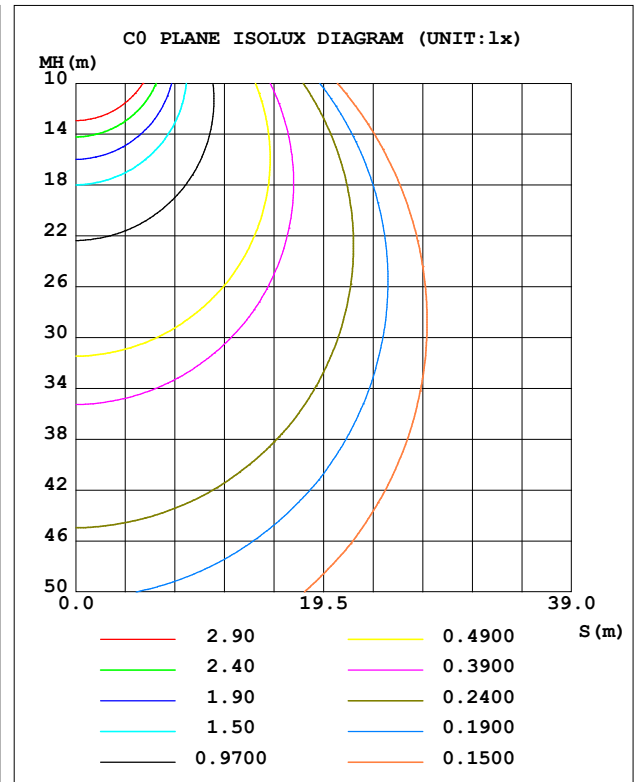
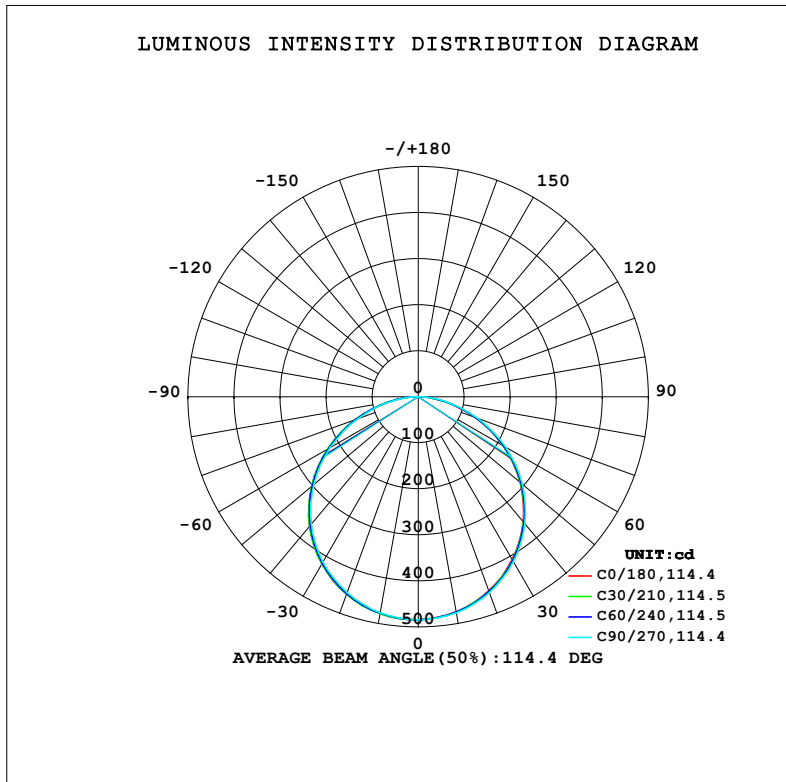


## LUMINAIRE PHOTOMETRIC TEST REPORT

NAME: 95SHELLY18LED/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 400 x 60	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL	95SHELLY18LED/GR	I <sub>max</sub> (cd)	484.4	S/MH (C0/180)	1.29
NOMINAL POWER (W)	18	LOR (%)	65.7	S/MH (C90/270)	1.27
RATED VOLTAGE (V)	230	TOTAL FLUX (lm)	1418.8	η UP, DN (C0-180)	0.0, 32.8
NOMINAL FLUX (lm)	2160	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 32.9
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	230	η down (%)	65.7	CIBSE SHR MAX	1.35



