

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: P30100

Luminaire Tested: **CRF-24-454T5-UNV-IK12**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P30100
Test Lab: METALUX RESEARCH LABS
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: CRF-24-454T5-UNV-IK12
Description: FAILSAFE TRISEAL CRF SERIES 2x4 4L T5
Light Source: (4) DOUBLE ENDED T5 4 FOOT HIGH OUTPUT LINEAR FLUORESCENT LAMPS
F54W T5 54 WATTS
Ballast/Driver: ADVANCE CENTIUM
(2) ICN-2S54

Summary

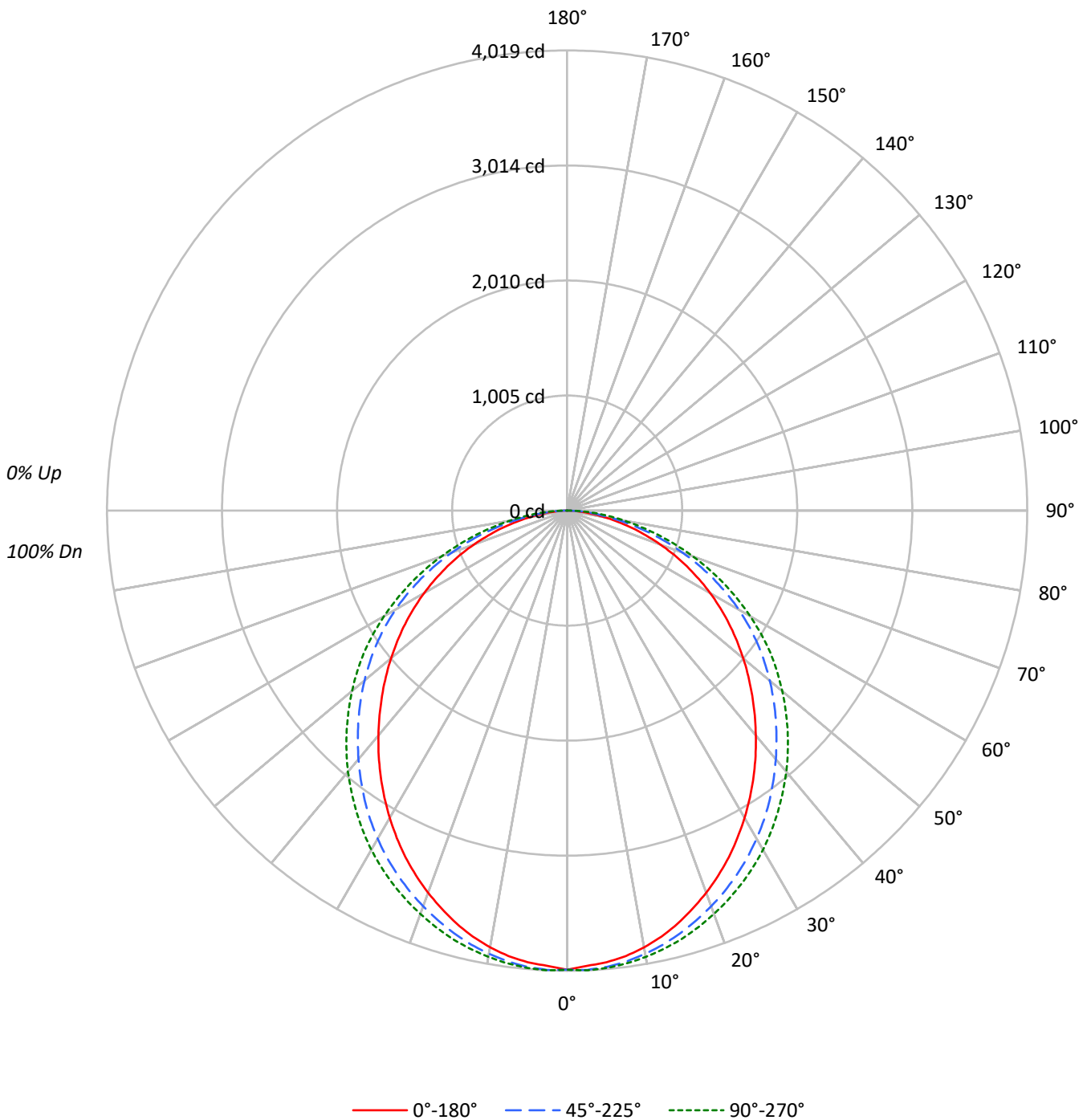
Lumens per Lamp: 4400 (4 lamps)
Luminaire Lumens: 11044.2 lumens
Efficiency: 62.8%
Efficacy: 53.1 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.27 / 1.35
Luminous Opening: Rectangular (W 1.75' x L: 3.75' x H: 0')
CIE Type: Direct

