

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: P20116

Luminaire Tested: **CRF-12-354T5-UNV-IK12**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P20116
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: CRF-12-354T5-UNV-IK12
Description: FAILSAFE TRISEAL CRF SERIES 1x4 3L T5
Light Source: (3) DOUBLE ENDED T5 4 FOOT HIGH OUTPUT LINEAR FLUORESCENT LAMPS
F54W T5HO 54 WATTS
Ballast/Driver: (1) ADVANCE ELECTRONIC BALLAST
ICN-4S54

Summary

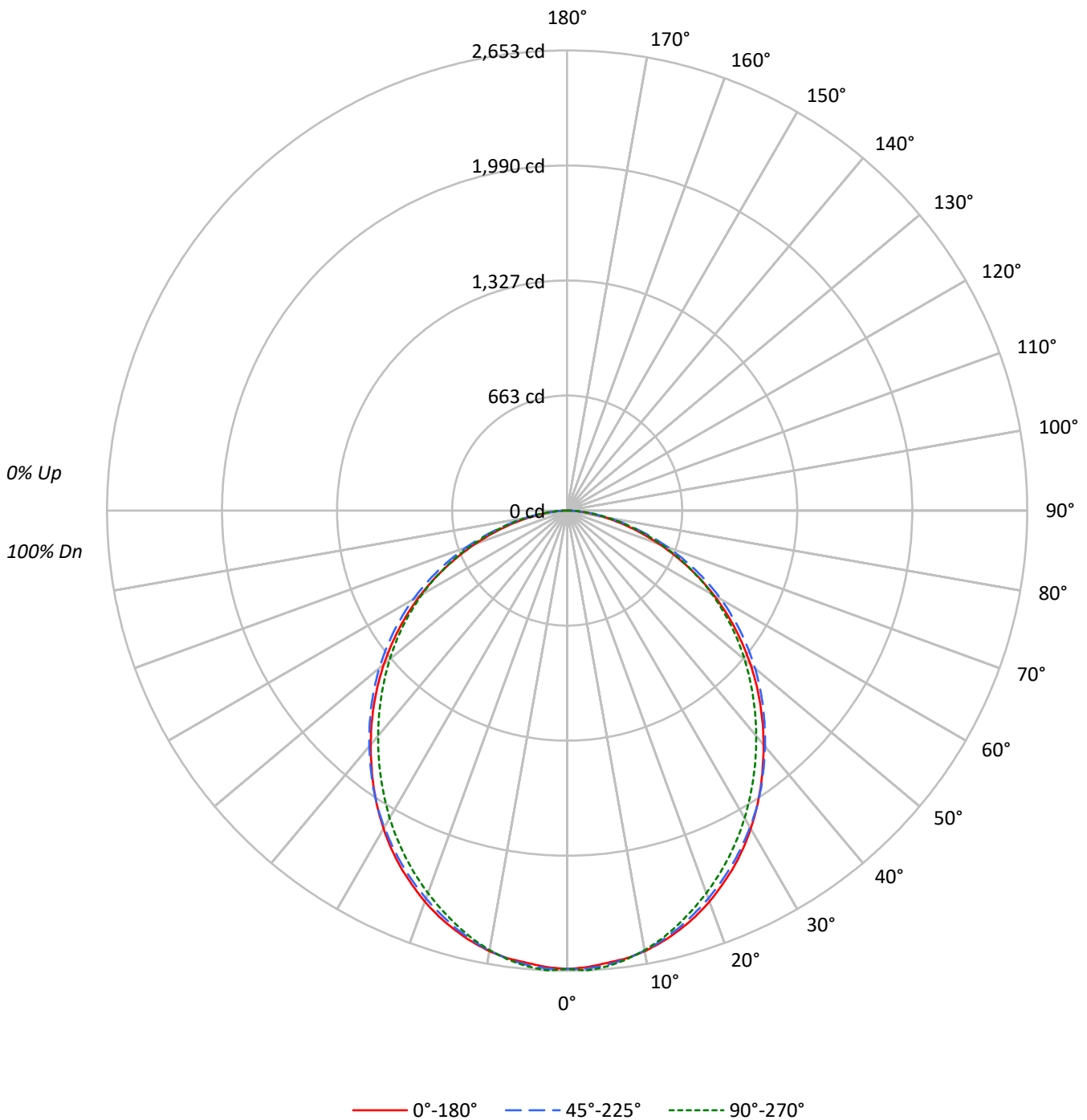
Lumens per Lamp: 4400 (3 lamps)
Luminaire Lumens: 6799.0 lumens
Efficiency: 51.5%
Efficacy: 43.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.31
Luminous Opening: Rectangular (W 0.75' x L: 3.75' x H: 0')
CIE Type: Direct

