

Report No.: MSL-31

Test Time: 2019-03-05 08:12

## Luminaire Property

Luminaire Manufacturer: Stand Iluminaciones S.A.S

Luminaire Category: Interior

Luminaire Description: Bala Stil Led Flat 22W Samsung

Number of Lamps: 1

Luminous Width (mm): 190 Diametro

Voltage: 119.9 V

Power: 21.98 W

Luminous Length (mm): 190 Diametro

Luminous Height (mm): 0

Current: 0.184 A

Power Factor: 0.994

## Photometric Results

CIE Class: Direct

Measurement Flux: 2261.7 lm

Downward Ratio: 100%

Field Angle(C0/C180,C90/C270,C45/C225,C135/315): 161.4, 161.5, 161.6, 161.3

Beam Angle(C0/C180,C90/C270,C45/C225,C135/315): 109.2, 109.4, 109.4, 109.3

Luminaire Efficacy Rating (LER): 102.95

Max. Intensity: 817.16 cd

S/MH(C0/C180): 1.23

Total Rated Lamp Lumens: 2261.7 lm

Efficiency: 100%

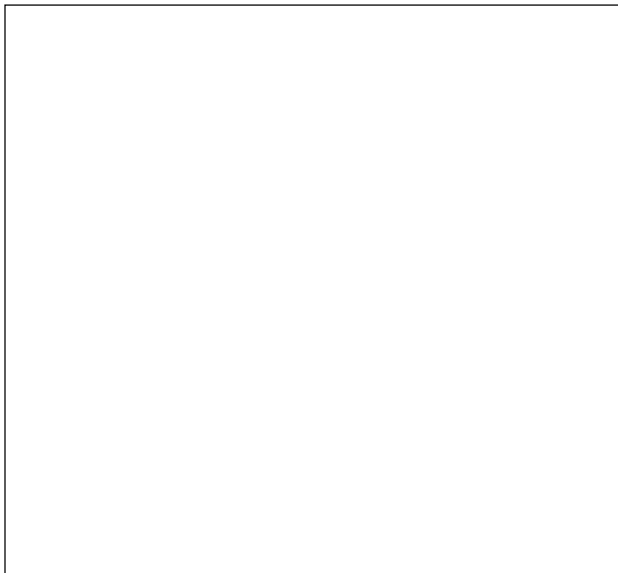
Upward Ratio: 0%

Central Intensity: 816.02 cd

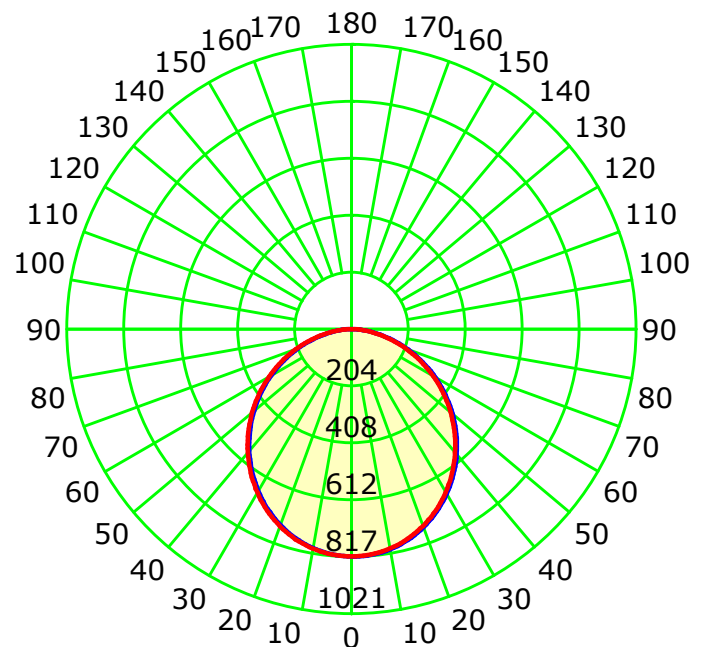
Pos of Max. Intensity: H30 V1

S/MH(C90/C270): 1.23

Picture Of Luminaire



Luminous Intensity Distribution Curve



Unit: cd

C Plane (°):0.0-360.0: 10.0

Test Lab: LABORATORIO STAND

Test Type: TYPE C

Temperature: 24.4

Operator: Cristian Herrera Arismendy

Gamma Plane (°):0.0-90.0:(50%): 109.3°

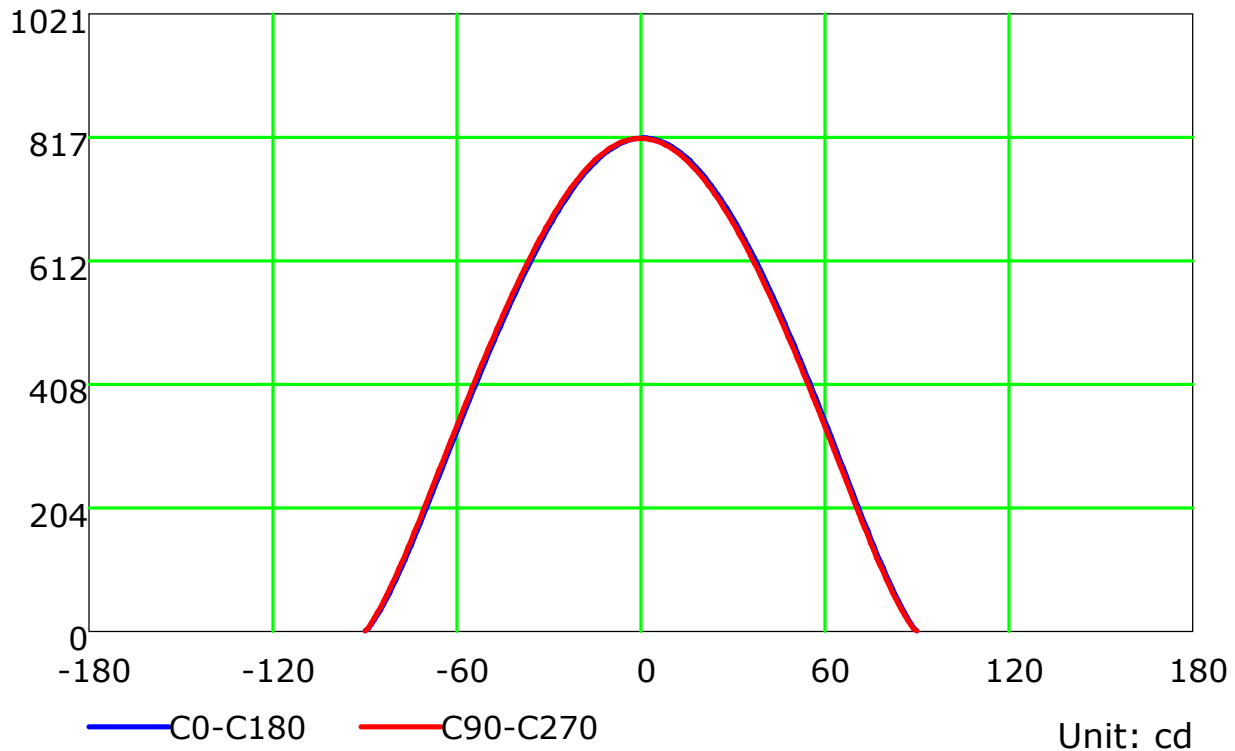
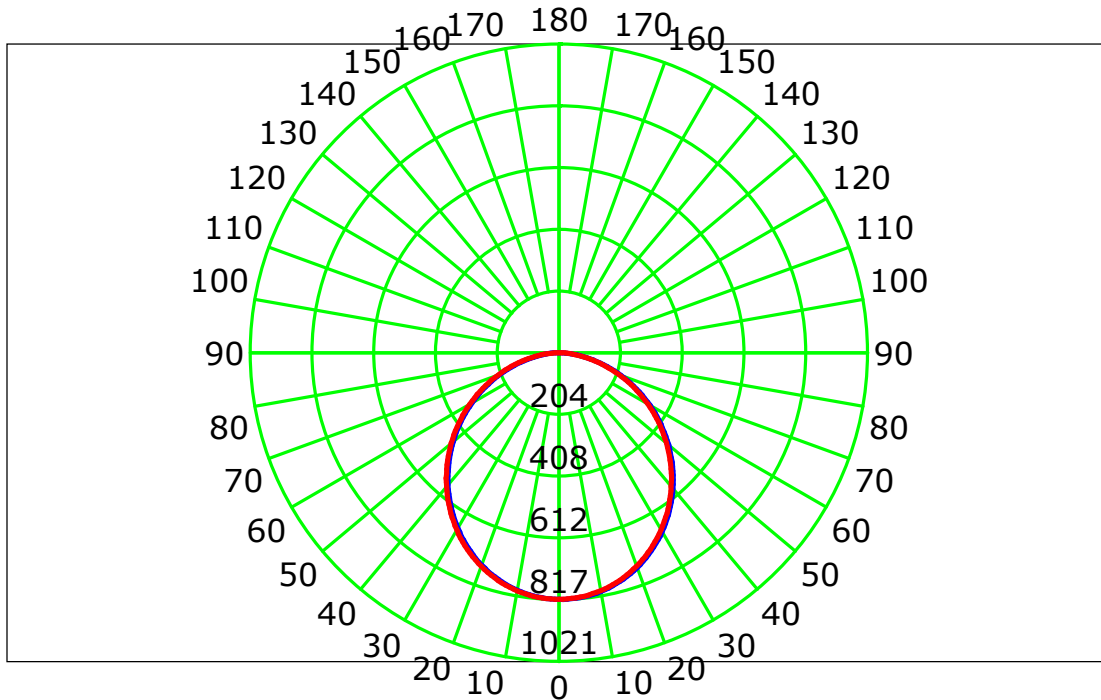
Test Device: LSG-1700B

