

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: P199512

Luminaire Tested: **S124-DIW-ULO-2-40-0048-1D-UDD-1-NA-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199512  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P28062 P28061)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124-DIW-ULO-2-40-0048-1D-UDD-1-NA-W  
Description: DEFINE 4-INCH DIRECT/INDIRECT WALL LED LUMINAIRE  
UPLIGHT LLO-4000K, NO LENS  
DOWNLIGHT LL2-4000K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

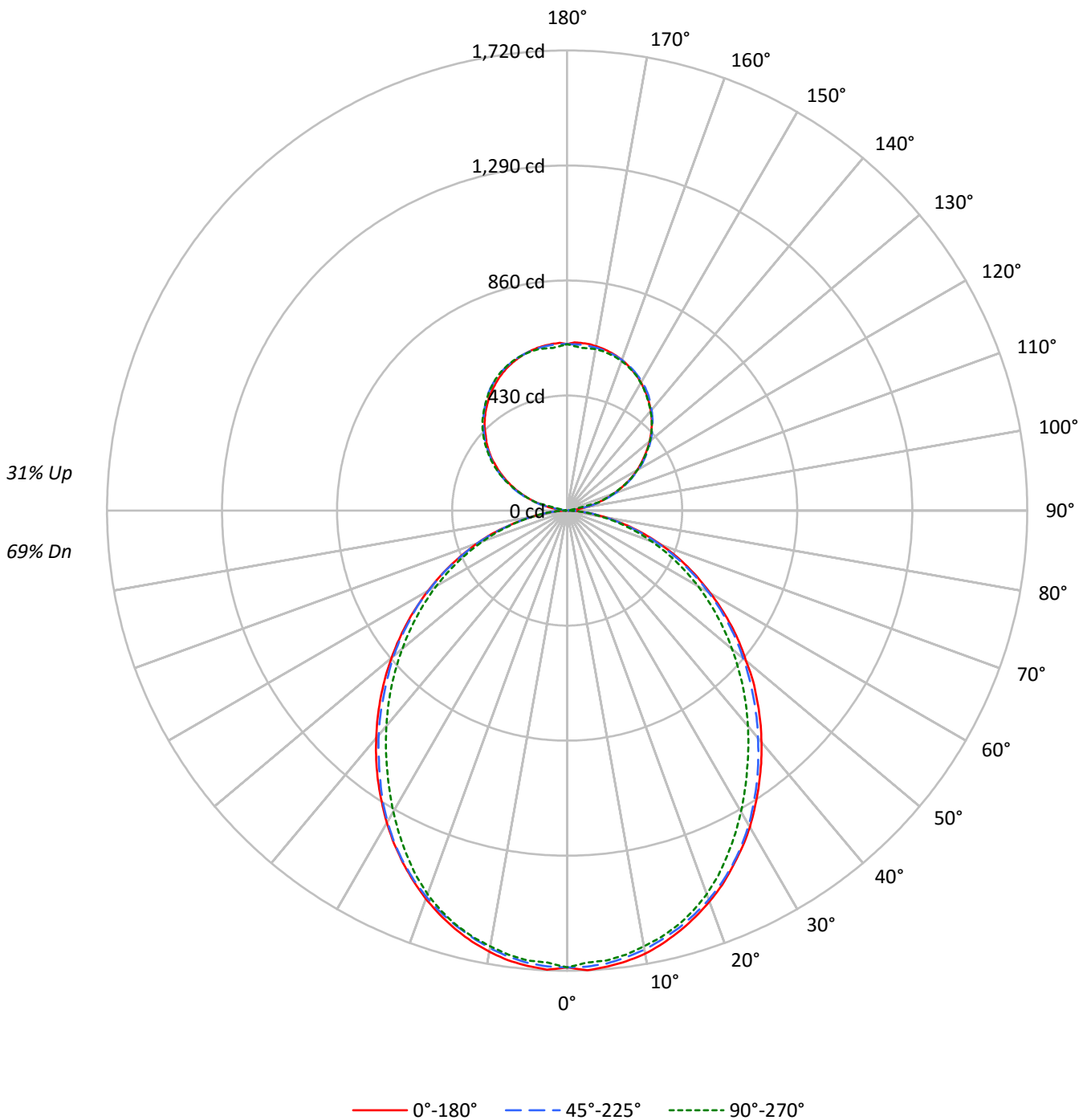
Lumens per Lamp: N/A  
Luminaire Lumens: 6096.9 lumens  
Efficiency: N/A  
Efficacy: 110.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.14 / 1.28  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4.08' x H: 0.38')  
CIE Type: Semi-Direct

