

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: P474384

Luminaire Tested: **24CZ2-40VHE-HRP-UNV-L830-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474384  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-40VHE-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: 3166.1 lumens  
Efficiency: N/A  
Efficacy: 116.0 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

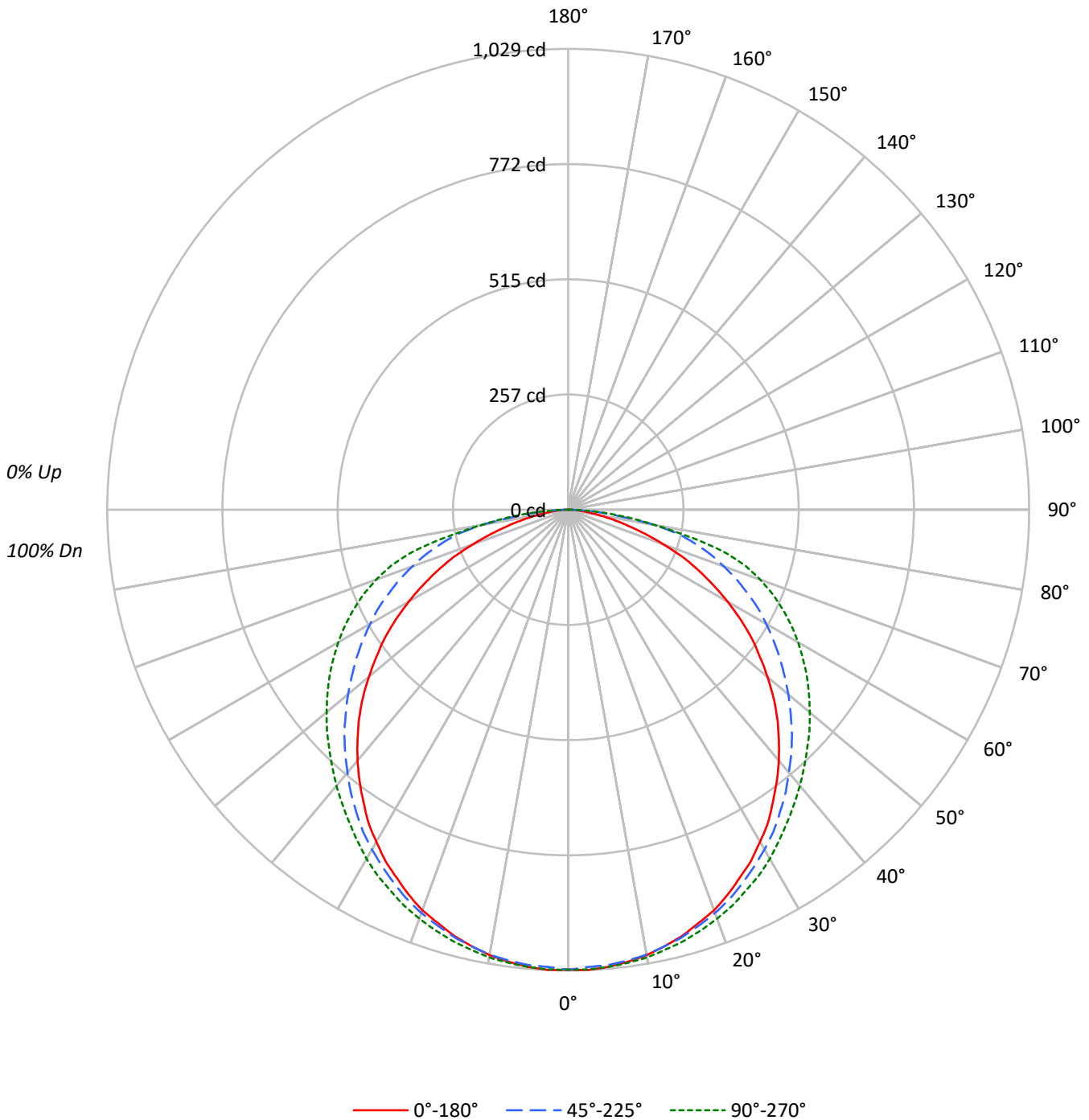
Input Watts (W): 27.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

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

	0°	45°	90°
0°	1382	1382	1382
5°	1384	1378	1384
10°	1380	1378	1387
15°	1372	1376	1388
20°	1363	1372	1391
25°	1346	1366	1393
30°	1330	1361	1398
35°	1309	1354	1400
40°	1285	1346	1413
45°	1256	1344	1435
50°	1215	1343	1473
55°	1172	1352	1527
60°	1105	1373	1594
65°	1021	1406	1684
70°	891	1455	1794
75°	724	1530	1854
80°	535	1500	1500
85°	409	1105	1247



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	97.3	3.1
10°-20°	279.4	8.8
20°-30°	425.4	13.4
30°-40°	516.6	16.3
40°-50°	545.8	17.2
50°-60°	515.0	16.3
60°-70°	428.2	13.5
70°-80°	281.7	8.9
80°-90°	76.8	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°	802.2	25.3
0°-40°	1318.7	41.7
0°-60°	2379.5	75.2
0°-90°	3166.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3166.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1027	1027	1027	1027	1027	
5°	1025	1025	1021	1025	1025	97
15°	985	986	988	997	997	278
25°	907	912	920	936	938	418
35°	797	806	824	846	852	499
45°	660	673	706	741	754	508
55°	500	521	576	631	651	445
65°	321	358	442	506	529	317
75°	139	203	294	348	357	150
85°	26	58	72	80	81	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1027.2	1027.2	1027.2	1027.2	1027.2
2.5°	1028.6	1027.2	1021.9	1027.2	1027.2
5°	1024.7	1024.7	1020.6	1024.7	1024.7
7.5°	1018.0	1018.0	1015.3	1020.6	1020.6
10°	1010.0	1010.0	1008.7	1015.3	1015.3
12.5°	998.1	999.4	998.1	1006.0	1006.0
15°	984.8	986.2	987.5	996.8	996.8
17.5°	967.7	970.2	973.0	983.4	984.8
20°	951.7	953.0	958.3	970.2	971.6
22.5°	930.5	934.5	941.1	953.0	957.1
25°	906.6	911.9	919.9	935.8	938.4
27.5°	884.1	888.1	898.7	916.0	921.3
30°	856.2	862.9	876.1	893.4	900.0
32.5°	829.7	836.4	852.3	870.8	876.1
35°	796.7	805.9	824.4	845.6	852.3
37.5°	764.8	774.1	796.7	820.5	828.5
40°	731.6	742.2	766.2	793.9	804.5
42.5°	695.9	710.4	736.9	767.4	779.4
45°	660.1	673.4	706.5	740.9	754.2
47.5°	621.7	637.6	673.4	714.5	730.4
50°	580.6	600.5	641.6	686.6	703.9
52.5°	539.5	562.0	608.4	658.7	677.3
55°	499.7	520.9	576.5	631.0	650.8
57.5°	456.0	482.5	543.5	601.7	621.7
60°	410.8	440.1	510.3	571.2	592.5
62.5°	365.8	399.0	478.5	539.5	562.0
65°	320.8	357.9	441.5	506.3	528.9
67.5°	277.0	318.1	406.9	471.9	494.4
70°	226.6	278.3	369.8	433.4	456.0
72.5°	180.3	240.0	334.0	393.7	413.6
75°	139.2	202.8	294.3	348.5	356.6
77.5°	102.0	165.7	253.2	271.7	273.0
80°	69.0	132.5	193.6	190.9	193.6
82.5°	45.0	99.4	121.9	136.6	137.8
85°	26.5	58.4	71.6	79.6	80.8
87.5°	13.2	19.9	25.2	26.5	29.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)