Distance: 11.703 m — C90-C270

Humidity:

Inspector:

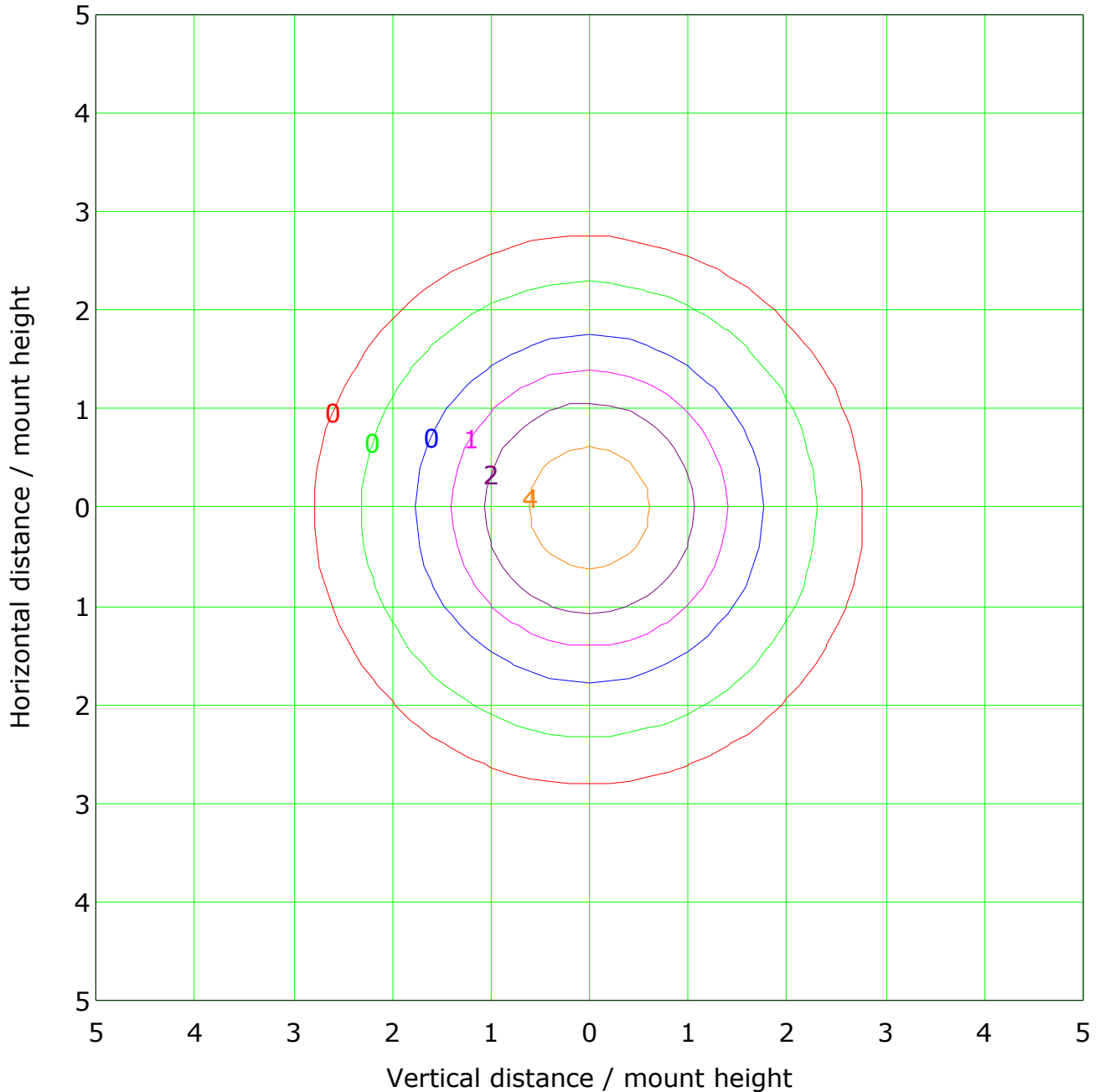
## Luminous Intensity Distribution Curve



