	71.8	73.3	74.9	76.4	77.9	79.2	80.2	81.1	81.6	82.0	81.9	81.7	81.1	80.4
120	64.8	65.5	66.5	67.7	69.0	70.4	71.9	73.4	74.9	76.3	77.5	78.6	79.4	80.0	80.3	80.3	80.1	79.6	78.9
125	63.5	64.2	65.2	66.3	67.6	68.9	70.3	71.8	73.2	74.5	75.8	76.7	77.6	78.1	78.5	78.5	78.3	77.8	77.2
130	62.0	62.7	63.6	64.7	65.9	67.2	68.5	69.9	71.3	72.6	73.7	74.7	75.5	76.0	76.3	76.4	76.2	75.7	75.2
135	60.4	61.0	61.9	62.9	64.1	65.3	66.6	67.9	69.2	70.4	71.5	72.3	73.1	73.6	73.9	74.0	73.8	73.4	72.9
140	58.4	59.0	59.9	60.9	62.0	63.2	64.4	65.6	66.8	67.9	68.9	69.8	70.5	71.0	71.3	71.4	71.2	70.8	70.3
145	55.3	56.1	56.9	57.9	59.0	60.1	61.3	62.6	63.7	64.8	65.7	66.6	67.2	67.8	68.1	68.2	68.0	67.7	67.2
150	51.2	52.0	52.9	53.9	54.9	55.9	57.0	58.3	59.7	60.7	61.6	62.4	63.1	63.6	63.9	64.2	64.1	63.6	63.2
155	45.7	46.7	47.7	48.6	49.6	50.4	51.1	52.7	54.1	55.5	56.4	57.2	57.8	58.4	58.7	58.9	58.7	58.4	58.1
160	39.3	40.2	41.4	42.5	43.3	44.1	44.8	46.0	47.7	49.1	50.3	51.1	51.5	52.0	52.4	52.5	52.4	52.2	51.9
165	31.9	32.7	33.5	34.6	35.5	36.5	37.4	38.3	39.9	41.5	42.7	43.6	44.1	44.6	44.9	45.1	45.1	44.9	44.7
170	23.5	24.1	24.7	25.5	26.3	27.3	28.1	29.1	30.3	32.0	33.2	34.1	34.8	35.3	35.5	35.7	35.7	35.6	35.4
175	10.3	10.6	11.0	11.7	12.2	13.1	14.2	15.8	17.2	18.2	18.8	19.5	19.8	20.1	20.2	20.3	20.1	20.0	19.4
180	0.87	0.87	0.87	0.87	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.87	0.87	0.86	0.87

C Range: 0 - 360DEG

C Interval: 10.0DEG

Test Speed: MEDIUM

Temperature:25.3°C

Operators:

Test Date:21 October 2022

γ Range: 0 - 180DEG

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:

## LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: 99LED838W	TYPE:	WEIGHT: 1
SPEC.:	DIM.: F90	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: round	Shielding Angle:

Table--2

UNIT: cd

C (DEG) γ (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6		
5	67.1	66.9	66.8	66.7	66.6	66.5	66.4	66.3	66.2	66.1	66.0	66.0	66.0	66.0	66.0	66.0	66.1		
10	67.7	67.4	67.2	67.0	66.8	66.6	66.4	66.2	66.0	65.9	65.8	65.7	65.6	65.6	65.6	65.7	65.8		
15	68.7	68.4	68.1	67.8	67.4	67.1	66.8	66.5	66.2	66.0	65.8	65.6	65.6	65.6	65.6	65.7	65.9		
20	69.7	69.4	69.0	68.5	68.0	67.6	67.2	66.8	66.4	66.1	65.8	65.6	65.5	65.5	65.6	65.7	65.9		
25	70.7	70.2	69.7	69.2	68.6	68.0	67.5	67.0	66.5	66.1	65.8	65.6	65.5	65.4	65.5	65.7	65.9		
30	71.7	71.1	70.5	69.8	69.2	68.6	68.0	67.4	66.9	66.4	66.0	65.8	65.7	65.6	65.7	65.9	66.2		
35	72.9	72.3	71.5	70.8	70.0	69.2	68.5	67.9	67.3	66.8	66.3	66.0	65.9	65.8	65.9	66.1	66.4		
40	74.1	73.4	72.5	71.7	70.9	70.0	69.2	68.5	67.8	67.3	66.8	66.5	66.3	66.2	66.3	66.5	66.9		
45	75.5	74.6	73.7	72.8	71.9	71.0	70.1	69.3	68.6	68.0	67.4	67.1	66.8	66.7	66.8	67.0	67.4		
50	76.8	75.9	74.9	73.9	72.9	71.9	71.0	70.1	69.3	68.7	68.1	67.7	67.4	67.3	67.3	67.6	68.0		
55	78.2	77.2	76.1	75.1	74.0	72.9	71.9	71.0	70.1	69.4	68.8	68.3	68.0	67.9	67.9	68.1	68.5		
60	79.5	78.4	77.3	76.1	75.0	73.8	72.7	71.7	70.8	70.1	69.4	68.9	68.5	68.4	68.4	68.6	69.1		
65	80.6	79.5	78.3	77.1	75.9	74.6	73.5	72.4	71.5	70.6	69.9	69.4	69.0	68.8	68.8	69.0	69.5		
70	81.6	80.4	79.2	77.9	76.6	75.3	74.1	73.0	72.0	71.1	70.3	69.7	69.3	69.1	69.1	69.3	69.8		
75	82.4	81.2	79.9	78.5	77.1	75.8	74.5	73.4	72.3	71.4	70.6	69.9	69.5	69.2	69.2	69.5	69.9		
80	83.0	81.7	80.3	78.9	77.5	76.1	74.8	73.6	72.5	71.5	70.7	70.0	69.5	69.3	69.2	69.4	69.9		
85	83.3	81.9	80.6	79.1	77.7	76.3	74.9	73.7	72.5	71.5	70.6	69.9	69.4	69.1	69.0	69.2	69.7		
90	83.3	82.0	80.6	79.1	77.6	76.2	74.8	73.5	72.3	71.3	70.3	69.6	69.0	68.7	68.7	68.9	69.3		
95	83.1	81.8	80.4	78.9	77.4	75.9	74.5	73.2	72.0	70.9	70.0	69.2	68.6	68.3	68.2	68.4	68.8		
100	82.6	81.3	79.9	78.4	76.9	75.4	74.0	72.7	71.5	70.4	69.4	68.6	68.0	67.7	67.6	67.7	68.1		
105	81.8	80.6	79.2	77.7	76.2	74.7	73.3	72.0	70.8	69.6	68.7	67.9	67.3	66.9	66.7	66.9	67.2		
110	80.7	79.5	78.2	76.7	75.3	73.8	72.4	71.1	69.8	68.7	67.8	66.9	66.3	66.0	65.8	65.9	66.3		
115	79.5	78.3	77.0	75.6	74.2	72.7	71.4	70.0	68.8	67.7	66.7	65.9	65.4	65.0	64.8	64.9	65.2		
120	78.0	76.8	75.6	74.3	72.9	71.5	70.2	68.9	67.7	66.6	65.6	64.9	64.3	64.0	63.8	63.8	64.1		
125	76.3	75.2	74.1	72.8	71.5	70.1	68.8	67.6	66.4	65.3	64.5	63.7	63.2	62.8	62.6	62.7	62.9		
130	74.3	73.4	72.3	71.1	69.8	68.5	67.3	66.0	64.9	63.9	63.0	62.3	61.8	61.4	61.2	61.2	61.5		
135	72.1	71.2	70.2	69.1	67.9	66.7	65.4	64.2	63.1	62.2	61.3	60.6	60.1	59.7	59.5	59.6	59.8		
140	69.6	68.7	67.8	66.8	65.6	64.5	63.3	62.1	61.1	60.2	59.3	58.6	58.1	57.7	57.5	57.6	57.8		
145	66.5	65.7	64.8	63.8	62.7	61.6	60.4	59.3	58.2	57.3	56.4	55.7	55.1	54.8	54.6	54.7	54.9		
150	62.6	61.8	60.9	59.9	58.9	57.8	56.6	55.5	54.3	53.4	52.5	51.8	51.3	51.0	50.9	50.9	50.5		
155	57.5	56.8	55.9	55.0	53.9	52.8	51.6	50.5	49.4	48.5	47.6	46.9	46.4	46.1	45.6	44.9	44.9		
160	51.4	50.8	49.9	49.1	48.0	46.8	45.6	44.8	43.8	42.9	42.0	41.4	40.8	40.2	39.1	38.5	38.9		
165	44.2	43.6	42.7	41.7	40.8	39.7	38.7	37.7	36.9	36.0	35.2	34.6	33.8	32.8	31.6	30.7	30.6		
170	34.8	34.1	33.1	32.3	31.7	30.9	30.2	29.4	28.6	27.8	26.9	26.0	25.0	24.2	23.2	22.7	22.0		
175	19.1	18.9	18.4	18.0	17.3	16.9	16.2	15.6	14.8	14.2	13.5	13.1	12.5	12.2	11.7	10.8	9.75		
180	0.88	0.87	0.88	0.88	0.88	0.88	0.88	0.88	0.89	0.88	0.88	0.88	0.88	0.88	0.87	0.87	0.86		

C Range: 0 - 360DEG

C Interval: 10.0DEG

Test Speed: MEDIUM

Temperature:25.3°C

Operators:

Test Date:21 October 2022

γ Range: 0 - 180DEG

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: