

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: P391513

Luminaire Tested: **24CZ2-60VHE-HRP-UNV-L935-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: P391513  
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-SWPD1-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: 4291.6 lumens  
Efficiency: N/A  
Efficacy: 110.9 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

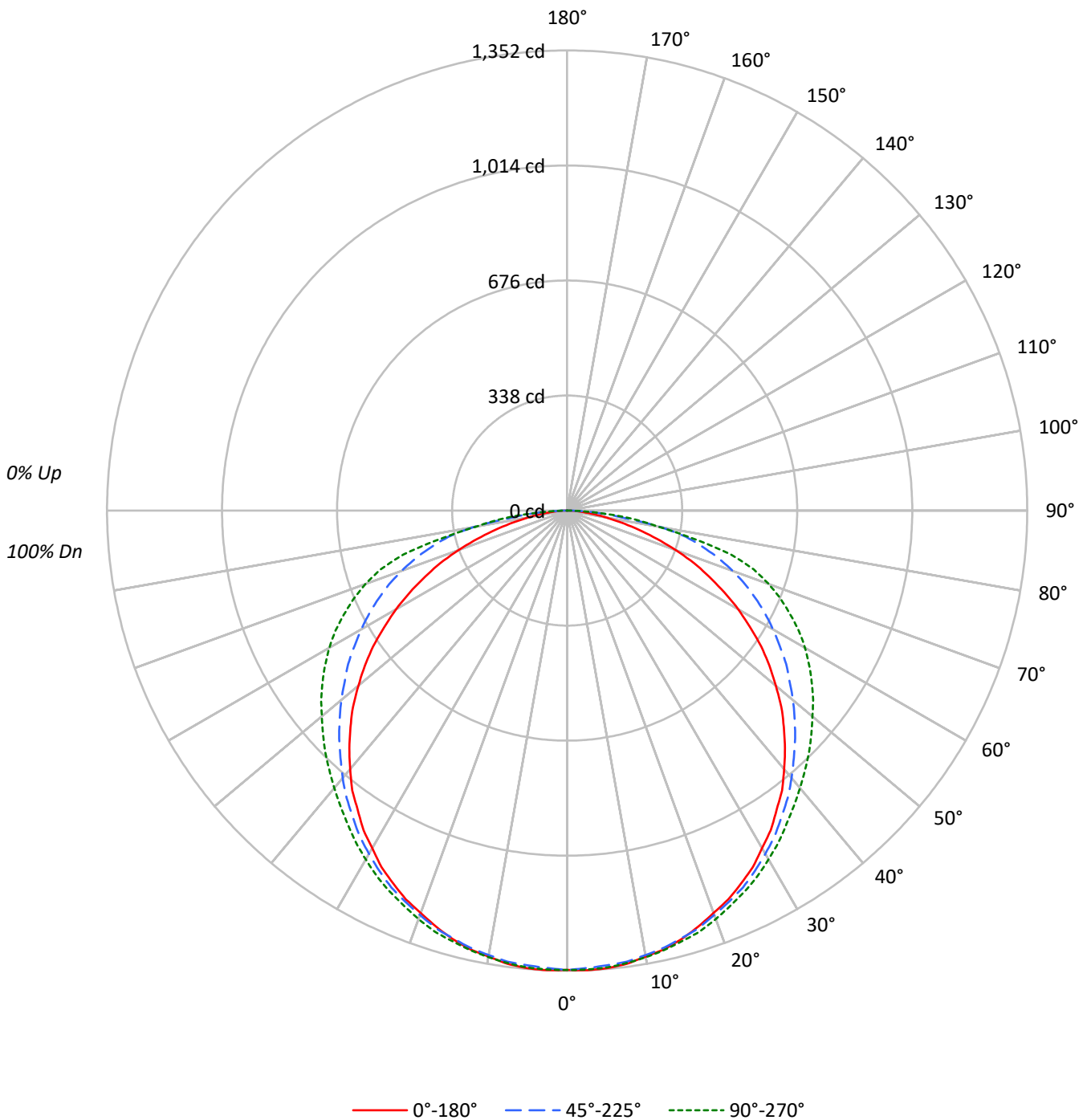
Input Watts (W): 38.7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