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

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	473.9	475.0	476.1	477.2	477.9	477.6	476.3	474.2	0- 10	45.83	45.83	3.23,2.12
20	448.3	449.8	452.3	455.3	456.6	455.6	452.7	449.2	10- 20	131.6	177.4	12.5,8.22
30	408.2	410.0	413.4	417.2	419.4	418.2	414.0	409.1	20- 30	200.5	377.9	26.6,17.5
40	354.5	356.5	360.4	365.0	367.8	366.7	361.4	355.6	30- 40	243.3	621.3	43.8,28.8
50	288.4	290.4	294.7	300.1	302.7	301.6	295.9	289.6	40- 50	254.2	875.5	61.7,40.5
60	212.5	214.7	219.0	224.5	227.4	226.4	220.6	213.9	50- 60	231.2	1107	78,51.2
70	131.2	133.6	137.7	142.7	145.8	145.1	139.0	132.6	60- 70	177.5	1284	90.5,59.5
80	58.33	56.09	59.05	63.39	66.11	65.74	60.93	55.38	70- 80	104.0	1388	97.8,64.3
90	1.090	1.015	0.9760	2.266	3.131	2.900	1.500	0.8904	80- 90	30.58	1419	100,65.7
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): 749.18 lm

%lum = 52.8%

%lamp = 34.7%

Conical surface Flux(130deg): 1203.8 lm

%lum = 84.8%

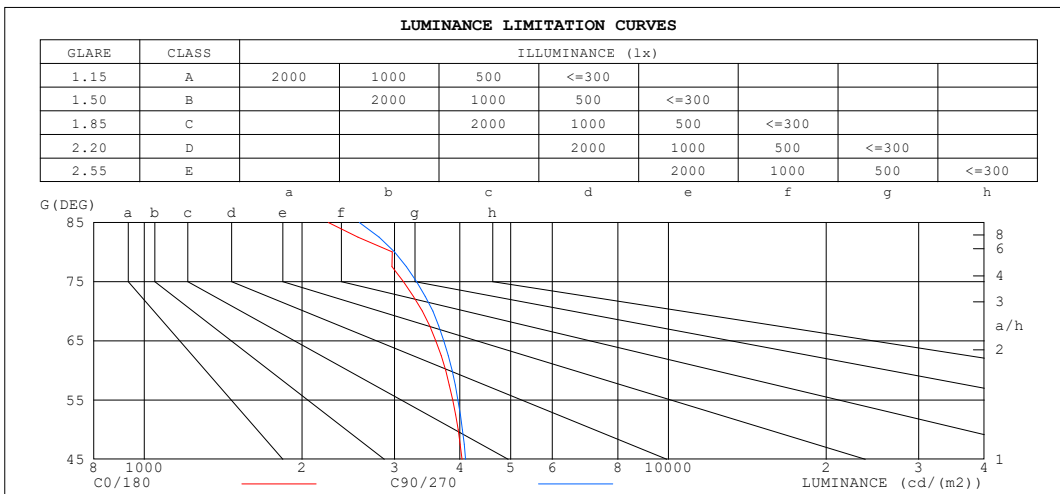
%lamp = 55.7%

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 January 2023

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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: 95SHELLY18LED/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 400 x 60	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2243	2570
80	2971	2999
75	3119	3309
70	3393	3551
65	3599	3725
60	3758	3863
55	3877	3965
50	3967	4043
45	4038	4102

