

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: P391610

Luminaire Tested: **24CZ2-70VHE-HRP-UNV-L935-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: P391610  
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: 24CZ2-70VHE-HRP-UNV-L935-CD1-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: 5066.0 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

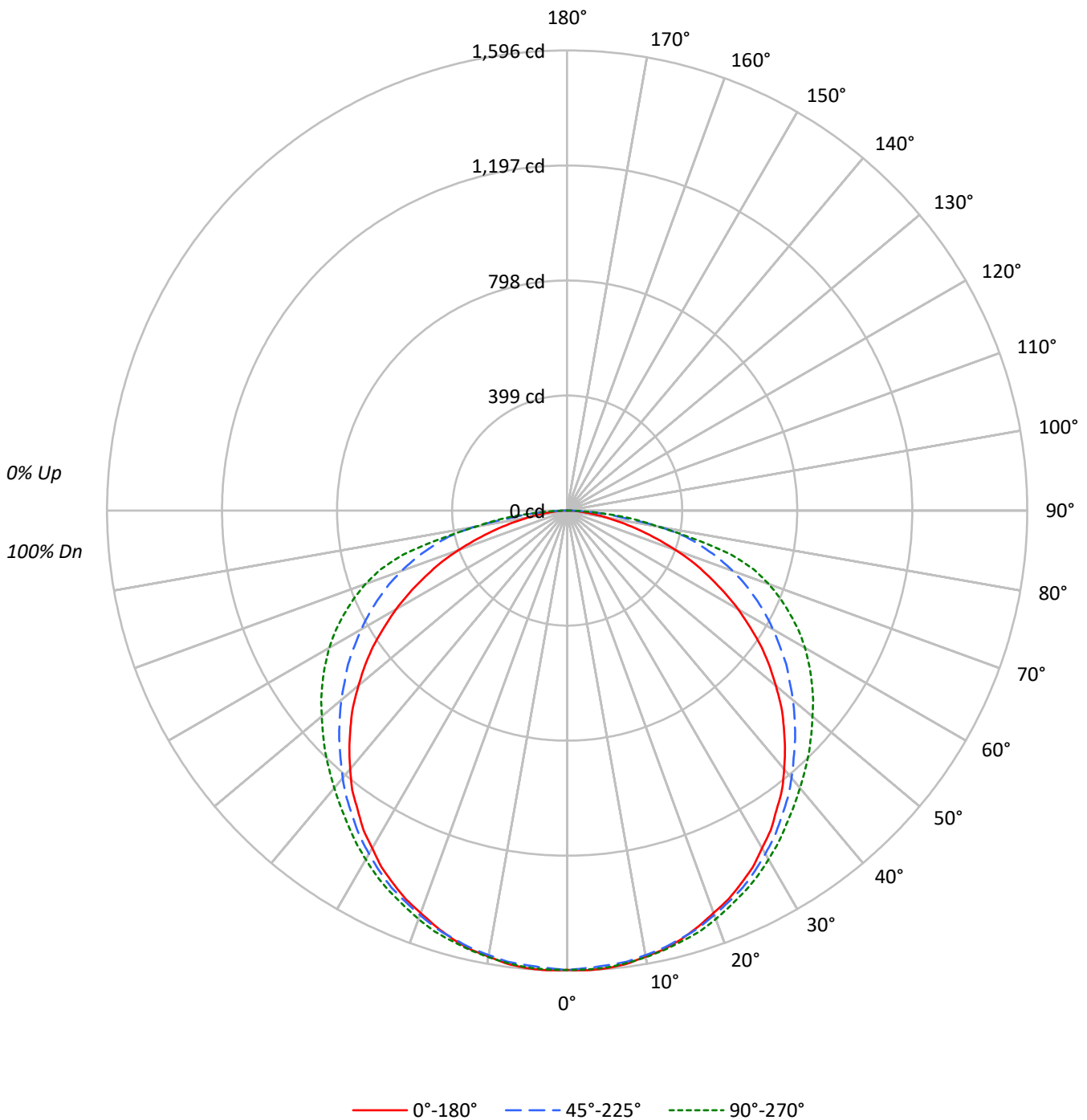
Input Watts (W): 45.7  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P391610

CATALOG NUMBER: 24CZ2-70VHE-HRP-UNV-L935-CD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P391610