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

	0°	45°	90°
0°	1816	1816	1816
5°	1823	1811	1820
10°	1818	1812	1821
15°	1815	1812	1824
20°	1801	1810	1829
25°	1795	1814	1833
30°	1779	1809	1839
35°	1762	1804	1846
40°	1742	1802	1869
45°	1713	1803	1912
50°	1675	1814	1970
55°	1633	1843	2057
60°	1564	1879	2171
65°	1464	1945	2304
70°	1332	2035	2479
75°	1129	2147	2589
80°	890	2161	2094
85°	658	1643	1840



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	128.0	3.0
10°-20°	368.4	8.6
20°-30°	563.4	13.1
30°-40°	688.8	16.0
40°-50°	734.1	17.1
50°-60°	701.9	16.4
60°-70°	594.6	13.9
70°-80°	399.6	9.3
80°-90°	112.7	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°	1059.9	24.7
0°-40°	1748.7	40.7
0°-60°	3184.7	74.2
0°-90°	4291.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4291.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1350	1350	1350	1350	1350	
5°	1350	1348	1341	1348	1348	128
15°	1303	1303	1301	1311	1309	367
25°	1209	1213	1222	1232	1235	557
35°	1073	1081	1098	1120	1124	672
45°	900	915	947	988	1005	695
55°	696	722	786	847	877	620
65°	460	507	611	692	724	456
75°	217	296	413	483	498	232
85°	43	87	106	115	119	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1349.6	1349.6	1349.6	1349.6	1349.6
2.5°	1351.7	1351.7	1345.3	1349.6	1349.6
5°	1349.6	1347.5	1341.1	1347.5	1347.5
7.5°	1343.2	1341.1	1336.8	1343.2	1341.1
10°	1330.4	1330.4	1326.2	1332.6	1332.6
12.5°	1319.8	1317.7	1315.5	1324.0	1321.9
15°	1302.8	1302.8	1300.6	1311.3	1309.1
17.5°	1281.5	1283.6	1285.7	1294.2	1296.4
20°	1258.1	1262.3	1264.4	1277.2	1277.2
22.5°	1236.8	1238.9	1243.2	1255.9	1255.9
25°	1209.1	1213.3	1221.9	1232.5	1234.6
27.5°	1181.4	1183.5	1194.2	1209.1	1211.2
30°	1145.2	1151.6	1164.4	1181.4	1183.5
32.5°	1113.3	1119.7	1134.6	1151.6	1155.9
35°	1072.9	1081.4	1098.4	1119.7	1123.9
37.5°	1036.7	1043.1	1064.3	1087.8	1094.1
40°	992.0	1004.7	1026.0	1053.7	1064.3
42.5°	947.3	960.0	985.6	1021.8	1034.5
45°	900.4	915.3	947.3	987.7	1004.7
47.5°	853.6	870.6	906.8	953.7	972.8
50°	800.4	821.7	866.4	919.6	940.9
52.5°	749.3	774.8	823.8	883.4	911.1
55°	696.1	721.6	785.5	847.2	877.0
57.5°	636.5	670.5	740.8	811.0	843.0
60°	581.1	613.1	698.2	774.8	806.8
62.5°	521.5	564.1	655.6	736.5	768.5
65°	459.8	506.6	610.9	691.8	723.8
67.5°	404.4	455.5	566.2	647.1	679.1
70°	338.5	402.3	517.3	598.2	630.1
72.5°	276.7	347.0	466.2	544.9	574.7
75°	217.1	295.9	413.0	483.2	498.1
77.5°	161.8	244.8	357.6	387.4	376.8
80°	114.9	195.8	278.9	264.0	270.3
82.5°	74.5	149.0	172.4	195.8	202.2
85°	42.6	87.3	106.4	114.9	119.2
87.5°	19.2	31.9	42.6	42.6	40.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)