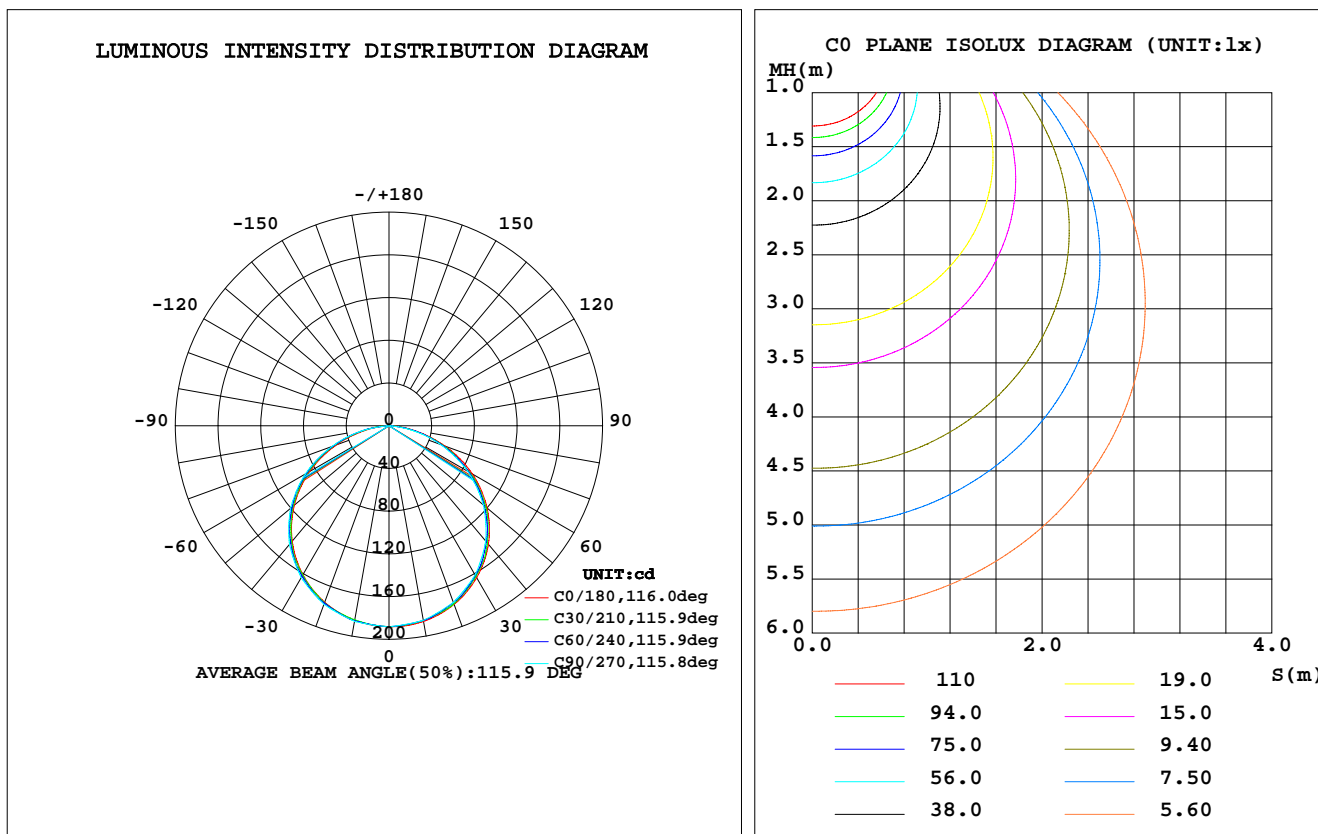


# LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:24.00V I:0.2331A P:5.594W PF:1.000 Lamp Flux:552.909x1 lm		
NAME: 2835-60-24V	TYPE:LED Strip LIGHT	WEIGHT:1
SPEC.:1000*12MM	DIM.: 1000*12MM	SERIAL No.:1
MFR.: ESTAR	SUR.:1000*12MM	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 98.83 lm/W			
MODEL	6000K	Imax(cd)	188.2	S/MH(C0/180)	1.27
NOMINAL POWER(W)	23	LOR(%)	100.0	S/MH(C90/270)	1.29
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	552.91	η UP,DN(C0-180)	0.0,49.1
NOMINAL FLUX(lm)	552.909	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.9
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	η down(%)	100.0	CIBSE SHR MAX	1.35



