

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: P30115

Luminaire Tested: **CRF-24-424T5-UNV-IK12**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P30115
Test Lab: METALUX RESEARCH LABS
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: CRF-24-424T5-UNV-IK12
Description: FAILSAFE TRISEAL CRF SERIES 2x2 4L T5
Light Source: (4) DOUBLE ENDED T5 2 FOOT HIGH OUTPUT LINEAR FLUORESCENT LAMPS
F24W T5HO 24 WATTS
Ballast/Driver: ADVANCE CENTIUM
(2) ICN-2S54

Summary

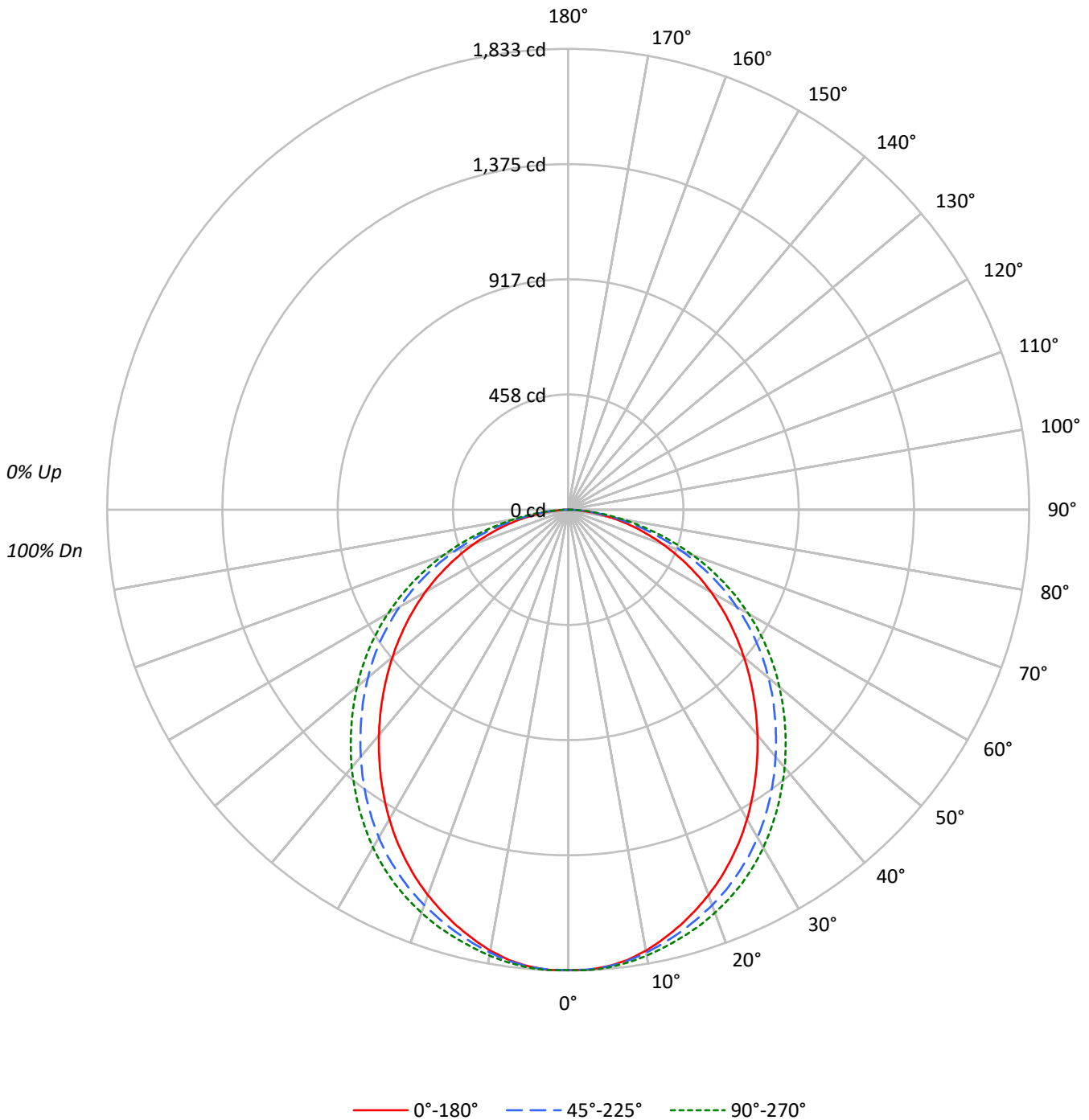
Lumens per Lamp: 2000 (4 lamps)
Luminaire Lumens: 4997.6 lumens
Efficiency: 62.5%
Efficacy: 40.3 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.26 / 1.34
Luminous Opening: Rectangular (W 1.75' x L: 1.75' x H: 0')
CIE Type: Direct

Input Watts (W): 124
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	74	74	74	74	73	73	73	73	69	69	69	66	66	66	64	64	64	62
1	68	65	62	60	66	64	61	59	61	59	57	58	57	55	56	55	54	52
2	62	57	52	49	60	55	51	48	53	50	47	51	48	46	49	47	45	44
3	56	50	45	41	55	49	44	40	47	43	39	45	42	39	44	41	38	37
4	52	44	39	34	50	43	38	34	42	37	34	40	36	33	39	35	33	31
5	47	39	34	30	46	39	33	29	37	33	29	36	32	29	35	31	28	27
6	44	35	30	26	43	35	30	26	34	29	25	33	28	25	32	28	25	24
7	41	32	27	23	40	32	26	23	31	26	23	30	26	22	29	25	22	21
8	38	29	24	20	37	29	24	20	28	23	20	27	23	20	27	23	20	19
9	35	27	22	18	34	27	22	18	26	21	18	25	21	18	25	21	18	17
10	33	25	20	17	32	25	20	17	24	20	17	23	19	16	23	19	16	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6436	6436	6436
5°	6432	6435	6450
10°	6356	6385	6428
15°	6233	6320	6401
20°	6100	6261	6381
25°	5949	6193	6352
30°	5771	6112	6299
35°	5574	6003	6222
40°	5373	5887	6144
45°	5174	5776	6064
50°	4987	5681	5993
55°	4804	5589	5926
60°	4611	5448	5820
65°	4383	5239	5664
70°	4111	4922	5405
75°	3762	4481	4997
80°	3319	3846	4412
85°	2742	3065	3629



