

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. 11534.0

Luminaire Tested: **FUS12LP-X-228-120-80/86-EB81**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: BALLABS TEST NO. 11534.0
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FUS12LP-X-228-120-80/86-EB81
Description: 2/28W T5 4'SURFACE LUMINAIRE
Light Source: -
FP28T5/835
Ballast/Driver: -

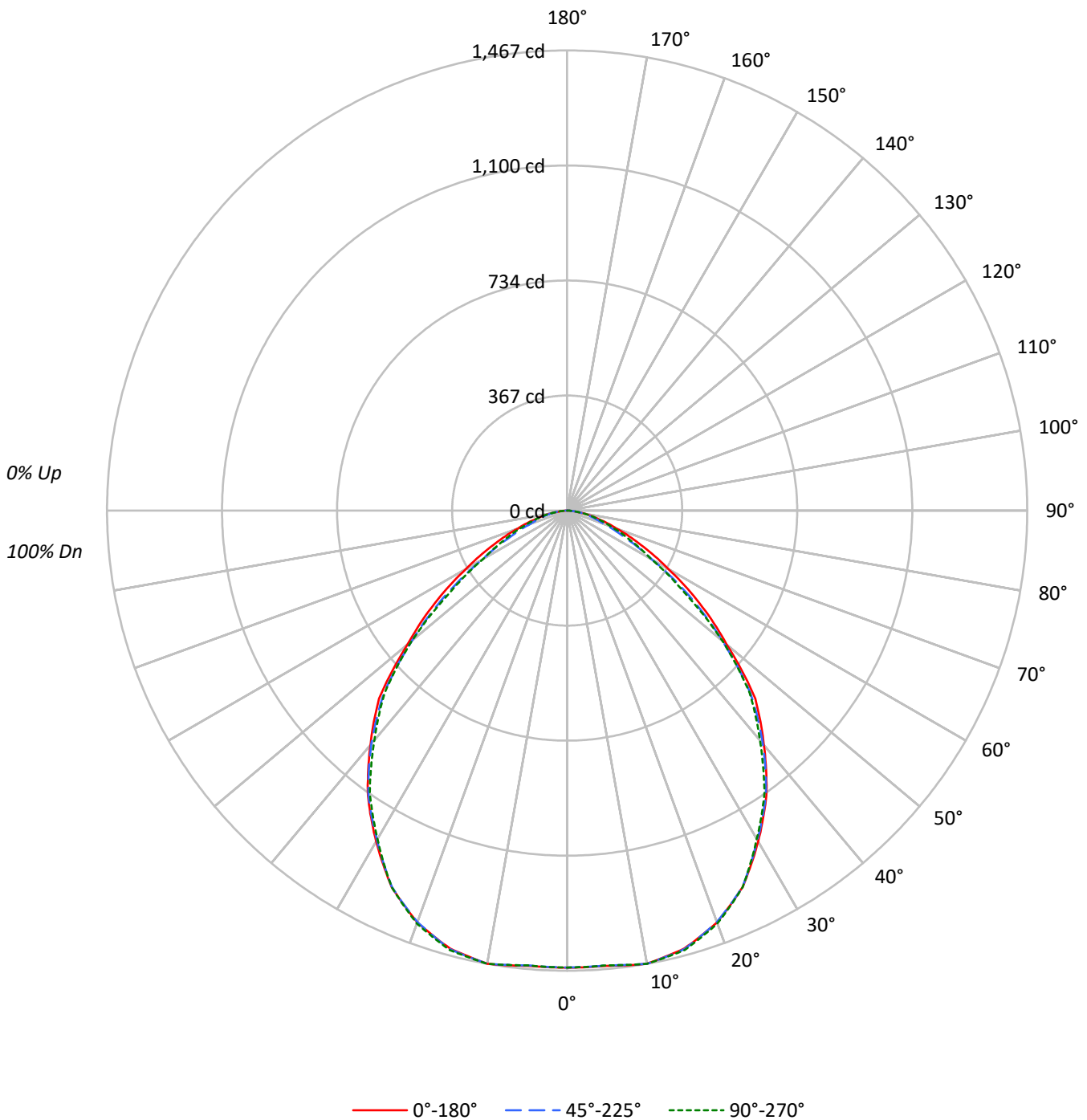
Summary

Lumens per Lamp: 2900 (2 lamps)
Luminaire Lumens: 3251.8 lumens
Efficiency: 56.1%
Efficacy: 54.2 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.23 / 1.29
Luminous Opening: Rectangular (W 0.44' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 60
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	67	67	67	67	65	65	65	65	62	62	62		60	60	60		57	57	57	56
1	62	60	58	56	61	58	57	55	56	55	53		54	53	52		52	51	50	49
2	57	53	50	47	56	52	49	47	50	48	46		48	46	45		47	45	44	42
3	53	48	44	40	51	47	43	40	45	42	39		44	41	39		42	40	38	37
4	49	43	38	35	47	42	38	35	41	37	34		39	36	34		38	36	33	32
5	45	39	34	31	44	38	34	30	37	33	30		36	32	30		35	32	30	28
6	42	35	30	27	41	35	30	27	34	30	27		33	29	27		32	29	26	25
7	39	32	27	24	38	32	27	24	31	27	24		30	26	24		29	26	24	23
8	36	29	25	22	36	29	25	22	28	24	22		28	24	22		27	24	21	20
9	34	27	23	20	33	27	23	20	26	22	20		26	22	20		25	22	19	19
10	32	25	21	18	31	25	21	18	24	21	18		24	20	18		23	20	18	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9038	9038	9038
5°	9073	9060	9060
10°	9240	9240	9240
15°	9280	9293	9312
20°	9222	9215	9248
25°	9062	9055	9062
30°	8724	8688	8660
35°	8391	8368	8307
40°	7903	7863	7741