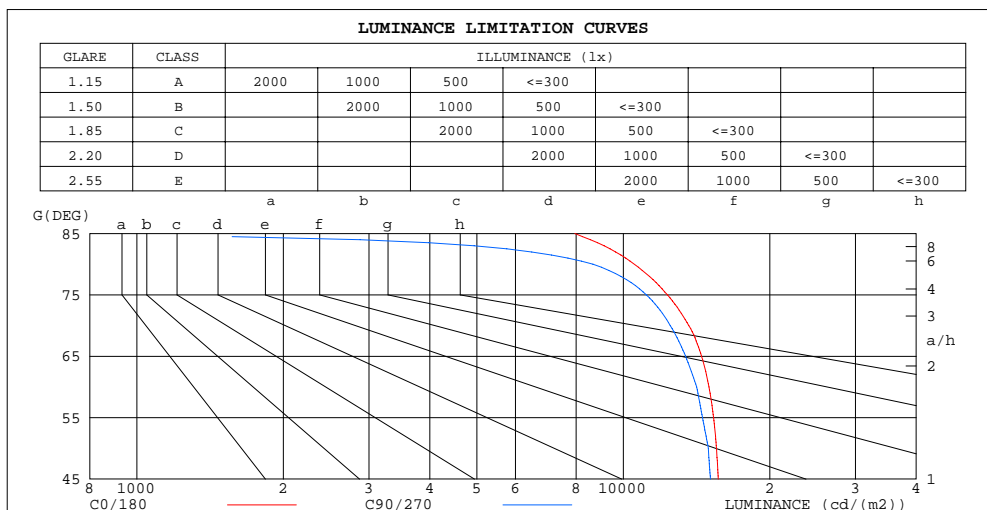
C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:ZP  
Test Date:2020-07-14

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.292  
Humidity:65.0%  
Test Distance:9.900m [K=1.0000]  
Remarks:

## ZONAL FLUX DIAGRAM AND LUMINANCE LIMITATION CURVES

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\%lum, lamp$
5	187.9	187.0	186.6	186.6	187.3	186.9	187.1	187.3	0- 5	4.482	4.482	0.81,0.81
10	186.0	185.0	185.0	184.2	184.9	184.8	186.0	185.7	5- 10	13.31	17.79	3.22,3.22
15	182.8	181.9	180.5	180.7	181.1	181.7	182.0	182.9	10- 15	21.75	39.54	7.15,7.15
20	178.0	176.5	176.0	174.8	175.8	176.2	178.0	177.8	15- 20	29.50	69.04	12.5,12.5
25	171.8	170.4	168.7	168.4	169.2	170.1	171.1	172.0	20- 25	36.37	105.4	19.1,19.1
30	164.2	162.5	161.4	160.1	161.1	162.3	164.3	164.5	25- 30	42.07	147.5	26.7,26.7
35	155.2	153.1	151.2	150.4	151.7	153.0	154.6	155.5	30- 35	46.47	193.9	35.1,35.1
40	144.7	142.9	141.0	139.9	141.0	142.9	145.0	145.7	35- 40	49.34	243.3	44.44
45	133.0	130.4	128.2	127.2	128.9	130.8	132.6	133.6	40- 45	50.61	293.9	53.2,53.2
50	119.9	117.6	115.4	114.3	115.7	118.3	120.3	121.2	45- 50	50.14	344.0	62.2,62.2
55	105.5	102.2	100.1	99.12	101.2	103.6	105.4	106.6	50- 55	47.97	392.0	70.9,70.9
60	89.97	86.92	84.90	83.74	85.69	88.58	90.59	91.64	55- 60	44.06	436.1	78.9,78.9
65	73.43	70.26	68.08	67.04	69.28	72.08	73.76	74.96	60- 65	38.59	474.7	85.8,85.8
70	55.95	53.46	51.26	50.29	52.26	55.31	56.92	57.98	65- 70	31.67	506.3	91.6,91.6
75	38.28	35.92	34.65	33.51	35.19	38.22	40.00	40.64	70- 75	23.63	530.0	95.8,95.8
80	21.94	20.96	18.05	19.11	19.62	23.05	23.08	24.86	75- 80	15.28	545.2	98.6,98.6
85	8.314	5.190	0	4.541	6.829	5.956	0	6.537	80- 85	6.964	552.2	99.9,99.9
90	0.4484	0	0	0	0.5103	0	0	0	85- 90	0.7068	552.9	100,100
95									90- 95			
100									95-100			
105									100-105			
110									105-110			
115									110-115			
120									115-120			
125									120-125			
130									125-130			
135									130-135			
140									135-140			
145									140-145			
150									145-150			
155									150-155			
160									155-160			
165									160-165			
170									165-170			
175									170-175			
180									175-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



LUMINANCE cd/(m <sup>2</sup> )		
G(°)	C0/180	C90/270
85	7949	0
80	10527	8662
75	12325	11157
70	13633	12489
65	14479	13425
60	14995	14151
55	15328	14549
50	15539	14958
45	15670	15105

