

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: FAIL-SAFE

Report Number: BALLABS TEST NO. 8045.0

Luminaire Tested: **FRR213**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: BALLABS TEST NO. 8045.0
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FRR213
Description: 2/13W PL LAMP 9"DIA RECESSED LUMINAIRE
Light Source: -
F13TT/27K
Ballast/Driver: -

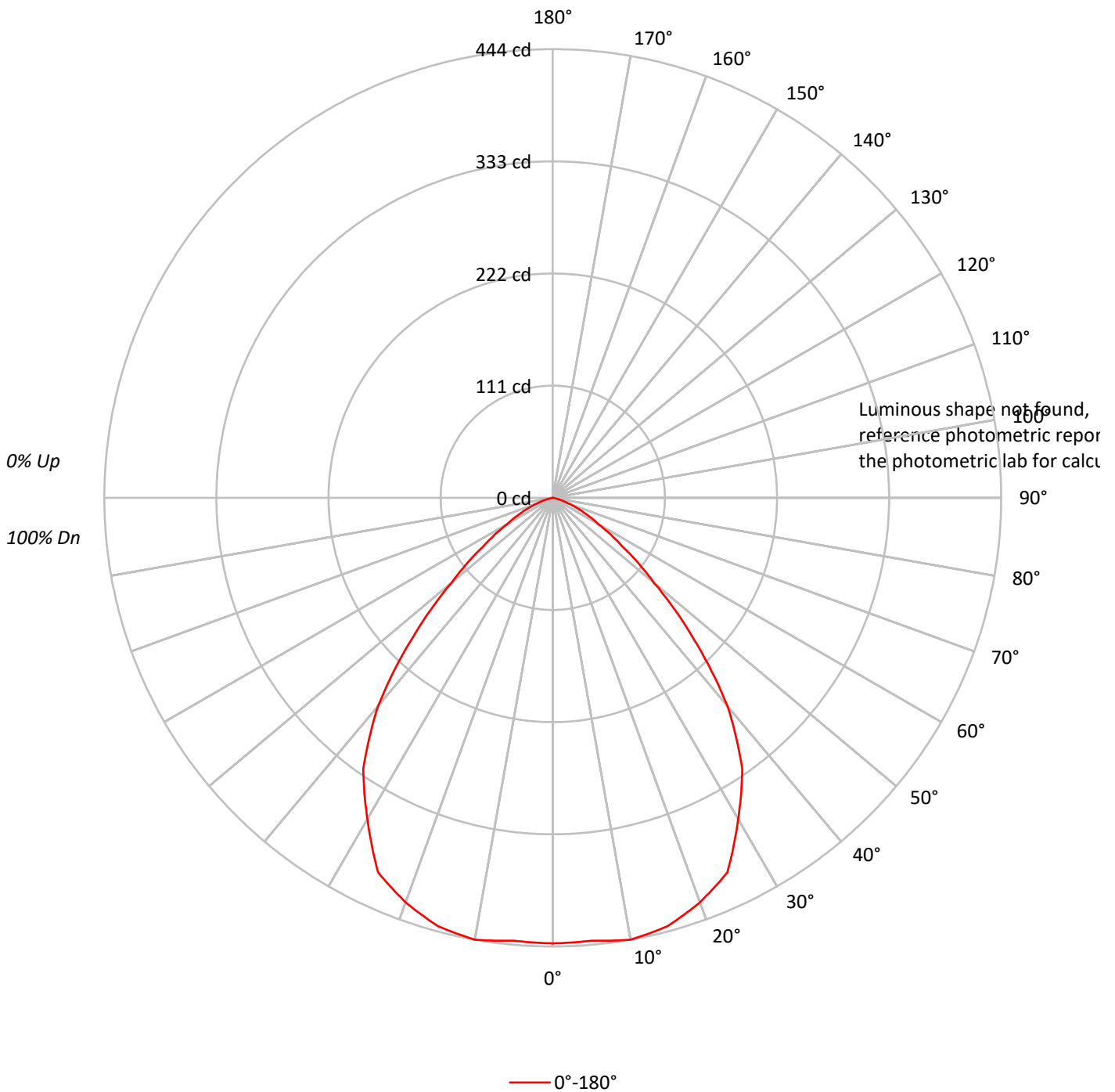
Summary

Lumens per Lamp: 900 (2 lamps)
Luminaire Lumens: 825.9 lumens
Efficiency: 45.9%
Efficacy: 22.3 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.22 / 1.23
Luminous Opening: (L: 0.71 ' x W: 0 ' x H: 0 '
CIE Type: Direct

