

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: P30018

Luminaire Tested: **CRF-12-332-UNV-IK12**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P30018  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: CRF-12-332-UNV-IK12  
Description: FAILSAFE TRISEAL CRF SERIES 1x4 3L T8  
Light Source: (3) DOUBLE ENDED T8 4 FOOT LINEAR FLUORESCENT LAMPS  
F32W T8 32 WATTS  
Ballast/Driver: (1) ADVANCE ELECTRONIC BALLAST  
ICN-3P32

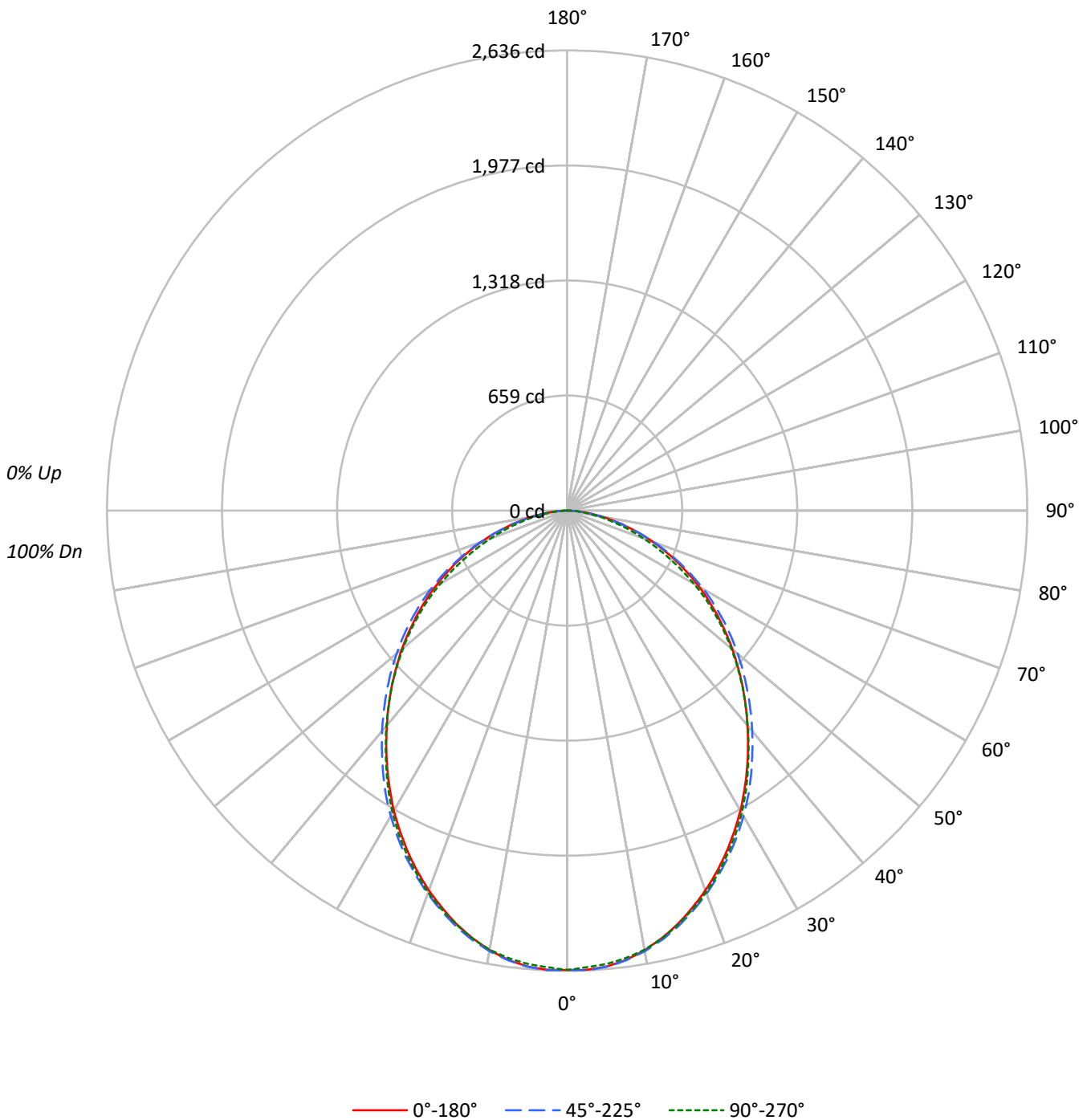
**Summary**

Lumens per Lamp: 3100 (3 lamps)  
Luminaire Lumens: 6295.6 lumens  
Efficiency: 67.7%  
Efficacy: 87.1 lumens/watt  
Spacing Criteria (0/90/45): 1.14 / 1.14 / 1.26  
Luminous Opening: Rectangular (W 0.75' x L: 3.75' x H: 0')  
CIE Type: Direct

