

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: P313332

Luminaire Tested: **24FCZ2-60HE-UNV-L83050-HRP-CP187-W2A-U-4000K**

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: P313332
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: 24FCZ2-60HE-UNV-L83050-HRP-CP187-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.187" POLYCARB SHEET
Light Source: (336) 4000K 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: 4209.0 lumens
Efficiency: N/A
Efficacy: 86.4 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

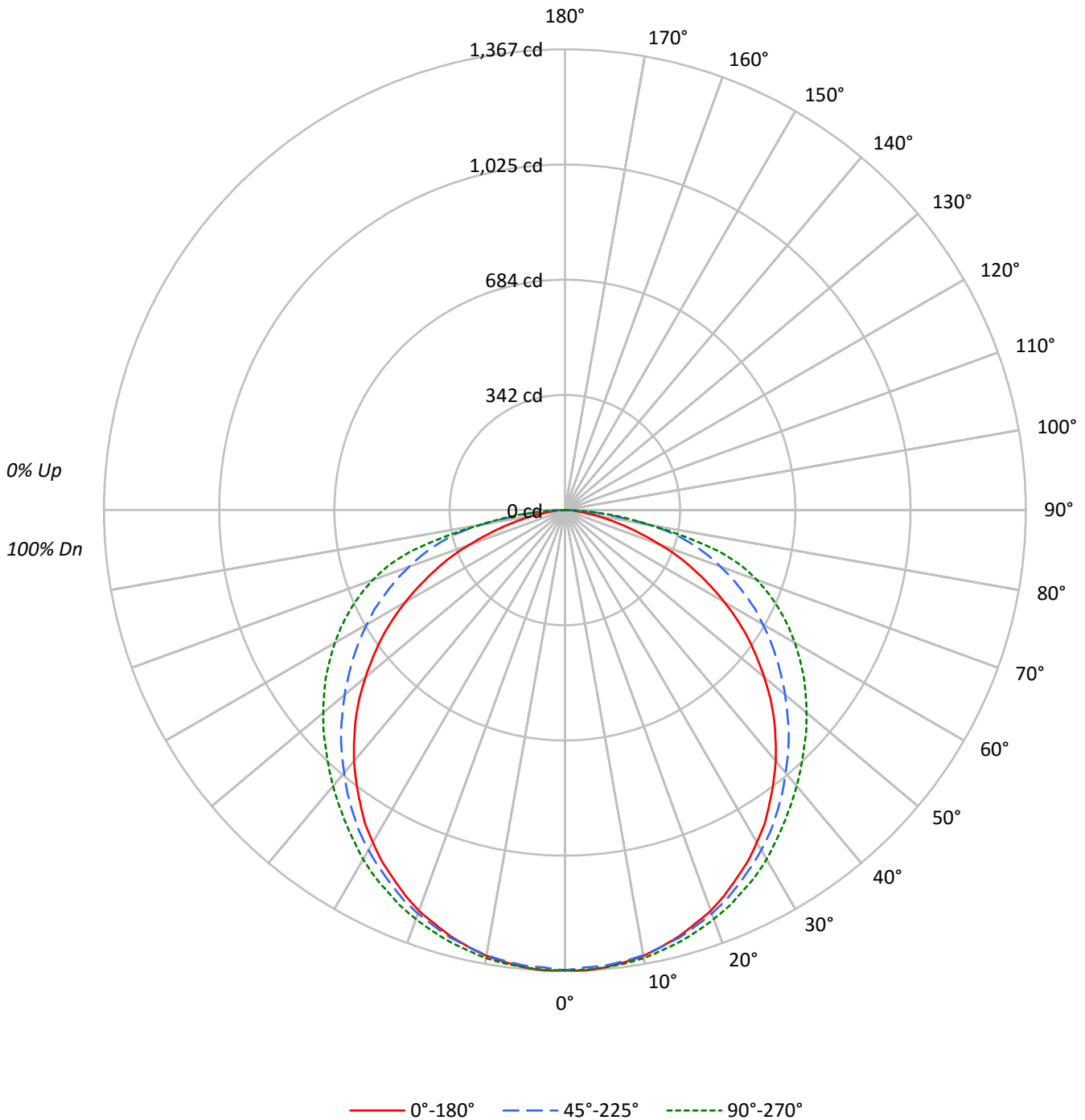
Input Watts (W): 48.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1837	1837	1837
5°	1840	1833	1840
10°	1834	1832	1844
15°	1824	1829	1846
20°	1812	1824	1849
25°	1789	1815	1852
30°	1769	1810	1859
35°	1739	1800	1861
40°	1708	1789	1879
45°	1670	1787	1908
50°	1616	1785	1959
55°	1558	1798	2030
60°	1470	1826	2120
65°	1358	1868	2238
70°	1185	1934	2385
75°	962	2034	2464
80°	710	1994	1994
85°	543	1470	1660