Input Watts (W): 207.9
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	50	30	10	0	
RCR																						
0	75	75	75	75	73	73	73	73	70	70	70	67	67	67	64	64	64	63				63
1	68	65	63	60	67	64	61	59	61	59	57	59	57	55	56	55	54	52				52
2	62	57	53	49	60	56	52	48	53	50	47	51	49	46	49	47	45	44				44
3	57	50	45	41	55	49	44	40	47	43	40	45	42	39	44	41	38	37				37
4	52	44	39	34	50	43	38	34	42	37	34	40	36	33	39	36	33	31				31
5	48	39	34	30	46	39	33	29	37	33	29	36	32	29	35	31	28	27				27
6	44	36	30	26	43	35	30	26	34	29	26	33	29	25	32	28	25	24				24
7	41	32	27	23	40	32	26	23	31	26	23	30	26	22	29	25	22	21				21
8	38	29	24	20	37	29	24	20	28	24	20	27	23	20	27	23	20	19				19
9	35	27	22	18	35	27	22	18	26	21	18	25	21	18	25	21	18	17				17
10	33	25	20	17	32	25	20	17	24	20	17	23	19	16	23	19	16	15				15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6577	6577	6577
5°	6520	6586	6601
10°	6451	6547	6592
15°	6341	6488	6575
20°	6200	6420	6544
25°	6045	6349	6513
30°	5869	6269	6479
35°	5685	6175	6427
40°	5490	6070	6376
45°	5303	5978	6316
50°	5124	5897	6259
55°	4941	5811	6197
60°	4734	5682	6062
65°	4479	5468	5872
70°	4148	5146	5592
75°	3726	4683	5228
80°	3127	4024	4798
85°	2315	3293	4460



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	379.1	3.4	2.2	0°	4010	4010	4010	4010	4010	
10°-20°	1075.2	9.7	6.1	5°	3960	3990	4000	4002	4009	375
20°-30°	1607.6	14.6	9.1	15°	3734	3776	3821	3854	3872	1051
30°-40°	1909.7	17.3	10.9	25°	3340	3405	3508	3576	3599	1537
40°-50°	1960.0	17.7	11.1	35°	2839	2920	3084	3184	3210	1775
50°-60°	1776.6	16.1	10.1	45°	2286	2383	2577	2695	2723	1765
60°-70°	1357.4	12.3	7.7	55°	1728	1830	2032	2150	2167	1544
70°-80°	768.3	7.0	4.4	65°	1154	1243	1409	1509	1513	1142
80°-90°	210.3	1.9	1.2	75°	588	640	739	814	825	623
90°-100°	0.0	0.0	0.0	85°	123	141	175	221	237	152
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°	3061.8	27.7	17.4							
0°-40°	4971.6	45.0	28.2							
0°-60°	8708.2	78.8	49.5							
0°-90°	11044.2	100.0	62.8							
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°	11044.2	100.0	62.8							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4010	4010	4010	4010	4010
2.5°	3980	4011	4015	4014	4019
5°	3960	3990	4000	4002	4009
7.5°	3925	3957	3972	3980	3989
10°	3873	3909	3931	3946	3958
12.5°	3810	3849	3881	3905	3920
15°	3734	3776	3821	3854	3872
17.5°	3645	3693	3752	3794	3814
20°	3552	3603	3678	3728	3749
22.5°	3450	3508	3597	3657	3678
25°	3340	3405	3508	3576	3599
27.5°	3222	3293	3413	3490	3513
30°	3099	3174	3310	3395	3421
32.5°	2971	3049	3200	3294	3319
35°	2839	2920	3084	3184	3210
37.5°	2703	2789	2961	3067	3096
40°	2564	2656	2835	2947	2978
42.5°	2425	2518	2706	2822	2853
45°	2286	2383	2577	2695	2723
47.5°	2147	2244	2444	2564	2590
50°	2008	2108	2311	2431	2453
52.5°	1867	1970	2172	2293	2312
55°	1728	1830	2032	2150	2167
57.5°	1586	1688	1884	1999	2009
60°	1443	1543	1732	1840	1848
62.5°	1298	1393	1572	1675	1681
65°	1154	1243	1409	1509	1513
67.5°	1011	1092	1242	1336	1343
70°	865	939	1073	1162	1166
72.5°	724	788	905	986	994
75°	588	640	739	814	825
77.5°	454	496	576	645	659
80°	331	365	426	490	508
82.5°	219	244	290	345	364
85°	123	141	175	221	237
87.5°	50	60	84	119	133
90°	0	0	0	0	0

(END OF REPORT)