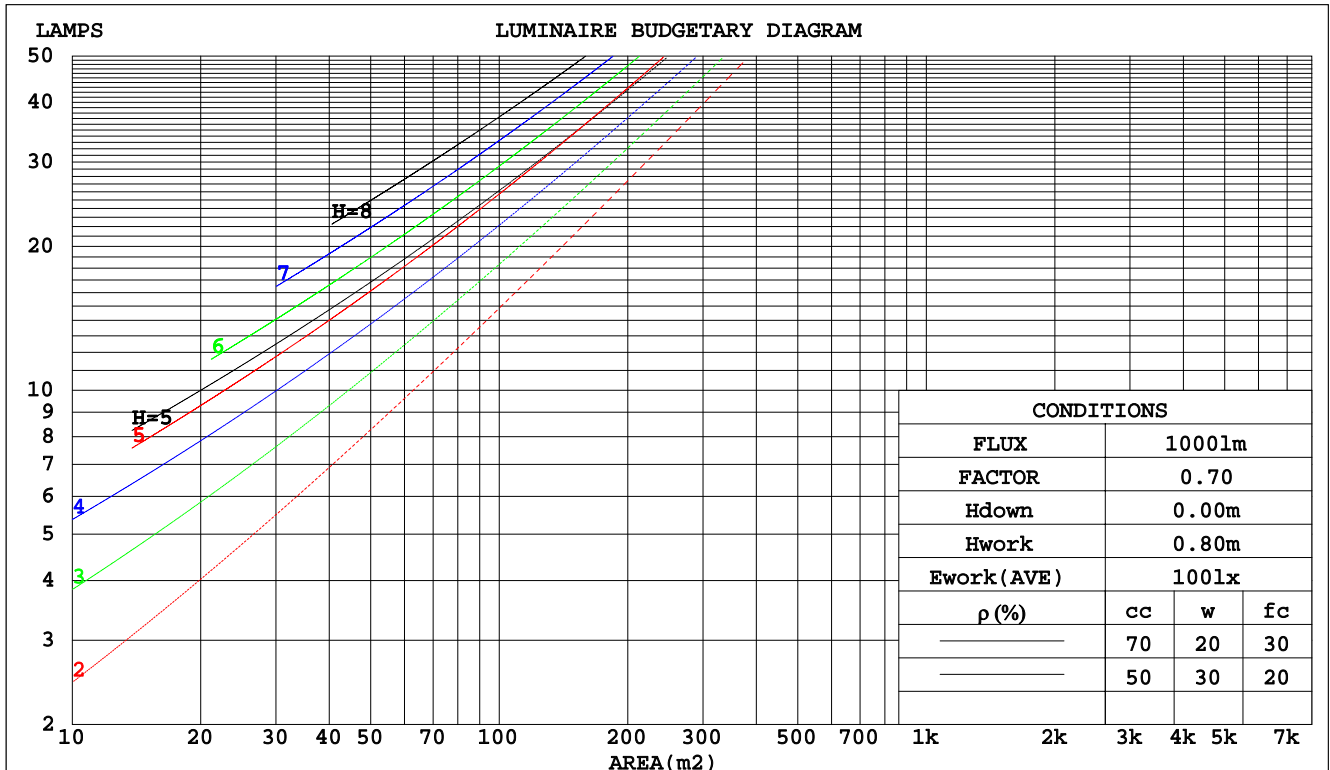
C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: MEDIUM  
 Temperature: 25.3DEG  
 Operators: ZP  
 Test Date: 2020-07-14

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
 Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.292  
 Humidity: 65.0%  
 Test Distance: 9.900m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:24.00V I:0.2331A P:5.594W PF:1.000 Lamp Flux:552.909x1 lm		
NAME: 2835-60-24V	TYPE:LED Strip LIGHT	WEIGHT:1
SPEC.:1000*12MM	DIM.: 1000*12MM	SERIAL No.:1
MFR.: ESTAR	SUR.:1000*12MM	PROTECTION 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	Coefficients of Utilization(CU)															
	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
0.0	1.04	.00	.96	1.02	.98	.94	.98	.94	.91	.94	.91	.89	.90	.88	.86	.84
1.0	.91	.84	.78	.89	.82	.77	.85	.80	.75	.82	.77	.73	.79	.75	.72	.70
2.0	.79	.71	.65	.78	.70	.64	.75	.68	.63	.72	.66	.62	.69	.65	.61	.58
3.0	.70	.61	.54	.69	.61	.54	.66	.59	.53	.64	.58	.53	.62	.56	.52	.50
4.0	.63	.53	.47	.61	.53	.47	.59	.52	.46	.57	.51	.45	.55	.50	.45	.43
5.0	.56	.47	.41	.55	.47	.41	.53	.46	.40	.52	.45	.40	.50	.44	.39	.37
6.0	.51	.42	.36	.50	.42	.36	.49	.41	.35	.47	.40	.35	.46	.40	.35	.33
7.0	.46	.38	.32	.46	.38	.32	.44	.37	.32	.43	.36	.31	.42	.36	.31	.29
8.0	.43	.34	.29	.42	.34	.29	.41	.34	.28	.40	.33	.28	.39	.33	.28	.26
9.0	.39	.31	.26	.39	.31	.26	.38	.31	.26	.37	.30	.26	.36	.30	.26	.24
10.0																



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: MEDIUM  
 Temperature:25.3DEG  
 Operators:ZP  
 Test Date:2020-07-14

