

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: P474487

Luminaire Tested: **24CZ2-60VHE-HRP-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474487  
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-L840-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ HRP  
INSERT  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4958.8 lumens  
Efficiency: N/A  
Efficacy: 121.8 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

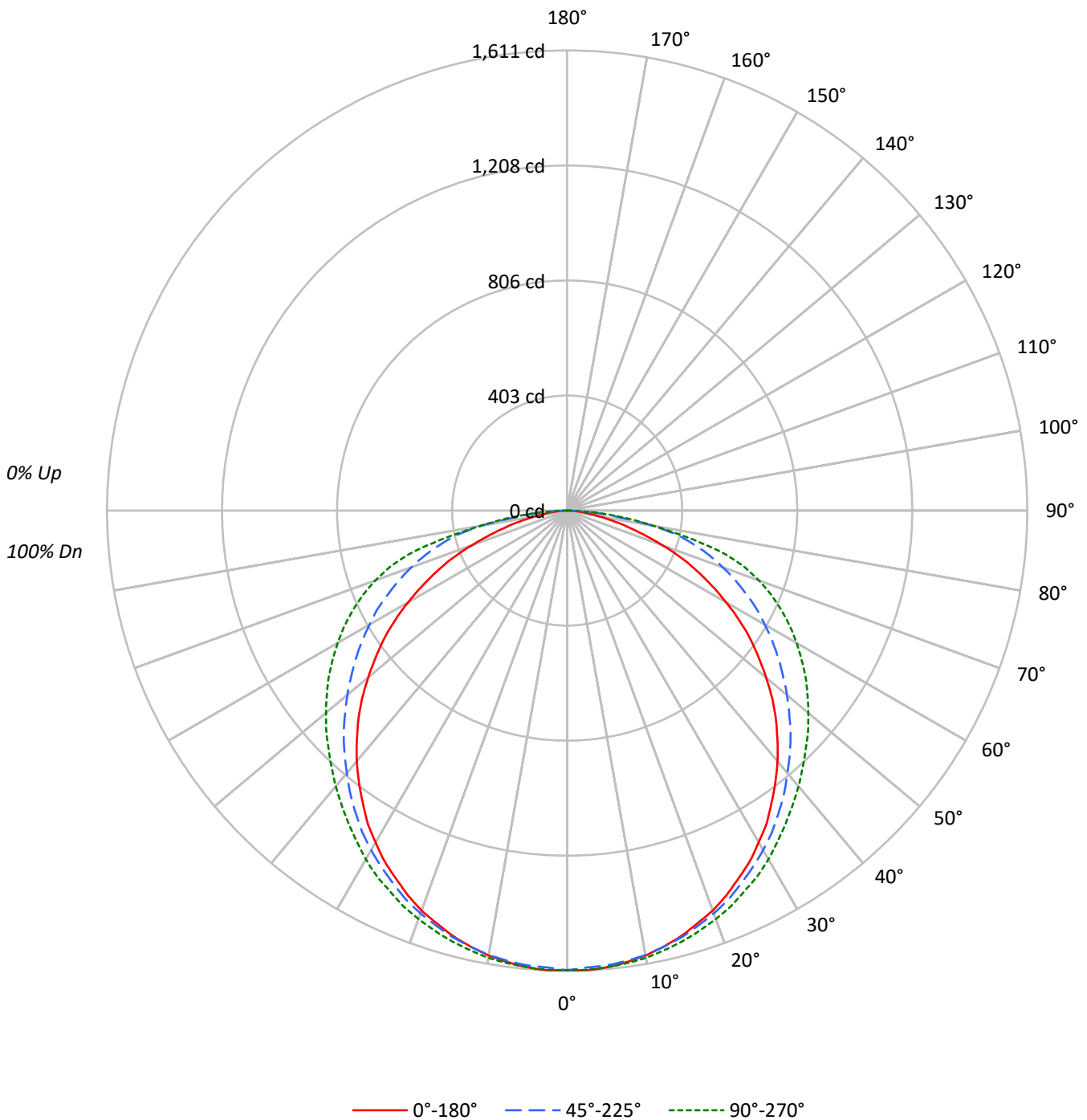
Input Watts (W): 40.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	2165	2165	2165
5°	2167	2159	2167
10°	2161	2159	2172
15°	2148	2154	2175
20°	2134	2149	2179
25°	2108	2139	2182
30°	2084	2132	2190
35°	2049	2121	2193
40°	2013	2108	2213
45°	1967	2105	2248
50°	1904	2103	2308
55°	1836	2118	2391
60°	1732	2151	2497
65°	1599	2201	2637
70°	1397	2278	2810
75°	1133	2396	2903
80°	837	2349	2349
85°	641	1731	1954