C Plane (°):0.0-360.0: 10.0  
 Test Lab: LABORATORIO STAND  
 Test Type: TYPE C  
 Temperature: 24.4  
 Operator: Cristian Herrera Arismendy

Gamma Plane (°):0.0-90.0:1.0  
 Test Device: LSG-1700B  
 Distance: 11.703 m  
 Humidity:  
 Inspector:

### IsoLux Plot



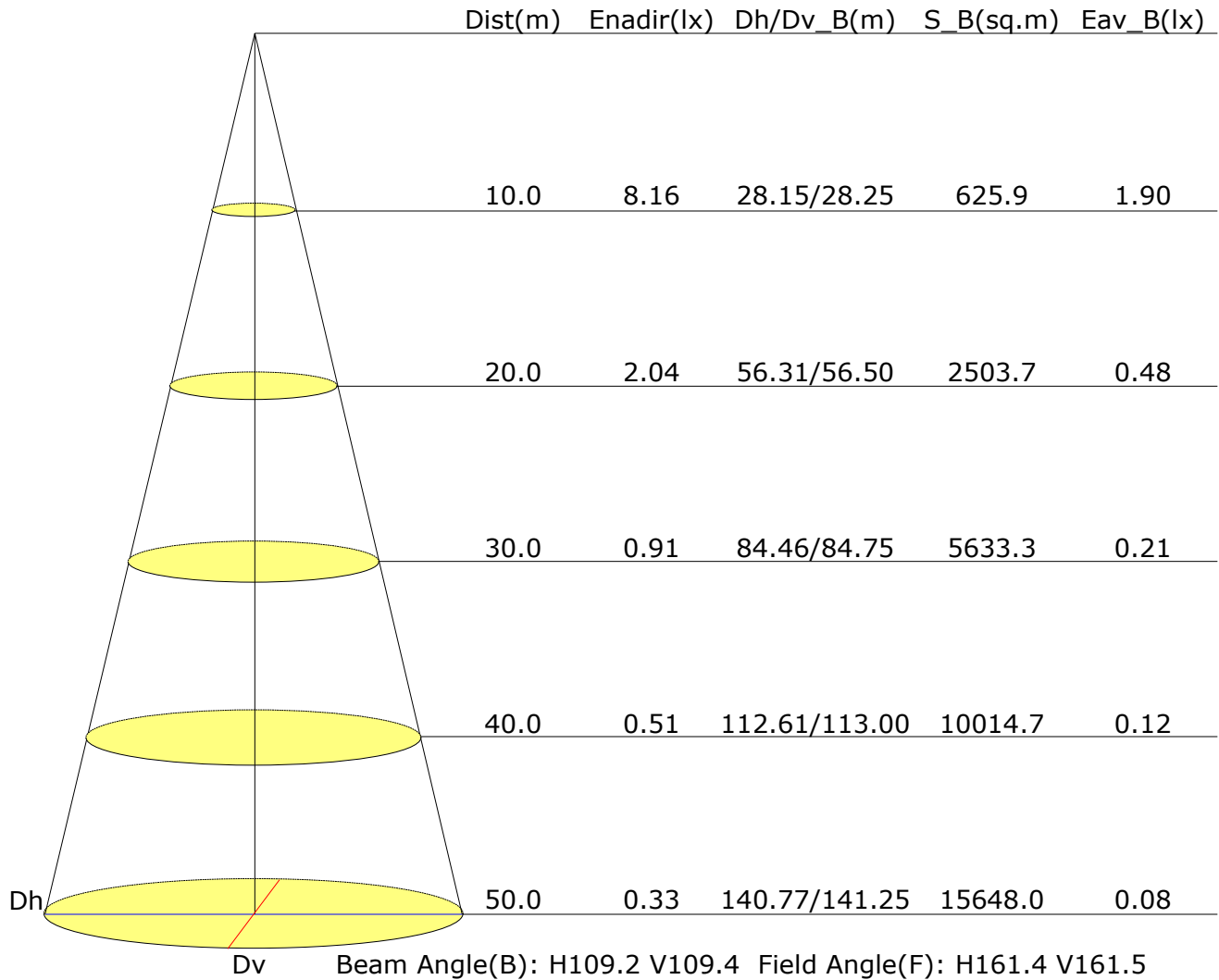
Mounting Height: 10.0m Max Lux(100%): 8.2 lx