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.292  
 Humidity:65.0%  
 Test Distance:9.900m [K=1.0000]  
 Remarks:

## WEC AND CCEC

Test:U:24.00V I:0.2331A P:5.594W PF:1.000 Lamp Flux:552.909x1 lm		
NAME: 2835-60-24V	TYPE:LED Strip LIGHT	WEIGHT:1
SPEC.:1000*12MM	DIM.: 1000*12MM	SERIAL No.:1
MFR.: ESTAR	SUR.:1000*12MM	PROTECTION 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	.307	.174	.055	.300	.171	.054	.286	.164	.052	.274	.158	.051	.263	.152	.049		
2.0	.291	.160	.049	.285	.157	.048	.273	.152	.047	.262	.147	.046	.252	.143	.045		
3.0	.270	.144	.043	.265	.142	.043	.254	.138	.042	.245	.134	.041	.236	.131	.040		
4.0	.250	.130	.038	.245	.128	.038	.236	.125	.037	.227	.122	.037	.219	.119	.036		
5.0	.231	.118	.034	.227	.116	.034	.219	.114	.034	.211	.111	.033	.204	.109	.033		
6.0	.214	.107	.031	.211	.106	.031	.203	.104	.030	.197	.102	.030	.190	.100	.030		
7.0	.200	.099	.028	.196	.098	.028	.190	.096	.028	.184	.094	.027	.178	.092	.027		
8.0	.186	.091	.026	.183	.090	.026	.178	.089	.025	.172	.087	.025	.167	.086	.025		
9.0	.175	.084	.024	.172	.084	.024	.167	.082	.023	.162	.081	.023	.157	.080	.023		
10.0	.164	.079	.022	.162	.078	.022	.157	.077	.022	.153	.076	.022	.148	.075	.021		

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.180	.156	.135	.154	.134	.116	.105	.092	.080	.061	.053	.047	.019	.017	.015	
2.0	.172	.132	.098	.147	.114	.085	.101	.079	.059	.058	.046	.035	.019	.015	.011	
3.0	.165	.114	.074	.141	.099	.064	.097	.068	.045	.056	.040	.027	.018	.013	.009	
4.0	.157	.101	.058	.135	.087	.051	.093	.061	.036	.054	.036	.021	.017	.012	.007	
5.0	.150	.091	.047	.129	.078	.041	.089	.055	.029	.051	.032	.017	.017	.010	.006	
6.0	.143	.082	.039	.122	.071	.034	.085	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.136	.075	.033	.117	.065	.029	.081	.046	.020	.047	.027	.012	.015	.009	.004	
8.0	.129	.070	.029	.111	.060	.025	.077	.042	.018	.045	.025	.011	.014	.008	.003	
9.0	.123	.065	.025	.106	.056	.022	.074	.039	.016	.043	.023	.009	.014	.008	.003	
10.0	.117	.060	.022	.101	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:ZP  
Test Date:2020-07-14

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.292  
Humidity:65.0%  
Test Distance:9.900m [K=1.0000]  
Remarks:

UGR(Unified Glare Rating) Table

Test:U:24.00V I:0.2331A P:5.594W PF:1.000 Lamp Flux:552.909x1 lm											
NAME: 2835-60-24V						TYPE:LED Strip LIGHT		WEIGHT:1			
SPEC.:1000*12MM						DIM.: 1000*12MM		SERIAL No.:1			
MFR.: ESTAR						SUR.:1000*12MM		PROTECTION 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		22.4	24.0	22.7	24.2	24.4	22.2	23.8	22.5	24.0	24.2
3H		24.0	25.4	24.3	25.6	25.8	23.7	25.1	24.0	25.3	25.6
4H		24.5	25.8	24.8	26.1	26.3	24.2	25.6	24.6	25.8	26.1
6H		24.8	26.1	25.1	26.3	26.6	24.6	25.8	24.9	26.1	26.4
8H		24.9	26.1	25.2	26.4	26.7	24.6	25.8	25.0	26.1	26.4
12H		24.9	26.1	25.3	26.4	26.7	24.6	25.8	24.9	26.1	26.4
4H 2H		23.0	24.4	23.3	24.6	24.9	22.9	24.2	23.2	24.5	24.7
3H		24.7	25.9	25.1	26.2	26.5	24.5	25.7	24.8	26.0	26.3
4H		25.3	26.4	25.7	26.7	27.1	25.2	26.2	25.5	26.6	26.9
6H		25.7	26.7	26.1	27.0	27.4	25.6	26.6	26.0	26.9	27.3
8H		25.9	26.7	26.3	27.1	27.5	25.7	26.6	26.1	27.0	27.3
12H		25.9	26.7	26.3	27.1	27.5	25.7	26.5	26.1	26.9	27.3
8H 4H		25.6	26.5	26.0	26.8	27.2	25.4	26.3	25.8	26.7	27.1
6H		26.1	26.8	26.5	27.2	27.7	26.0	26.7	26.5	27.2	27.6
8H		26.3	26.9	26.7	27.4	27.8	26.1	26.8	26.6	27.2	27.7
12H		26.4	27.0	26.9	27.4	27.9	26.1	26.7	26.6	27.1	27.6
12H 4H		25.6	26.4	26.0	26.8	27.2	25.4	26.2	25.9	26.6	27.0
6H		26.1	26.8	26.6	27.2	27.7	26.1	26.7	26.5	27.1	27.6
8H		26.4	26.9	26.8	27.4	27.8	26.2	26.8	26.7	27.2	27.7
Variations with the observer position at spacings:											
S = 1.0H		+ 0.2 / - 0.2					+ 0.2 / - 0.2				
1.5H		+ 0.1 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.3 / - 0.4					+ 0.2 / - 0.3				

