

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: NEO-RAY

Report Number: P231578

Luminaire Tested: **S124-DR-2-40-X-0048-1-U-DD-3-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231578
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29681)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124-DR-2-40-X-0048-1-U-DD-3-W
Description: DEFINE 4 LED LINEAR DIRECT RECESSED LED LUMINAIRE WITH ASYMMETRIC LENS.
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

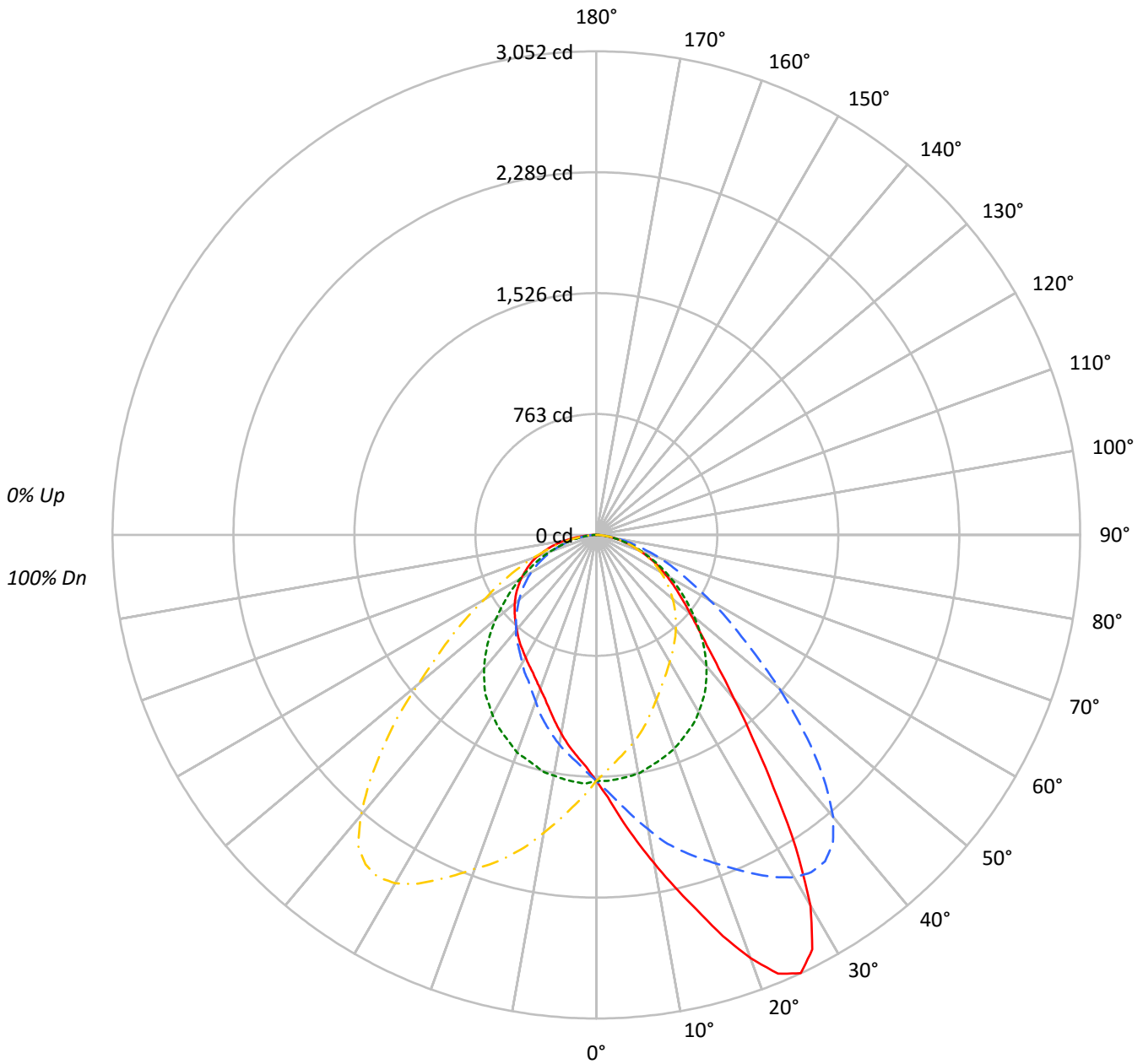
Lumens per Lamp: N/A
Luminaire Lumens: 4546.3 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Spacing Criteria (0/90/45): 1.39 / 1.24 / 1.51
Luminous Opening: Rectangular (W 3.92' x L: 0.31' x H: 0')
CIE Type: Direct

Input Watts (W): 42.6
Input Voltage (V): 120
Input Current (A_{in}): 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



— 0°-180° - - - 45°-225° - · - · - 90°-270° - · - · - 135°-315°



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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	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	109	105	101	97	107	103	99	96	98	95	93	95	92	90	91	89	87	85					85			
2	100	92	86	80	98	90	84	79	87	82	78	84	79	76	81	77	74	72					72			
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	61					61			
4	84	73	64	58	82	71	64	57	69	62	57	67	61	56	64	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	55	48	43	53	47	43	41					41			
7	67	54	45	39	65	53	45	39	51	44	39	50	43	38	48	43	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	35	46	39	34	45	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	42	34	29	53	41	34	29	40	33	28	39	33	28	38	32	28	26					26			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	13912	13912	13912	13912
5°	16174	13913	12601	14069
10°	19147	13917	11590	14035
15°	22709	13759	10571	13947
20°	27103	13689	9861	13937
25°	30172	13522	9424	13722
30°	27945	13360	9235	13553
35°	21297	13097	9163	13381
40°	15796	12636	9139	12890
45°	12482	12025	9206	12281
50°	10751	11254	9362	11537
55°	9792	10447	9567	10740
60°	9084	9654	9783	9991
65°	8422	8818	10075	9094
70°	7642	7983	10367	8247
75°	6800	6952	10352	7149
80°	5738	5666	9985	6110
85°	4154	4010	9202	5048



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CATALOG NUMBER: S124-DR-2-40-X-0048-1-U-DD-3-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.3	3.3
10°-20°	467.6	10.3
20°-30°	777.1	17.1
30°-40°	904.5	19.9
40°-50°	814.4	17.9
50°-60°	654.6	14.4
60°-70°	461.8	10.2
70°-80°	249.1	5.5
80°-90°	65.9	1.4
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°	1396.0	30.7
0°-40°	2300.5	50.6
0°-60°	3769.6	82.9
0°-90°	4546.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4546.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1553	1553	1553	1553	1553	
5°	1798	1547	1401	1564	1798	181
15°	2448	1483	1140	1504	2448	709
25°	3052	1368	953	1388	3052	1360
35°	1947	1197	838	1223	1947	1229
45°	985	949	726	969	985	778
55°	627	669	612	688	627	564
65°	397	416	475	429	397	393
75°	196	201	299	206	196	209
85°	40	39	90	49	40	50
90°	0	0	0	0	0	



