

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: P389836

Luminaire Tested: **24CZ2-60VHE-S-UNV-L940-CD1-SWPD1-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: P389836  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-1)  
Test Lab: INNOVATIONS CENTER(G3)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-60VHE-S-UNV-L940-CD1-SWPD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 4000K, 90 LEDS, AND SMOOTH LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5367.3 lumens  
Efficiency: N/A  
Efficacy: 138.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

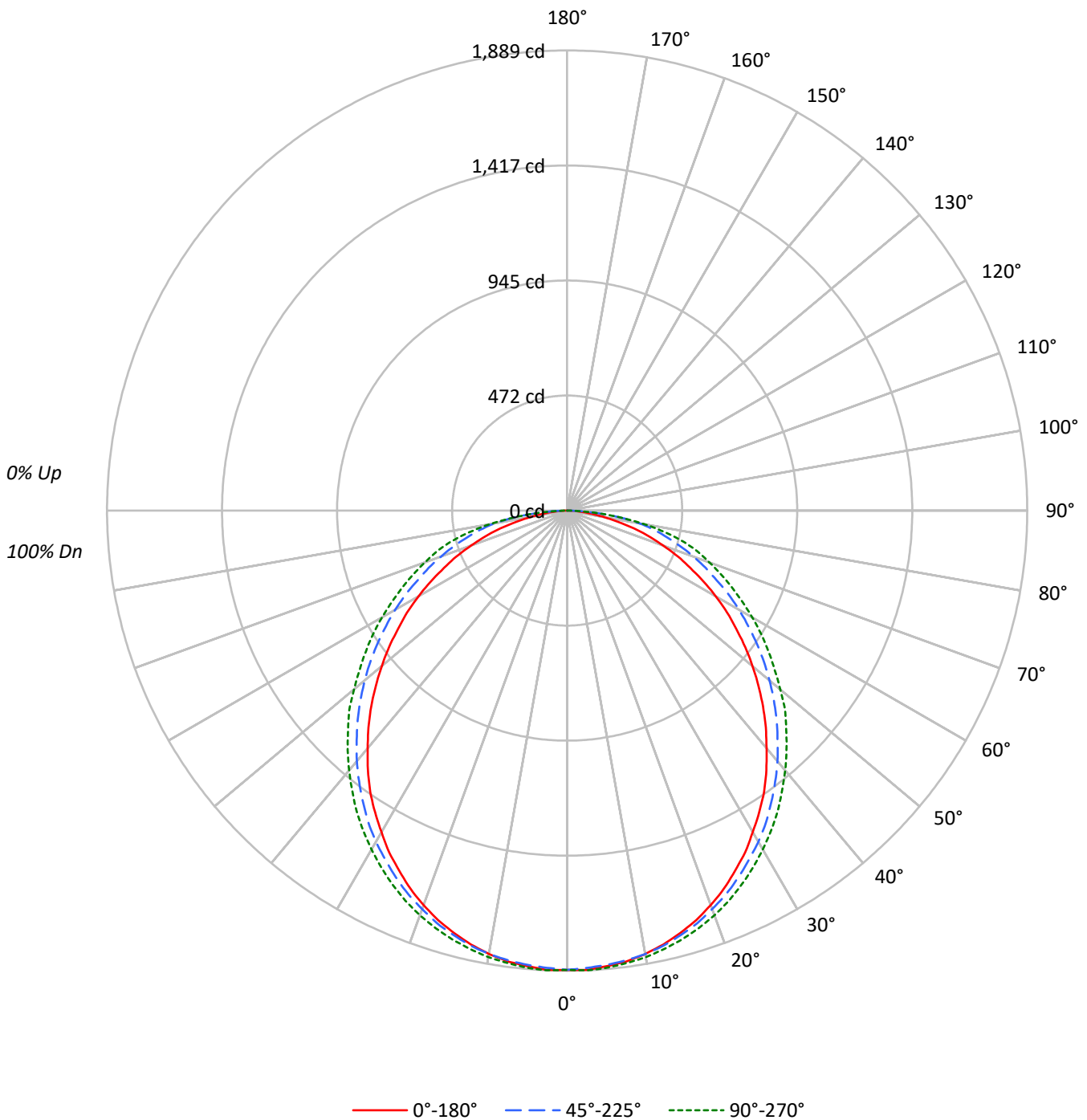
Input Watts (W): 38.7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

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

	0°	45°	90°
0°	2537	2537	2537
5°	2535	2528	2544
10°	2525	2525	2544
15°	2501	2512	2539
20°	2468	2492	2531
25°	2422	2468	2516
30°	2368	2440	2495
35°	2316	2400	2475
40°	2237	2360	2447
45°	2164	2313	2420
50°	2080	2270	2391
55°	1988	2228	2368
60°	1895	2193	2363
65°	1775	2155	2377
70°	1643	2166	2441
75°	1471	2207	2579
80°	1189	2338	2523
85°	895	2053	2001



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	178.5	3.3
10°-20°	510.1	9.5
20°-30°	766.7	14.3
30°-40°	913.3	17.0
40°-50°	934.7	17.4
50°-60°	841.5	15.7
60°-70°	660.9	12.3
70°-80°	428.9	8.0
80°-90°	132.6	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°	1455.3	27.1
0°-40°	2368.6	44.1
0°-60°	4144.9	77.2
0°-90°	5367.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5367.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1886	1886	1886	1886	1886	
5°	1877	1880	1872	1882	1884	178
15°	1795	1800	1804	1819	1822	506
25°	1632	1645	1662	1690	1695	752
35°	1410	1427	1461	1497	1507	880
45°	1137	1164	1216	1262	1272	877
55°	847	885	950	999	1009	760
65°	558	600	677	733	747	555
75°	283	338	424	482	496	299
85°	58	107	133	130	130	70
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1885.6	1885.6	1885.6	1885.6	1885.6
2.5°	1887.3	1887.3	1878.7	1887.3	1889.0
5°	1877.0	1880.5	1871.9	1882.2	1883.9
7.5°	1866.8	1866.8	1861.7	1871.9	1873.6
10°	1848.1	1849.8	1848.1	1860.0	1861.7
12.5°	1824.2	1827.6	1829.3	1841.2	1842.9
15°	1795.2	1800.3	1803.7	1819.1	1822.5
17.5°	1762.8	1767.9	1776.5	1793.5	1796.9
20°	1723.6	1730.4	1740.7	1762.8	1767.9
22.5°	1681.0	1687.8	1704.9	1725.3	1733.8
25°	1631.5	1645.2	1662.2	1689.5	1694.6
27.5°	1582.1	1594.0	1616.2	1645.2	1652.0
30°	1524.1	1542.9	1570.2	1599.2	1606.0
32.5°	1467.9	1486.6	1519.0	1549.7	1558.2
35°	1409.9	1427.0	1461.1	1496.9	1507.1
37.5°	1343.4	1365.6	1403.1	1438.9	1449.1
40°	1273.5	1300.8	1343.4	1380.9	1392.9
42.5°	1207.0	1236.0	1278.6	1319.6	1333.2
45°	1137.1	1164.4	1215.6	1261.6	1271.8
47.5°	1065.5	1096.2	1150.8	1196.8	1213.9
50°	993.9	1026.3	1084.3	1132.0	1142.3
52.5°	922.3	956.4	1017.8	1068.9	1074.1
55°	847.3	884.8	949.6	999.0	1009.3
57.5°	779.1	811.5	881.4	932.6	944.5
60°	704.1	739.9	814.9	862.7	878.0
62.5°	632.5	670.0	748.4	796.2	809.8
65°	557.5	600.1	676.8	733.1	746.7
67.5°	492.7	533.6	615.5	670.0	683.6
70°	417.7	463.7	550.7	606.9	620.6
72.5°	352.9	400.6	487.6	542.1	562.6
75°	283.0	337.6	424.5	482.5	496.1
77.5°	214.8	277.9	366.5	410.9	410.9
80°	153.4	219.9	301.8	322.2	325.6
82.5°	100.6	165.4	223.3	221.6	221.6
85°	58.0	107.4	133.0	129.6	129.6
87.5°	22.2	44.3	47.7	47.7	46.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)