( 1%): 0.1 lx ( 2%): 0.2 lx

( 5%): 0.4 lx ( 10%): 0.8 lx

C Plane (°):0.0-360.0: 10.0	Gamma Plane (°):0.0-90.0:1.0
Test Lab: LABORATORIO STAND 1.6 lx	Test Device: LSG-1700B lx
Test Type: TYPE C (100%): 8.2 lx	Distance: 11.703 m
Temperature: 24.4	Humidity:
Operator: Cristian Herrera Arismendy	Inspector:

## Illuminance at a Distance



## UGR Table

Reflectance:										
Ceiling (cavity)	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference 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	23.1	24.5	23.4	24.7	24.9	23.0	24.4	23.3	24.6	24.8
3H	24.6	25.9	25.0	26.2	26.5	24.5	25.8	24.8	26.0	26.3
4H	25.3	26.5	25.6	26.8	27.1	25.1	26.3	25.5	26.6	26.9
6H	25.8	26.9	26.1	27.2	27.5	25.6	26.7	25.9	27.0	27.3
8H	25.9	27.0	26.3	27.3	27.7	25.7	26.8	26.1	27.1	27.5
12H	26.0	27.1	26.4	27.4	27.7	25.8	26.9	26.2	27.2	27.5
X=4H Y=2H	23.7	24.9	24.1	25.2	25.5	23.7	24.9	24.0	25.1	25.4
3H	25.5	26.5	25.9	26.9	27.2	25.4	26.4	25.8	26.8	27.1
4H	26.3	27.2	26.7	27.6	27.9	26.1	27.1	26.6	27.4	27.8
6H	26.9	27.7	27.3	28.1	28.5	26.7	27.5	27.2	27.9	28.3
8H	27.1	27.9	27.6	28.3	28.7	26.9	27.7	27.4	28.1	28.5
12H	27.3	28.0	27.7	28.4	28.8	27.1	27.7	27.5	28.2	28.6
X=8H Y=4H	26.6	27.4	27.0	27.8	28.2	26.5	27.2	26.9	27.6	28.0
6H	27.4	28.0	27.8	28.4	28.9	27.2	27.8	27.7	28.3	28.7
8H	27.7	28.2	28.2	28.7	29.2	27.5	28.0	28.0	28.5	29.0
12H	27.9	28.4	28.4	28.9	29.4	27.7	28.2	28.2	28.6	29.2
X=12H Y=4H	26.6	27.3	27.1	27.7	28.2	26.5	27.2	27.0	27.6	28.0
6H	27.4	28.0	27.9	28.4	28.9	27.3	27.8	27.8	28.3	28.8
8H	27.8	28.3	28.3	28.7	29.2	27.6	28.1	28.1	28.6	29.1
Variations with the observer position at spacings:										
S=1.0H	+0.2/-0.2					+0.2/-0.2				
S=1.5H	+0.4/-0.5					+0.3/-0.5				
S=2.0H	+0.5/-0.9					+0.5/-0.8				

Calculate in accordance with CIE Pub.117. The table is revised with 2262lm ( $8\log(F/F_0) = 2.8$ ).