CIE Pub.117 Corrected 552.9 lm Total Lamp Luminous Flux.(8log(F/F0) = -2.1)

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:ZP  
Test Date:2020-07-14

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.292  
Humidity:65.0%  
Test Distance:9.900m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

Test:U:24.00V I:0.2331A P:5.594W PF:1.000 Lamp Flux:552.909x1 lm		
NAME: 2835-60-24V	TYPE:LED Strip LIGHT	WEIGHT:1
SPEC.:1000*12MM	DIM.: 1000*12MM	SERIAL No.:1
MFR.: ESTAR	SUR.:1000*12MM	PROTECTION 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) x RCR = 5									
k = 0.60	57	45	38	56	45	38	55	45	38	32
0.80	67	56	48	66	55	48	64	54	48	41
1.00	76	65	57	75	64	57	72	65	56	49
1.25	83	72	65	81	72	65	79	70	64	57
1.50	88	78	71	86	77	71	83	75	69	62
2.00	95	86	80	93	85	79	90	83	78	70
2.50	99	91	85	97	90	84	93	87	82	74
3.00	102	95	90	100	94	89	96	91	87	78
4.00	106	101	96	104	99	95	100	96	92	83
5.00	109	104	100	106	102	98	102	98	95	86
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNM = 1.25										

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:ZP  
Test Date:2020-07-14

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.292  
Humidity:65.0%  
Test Distance:9.900m [K=1.0000]  
Remarks:

# ISOCANDELA DIAGRAM

Test:U:24.00V I:0.2331A P:5.594W PF:1.000 Lamp Flux:552.909x1 lm		
NAME: 2835-60-24V	TYPE:LED Strip LIGHT	WEIGHT:1
SPEC.:1000*12MM	DIM.: 1000*12MM	SERIAL No.:1
MFR.: ESTAR	SUR.:1000*12MM	PROTECTION ANGLE:

Conical surface Flux(90deg):