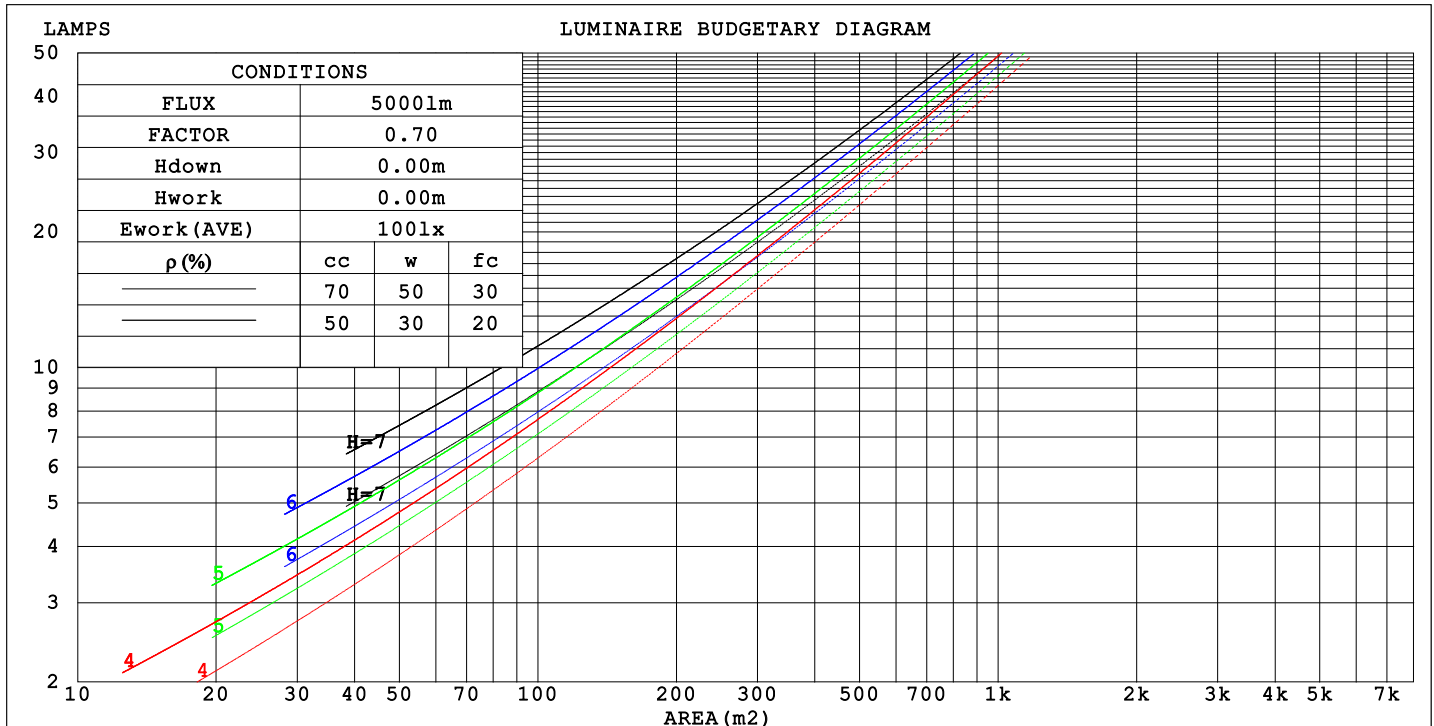
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 19 January 2023

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: 95SHELLY18LED/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 400 x 60	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															



C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 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: 95SHELLY18LED/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 400 x 60	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 Coeffcients(WEC)									
0.0																
1.0	.207	.118	.037	.202	.115	.037	.194	.111	.035	.186	.107	.034	.178	.103	.033	
2.0	.194	.106	.033	.190	.105	.032	.182	.101	.031	.175	.098	.031	.169	.095	.030	
3.0	.179	.095	.029	.176	.094	.028	.169	.091	.028	.162	.089	.027	.157	.087	.027	
4.0	.165	.086	.025	.162	.085	.025	.156	.083	.025	.150	.081	.024	.145	.079	.024	
5.0	.152	.078	.023	.150	.077	.022	.144	.075	.022	.139	.073	.022	.135	.072	.022	
6.0	.141	.071	.020	.139	.070	.020	.134	.069	.020	.130	.067	.020	.125	.066	.020	
7.0	.131	.065	.018	.129	.064	.018	.125	.063	.018	.121	.062	.018	.117	.061	.018	
8.0	.123	.060	.017	.121	.059	.017	.117	.058	.017	.113	.057	.017	.110	.056	.016	
9.0	.115	.056	.016	.113	.055	.015	.110	.054	.015	.106	.053	.015	.103	.053	.015	
10.0	.108	.052	.014	.106	.051	.014	.103	.051	.014	.100	.050	.014	.098	.049	.014	

