

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: P313381

Luminaire Tested: **24FCZ2-70HE-UNV-L83050-HRP-CP187-W2A-U-3500K**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.

Test Information

Test Method: LM-79-08
Report Number: P313381
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-20)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-70HE-UNV-L83050-HRP-CP187-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.187" POLYCARB SHEET
Light Source: (336) 3500K TUNABLE CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment:

<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
AS-5443-2	Good	REFLECTOR
AS-5443-3	Good	DRIVER
AS-5443-4	Good	UPPER MODULE
AS-5443-5	Good	LENS
AS-5443-6	Good	DRIVER 2
AS-5443-7	Good	TRIM RING

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4686.0 lumens
Efficiency: N/A
Efficacy: 81.2 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

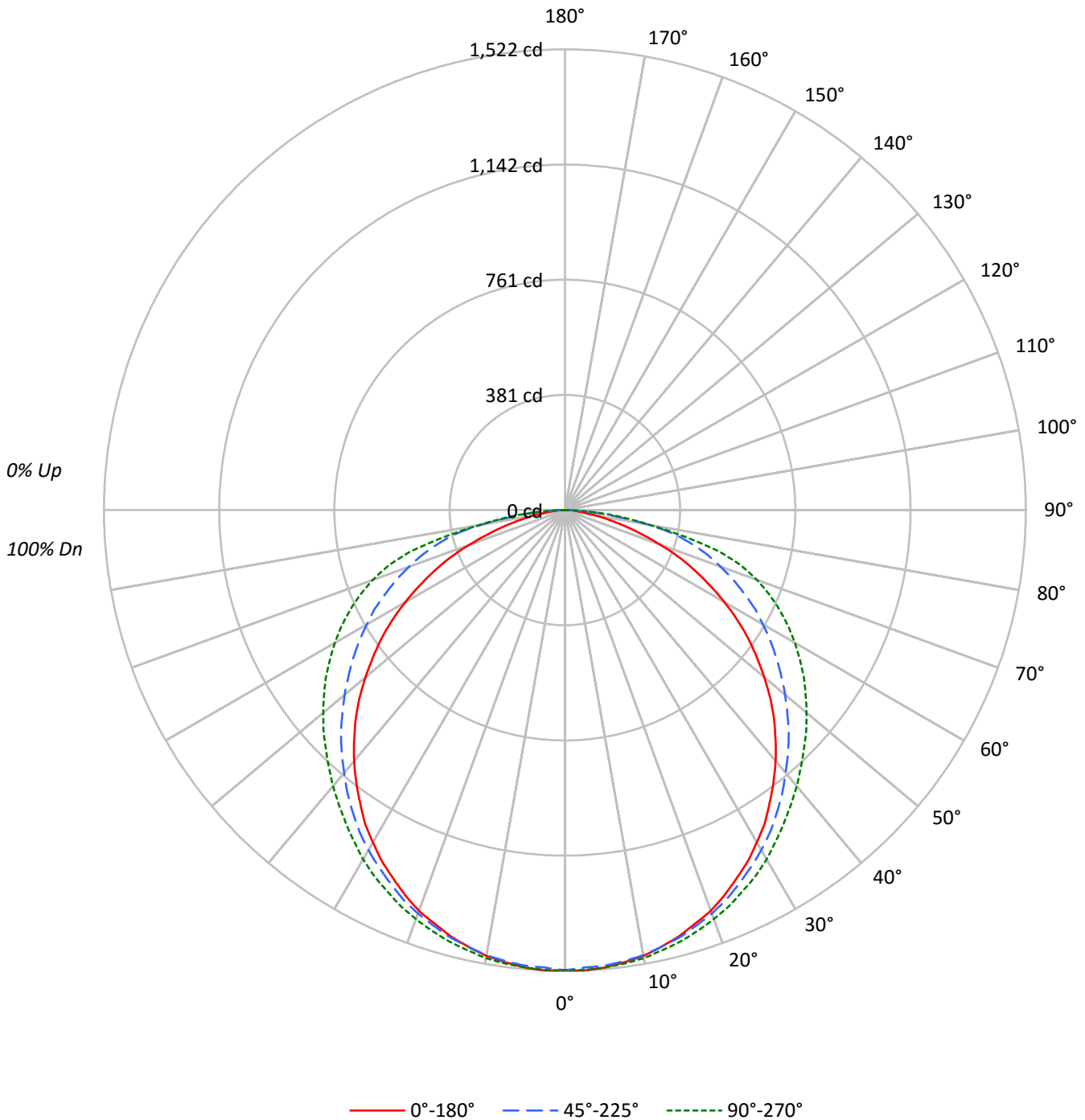
Input Watts (W): 57.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	98	94	105	101	96	93	96	93	90	92	90	87	89	86	84	82
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	68	63	58	56
4	81	68	59	52	79	67	59	52	65	57	51	62	56	50	60	54	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	63	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	36	30	57	44	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	24	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2046	2046	2046
5°	2048	2040	2048
10°	2042	2040	2053
15°	2030	2036	2055
20°	2017	2031	2059
25°	1992	2021	2062
30°	1969	2015	2069
35°	1937	2004	2072
40°	1902	1992	2092
45°	1859	1990	2124
50°	1799	1988	2180
55°	1735	2002	2259
60°	1637	2032	2360
65°	1511	2080	2492
70°	1320	2153	2655
75°	1071	2264	2743
80°	790	2219	2219
85°	605	1635	1848