293.89 lm

%lum = 53.2%

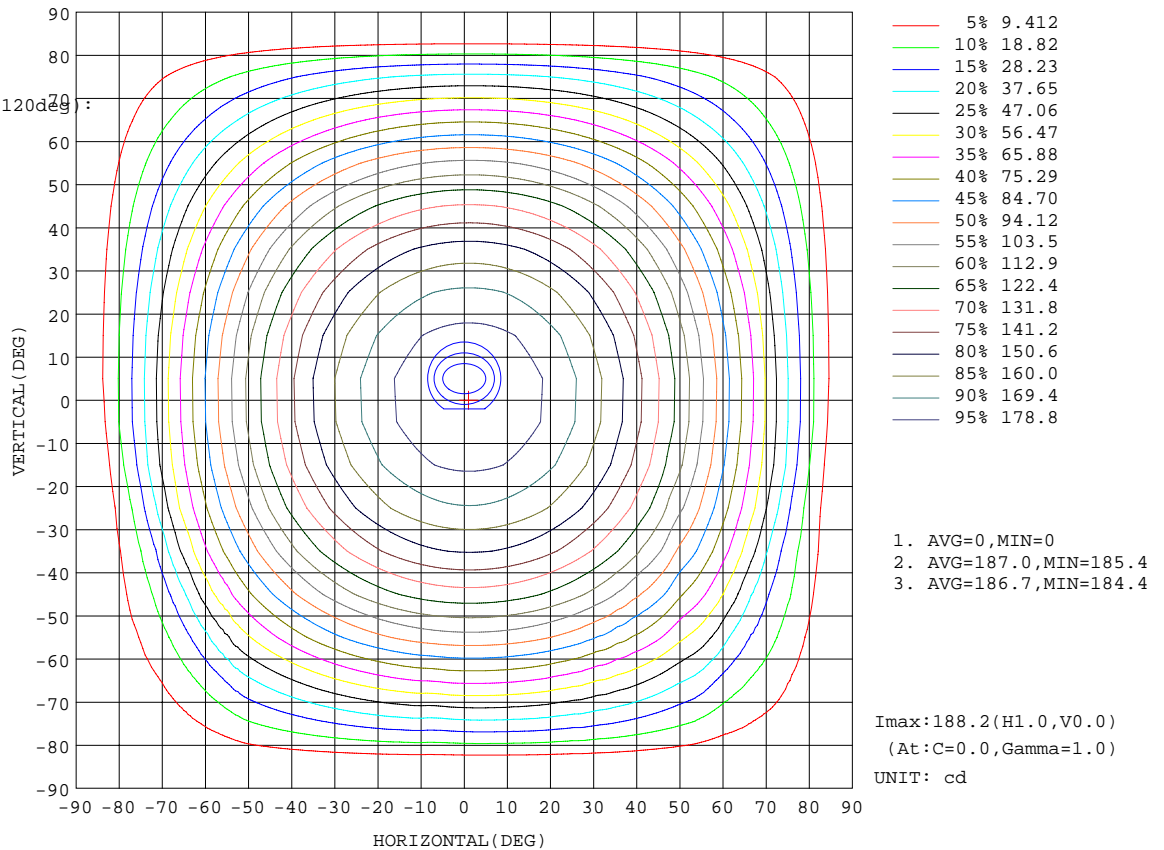
%lamp = 53.2%

Conical surface Flux(120deg):

436.06 lm

%lum = 78.9%

%lamp = 78.9%

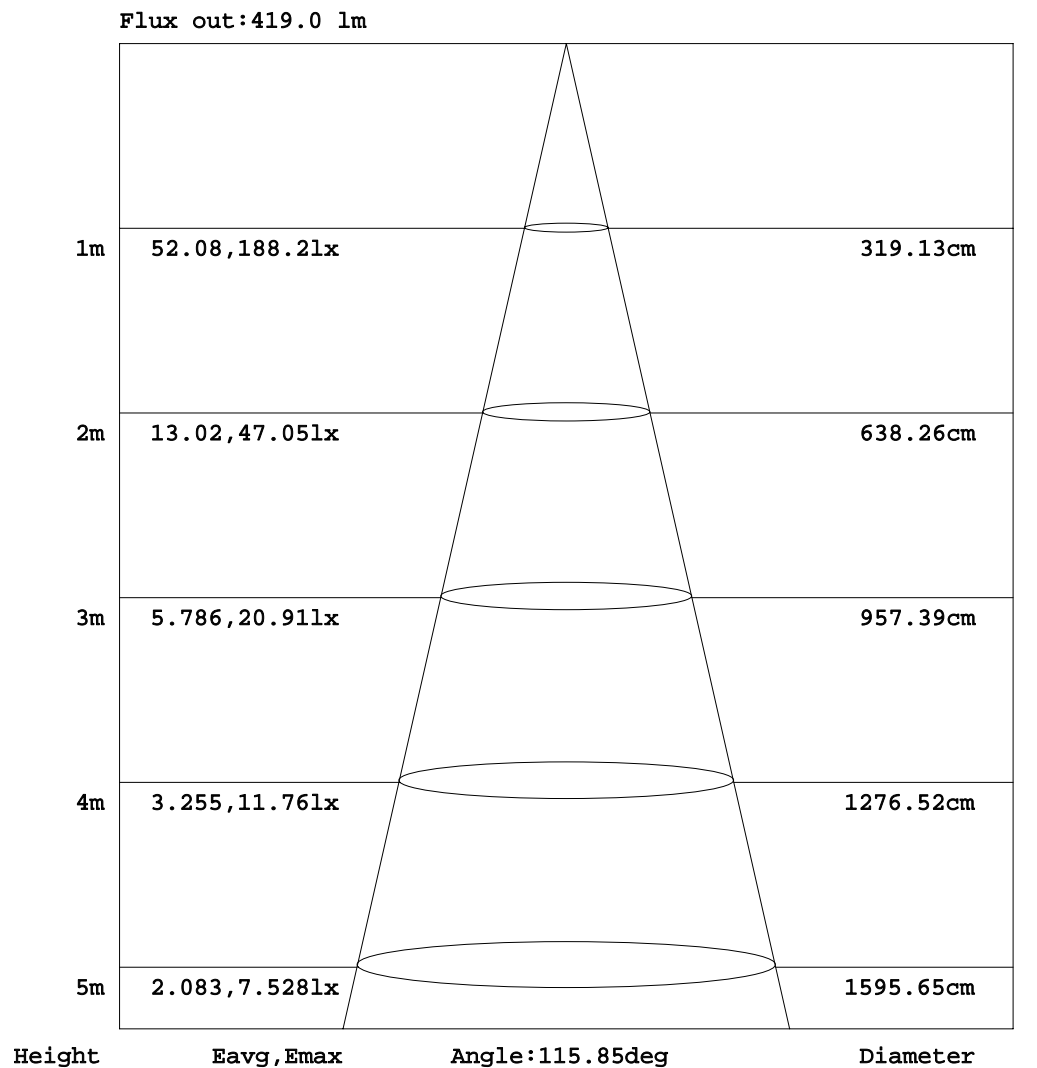


C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:ZP  
Test Date:2020-07-14

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.292  
Humidity:65.0%  
Test Distance:9.900m [K=1.0000]  
Remarks:

### AAI Figure

Test:U:24.00V I:0.2331A P:5.594W PF:1.000 Lamp Flux:552.909x1 lm		
NAME: 2835-60-24V	TYPE:LED Strip LIGHT	WEIGHT:1
SPEC.:1000*12MM	DIM.: 1000*12MM	SERIAL No.:1
MFR.: ESTAR	SUR.:1000*12MM	PROTECTION ANGLE:



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

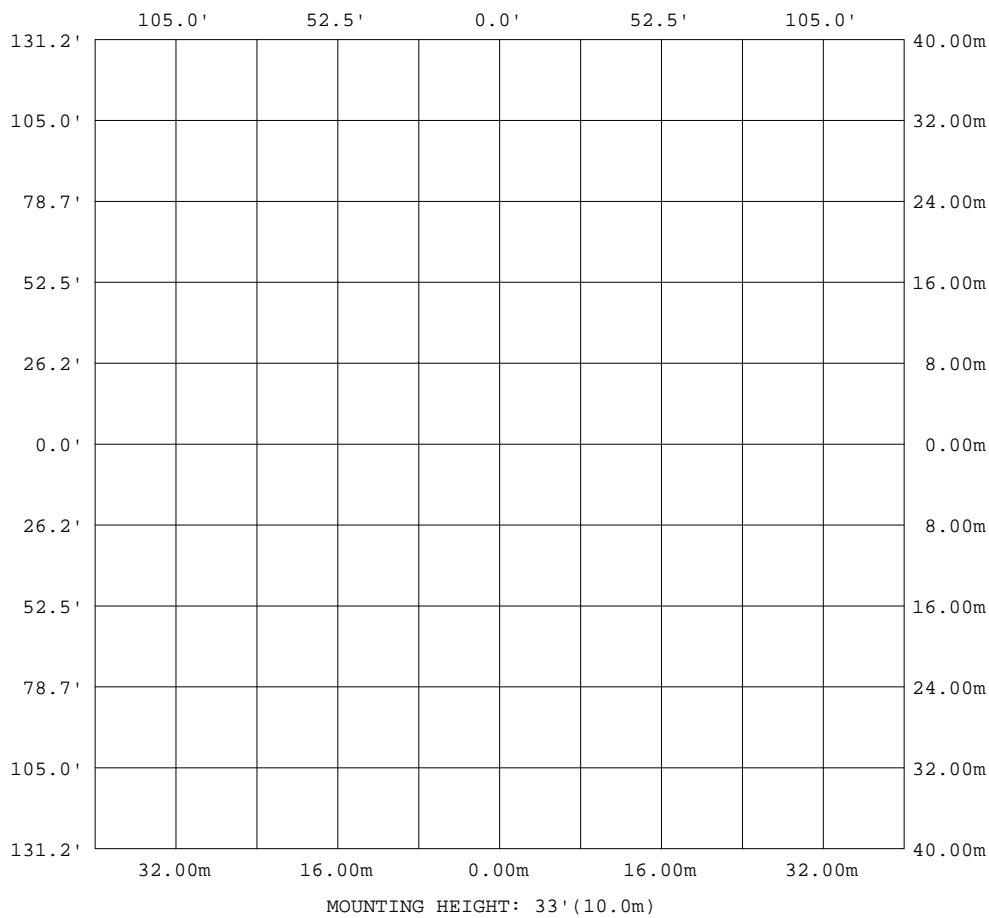
C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: MEDIUM  
 Temperature:25.3DEG  
 Operators:ZP  
 Test Date:2020-07-14

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.292  
 Humidity:65.0%  
 Test Distance:9.900m [K=1.0000]  
 Remarks:



**ISOLUX DIAGRAM**

Test:U:24.00V I:0.2331A P:5.594W PF:1.000 Lamp Flux:552.909x1 lm		
NAME: 2835-60-24V	TYPE:LED Strip LIGHT	WEIGHT:1
SPEC.:1000*12MM	DIM.: 1000*12MM	SERIAL No.:1
MFR.: ESTAR	SUR.:1000*12MM	PROTECTION ANGLE:



C Range: 0 - 360DEG  
 C Interval: 5.0DEG  
 Test Speed: MEDIUM  
 Temperature:25.3DEG  
 Operators:ZP  
 Test Date:2020-07-14

γ Range: 0 - 90DEG  
 γ Interval: 0.5DEG  
 Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.292  
 Humidity:65.0%  
 Test Distance:9.900m [K=1.0000]  
 Remarks:

### LED Avg.L Report

Test:U:24.00V I:0.2331A P:5.594W PF:1.000 Lamp Flux:552.909x1 lm		
NAME: 2835-60-24V	TYPE:LED Strip LIGHT	WEIGHT:1
SPEC.:1000*12MM	DIM.: 1000*12MM	SERIAL No.:1
MFR.: ESTAR	SUR.:1000*12MM	PROTECTION ANGLE:

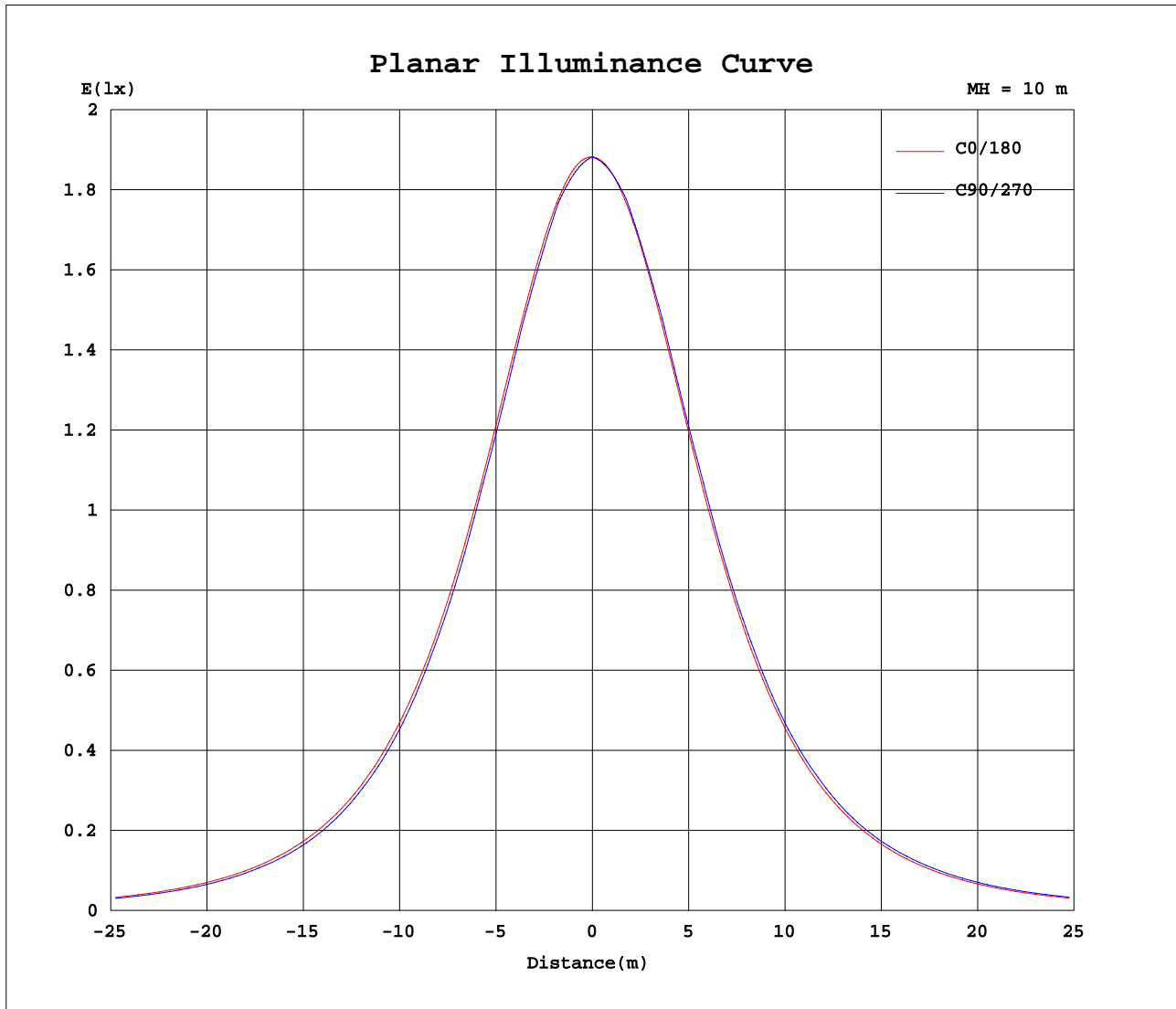
AvgL	cd/m2
L_0~180(65)av	14070
L_0~180(75)av	11828
L_0~180(85)av	7239
L_90~270(65)av	13984
L_90~270(75)av	12018
L_90~270(85)av	0
L_45(65)av	14017
L_45(75)av	11937
L_45(85)av	5312

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature:25.3DEG  
Operators:ZP  
Test Date:2020-07-14

γ Range: 0 - 90DEG  
γ Interval: 0.5DEG  
Test System:EVERFINE GO-2000A\_V1 SYSTEM V2.0.292  
Humidity:65.0%  
Test Distance:9.900m [K=1.0000]  
Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 5.0DEG  
Test Speed: MEDIUM  
Temperature: 25.3DEG  
Operators: ZP  
Test Date: 2020-07-14

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 0.5DEG  
Test System: EVERFINE GO-2000A\_V1 SYSTEM V2.0.292  
Humidity: 65.0%  
Test Distance: 9.900m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.292
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.292
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.292
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.292
Humidity:65.0%
Test Distance:9.900m [K=1.0000]
Remarks:

```