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.4	3.1
10°-20°	371.5	8.8
20°-30°	565.5	13.4
30°-40°	686.7	16.3
40°-50°	725.5	17.2
50°-60°	684.6	16.3
60°-70°	569.2	13.5
70°-80°	374.5	8.9
80°-90°	102.1	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°	1066.4	25.3
0°-40°	1753.1	41.7
0°-60°	3163.2	75.2
0°-90°	4209.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4209.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1366	1366	1366	1366	1366	
5°	1362	1362	1357	1362	1362	129
15°	1309	1311	1313	1325	1325	369
25°	1205	1212	1223	1244	1248	556
35°	1059	1071	1096	1124	1133	663
45°	878	895	939	985	1003	676
55°	664	692	766	839	865	592
65°	426	476	587	673	703	422
75°	185	270	391	463	474	199
85°	35	78	95	106	108	43
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1365.6	1365.6	1365.6	1365.6	1365.6
2.5°	1367.4	1365.6	1358.6	1365.6	1365.6
5°	1362.1	1362.1	1356.8	1362.1	1362.1
7.5°	1353.3	1353.3	1349.8	1356.8	1356.8
10°	1342.7	1342.7	1340.9	1349.8	1349.8
12.5°	1326.8	1328.6	1326.8	1337.4	1337.4
15°	1309.2	1311.0	1312.8	1325.1	1325.1
17.5°	1286.3	1289.8	1293.4	1307.5	1309.2
20°	1265.2	1266.9	1274.0	1289.8	1291.6
22.5°	1237.0	1242.3	1251.1	1266.9	1272.2
25°	1205.3	1212.3	1222.9	1244.0	1247.6
27.5°	1175.3	1180.6	1194.7	1217.6	1224.6
30°	1138.3	1147.1	1164.7	1187.6	1196.5
32.5°	1103.1	1111.9	1133.0	1157.7	1164.7
35°	1059.0	1071.3	1096.0	1124.2	1133.0
37.5°	1016.7	1029.1	1059.0	1090.7	1101.3
40°	972.7	986.8	1018.5	1055.5	1069.6
42.5°	925.1	944.5	979.7	1020.2	1036.1
45°	877.5	895.1	939.2	985.0	1002.6
47.5°	826.4	847.6	895.1	949.8	970.9
50°	771.8	798.2	852.8	912.8	935.7
52.5°	717.2	747.1	808.8	875.8	900.4
55°	664.3	692.5	766.5	838.8	865.2
57.5°	606.2	641.4	722.5	800.0	826.4
60°	546.2	585.0	678.4	759.5	787.7
62.5°	486.3	530.4	636.1	717.2	747.1
65°	426.4	475.8	586.8	673.1	703.1
67.5°	368.3	422.9	541.0	627.3	657.3
70°	301.3	370.0	491.6	576.2	606.2
72.5°	239.6	318.9	444.0	523.3	549.8
75°	185.0	269.6	391.2	463.4	474.0
77.5°	135.7	220.3	336.6	361.2	363.0
80°	91.6	176.2	257.3	253.7	257.3
82.5°	59.9	132.2	162.1	181.5	183.3
85°	35.2	77.5	95.2	105.7	107.5
87.5°	17.6	26.4	33.5	35.2	38.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)