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	.125	.125	.125	.107	.107	.107	.073	.073	.073	.042	.042	.042	.013	.013	.013	
1.0	.119	.103	.088	.102	.088	.076	.069	.061	.052	.040	.035	.030	.013	.011	.010	
2.0	.113	.087	.064	.097	.075	.055	.067	.052	.039	.038	.030	.023	.012	.010	.007	
3.0	.108	.075	.049	.093	.065	.042	.064	.045	.030	.037	.026	.017	.012	.009	.006	
4.0	.103	.066	.038	.089	.057	.033	.061	.040	.023	.035	.023	.014	.011	.008	.005	
5.0	.098	.060	.031	.085	.052	.027	.058	.036	.019	.034	.021	.011	.011	.007	.004	
6.0	.094	.054	.026	.081	.047	.022	.056	.033	.016	.032	.019	.009	.010	.006	.003	
7.0	.089	.050	.022	.077	.043	.019	.053	.030	.013	.031	.018	.008	.010	.006	.003	
8.0	.085	.046	.019	.073	.040	.016	.051	.028	.012	.029	.016	.007	.010	.005	.002	
9.0	.081	.042	.016	.070	.037	.014	.048	.026	.010	.028	.015	.006	.009	.005	.002	
10.0	.077	.040	.015	.067	.034	.013	.046	.024	.009	.027	.014	.005	.009	.005	.002	

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 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: 95SHELLY18LED/GR					TYPE:			WEIGHT: 1			
SPEC.:					DIM.: 400 x 60			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	14.8	16.4	15.1	16.6	16.8	14.9	16.5	15.2	16.7	16.9
	3H	16.3	17.8	16.6	18.0	18.2	16.5	17.9	16.8	18.1	18.4
	4H	16.9	18.3	17.2	18.5	18.8	17.1	18.4	17.4	18.7	18.9
	6H	17.4	18.6	17.7	18.9	19.2	17.5	18.8	17.9	19.1	19.4
	8H	17.5	18.7	17.8	19.0	19.3	17.7	18.9	18.0	19.2	19.5
	12H	17.5	18.7	17.9	19.0	19.3	17.7	18.9	18.1	19.2	19.5
4H	2H	15.5	16.8	15.8	17.1	17.3	15.5	16.9	15.8	17.1	17.4
	3H	17.1	18.3	17.5	18.6	18.9	17.2	18.4	17.6	18.7	19.0
	4H	17.8	18.9	18.2	19.2	19.6	18.0	19.1	18.4	19.4	19.7
	6H	18.4	19.4	18.8	19.7	20.1	18.6	19.5	19.0	19.9	20.2
	8H	18.6	19.5	19.0	19.9	20.2	18.7	19.6	19.2	20.0	20.4
	12H	18.7	19.5	19.1	19.9	20.3	18.9	19.7	19.3	20.1	20.5
8H	4H	18.1	19.0	18.5	19.4	19.8	18.2	19.1	18.7	19.5	19.9
	6H	18.8	19.6	19.3	20.0	20.4	19.0	19.7	19.4	20.1	20.5
	8H	19.1	19.7	19.5	20.2	20.6	19.2	19.9	19.7	20.3	20.8
	12H	19.2	19.8	19.7	20.3	20.7	19.4	20.0	19.9	20.4	20.9
12H	4H	18.1	18.9	18.5	19.3	19.7	18.2	19.1	18.7	19.5	19.9
	6H	18.9	19.6	19.3	20.0	20.4	19.0	19.7	19.5	20.1	20.5
	8H	19.2	19.7	19.7	20.2	20.7	19.3	19.9	19.8	20.3	20.8
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2					
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.3					