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.4	3.1
10°-20°	437.7	8.8
20°-30°	666.3	13.4
30°-40°	809.0	16.3
40°-50°	854.8	17.2
50°-60°	806.6	16.3
60°-70°	670.6	13.5
70°-80°	441.2	8.9
80°-90°	120.3	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°	1256.4	25.3
0°-40°	2065.4	41.7
0°-60°	3726.7	75.2
0°-90°	4958.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4958.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1609	1609	1609	1609	1609	
5°	1605	1605	1598	1605	1605	152
15°	1542	1544	1547	1561	1561	435
25°	1420	1428	1441	1466	1470	655
35°	1248	1262	1291	1324	1335	781
45°	1034	1055	1106	1160	1181	796
55°	783	816	903	988	1019	697
65°	502	561	691	793	828	497
75°	218	318	461	546	558	235
85°	42	91	112	125	127	51
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1608.9	1608.9	1608.9	1608.9	1608.9
2.5°	1611.0	1608.9	1600.6	1608.9	1608.9
5°	1604.8	1604.8	1598.4	1604.8	1604.8
7.5°	1594.4	1594.4	1590.1	1598.4	1598.4
10°	1581.8	1581.8	1579.9	1590.1	1590.1
12.5°	1563.3	1565.2	1563.3	1575.6	1575.6
15°	1542.4	1544.5	1546.7	1561.2	1561.2
17.5°	1515.6	1519.6	1523.9	1540.3	1542.4
20°	1490.6	1492.5	1500.9	1519.6	1521.7
22.5°	1457.4	1463.6	1474.0	1492.5	1498.9
25°	1419.9	1428.2	1440.8	1465.7	1469.8
27.5°	1384.7	1390.9	1407.5	1434.6	1442.9
30°	1341.1	1351.5	1372.2	1399.2	1409.7
32.5°	1299.5	1309.9	1334.9	1363.9	1372.2
35°	1247.7	1262.2	1291.2	1324.4	1334.9
37.5°	1197.9	1212.4	1247.7	1285.0	1297.6
40°	1145.9	1162.5	1200.0	1243.5	1260.1
42.5°	1089.8	1112.6	1154.2	1201.9	1220.7
45°	1033.8	1054.7	1106.5	1160.4	1181.3
47.5°	973.7	998.7	1054.7	1119.0	1144.0
50°	909.4	940.5	1004.8	1075.4	1102.4
52.5°	845.0	880.2	952.8	1031.7	1060.9
55°	782.6	815.8	903.0	988.2	1019.3
57.5°	714.2	755.8	851.2	942.4	973.7
60°	643.5	689.3	799.2	894.7	927.9
62.5°	572.9	624.9	749.4	845.0	880.2
65°	502.4	560.6	691.4	793.0	828.4
67.5°	433.8	498.2	637.3	739.1	774.3
70°	355.0	435.9	579.1	678.8	714.2
72.5°	282.3	375.9	523.1	616.6	647.7
75°	218.0	317.7	460.9	545.9	558.5
77.5°	159.8	259.5	396.5	425.5	427.6
80°	108.0	207.5	303.2	298.9	303.2
82.5°	70.5	155.8	190.9	213.9	215.8
85°	41.5	91.4	112.1	124.6	126.6
87.5°	20.7	31.1	39.4	41.5	45.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)