

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. 9330.0

Luminaire Tested: **FUS 16-X-332-120-80/87-EB81**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: BALLABS TEST NO. 9330.0  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FUS 16-X-332-120-80/87-EB81  
Description: 3/32W T8 LAMP 4'SURFACE MNT LUMINAIRE w/WHITE BODY  
Light Source: -  
F32T8/735/  
Ballast/Driver: MAGNETEK BALLAST #B332I120RH

**Summary**

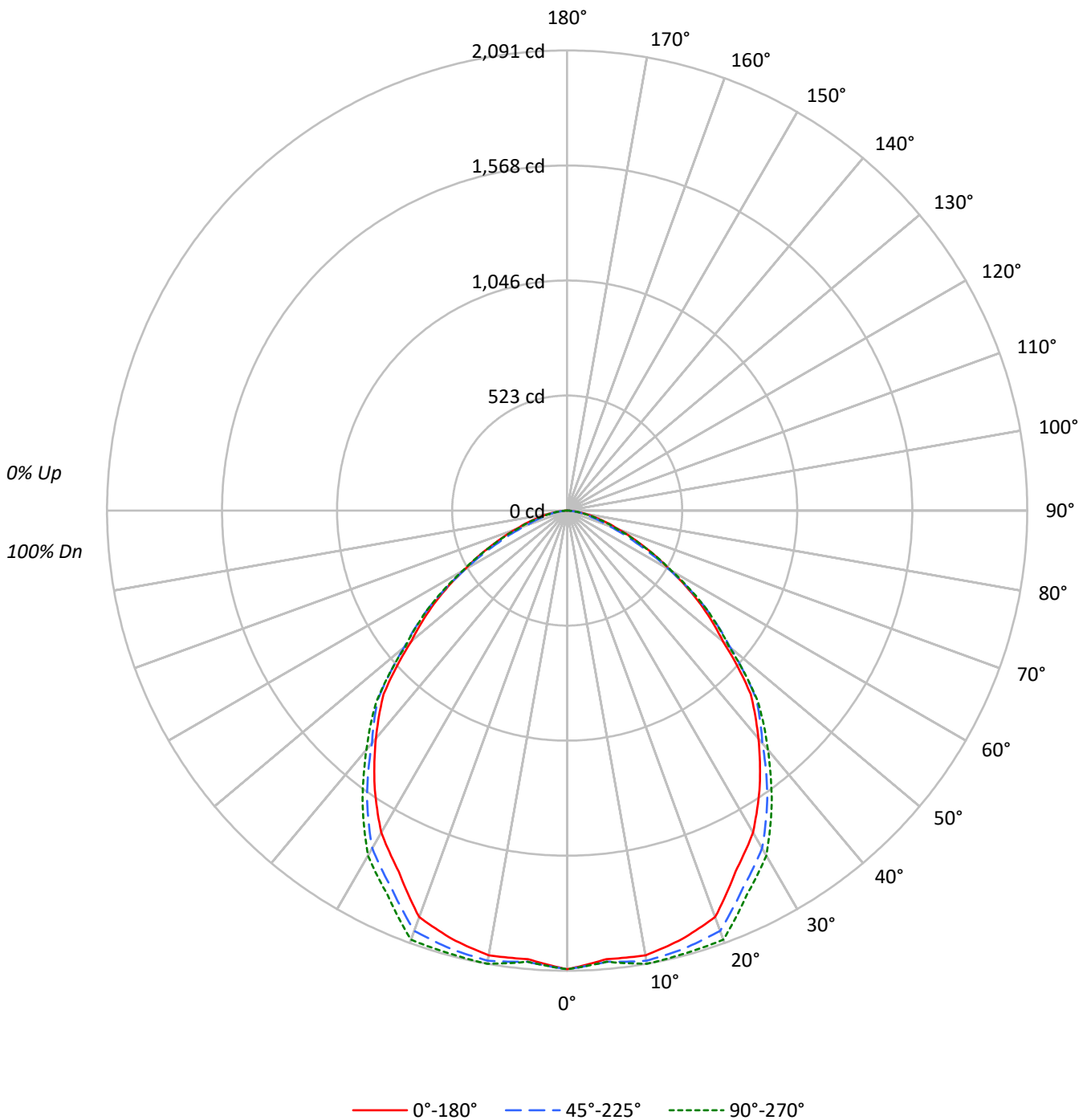
Lumens per Lamp: 2850 (3 lamps)  
Luminaire Lumens: 4761.9 lumens  
Efficiency: 55.7%  
Efficacy: 56.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.3  
Luminous Opening: Rectangular (W 1.02' x L: 3.91' x H: 0')  
CIE Type: Direct

Input Watts (W): 84  
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																		
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	50	30	10	50	30	10	50	30	10	0																			
RCR																																														
0	66	66	66	66	65	65	65	65	62	62	62	59	59	59	57	57	57	56																												
1	62	59	57	55	60	58	56	55	56	54	53	54	52	51	52	51	50	49																												
2	57	53	49	47	55	52	49	46	50	47	45	48	46	44	46	45	43	42																												
3	52	47	43	40	51	46	42	39	45	41	39	43	40	38	42	39	37	36																												
4	48	42	38	34	47	41	37	34	40	37	34	39	36	33	38	35	33	32																												
5	45	38	33	30	43	37	33	30	36	32	30	35	32	29	34	31	29	28																												
6	41	34	30	27	40	34	30	26	33	29	26	32	29	26	31	28	26	25																												
7	38	31	27	24	38	31	27	24	30	26	23	29	26	23	29	26	23	22																												
8	36	29	24	21	35	28	24	21	28	24	21	27	24	21	26	23	21	20																												
9	34	27	22	19	33	26	22	19	26	22	19	25	22	19	24	21	19	18																												
10	32	25	20	18	31	24	20	18	24	20	17	23	20	17	23	20	17	16																												

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5618	5618	5618
5°	5536	5569	5569
10°	5617	5685	5723
15°	5626	5749	5810
20°	5640	5829	5952
25°	5383	5624	5737
30°	5257	5516	5634
35°	5022	5219	5334
40°	4758	4856	4993
45°	4495	4639	4674
50°	3879	4055	4026
55°	3473	3595	3595
60°	2911	2879	2965
65°	2437	2201	2398
70°	1947	1545	1852
75°	1593	1219	1489
80°	1226	993	1102
85°	711	650	711



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	197.0	4.1	2.3	0°	2084	2084	2084	2084	2084	
10°-20°	580.9	12.2	6.8	5°	2046	2046	2058	2052	2058	196
20°-30°	869.4	18.3	10.2	15°	2016	2029	2060	2076	2082	569
30°-40°	985.2	20.7	11.5	25°	1810	1837	1891	1914	1929	839
40°-50°	916.9	19.3	10.7	35°	1526	1548	1586	1610	1621	954
50°-60°	670.8	14.1	7.8	45°	1179	1193	1217	1225	1226	894
60°-70°	365.5	7.7	4.3	55°	739	753	765	753	765	657
70°-80°	145.8	3.1	1.7	65°	382	367	345	352	376	383
80°-90°	30.4	0.6	0.4	75°	153	137	117	127	143	167
90°-100°	0.0	0.0	0.0	85°	23	23	21	21	23	34
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°	1647.3	34.6	19.3							
0°-40°	2632.5	55.3	30.8							
0°-60°	4220.2	88.6	49.4							
0°-90°	4761.9	100.0	55.7							
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°	4761.9	100.0	55.7							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2084	2084	2084	2084	2084
5°	2046	2046	2058	2052	2058
10°	2052	2058	2077	2087	2091
15°	2016	2029	2060	2076	2082
20°	1966	1984	2032	2062	2075
25°	1810	1837	1891	1914	1929
30°	1689	1715	1772	1794	1810
35°	1526	1548	1586	1610	1621
40°	1352	1356	1380	1400	1419
45°	1179	1193	1217	1225	1226
50°	925	950	967	961	960
55°	739	753	765	753	765
60°	540	540	534	529	550
65°	382	367	345	352	376
70°	247	231	196	215	235
75°	153	137	117	127	143
80°	79	68	64	64	71
85°	23	23	21	21	23
90°	0	0	0	0	0

(END OF REPORT)