Input Watts (W): 72.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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	81	81	81	81	79	79	79	79	75	75	75	72	72	72	69	69	69	68
1	74	71	68	66	72	69	67	65	67	64	63	64	62	61	61	60	59	57
2	68	62	58	54	66	61	57	53	59	55	52	56	54	51	54	52	50	48
3	62	55	50	45	60	54	49	45	52	48	44	50	46	43	48	45	43	41
4	57	49	43	39	55	48	43	39	46	42	38	45	41	38	43	40	37	36
5	52	44	38	34	51	43	38	33	42	37	33	40	36	33	39	35	32	31
6	48	40	34	30	47	39	34	29	38	33	29	37	32	29	36	32	29	27
7	45	36	30	26	44	36	30	26	35	30	26	34	29	26	33	29	26	24
8	42	33	27	24	41	33	27	23	32	27	23	31	26	23	30	26	23	22
9	39	30	25	21	38	30	25	21	29	24	21	29	24	21	28	24	21	20
10	37	28	23	19	36	28	23	19	27	22	19	27	22	19	26	22	19	18

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

	0°	45°	90°
0°	10069	10069	10069
5°	10069	10077	10012
10°	9937	9960	9925
15°	9711	9763	9727
20°	9429	9510	9481
25°	9117	9235	9176
30°	8772	8931	8838
35°	8396	8587	8438
40°	8029	8238	8044
45°	7686	7908	7675
50°	7359	7591	7306
55°	7026	7273	6899
60°	6682	6904	6414
65°	6294	6457	5832
70°	5830	5908	5203
75°	5264	5175	4525
80°	4518	4298	3769
85°	3601	3381	3030



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	248.2	3.9	2.7	0°	2631	2631	2631	2631	2631	
10°-20°	692.5	11.0	7.4	5°	2621	2618	2623	2625	2606	248
20°-30°	1002.4	15.9	10.8	15°	2451	2452	2464	2472	2455	690
30°-40°	1138.7	18.1	12.2	25°	2159	2169	2187	2192	2173	993
40°-50°	1113.1	17.7	12.0	35°	1797	1811	1838	1832	1806	1124
50°-60°	957.8	15.2	10.3	45°	1420	1440	1461	1449	1418	1096
60°-70°	688.7	10.9	7.4	55°	1053	1075	1090	1077	1034	942
70°-80°	363.7	5.8	3.9	65°	695	709	713	688	644	688
80°-90°	90.7	1.4	1.0	75°	356	357	350	326	306	378
90°-100°	0.0	0.0	0.0	85°	82	81	77	72	69	98
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°	1943.0	30.9	20.9							
0°-40°	3081.7	48.9	33.1							
0°-60°	5152.5	81.8	55.4							
0°-90°	6295.6	100.0	67.7							
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°	6295.6	100.0	67.7							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2631	2631	2631	2631	2631
2.5°	2633	2631	2636	2636	2618
5°	2621	2618	2623	2625	2606
7.5°	2595	2592	2598	2603	2585
10°	2557	2555	2563	2569	2554
12.5°	2508	2508	2518	2525	2510
15°	2451	2452	2464	2472	2455
17.5°	2385	2389	2402	2411	2394
20°	2315	2321	2335	2343	2328
22.5°	2239	2247	2263	2270	2253
25°	2159	2169	2187	2192	2173
27.5°	2073	2086	2106	2109	2090
30°	1985	1998	2021	2022	2000
32.5°	1891	1906	1932	1930	1905
35°	1797	1811	1838	1832	1806
37.5°	1702	1717	1743	1732	1707
40°	1607	1624	1649	1636	1610
42.5°	1513	1531	1554	1541	1513
45°	1420	1440	1461	1449	1418
47.5°	1327	1348	1368	1356	1323
50°	1236	1257	1275	1264	1227
52.5°	1144	1167	1183	1171	1131
55°	1053	1075	1090	1077	1034
57.5°	963	984	996	982	938
60°	873	893	902	885	838
62.5°	783	801	808	787	740
65°	695	709	713	688	644
67.5°	607	619	620	592	553
70°	521	529	528	498	465
72.5°	437	441	437	409	382
75°	356	357	350	326	306
77.5°	278	277	269	249	235
80°	205	203	195	180	171
82.5°	139	137	130	120	116
85°	82	81	77	72	69
87.5°	36	37	33	29	27
90°	0	0	0	0	0

(END OF REPORT)