45°	7439	7264	7220
50°	6408	6234	6234
55°	5570	5148	4932
60°	4603	3883	3846
65°	3816	2965	3214
70°	3029	2267	2721
75°	2469	1989	2373
80°	1965	1822	1929
85°	1068	1281	1281



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	139.4	4.3	2.4	0°	1457	1457	1457	1457	1457	
10°-20°	407.2	12.5	7.0	5°	1457	1455	1455	1455	1455	139
20°-30°	606.3	18.6	10.5	15°	1445	1445	1447	1447	1450	407
30°-40°	686.5	21.1	11.8	25°	1324	1323	1323	1324	1324	607
40°-50°	630.7	19.4	10.9	35°	1108	1105	1105	1100	1097	690
50°-60°	430.7	13.2	7.4	45°	848	839	828	812	823	643
60°-70°	226.9	7.0	3.9	55°	515	489	476	463	456	461
70°-80°	100.7	3.1	1.7	65°	260	227	202	224	219	262
80°-90°	23.4	0.7	0.4	75°	103	91	83	96	99	113
90°-100°	0.0	0.0	0.0	85°	15	17	18	18	18	23
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	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°	1152.9	35.5	19.9							
0°-40°	1839.4	56.6	31.7							
0°-60°	2900.8	89.2	50.0							
0°-90°	3251.8	100.0	56.1							
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°	3251.8	100.0	56.1							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1457	1457	1457	1457	1457
5°	1457	1455	1455	1455	1455
10°	1467	1467	1467	1467	1467
15°	1445	1445	1447	1447	1450
20°	1397	1397	1396	1398	1401
25°	1324	1323	1323	1324	1324
30°	1218	1215	1213	1209	1209
35°	1108	1105	1105	1100	1097
40°	976	973	971	960	956
45°	848	839	828	812	823
50°	664	656	646	631	646
55°	515	489	476	463	456
60°	371	334	313	318	310
65°	260	227	202	224	219
70°	167	146	125	152	150
75°	103	91	83	96	99
80°	55	48	51	51	54
85°	15	17	18	18	18
90°	0	0	0	0	0

(END OF REPORT)