

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: P30098

Luminaire Tested: **CRG-24-254T5-UNV-IK12**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P30098  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: CRG-24-254T5-UNV-IK12  
Description: [ FAILSAFE TRISEAL CRG SERIES 2x4 2L T5  
Light Source: (2) DOUBLE ENDED T5 4 FOOT HIGH OUTPUT LINEAR FLUORESCENT LAMPS  
F54W T5 54 WATTS  
Ballast/Driver: ADVANCE CENTIUM  
ICN-2S54

**Summary**

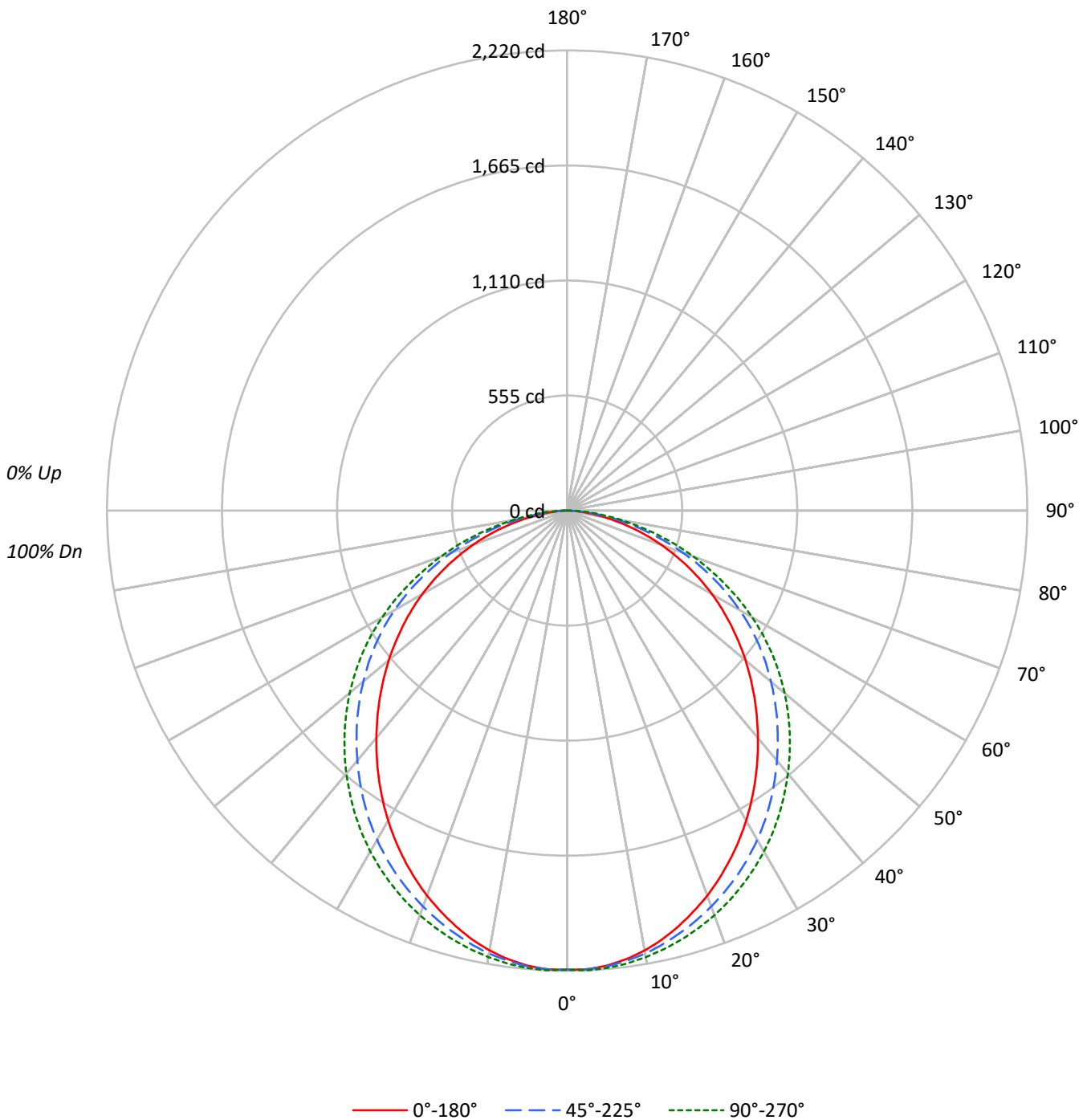
Lumens per Lamp: 4400 (2 lamps)  
Luminaire Lumens: 6131.4 lumens  
Efficiency: 69.7%  
Efficacy: 54.8 lumens/watt  
Spacing Criteria (0/90/45): 1.17 / 1.27 / 1.36  
Luminous Opening: Rectangular (W 1.75' x L: 3.75' x H: 0')  
CIE Type: Direct