CATALOG NUMBER: 24CZ2-70VHE-HRP-UNV-L935-CD1-U

**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°	2143	2143	2143
5°	2152	2138	2148
10°	2146	2139	2149
15°	2142	2139	2153
20°	2126	2137	2159
25°	2119	2141	2164
30°	2100	2135	2171
35°	2080	2130	2179
40°	2057	2127	2207
45°	2022	2128	2257
50°	1978	2141	2325
55°	1928	2175	2429
60°	1846	2218	2563
65°	1728	2296	2720
70°	1572	2402	2926
75°	1332	2534	3057
80°	1051	2551	2473
85°	777	1939	2172



TEST NUMBER: P391610

CATALOG NUMBER: 24CZ2-70VHE-HRP-UNV-L935-CD1-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.1	3.0
10°-20°	434.9	8.6
20°-30°	665.1	13.1
30°-40°	813.1	16.0
40°-50°	866.6	17.1
50°-60°	828.6	16.4
60°-70°	701.9	13.9
70°-80°	471.7	9.3
80°-90°	133.1	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°	1251.1	24.7
0°-40°	2064.2	40.7
0°-60°	3759.3	74.2
0°-90°	5066.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5066.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1593	1593	1593	1593	1593	
5°	1593	1591	1583	1591	1591	151
15°	1538	1538	1535	1548	1545	434
25°	1427	1432	1442	1455	1457	658
35°	1266	1276	1297	1322	1327	793
45°	1063	1080	1118	1166	1186	820
55°	822	852	927	1000	1035	732
65°	543	598	721	817	854	539
75°	256	349	488	570	588	274
85°	50	103	126	136	141	62
90°	0	0	0	0	0	



TEST NUMBER: P391610

CATALOG NUMBER: 24CZ2-70VHE-HRP-UNV-L935-CD1-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1593.1	1593.1	1593.1	1593.1	1593.1
2.5°	1595.6	1595.6	1588.1	1593.1	1593.1
5°	1593.1	1590.6	1583.1	1590.6	1590.6
7.5°	1585.6	1583.1	1578.0	1585.6	1583.1
10°	1570.5	1570.5	1565.5	1573.0	1573.0
12.5°	1557.9	1555.4	1552.9	1563.0	1560.4
15°	1537.8	1537.8	1535.3	1547.9	1545.4
17.5°	1512.7	1515.2	1517.7	1527.8	1530.3
20°	1485.1	1490.1	1492.6	1507.7	1507.7
22.5°	1459.9	1462.4	1467.5	1482.5	1482.5
25°	1427.3	1432.3	1442.3	1454.9	1457.4
27.5°	1394.6	1397.1	1409.7	1427.3	1429.8
30°	1351.9	1359.4	1374.5	1394.6	1397.1
32.5°	1314.2	1321.7	1339.3	1359.4	1364.4
35°	1266.4	1276.5	1296.6	1321.7	1326.8
37.5°	1223.7	1231.3	1256.4	1284.0	1291.6
40°	1171.0	1186.0	1211.2	1243.8	1256.4
42.5°	1118.2	1133.3	1163.4	1206.1	1221.2
45°	1062.9	1080.5	1118.2	1165.9	1186.0
47.5°	1007.6	1027.7	1070.5	1125.7	1148.3
50°	944.8	969.9	1022.7	1085.5	1110.7
52.5°	884.5	914.7	972.5	1042.8	1075.5
55°	821.7	851.8	927.2	1000.1	1035.3
57.5°	751.3	791.5	874.5	957.4	995.1
60°	686.0	723.7	824.2	914.7	952.3
62.5°	615.6	665.9	773.9	869.4	907.1
65°	542.8	598.0	721.2	816.7	854.4
67.5°	477.4	537.7	668.4	763.9	801.6
70°	399.5	474.9	610.6	706.1	743.8
72.5°	326.7	409.6	550.3	643.3	678.5
75°	256.3	349.3	487.5	570.4	588.0
77.5°	191.0	289.0	422.1	457.3	444.8
80°	135.7	231.2	329.2	311.6	319.1
82.5°	87.9	175.9	203.5	231.2	238.7
85°	50.3	103.0	125.6	135.7	140.7
87.5°	22.6	37.7	50.3	50.3	47.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)