## Zonal Lumen

Gamma [°]	Imean [cd]	Zonal Flux [lm]	Sum Zonal Flux [lm]	Rel Zonal Flux [%]	Sum Rel Zonal Flux [%]
0.0-1.0	816.0	0.8	0.8	0.03	0.03
1.0-2.0	815.7	2.3	3.1	0.10	0.14
2.0-3.0	815.0	3.9	7.0	0.17	0.31
3.0-4.0	814.0	5.4	12.5	0.24	0.55
4.0-5.0	812.7	7.0	19.5	0.31	0.86
5.0-6.0	811.1	8.5	28.0	0.38	1.24
6.0-7.0	809.1	10.0	38.0	0.44	1.68
7.0-8.0	806.9	11.5	49.6	0.51	2.19
8.0-9.0	804.2	13.0	62.6	0.58	2.77
9.0-10.0	801.4	14.5	77.1	0.64	3.41
10.0-11.0	798.1	15.9	93.1	0.71	4.12
11.0-12.0	794.6	17.4	110.4	0.77	4.88
12.0-13.0	790.8	18.8	129.2	0.83	5.71
13.0-14.0	786.5	20.1	149.3	0.89	6.60
14.0-15.0	782.1	21.5	170.8	0.95	7.55
15.0-16.0	777.3	22.8	193.6	1.01	8.56
16.0-17.0	772.2	24.1	217.7	1.06	9.62
17.0-18.0	767.0	25.3	242.9	1.12	10.74
18.0-19.0	761.2	26.5	269.4	1.17	11.91
19.0-20.0	755.2	27.6	297.1	1.22	13.14
20.0-21.0	749.1	28.8	325.8	1.27	14.41
21.0-22.0	742.5	29.8	355.7	1.32	15.73
22.0-23.0	735.8	30.9	386.6	1.37	17.09
23.0-24.0	728.7	31.9	418.4	1.41	18.50
24.0-25.0	721.3	32.8	451.2	1.45	19.95
25.0-26.0	713.9	33.7	484.9	1.49	21.44
26.0-27.0	706.0	34.5	519.5	1.53	22.97
27.0-28.0	697.9	35.3	554.8	1.56	24.53
28.0-29.0	689.8	36.1	590.9	1.60	26.13
29.0-30.0	681.2	36.8	627.7	1.63	27.75
30.0-31.0	672.5	37.4	665.1	1.65	29.41
31.0-32.0	663.3	38.0	703.1	1.68	31.09
32.0-33.0	654.0	38.5	741.7	1.70	32.79
33.0-34.0	644.9	39.0	780.7	1.73	34.52
34.0-35.0	635.2	39.5	820.2	1.74	36.26
35.0-36.0	625.3	39.8	860.0	1.76	38.02

C Plane (°):0.0-360.0: 10.0  
 Test Lab: LABORATORIO STAND  
 Test Type: TYPE C  
 Temperature: 24.4  
 Operator: Cristian Herrera Arismendy

Gamma Plane (°):0.0-90.0:1.0  
 Test Device: LSG-1700B  
 Distance: 11.703 m  
 Humidity:  
 Inspector:

## Zonal Lumen (Continue 1)

Gamma [°]	Imean [cd]	Zonal Flux [lm]	Sum Zonal Flux [lm]	Rel Zonal Flux [%]	Sum Rel Zonal Flux [%]
36.0-37.0	615.4	40.1	900.1	1.77	39.80
37.0-38.0	605.1	40.4	940.5	1.79	41.58
38.0-39.0	594.9	40.6	981.1	1.80	43.38
39.0-40.0	584.3	40.8	1021.9	1.80	45.18
40.0-41.0	573.5	40.8	1062.7	1.81	46.99
41.0-42.0	563.1	40.9	1103.6	1.81	48.80
42.0-43.0	551.9	40.9	1144.5	1.81	50.61
43.0-44.0	540.6	40.8	1185.3	1.80	52.41
44.0-45.0	529.5	40.7	1226.0	1.80	54.21
45.0-46.0	518.0	40.5	1266.6	1.79	56.00
46.0-47.0	506.6	40.3	1306.9	1.78	57.78
47.0-48.0	494.8	40.0	1346.9	1.77	59.55
48.0-49.0	482.8	39.7	1386.5	1.75	61.30
49.0-50.0	471.3	39.3	1425.8	1.74	63.04
50.0-51.0	459.2	38.9	1464.7	1.72	64.76
51.0-52.0	446.9	38.4	1503.0	1.70	66.46
52.0-53.0	434.9	37.8	1540.9	1.67	68.13
53.0-54.0	422.5	37.2	1578.1	1.65	69.78
54.0-55.0	410.2	36.6	1614.7	1.62	71.39
55.0-56.0	397.7	35.9	1650.7	1.59	72.98
56.0-57.0	385.0	35.2	1685.9	1.56	74.54
57.0-58.0	372.9	34.5	1720.4	1.52	76.07
58.0-59.0	360.0	33.7	1754.0	1.49	77.55
59.0-60.0	347.2	32.8	1786.8	1.45	79.00
60.0-61.0	334.3	31.9	1818.7	1.41	80.41
61.0-62.0	321.4	31.0	1849.7	1.37	81.78
62.0-63.0	308.8	30.0	1879.7	1.33	83.11
63.0-64.0	295.7	29.0	1908.8	1.28	84.40
64.0-65.0	282.7	28.0	1936.7	1.24	85.63
65.0-66.0	270.1	26.9	1963.7	1.19	86.82
66.0-67.0	256.9	25.8	1989.5	1.14	87.97
67.0-68.0	243.9	24.7	2014.2	1.09	89.06
68.0-69.0	231.0	23.6	2037.8	1.04	90.10
69.0-70.0	218.0	22.4	2060.2	0.99	91.09
70.0-71.0	205.4	21.2	2081.4	0.94	92.03
71.0-72.0	192.5	20.0	2101.5	0.88	92.92

C Plane (°):0.0-360.0: 10.0  
 Test Lab: LABORATORIO STAND  
 Test Type: TYPE C  
 Temperature: 24.4  
 Operator: Cristian Herrera Arismendy

Gamma Plane (°):0.0-90.0:1.0  
 Test Device: LSG-1700B  
 Distance: 11.703 m  
 Humidity:  
 Inspector:

**Zonal Lumen (Continue 2)**

Gamma [°]	Imean [cd]	Zonal Flux [lm]	Sum Zonal Flux [lm]	Rel Zonal Flux [%]	Sum Rel Zonal Flux [%]
72.0-73.0	179.7	18.8	2120.2	0.83	93.75
73.0-74.0	167.4	17.6	2137.8	0.78	94.52
74.0-75.0	154.8	16.4	2154.2	0.72	95.25
75.0-76.0	142.4	15.1	2169.3	0.67	95.92
76.0-77.0	130.2	13.9	2183.2	0.61	96.53
77.0-78.0	118.0	12.6	2195.8	0.56	97.09
78.0-79.0	106.8	11.5	2207.3	0.51	97.60
79.0-80.0	95.3	10.3	2217.6	0.45	98.05
80.0-81.0	84.0	9.1	2226.7	0.40	98.45
81.0-82.0	73.4	8.0	2234.6	0.35	98.80
82.0-83.0	62.8	6.8	2241.5	0.30	99.11
83.0-84.0	52.9	5.8	2247.2	0.25	99.36
84.0-85.0	43.1	4.7	2251.9	0.21	99.57
85.0-86.0	33.8	3.7	2255.6	0.16	99.73
86.0-87.0	25.4	2.8	2258.4	0.12	99.85
87.0-88.0	17.0	1.9	2260.3	0.08	99.94
88.0-89.0	9.3	1.0	2261.3	0.05	99.98
89.0-90.0	3.6	0.4	2261.7	0.02	100.00

C Plane (°):0.0-360.0: 10.0  
 Test Lab: LABORATORIO STAND  
 Test Type: TYPE C  
 Temperature: 24.4  
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Gamma Plane (°):0.0-90.0:1.0  
 Test Device: LSG-1700B  
 Distance: 11.703 m  
 Humidity:  
 Inspector: