

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: P391512

Luminaire Tested: **24CZ2-60VHE-HRP-UNV-L935-CD1-SDWPD1-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: P391512  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-19)  
Test Lab: INNOVATIONS CENTER(G3)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-60VHE-HRP-UNV-L935-CD1-SDWPD1-U  
Description: 2x4 CRUZE LED TROFFER WITH 3500K, 90 LEDS, AND HRP LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4239.8 lumens  
Efficiency: N/A  
Efficacy: 109.6 lumens/watt  
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

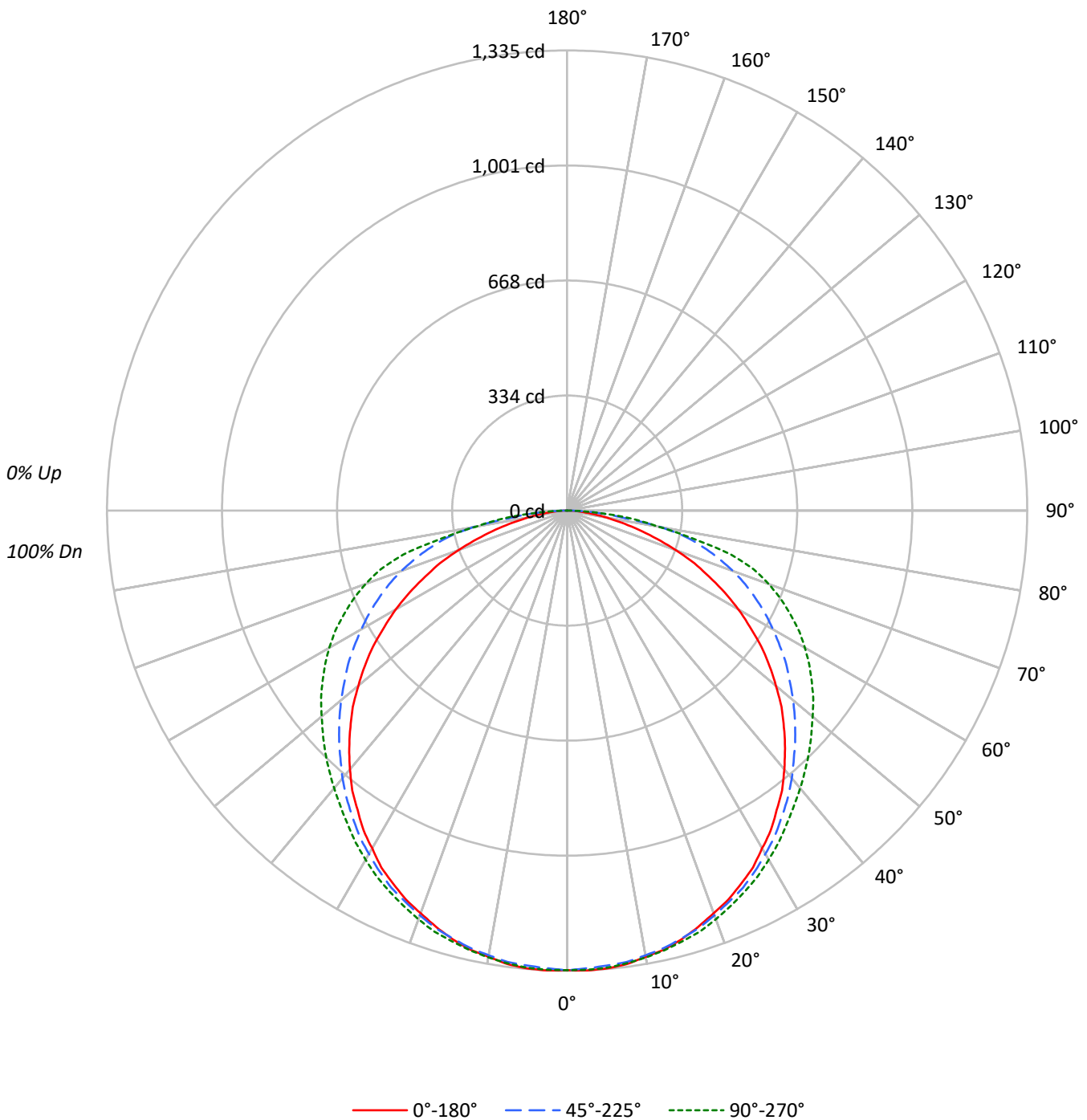
Input Watts (W): 38.7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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					100			
1	108	103	98	94	105	100	96	92	96	93	89	92	89	87	88	86	84	82					82			
2	97	89	81	75	95	87	80	74	83	77	72	80	75	71	77	73	69	67					67			
3	88	77	68	62	86	76	67	61	72	66	60	70	64	59	67	62	58	56					56			
4	81	68	59	52	78	67	58	51	64	57	51	62	55	50	59	54	49	47					47			
5	74	60	51	44	72	59	51	44	57	49	43	55	48	43	53	47	42	40					40			
6	68	54	45	38	66	53	45	38	51	44	38	50	43	37	48	42	37	35					35			
7	63	49	40	34	61	48	40	34	47	39	33	45	38	33	44	38	33	31					31			
8	59	45	36	30	57	44	36	30	43	35	30	41	34	29	40	34	29	27					27			
9	55	41	33	27	53	40	32	27	39	32	27	38	31	26	37	31	26	24					24			
10	51	38	30	24	50	37	29	24	36	29	24	35	29	24	34	28	24	22					22			

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

	0°	45°	90°
0°	1794	1794	1794
5°	1801	1789	1798
10°	1796	1790	1799
15°	1793	1790	1802
20°	1780	1789	1807
25°	1773	1792	1811
30°	1758	1787	1817
35°	1741	1782	1824
40°	1721	1780	1847
45°	1693	1781	1889
50°	1655	1792	1946
55°	1613	1820	2032
60°	1545	1856	2145
65°	1446	1922	2276
70°	1316	2010	2449
75°	1115	2121	2558
80°	880	2135	2070
85°	650	1623	1819



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.5	3.0
10°-20°	364.0	8.6
20°-30°	556.6	13.1
30°-40°	680.5	16.0
40°-50°	725.2	17.1
50°-60°	693.4	16.4
60°-70°	587.4	13.9
70°-80°	394.8	9.3
80°-90°	111.4	2.6
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°	1047.1	24.7
0°-40°	1727.6	40.7
0°-60°	3146.2	74.2
0°-90°	4239.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4239.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1333	1333	1333	1333	1333	
5°	1333	1331	1325	1331	1331	127
15°	1287	1287	1285	1295	1293	363
25°	1194	1199	1207	1218	1220	551
35°	1060	1068	1085	1106	1110	664
45°	890	904	936	976	993	686
55°	688	713	776	837	866	612
65°	454	500	604	684	715	451
75°	214	292	408	477	492	230
85°	42	86	105	114	118	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1333.3	1333.3	1333.3	1333.3	1333.3
2.5°	1335.4	1335.4	1329.1	1333.3	1333.3
5°	1333.3	1331.2	1324.9	1331.2	1331.2
7.5°	1327.0	1324.9	1320.7	1327.0	1324.9
10°	1314.4	1314.4	1310.2	1316.5	1316.5
12.5°	1303.9	1301.8	1299.6	1308.1	1306.0
15°	1287.0	1287.0	1284.9	1295.4	1293.3
17.5°	1266.0	1268.1	1270.2	1278.6	1280.7
20°	1242.9	1247.1	1249.2	1261.8	1261.8
22.5°	1221.8	1223.9	1228.1	1240.8	1240.8
25°	1194.5	1198.7	1207.1	1217.6	1219.7
27.5°	1167.2	1169.3	1179.8	1194.5	1196.6
30°	1131.4	1137.7	1150.3	1167.2	1169.3
32.5°	1099.9	1106.2	1120.9	1137.7	1141.9
35°	1059.9	1068.3	1085.1	1106.2	1110.4
37.5°	1024.2	1030.5	1051.5	1074.6	1080.9
40°	980.0	992.6	1013.6	1041.0	1051.5
42.5°	935.8	948.4	973.7	1009.4	1022.1
45°	889.6	904.3	935.8	975.8	992.6
47.5°	843.3	860.1	895.9	942.1	961.1
50°	790.7	811.8	855.9	908.5	929.5
52.5°	740.3	765.5	813.9	872.7	900.1
55°	687.7	712.9	776.0	837.0	866.4
57.5°	628.8	662.4	731.8	801.2	832.8
60°	574.1	605.7	689.8	765.5	797.0
62.5°	515.2	557.3	647.7	727.6	759.2
65°	454.2	500.5	603.6	683.5	715.0
67.5°	399.6	450.0	559.4	639.3	670.9
70°	334.4	397.5	511.0	590.9	622.5
72.5°	273.4	342.8	460.6	538.4	567.8
75°	214.5	292.3	408.0	477.4	492.1
77.5°	159.8	241.8	353.3	382.7	372.2
80°	113.6	193.5	275.5	260.8	267.1
82.5°	73.6	147.2	170.3	193.5	199.8
85°	42.1	86.2	105.1	113.6	117.8
87.5°	18.9	31.5	42.1	42.1	40.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)