

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: P474387

Luminaire Tested: **24CZ2-60VHE-HRP-UNV-L830-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474387  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-60VHE-HRP-UNV-L830-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ HRP  
INSERT  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4696.1 lumens  
Efficiency: N/A  
Efficacy: 115.4 lumens/watt  
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

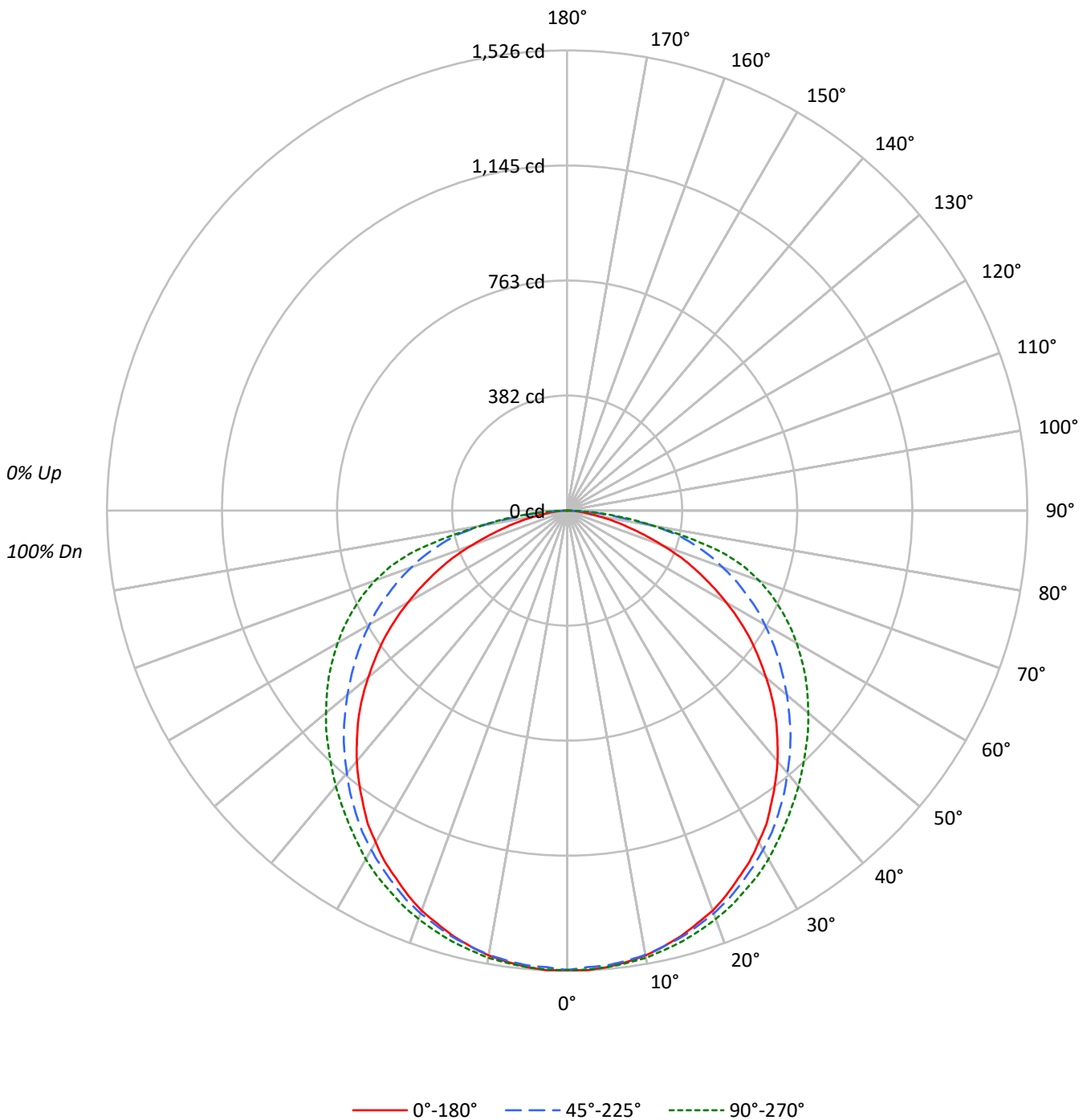
Input Watts (W): 40.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P474387

CATALOG NUMBER: 24CZ2-60VHE-HRP-UNV-L830-CD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P474387

CATALOG NUMBER: 24CZ2-60VHE-HRP-UNV-L830-CD1-U

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				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	101	96	93	96	93	90	92	90	87	89	86	84	82
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	68	63	58	56
4	81	68	59	52	79	67	59	52	65	57	51	62	56	50	60	54	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	63	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	36	30	57	44	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	24	35	29	24	23

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

	0°	45°	90°
0°	2050	2050	2050
5°	2053	2044	2053
10°	2047	2044	2057
15°	2035	2040	2059
20°	2021	2035	2063
25°	1996	2026	2066
30°	1973	2019	2074
35°	1941	2008	2076
40°	1906	1996	2096
45°	1863	1994	2129
50°	1803	1992	2185
55°	1738	2006	2264
60°	1640	2037	2365
65°	1515	2085	2498
70°	1323	2157	2661
75°	1073	2269	2750
80°	793	2225	2225
85°	607	1638	1851



TEST NUMBER: P474387

CATALOG NUMBER: 24CZ2-60VHE-HRP-UNV-L830-CD1-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.3	3.1
10°-20°	414.5	8.8
20°-30°	631.0	13.4
30°-40°	766.2	16.3
40°-50°	809.5	17.2
50°-60°	763.8	16.3
60°-70°	635.1	13.5
70°-80°	417.8	8.9
80°-90°	113.9	2.4
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°	1189.8	25.3
0°-40°	1956.0	41.7
0°-60°	3529.2	75.2
0°-90°	4696.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4696.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1524	1524	1524	1524	1524	
5°	1520	1520	1514	1520	1520	144
15°	1461	1463	1465	1478	1478	412
25°	1345	1352	1364	1388	1392	620
35°	1182	1195	1223	1254	1264	740
45°	979	999	1048	1099	1119	754
55°	741	773	855	936	965	660
65°	476	531	655	751	784	470
75°	206	301	436	517	529	222
85°	39	87	106	118	120	48
90°	0	0	0	0	0	



TEST NUMBER: P474387

CATALOG NUMBER: 24CZ2-60VHE-HRP-UNV-L830-CD1-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1523.6	1523.6	1523.6	1523.6	1523.6
2.5°	1525.6	1523.6	1515.8	1523.6	1523.6
5°	1519.8	1519.8	1513.7	1519.8	1519.8
7.5°	1509.9	1509.9	1505.9	1513.7	1513.7
10°	1498.0	1498.0	1496.2	1505.9	1505.9
12.5°	1480.4	1482.3	1480.4	1492.1	1492.1
15°	1460.7	1462.7	1464.7	1478.4	1478.4
17.5°	1435.2	1439.1	1443.1	1458.7	1460.7
20°	1411.6	1413.5	1421.3	1439.1	1441.1
22.5°	1380.2	1386.0	1395.9	1413.5	1419.5
25°	1344.6	1352.5	1364.4	1388.0	1391.9
27.5°	1311.4	1317.2	1332.9	1358.6	1366.4
30°	1270.0	1279.9	1299.4	1325.1	1335.0
32.5°	1230.6	1240.5	1264.1	1291.6	1299.4
35°	1181.6	1195.3	1222.8	1254.3	1264.1
37.5°	1134.4	1148.1	1181.6	1216.9	1228.8
40°	1085.2	1100.9	1136.4	1177.6	1193.3
42.5°	1032.1	1053.7	1093.0	1138.2	1156.0
45°	979.0	998.8	1047.8	1098.9	1118.7
47.5°	922.1	945.7	998.8	1059.7	1083.3
50°	861.2	890.6	951.6	1018.4	1044.0
52.5°	800.3	833.5	902.4	977.0	1004.7
55°	741.1	772.6	855.1	935.8	965.3
57.5°	676.4	715.7	806.1	892.5	922.1
60°	609.4	652.8	756.9	847.3	878.7
62.5°	542.6	591.8	709.7	800.3	833.5
65°	475.8	530.9	654.8	751.0	784.5
67.5°	410.8	471.8	603.5	700.0	733.3
70°	336.2	412.8	548.4	642.9	676.4
72.5°	267.4	355.9	495.4	583.9	613.4
75°	206.4	300.9	436.4	517.0	528.9
77.5°	151.3	245.8	375.5	403.0	405.0
80°	102.3	196.5	287.1	283.1	287.1
82.5°	66.8	147.5	180.8	202.6	204.4
85°	39.3	86.6	106.1	118.0	119.9
87.5°	19.6	29.5	37.3	39.3	43.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)