

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: METALUX

Report Number: P389048

Luminaire Tested: **24CZ2-70HE-SQR-UNV-L940-CD1-U**

Issue Date: 2/28/2020

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: P389048  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2002-678-2)  
Test Lab: INNOVATION CENTER (G2)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-70HE-SQR-UNV-L940-CD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 4000K, 90 LEDS, AND SQUARE LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5757.5 lumens  
Efficiency: N/A  
Efficacy: 112.9 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.33 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

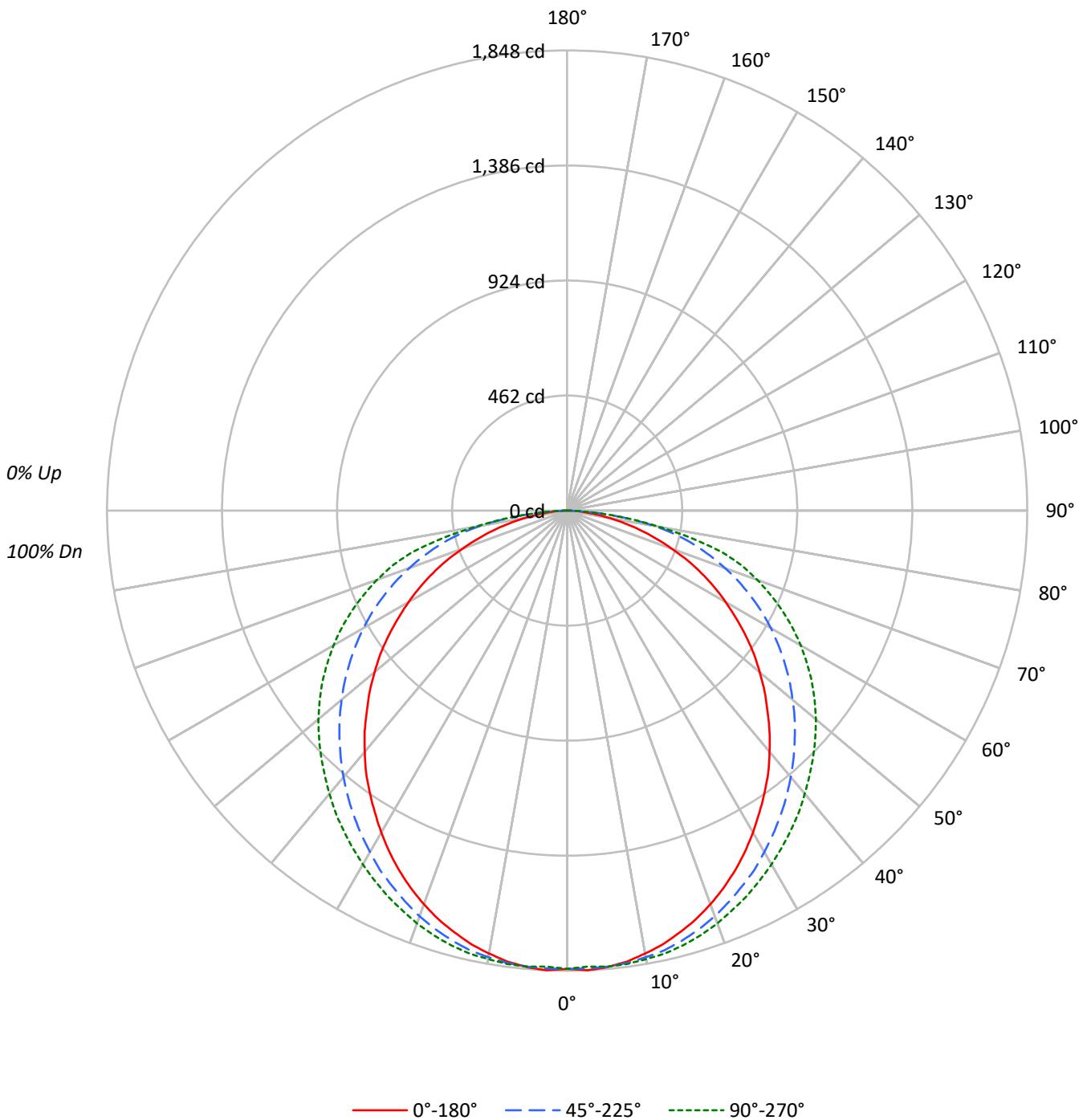
Input Watts (W): 51  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	100	96	92	96	93	89		92	89	87		89	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73		80	75	71		77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60		70	64	59		67	62	58	56
4	81	68	59	52	78	67	58	52	64	57	51		62	55	50		60	54	49	47
5	74	61	51	44	72	60	51	44	57	50	44		55	49	43		54	48	43	41
6	68	55	45	39	66	54	45	38	52	44	38		50	43	38		48	42	37	35
7	63	49	40	34	62	49	40	34	47	39	34		45	39	33		44	38	33	31
8	59	45	36	30	57	44	36	30	43	35	30		42	35	30		40	34	30	28
9	55	41	33	27	54	41	33	27	39	32	27		38	32	27		37	31	27	25
10	52	38	30	25	50	37	30	24	36	29	24		36	29	24		35	29	24	22

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

	0°	45°	90°
0°	2476	2476	2476
5°	2486	2483	2483
10°	2468	2488	2499
15°	2442	2489	2516
20°	2409	2483	2526
25°	2368	2470	2535
30°	2319	2460	2549
35°	2270	2455	2573
40°	2221	2454	2608
45°	2163	2460	2659
50°	2113	2475	2730
55°	2052	2502	2814
60°	1980	2543	2916
65°	1895	2591	3039
70°	1758	2655	3194
75°	1591	2747	3341
80°	1340	2755	2872
85°	1027	2084	2084



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	174.7	3.0
10°-20°	502.6	8.7
20°-30°	763.4	13.3
30°-40°	928.6	16.1
40°-50°	988.7	17.2
50°-60°	941.7	16.4
60°-70°	787.5	13.7
70°-80°	525.0	9.1
80°-90°	145.3	2.5
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°	1440.7	25.0
0°-40°	2369.4	41.2
0°-60°	4299.7	74.7
0°-90°	5757.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5757.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1840	1840	1840	1840	1840	
5°	1840	1829	1838	1838	1838	175
15°	1753	1757	1787	1800	1806	494
25°	1595	1616	1664	1692	1707	734
35°	1382	1422	1494	1544	1567	865
45°	1137	1198	1293	1365	1397	879
55°	875	951	1067	1160	1200	782
65°	595	682	814	914	954	588
75°	306	403	528	618	643	324
85°	66	124	135	133	135	80
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1840.4	1840.4	1840.4	1840.4	1840.4
2.5°	1848.0	1834.7	1840.4	1840.4	1832.8
5°	1840.4	1829.0	1838.5	1838.5	1838.5
7.5°	1827.1	1817.6	1832.8	1836.6	1836.6
10°	1806.2	1802.4	1821.4	1827.1	1829.0
12.5°	1783.3	1781.4	1808.1	1815.7	1821.4
15°	1752.9	1756.7	1787.1	1800.5	1806.2
17.5°	1720.6	1728.2	1762.4	1781.4	1787.1
20°	1682.6	1694.0	1733.9	1752.9	1764.3
22.5°	1640.7	1657.9	1699.7	1722.5	1735.8
25°	1595.1	1616.0	1663.6	1692.1	1707.3
27.5°	1545.7	1572.3	1627.4	1659.8	1675.0
30°	1492.5	1522.9	1583.7	1621.7	1640.7
32.5°	1437.3	1473.4	1540.0	1581.8	1604.6
35°	1382.2	1422.1	1494.4	1543.8	1566.6
37.5°	1327.0	1367.0	1446.8	1500.1	1528.6
40°	1264.3	1311.8	1397.4	1456.3	1484.8
42.5°	1203.5	1254.8	1346.1	1410.7	1441.1
45°	1136.9	1197.8	1292.8	1365.1	1397.4
47.5°	1076.1	1136.9	1239.6	1315.6	1351.8
50°	1009.5	1074.2	1182.6	1266.2	1304.2
52.5°	944.9	1011.4	1125.5	1214.9	1252.9
55°	874.6	950.6	1066.6	1159.7	1199.7
57.5°	804.2	886.0	1005.7	1102.7	1142.6
60°	735.8	819.4	944.9	1041.9	1083.7
62.5°	667.3	751.0	882.2	981.0	1021.0
65°	595.1	682.5	813.7	914.5	954.4
67.5°	522.8	614.1	745.3	846.0	884.1
70°	446.8	543.7	674.9	773.8	811.8
72.5°	376.4	473.4	602.7	699.6	735.8
75°	306.1	403.1	528.5	617.9	642.6
77.5°	237.7	334.6	446.8	505.7	511.4
80°	173.0	264.3	355.5	372.6	370.7
82.5°	116.0	197.7	245.3	247.2	252.9
85°	66.5	123.6	135.0	133.1	135.0
87.5°	26.6	43.7	38.0	28.5	28.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)