TEST NUMBER: P231578

CATALOG NUMBER: S124-DR-2-40-X-0048-1-U-DD-3-W

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1552.6	1552.6	1552.6	1552.6	1552.6	1552.6	1552.6	1552.6	1552.6	1552.6	1552.6
2.5°	1656.6	1643.6	1620.5	1578.6	1554.0	1507.8	1489.0	1474.6	1464.5	1464.5	1493.4
5°	1798.1	1757.7	1701.3	1614.7	1546.8	1470.2	1432.7	1408.1	1400.9	1400.9	1437.0
7.5°	1948.3	1890.5	1793.8	1650.8	1538.1	1432.7	1382.1	1350.4	1340.3	1344.6	1390.8
10°	2104.3	2027.7	1886.2	1691.2	1529.5	1400.9	1333.0	1288.3	1273.8	1283.9	1343.2
12.5°	2271.8	2166.4	1984.4	1714.3	1504.9	1356.2	1281.1	1221.8	1206.0	1218.9	1291.2
15°	2448.0	2316.6	2062.4	1738.9	1483.2	1315.7	1223.3	1155.4	1139.5	1156.8	1236.3
17.5°	2654.5	2478.3	2134.6	1757.7	1460.1	1273.8	1161.2	1097.6	1081.7	1094.7	1182.8
20°	2842.3	2641.5	2206.8	1769.2	1435.6	1231.9	1106.3	1045.6	1034.1	1045.6	1117.9
22.5°	2996.8	2797.5	2281.9	1759.1	1402.4	1181.4	1054.3	1003.8	992.2	998.0	1064.4
25°	3051.7	2917.4	2359.9	1737.4	1367.7	1125.1	1008.1	969.1	953.2	960.4	1015.3
27.5°	2949.2	2936.2	2435.0	1705.7	1335.9	1080.3	966.2	930.1	922.9	928.7	979.2
30°	2700.8	2835.1	2495.7	1668.1	1291.2	1032.6	925.8	896.9	892.5	905.5	933.0
32.5°	2341.1	2604.0	2524.6	1620.5	1244.9	982.1	888.2	863.7	863.7	866.6	894.0
35°	1946.9	2284.8	2514.4	1565.6	1197.3	935.9	852.1	833.3	837.7	831.9	857.9
37.5°	1619.0	1941.1	2450.9	1515.0	1139.5	894.0	816.0	801.6	810.2	803.0	830.4
40°	1350.4	1627.7	2322.4	1455.8	1080.3	847.8	779.9	771.2	781.3	774.1	787.1
42.5°	1141.0	1367.7	2143.3	1393.7	1015.3	804.4	742.3	739.5	753.9	742.3	749.6
45°	985.0	1158.3	1936.7	1330.2	948.9	761.1	704.8	709.1	726.5	712.0	713.5
47.5°	865.1	996.5	1715.8	1257.9	876.7	717.8	667.2	677.4	699.0	680.2	674.5
50°	771.2	869.4	1504.9	1180.0	807.3	674.5	628.2	642.7	671.6	648.5	635.5
52.5°	694.7	766.9	1294.1	1097.6	738.0	628.2	589.3	610.9	642.7	618.1	596.5
55°	626.8	681.7	1116.4	1012.4	668.7	582.0	548.8	577.7	612.4	584.9	557.5
57.5°	564.7	608.0	970.5	924.3	603.7	534.4	509.8	540.2	579.1	550.3	517.0
60°	506.9	538.7	830.4	826.1	538.7	486.7	467.9	502.6	545.9	512.7	475.2
62.5°	450.6	476.6	701.9	727.9	475.2	437.6	426.1	463.6	509.8	473.7	431.8
65°	397.2	417.4	596.5	634.0	415.9	387.1	381.3	423.2	475.2	431.8	387.1
67.5°	342.3	358.2	509.8	543.0	353.8	335.1	335.1	381.3	437.6	389.9	340.8
70°	291.7	300.4	421.7	452.1	304.7	287.4	287.4	335.1	395.7	343.7	296.1
72.5°	242.6	249.9	339.4	365.4	251.3	238.3	244.1	291.7	346.6	300.4	251.3
75°	196.4	200.8	262.9	287.4	200.8	192.1	199.3	248.4	299.0	255.6	208.0
77.5°	153.1	154.5	202.2	216.6	153.1	148.8	156.0	206.5	247.0	209.4	164.6
80°	111.2	112.7	144.4	154.5	109.8	108.3	117.0	161.8	193.5	164.6	124.2
82.5°	72.2	75.1	96.8	99.7	70.8	72.2	80.9	117.0	140.1	119.9	88.1
85°	40.4	41.9	54.9	54.9	39.0	41.9	50.5	72.2	89.5	78.0	56.3
87.5°	15.9	15.9	21.7	21.7	15.9	18.8	23.1	39.0	44.8	40.4	28.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1552.6	1552.6	1552.6	1552.6	1552.6	1552.6
2.5°	1512.1	1571.3	1594.5	1640.7	1656.6	1656.6
5°	1476.0	1564.1	1632.0	1724.4	1775.0	1798.1
7.5°	1438.5	1555.5	1671.0	1815.4	1912.2	1948.3
10°	1400.9	1542.5	1708.6	1907.9	2055.2	2104.3
12.5°	1373.5	1532.4	1753.3	2007.5	2199.6	2271.8
15°	1322.9	1503.5	1767.8	2092.7	2346.9	2448.0
17.5°	1282.5	1480.4	1790.9	2173.6	2514.4	2654.5
20°	1236.3	1461.6	1799.5	2241.5	2689.2	2842.3
22.5°	1194.4	1422.6	1802.4	2323.8	2848.1	2996.8
25°	1136.6	1387.9	1779.3	2404.7	2957.8	3051.7
27.5°	1084.6	1354.7	1749.0	2484.1	2970.8	2949.2
30°	1042.8	1309.9	1717.2	2537.6	2858.2	2700.8
32.5°	987.9	1263.7	1659.4	2562.1	2598.2	2341.1
35°	941.7	1223.3	1608.9	2539.0	2264.6	1946.9
37.5°	904.1	1161.2	1558.3	2469.7	1918.0	1619.0
40°	853.6	1102.0	1497.7	2309.4	1608.9	1350.4
42.5°	810.2	1037.0	1434.1	2120.2	1350.4	1141.0
45°	766.9	969.1	1361.9	1905.0	1146.7	985.0
47.5°	722.1	901.2	1288.3	1699.9	987.9	865.1
50°	678.8	827.6	1216.1	1464.5	863.7	771.2
52.5°	635.5	756.8	1130.8	1272.4	762.6	694.7
55°	590.7	687.5	1034.1	1115.0	678.8	626.8
57.5°	543.0	623.9	940.2	961.9	603.7	564.7
60°	496.8	557.5	852.1	816.0	535.8	506.9
62.5°	447.7	488.2	751.0	709.1	473.7	450.6
65°	398.6	428.9	655.7	603.7	414.5	397.2
67.5°	346.6	374.1	563.3	508.4	355.3	342.3
70°	294.6	314.8	470.8	423.2	301.8	291.7
72.5°	248.4	255.6	385.6	340.8	251.3	242.6
75°	200.8	206.5	304.7	271.5	202.2	196.4
77.5°	160.3	161.8	234.0	208.0	157.4	153.1
80°	115.5	118.4	167.5	151.6	115.5	111.2
82.5°	80.9	79.4	112.7	102.5	80.9	72.2
85°	49.1	49.1	66.4	60.7	44.8	40.4
87.5°	24.6	24.6	30.3	27.4	18.8	15.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)