Input Watts (W): 155.8
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

TEST NUMBER: P20116

CATALOG NUMBER: CRF-12-354T5-UNV-IK12

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	0														
RCR																																						
0	61	61	61	61	60	60	60	60	57	57	57	55	55	55	53	53	53	52						52														
1	56	54	52	50	55	53	51	49	50	49	47	48	47	46	47	45	44	43						43														
2	51	47	44	41	50	46	43	40	44	42	39	43	40	38	41	39	37	36						36														
3	47	41	37	34	45	41	37	34	39	36	33	38	35	32	36	34	32	31						31														
4	43	37	32	29	42	36	32	29	35	31	28	34	30	28	32	30	27	26						26														
5	39	33	28	25	38	32	28	25	31	27	25	30	27	24	29	26	24	23						23														
6	36	30	25	22	35	29	25	22	28	24	22	27	24	21	27	24	21	20						20														
7	34	27	22	19	33	27	22	19	26	22	19	25	22	19	24	21	19	18						18														
8	32	25	20	17	31	24	20	17	24	20	17	23	20	17	22	19	17	16						16														
9	29	23	18	16	29	22	18	16	22	18	15	21	18	15	21	18	15	14						14														
10	28	21	17	14	27	21	17	14	20	17	14	20	16	14	19	16	14	13						13														

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10115	10115	10115
5°	10058	10104	10135
10°	10026	10011	9999
15°	9917	9866	9795
20°	9771	9693	9559
25°	9586	9514	9311
30°	9360	9320	9046
35°	9087	9111	8756
40°	8803	8868	8473
45°	8519	8644	8205
50°	8211	8419	7949
55°	7874	8160	7693
60°	7486	7846	7386
65°	6964	7435	7018
70°	6322	6904	6557
75°	5575	6181	5989
80°	4739	5268	5268
85°	3864	4259	4391



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	248.9	3.7	1.9	0°	2643	2643	2643	2643	2643	
10°-20°	699.8	10.3	5.3	5°	2618	2627	2630	2614	2638	249
20°-30°	1031.4	15.2	7.8	15°	2503	2496	2490	2459	2472	706
30°-40°	1203.1	17.7	9.1	25°	2270	2262	2253	2207	2205	1045
40°-50°	1210.1	17.8	9.2	35°	1945	1948	1950	1888	1874	1216
50°-60°	1068.7	15.7	8.1	45°	1574	1589	1597	1542	1516	1214
60°-70°	791.7	11.6	6.0	55°	1180	1212	1223	1184	1153	1055
70°-80°	432.3	6.4	3.3	65°	769	807	821	801	775	762
80°-90°	113.1	1.7	0.9	75°	377	400	418	416	405	403
90°-100°	0.0	0.0	0.0	85°	88	90	97	102	100	103
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°	1980.1	29.1	15.0							
0°-40°	3183.2	46.8	24.1							
0°-60°	5462.0	80.3	41.4							
0°-90°	6799.0	100.0	51.5							
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°	6799.0	100.0	51.5							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2643	2643	2643	2643	2643
2.5°	2635	2640	2643	2628	2653
5°	2618	2627	2630	2614	2638
7.5°	2604	2607	2608	2590	2611
10°	2580	2579	2576	2554	2573
12.5°	2545	2541	2537	2510	2527
15°	2503	2496	2490	2459	2472
17.5°	2455	2448	2437	2402	2411
20°	2399	2393	2380	2341	2347
22.5°	2336	2330	2318	2276	2278
25°	2270	2262	2253	2207	2205
27.5°	2197	2191	2182	2133	2128
30°	2118	2116	2109	2055	2047
32.5°	2034	2035	2032	1973	1961
35°	1945	1948	1950	1888	1874
37.5°	1854	1858	1862	1802	1785
40°	1762	1769	1775	1716	1696
42.5°	1669	1680	1686	1629	1606
45°	1574	1589	1597	1542	1516
47.5°	1478	1498	1506	1454	1426
50°	1379	1404	1414	1365	1335
52.5°	1280	1309	1319	1274	1245
55°	1180	1212	1223	1184	1153
57.5°	1079	1113	1124	1090	1058
60°	978	1013	1025	995	965
62.5°	874	911	924	898	871
65°	769	807	821	801	775
67.5°	666	702	718	703	680
70°	565	599	617	605	586
72.5°	469	497	516	509	494
75°	377	400	418	416	405
77.5°	292	308	325	327	319
80°	215	225	239	243	239
82.5°	146	152	162	168	164
85°	88	90	97	102	100
87.5°	38	40	44	49	47
90°	0	0	0	0	0

(END OF REPORT)