CIE Pub.117, 2160 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 2.7)  
Area: 0.113354 m2

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 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: 95SHELLY18LED/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 400 x 60	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

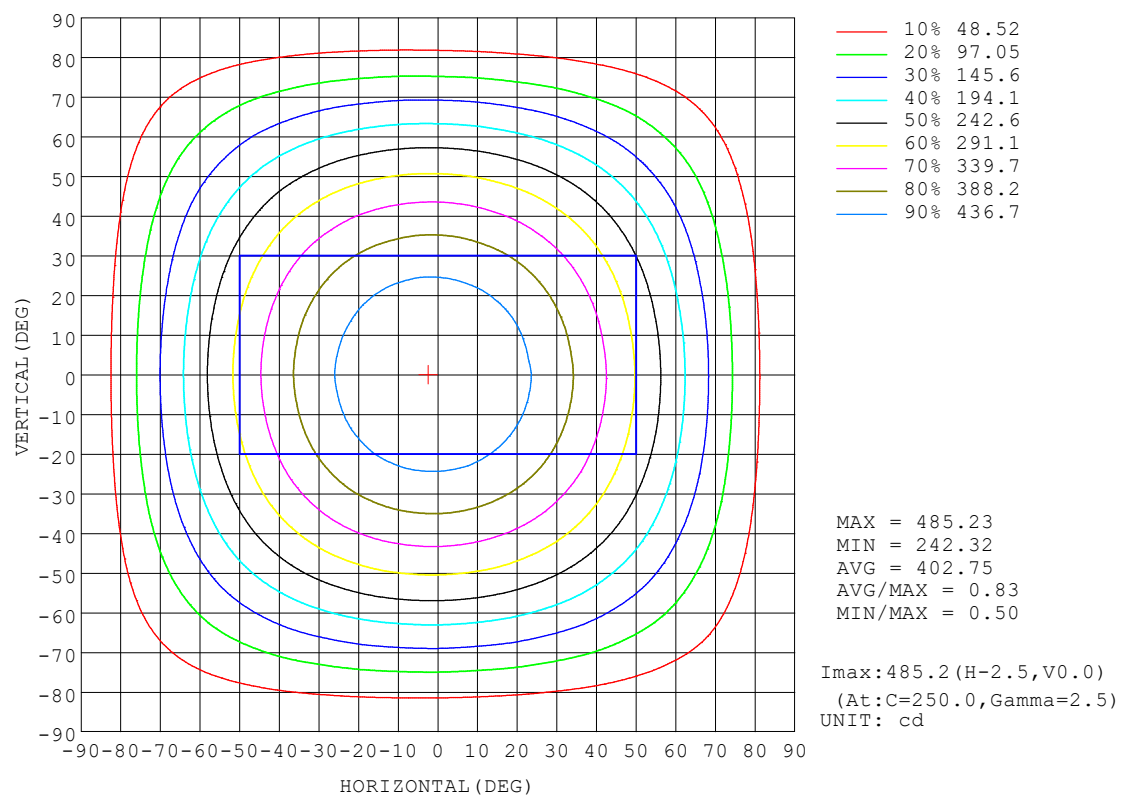
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	37	30	25	37	30	25	36	29	25	21
0.80	44	36	31	43	36	31	42	36	31	27
1.00	50	42	37	49	42	37	47	43	37	32
1.25	54	47	43	53	47	42	52	46	42	37
1.50	58	51	46	56	50	46	54	49	45	40
2.00	62	56	52	61	56	52	59	54	51	45
2.50	65	60	56	63	59	55	61	57	54	48
3.00	67	62	59	66	61	58	63	59	57	51
4.00	70	66	63	68	65	62	65	62	60	54
5.00	71	68	65	70	67	64	67	64	62	56
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:19 January 2023

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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: 95SHELLY18LED/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 400 x 60	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:



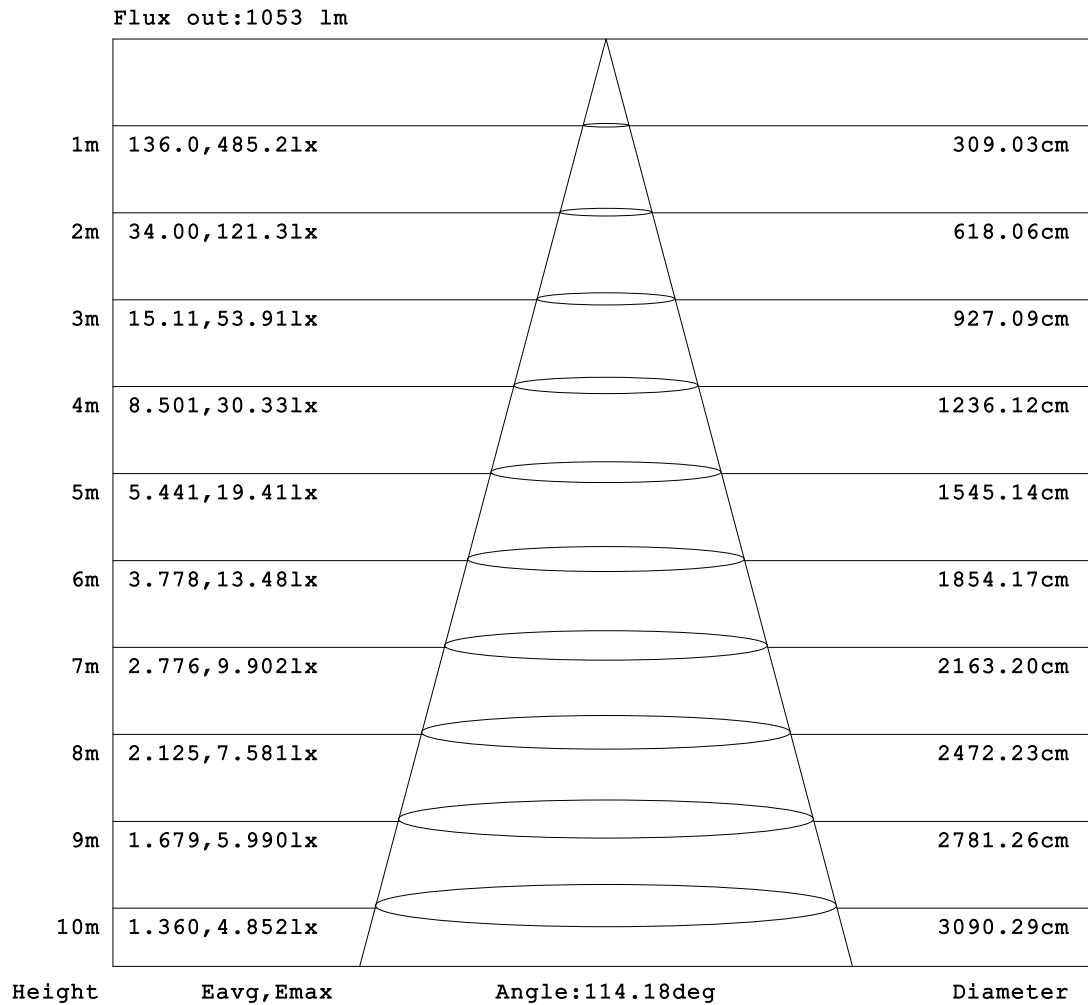
C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 January 2023

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: 95SHELLY18LED/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 400 x 60	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:



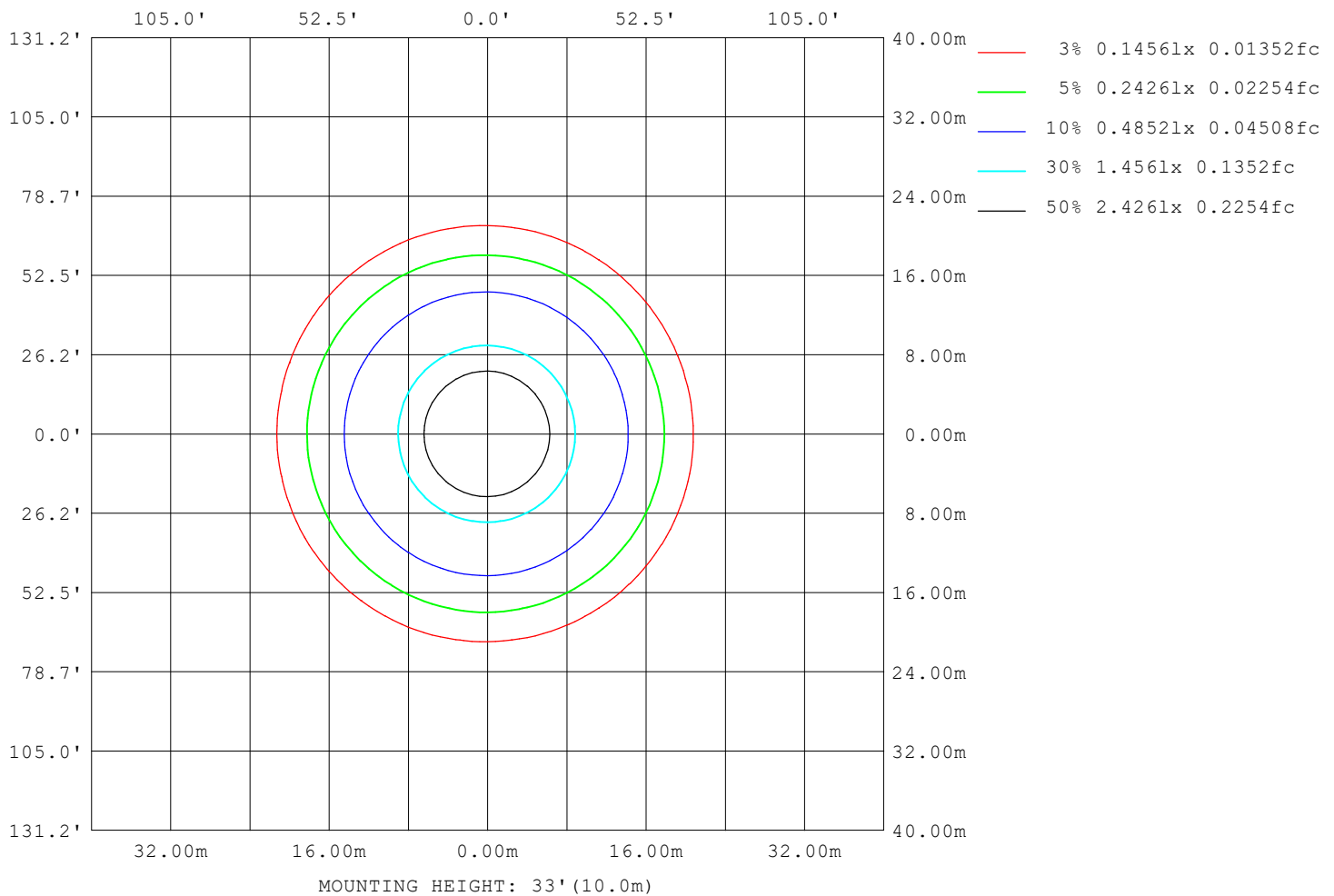
**Note:** The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 10.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3°C  
 Operators:  
 Test Date: 19 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: 95SHELLY18LED/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 400 x 60	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: 19 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: 95SHELLY18LED/GR	TYPE:	WEIGHT: 1
SPEC.:	DIM.: 400 x 60	SERIAL No.: 0
MFR.: Elmark Industries JSC	SUR.: cilinder	Shielding Angle:

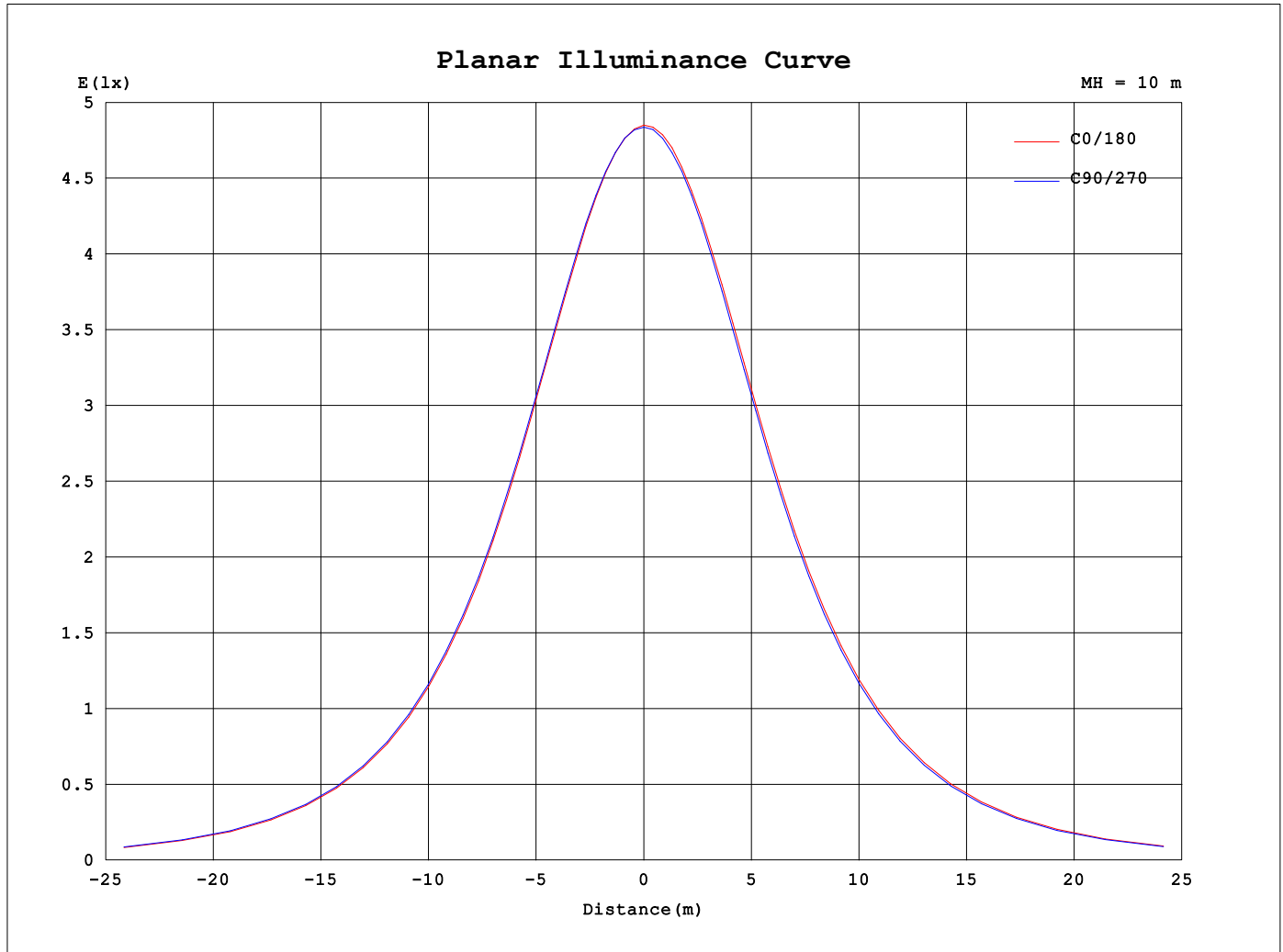
AvgL	cd/m2
L_0~180 (65) av	3746
L_0~180 (75) av	3342
L_0~180 (85) av	2714
L_90~270 (65) av	3743
L_90~270 (75) av	3334
L_90~270 (85) av	2672
L_45 (65) av	3745
L_45 (75) av	3340
L_45 (85) av	2691

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 10.0DEG  
Test Speed: MEDIUM  
Temperature:25.3°C  
Operators:  
Test Date:19 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: 10.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3°C  
Operators:  
Test Date: 19 January 2023

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:

```