Input Watts (W): 37
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

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Luminous Intensity Polar Plot



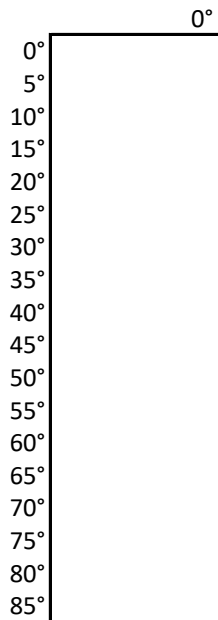


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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	55	55	55	55	53	53	53	53	51	51	51	49	49	49	47	47	47	46
1	51	50	48	47	50	49	47	46	47	46	45	45	44	43	43	43	42	41
2	48	45	43	41	47	44	42	40	43	41	39	41	40	38	40	39	37	37
3	44	41	38	35	43	40	37	35	39	36	34	38	36	34	36	35	33	33
4	41	37	34	31	40	36	33	31	35	33	31	34	32	30	33	31	30	29
5	39	34	30	28	38	33	30	28	32	29	27	31	29	27	31	28	27	26
6	36	31	27	25	35	30	27	25	30	27	24	29	26	24	28	26	24	23
7	34	28	25	22	33	28	25	22	27	24	22	27	24	22	26	24	22	21
8	31	26	23	20	31	26	22	20	25	22	20	25	22	20	24	22	20	19
9	30	24	21	18	29	24	21	18	23	20	18	23	20	18	22	20	18	17
10	28	22	19	17	27	22	19	17	22	19	17	21	19	17	21	19	17	16

AVERAGE LUMINANCE (cd/sqm):





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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp	0°	Flux	
0°-10°	42.2	5.1	2.3	0°	441	
10°-20°	123.7	15.0	6.9	5°	440	42
20°-30°	185.8	22.5	10.3	15°	439	124
30°-40°	201.6	24.4	11.2	25°	409	186
40°-50°	152.6	18.5	8.5	35°	327	202
50°-60°	78.6	9.5	4.4	45°	197	153
60°-70°	33.3	4.0	1.9	55°	85	79
70°-80°	8.1	1.0	0.5	65°	33	33
80°-90°	0.0	0.0	0.0	75°	7	8
90°-100°	0.0	0.0	0.0	85°	0	0
100°-110°	0.0	0.0	0.0	90°	0	
110°-120°	0.0	0.0	0.0			
120°-130°	0.0	0.0	0.0			
130°-140°	0.0	0.0	0.0			
140°-150°	0.0	0.0	0.0			
150°-160°	0.0	0.0	0.0			
160°-170°	0.0	0.0	0.0			
170°-180°	0.0	0.0	0.0			
0°-30°	351.6	42.6	19.5			
0°-40°	553.2	67.0	30.7			
0°-60°	784.4	95.0	43.6			
0°-90°	825.9	100.0	45.9			
90°-120°	0.0	0.0	0.0			
90°-150°	0.0	0.0	0.0			
90°-180°	0.0	0.0	0.0			
0°-180°	825.9	100.0	45.9			



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CANDELA DISTRIBUTION (FULL):

	0°
0°	441
5°	440
10°	444
15°	439
20°	426
25°	409
30°	367
35°	327
40°	269
45°	197
50°	131
55°	85
60°	52
65°	33
70°	17
75°	7
80°	0
85°	0
90°	0

(END OF REPORT)