Input Watts (W): 111.8  
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	83	83	83	83	81	81	81	81	77	77	77	74	74	74	71	71	71	70
1	76	72	69	67	74	71	68	66	68	66	64	65	63	62	63	61	60	58
2	69	63	58	54	67	62	57	54	59	56	52	57	54	51	55	52	50	49
3	63	55	50	45	61	54	49	45	52	48	44	50	46	43	48	45	42	41
4	57	49	43	38	56	48	42	38	46	41	37	45	40	37	43	39	36	35
5	53	44	38	33	51	43	37	33	42	36	32	40	36	32	39	35	32	30
6	49	39	33	29	47	39	33	29	38	32	28	36	32	28	35	31	28	26
7	45	36	30	25	44	35	29	25	34	29	25	33	28	25	32	28	25	23
8	42	33	27	23	41	32	26	23	31	26	22	30	26	22	30	25	22	21
9	39	30	24	20	38	30	24	20	29	24	20	28	23	20	27	23	20	19
10	37	28	22	18	36	27	22	18	27	22	18	26	21	18	25	21	18	17

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

	0°	45°	90°
0°	3633	3633	3633
5°	3627	3634	3647
10°	3589	3614	3642
15°	3525	3581	3636
20°	3451	3549	3625
25°	3364	3515	3612
30°	3271	3474	3597
35°	3170	3426	3574
40°	3066	3372	3548
45°	2964	3324	3523
50°	2866	3276	3493
55°	2762	3229	3454
60°	2647	3156	3382
65°	2503	3035	3264
70°	2316	2849	3108
75°	2060	2573	2864
80°	1710	2182	2531
85°	1261	1713	2164



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	209.4	3.4	2.4	0°	2215	2215	2215	2215	2215	
10°-20°	594.4	9.7	6.8	5°	2203	2203	2207	2206	2215	209
20°-30°	890.7	14.5	10.1	15°	2076	2084	2109	2128	2141	585
30°-40°	1061.0	17.3	12.1	25°	1859	1883	1942	1982	1996	856
40°-50°	1092.0	17.8	12.4	35°	1583	1621	1711	1769	1785	990
50°-60°	991.3	16.2	11.3	45°	1278	1328	1433	1502	1519	986
60°-70°	756.4	12.3	8.6	55°	966	1023	1129	1201	1208	864
70°-80°	423.8	6.9	4.8	65°	645	696	782	841	841	638
80°-90°	111.0	1.8	1.3	75°	325	356	406	448	452	346
90°-100°	1.3	0.0	0.0	85°	67	77	91	109	115	79
100°-110°	0.0	0.0	0.0	90°	4	6	8	14	17	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°	1694.5	27.6	19.3	165°	0	0	0	0	0	0
0°-40°	2755.5	44.9	31.3	175°	0	0	0	0	0	0
0°-60°	4838.8	78.9	55.0	180°	0	0	0	0	0	0
0°-90°	6130.1	100.0	69.7							
90°-120°	1.3	0.0	0.0							
90°-150°	1.3	0.0	0.0							
90°-180°	1.0	0.0	0.0							
0°-180°	6131.4	100.0	69.7							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2215	2215	2215	2215	2215
2.5°	2215	2214	2215	2213	2220
5°	2203	2203	2207	2206	2215
7.5°	2183	2184	2191	2194	2204
10°	2155	2157	2170	2176	2187
12.5°	2119	2124	2142	2154	2166
15°	2076	2084	2109	2128	2141
17.5°	2028	2040	2073	2096	2111
20°	1977	1992	2033	2062	2077
22.5°	1920	1939	1989	2023	2039
25°	1859	1883	1942	1982	1996
27.5°	1795	1822	1890	1935	1950
30°	1727	1759	1834	1884	1899
32.5°	1656	1691	1775	1829	1844
35°	1583	1621	1711	1769	1785
37.5°	1508	1550	1644	1705	1722
40°	1432	1476	1575	1639	1657
42.5°	1355	1402	1504	1571	1589
45°	1278	1328	1433	1502	1519
47.5°	1201	1253	1359	1430	1445
50°	1123	1177	1284	1357	1369
52.5°	1044	1100	1208	1281	1290
55°	966	1023	1129	1201	1208
57.5°	887	944	1048	1117	1122
60°	807	863	962	1029	1031
62.5°	726	779	873	936	938
65°	645	696	782	841	841
67.5°	563	610	689	744	744
70°	483	525	594	645	648
72.5°	403	439	499	546	550
75°	325	356	406	448	452
77.5°	251	276	315	352	356
80°	181	201	231	263	268
82.5°	119	134	156	180	186
85°	67	77	91	109	115
87.5°	26	32	39	51	56
90°	4	6	8	14	17
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)