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	144.0	3.1
10°-20°	413.6	8.8
20°-30°	629.6	13.4
30°-40°	764.5	16.3
40°-50°	807.7	17.2
50°-60°	762.2	16.3
60°-70°	633.7	13.5
70°-80°	416.9	8.9
80°-90°	113.6	2.4
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1187.3	25.3
0°-40°	1951.8	41.7
0°-60°	3521.7	75.2
0°-90°	4686.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4686.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1520	1520	1520	1520	1520	
5°	1516	1516	1511	1516	1516	144
15°	1458	1460	1462	1475	1475	411
25°	1342	1350	1362	1385	1389	619
35°	1179	1193	1220	1252	1261	738
45°	977	997	1046	1097	1116	752
55°	740	771	853	934	963	659
65°	475	530	653	749	783	469
75°	206	300	436	516	528	222
85°	39	86	106	118	120	48
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1520.4	1520.4	1520.4	1520.4	1520.4
2.5°	1522.3	1520.4	1512.5	1520.4	1520.4
5°	1516.5	1516.5	1510.6	1516.5	1516.5
7.5°	1506.6	1506.6	1502.7	1510.6	1510.6
10°	1494.9	1494.9	1492.9	1502.7	1502.7
12.5°	1477.2	1479.2	1477.2	1489.0	1489.0
15°	1457.6	1459.6	1461.5	1475.3	1475.3
17.5°	1432.1	1436.0	1439.9	1455.6	1457.6
20°	1408.6	1410.5	1418.4	1436.0	1438.0
22.5°	1377.2	1383.1	1392.9	1410.5	1416.4
25°	1341.9	1349.7	1361.5	1385.0	1388.9
27.5°	1308.5	1314.4	1330.1	1355.6	1363.4
30°	1267.3	1277.1	1296.7	1322.2	1332.0
32.5°	1228.1	1237.9	1261.4	1288.9	1296.7
35°	1179.0	1192.8	1220.2	1251.6	1261.4
37.5°	1131.9	1145.7	1179.0	1214.3	1226.1
40°	1082.9	1098.6	1133.9	1175.1	1190.8
42.5°	1029.9	1051.5	1090.7	1135.9	1153.5
45°	977.0	996.6	1045.6	1096.6	1116.3
47.5°	920.1	943.6	996.6	1057.4	1080.9
50°	859.3	888.7	949.5	1016.2	1041.7
52.5°	798.4	831.8	900.5	975.0	1002.5
55°	739.6	771.0	853.4	933.8	963.2
57.5°	674.9	714.1	804.3	890.6	920.1
60°	608.2	651.3	755.3	845.5	876.9
62.5°	541.5	590.5	708.2	798.4	831.8
65°	474.7	529.7	653.3	749.4	782.7
67.5°	410.0	470.8	602.3	698.4	731.7
70°	335.5	412.0	547.3	641.5	674.9
72.5°	266.8	355.1	494.4	582.6	612.1
75°	206.0	300.2	435.5	515.9	527.7
77.5°	151.1	245.2	374.7	402.2	404.1
80°	102.0	196.2	286.4	282.5	286.4
82.5°	66.7	147.1	180.5	202.1	204.0
85°	39.2	86.3	105.9	117.7	119.7
87.5°	19.6	29.4	37.3	39.2	43.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)