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	173.1	3.5	2.2	0°	1831	1831	1831	1831	1831	
10°-20°	489.9	9.8	6.1	5°	1823	1824	1824	1826	1828	173
20°-30°	733.0	14.7	9.2	15°	1713	1721	1737	1752	1759	483
30°-40°	867.0	17.3	10.8	25°	1534	1555	1597	1629	1638	706
40°-50°	884.8	17.7	11.1	35°	1299	1331	1399	1440	1450	812
50°-60°	798.6	16.0	10.0	45°	1041	1081	1162	1211	1220	804
60°-70°	610.8	12.2	7.6	55°	784	829	912	960	967	701
70°-80°	347.1	6.9	4.3	65°	527	564	630	674	681	522
80°-90°	92.7	1.9	1.2	75°	277	297	330	361	368	294
90°-100°	0.5	0.0	0.0	85°	68	72	76	85	90	75
100°-110°	0.0	0.0	0.0	90°	3	4	4	4	4	5
110°-120°	0.0	0.0	0.0	95°	0	0	0	0	0	0
120°-130°	0.0	0.0	0.0	105°	0	0	0	0	0	0
130°-140°	0.0	0.0	0.0	115°	0	0	0	0	0	0
140°-150°	0.0	0.0	0.0	125°	0	0	0	0	0	0
150°-160°	0.0	0.0	0.0	135°	0	0	0	0	0	0
160°-170°	0.0	0.0	0.0	145°	0	0	0	0	0	0
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0	0
0°-30°	1396.0	27.9	17.5	165°	0	0	0	0	0	0
0°-40°	2263.1	45.3	28.3	175°	0	0	0	0	0	0
0°-60°	3946.5	79.0	49.3	180°	0	0	0	0	0	0
0°-90°	4997.0	100.0	62.5							
90°-120°	0.5	0.0	0.0							
90°-150°	0.5	0.0	0.0							
90°-180°	1.0	0.0	0.0							
0°-180°	4997.6	100.0	62.5							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1831	1831	1831	1831	1831
2.5°	1832	1832	1831	1831	1833
5°	1823	1824	1824	1826	1828
7.5°	1806	1808	1810	1814	1817
10°	1781	1784	1789	1797	1801
12.5°	1749	1755	1764	1776	1781
15°	1713	1721	1737	1752	1759
17.5°	1674	1685	1706	1726	1735
20°	1631	1646	1674	1698	1706
22.5°	1585	1602	1638	1665	1674
25°	1534	1555	1597	1629	1638
27.5°	1480	1503	1554	1588	1597
30°	1422	1449	1506	1543	1552
32.5°	1361	1391	1454	1493	1502
35°	1299	1331	1399	1440	1450
37.5°	1235	1269	1342	1385	1395
40°	1171	1207	1283	1328	1339
42.5°	1106	1145	1223	1270	1280
45°	1041	1081	1162	1211	1220
47.5°	976	1019	1102	1150	1159
50°	912	956	1039	1088	1096
52.5°	848	893	977	1025	1033
55°	784	829	912	960	967
57.5°	720	763	844	892	899
60°	656	698	775	822	828
62.5°	592	631	703	748	756
65°	527	564	630	674	681
67.5°	463	497	555	597	605
70°	400	429	479	519	526
72.5°	337	362	404	439	446
75°	277	297	330	361	368
77.5°	219	234	258	284	291
80°	164	175	190	210	218
82.5°	113	120	128	143	150
85°	68	72	76	85	90
87.5°	29	32	33	38	40
90°	3	4	4	4	4
92.5°	0	0	0	0	0
95°	0	0	0	0	0
97.5°	0	0	0	0	0
100°	0	0	0	0	0
102.5°	0	0	0	0	0
105°	0	0	0	0	0
107.5°	0	0	0	0	0
110°	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0	0	0	0	0
115°	0	0	0	0	0
117.5°	0	0	0	0	0
120°	0	0	0	0	0
122.5°	0	0	0	0	0
125°	0	0	0	0	0
127.5°	0	0	0	0	0
130°	0	0	0	0	0
132.5°	0	0	0	0	0
135°	0	0	0	0	0
137.5°	0	0	0	0	0
140°	0	0	0	0	0
142.5°	0	0	0	0	0
145°	0	0	0	0	0
147.5°	0	0	0	0	0
150°	0	0	0	0	0
152.5°	0	0	0	0	0
155°	0	0	0	0	0
157.5°	0	0	0	0	0
160°	0	0	0	0	0
162.5°	0	0	0	0	0
165°	0	0	0	0	0
167.5°	0	0	0	0	0
170°	0	0	0	0	0
172.5°	0	0	0	0	0
175°	0	0	0	0	0
177.5°	0	0	0	0	0
180°	0	0	0	0	0

(END OF REPORT)