Input Watts (W): 55.1  
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

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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	112	112	112	112	106	106	106	106	94	94	94	84	84	84	74	74	74	69
1	102	98	94	90	96	93	89	86	83	80	78	74	72	70	66	64	63	59
2	93	86	79	74	88	81	76	71	73	68	65	65	62	59	58	55	53	49
3	85	75	68	62	80	72	65	59	64	59	55	58	53	50	51	48	45	42
4	78	67	59	53	73	64	56	51	57	51	47	51	47	43	46	42	39	36
5	72	60	51	45	68	57	49	44	51	45	40	46	41	37	42	37	34	31
6	66	54	45	39	62	51	44	38	46	40	35	42	37	33	38	34	30	28
7	61	49	41	35	58	47	39	34	42	36	31	38	33	29	35	30	27	25
8	57	44	36	31	54	42	35	30	39	32	28	35	30	26	32	27	24	22
9	53	41	33	28	50	39	32	27	36	29	25	32	27	24	29	25	22	20
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	27	23	20	18

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

	0°	90°	180°
0°	13503	13503	13503
5°	13478	12198	13454
10°	13289	11081	13232
15°	13000	10085	12934
20°	12668	9110	12576
25°	12265	8124	12153
30°	11843	7195	11691
35°	11340	6338	11180
40°	10834	5581	10646
45°	10288	4884	10088
50°	9673	4226	9501
55°	9122	3615	8883
60°	8437	3029	8198
65°	7762	2457	7456
70°	6900	1891	6575
75°	5803	1329	5379
80°	4360	809	4082
85°	2559	358	2421



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	160.7	2.6
10°-20°	453.2	7.4
20°-30°	663.9	10.9
30°-40°	760.9	12.5
40°-50°	750.1	12.3
50°-60°	646.6	10.6
60°-70°	471.4	7.7
70°-80°	257.1	4.2
80°-90°	67.5	1.1
90°-100°	16.2	0.3
100°-110°	125.7	2.1
110°-120°	243.3	4.0
120°-130°	316.3	5.2
130°-140°	343.4	5.6
140°-150°	324.9	5.3
150°-160°	265.1	4.3
160°-170°	171.6	2.8
170°-180°	59.0	1.0
0°-30°	1277.8	21.0
0°-40°	2038.7	33.4
0°-60°	3435.4	56.3
0°-90°	4231.4	69.4
90°-120°	385.2	6.3
90°-150°	1369.8	22.5
90°-180°	1866.0	30.6
0°-180°	6096.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1707	1707	1707	1707	1707	
5°	1712	1699	1688	1697	1708	162
15°	1627	1614	1603	1606	1619	458
25°	1466	1462	1419	1449	1452	675
35°	1250	1237	1174	1219	1232	782
45°	1004	984	928	967	985	775
55°	748	736	683	720	729	668
65°	496	485	448	473	477	491
75°	255	246	226	235	236	271
85°	58	59	55	56	55	66
90°	2	4	3	4	2	5
95°	22	6	6	6	20	27
105°	125	129	123	126	122	132
115°	244	250	245	247	238	242
125°	352	360	355	352	346	315
135°	447	452	448	443	436	345
145°	522	528	519	521	511	326
155°	578	581	577	576	568	266
165°	614	611	606	608	607	173
175°	628	622	610	622	625	60
180°	622	622	622	622	622	



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CATALOG NUMBER: S124-DIW-ULO-2-40-0048-1D-UDD-1-NA-W

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4	1707.4
2.5°	1719.8	1700.2	1706.4	1702.2	1690.9	1702.2	1705.3	1699.1	1717.7
5°	1711.5	1692.9	1699.1	1692.9	1687.8	1691.9	1697.1	1689.8	1708.4
7.5°	1699.1	1679.5	1684.7	1679.5	1674.4	1678.5	1681.6	1675.4	1695.0
10°	1681.6	1660.9	1666.1	1659.9	1653.7	1657.8	1660.9	1654.7	1674.4
12.5°	1656.8	1637.2	1641.3	1637.2	1632.0	1633.1	1635.1	1628.9	1649.6
15°	1626.9	1607.3	1614.5	1610.4	1603.1	1607.3	1606.2	1599.0	1618.6
17.5°	1592.8	1574.2	1582.5	1578.4	1568.0	1574.2	1574.2	1562.9	1583.5
20°	1555.6	1536.0	1547.4	1537.1	1525.7	1531.9	1537.1	1523.6	1544.3
22.5°	1514.4	1493.7	1507.1	1488.5	1476.2	1483.4	1495.8	1481.3	1499.9
25°	1465.8	1449.3	1461.7	1435.9	1419.4	1429.7	1449.3	1434.9	1452.4
27.5°	1418.4	1401.8	1412.2	1383.3	1360.5	1374.0	1398.7	1386.4	1401.8
30°	1365.7	1352.3	1357.4	1323.4	1299.6	1314.1	1343.0	1335.8	1348.2
32.5°	1307.9	1297.6	1297.6	1261.4	1236.7	1253.2	1284.2	1282.1	1290.3
35°	1250.1	1243.9	1236.7	1197.4	1173.7	1189.2	1219.1	1227.4	1232.5
37.5°	1191.2	1187.1	1173.7	1135.5	1112.8	1129.3	1157.2	1169.6	1172.7
40°	1130.3	1128.3	1109.7	1073.6	1050.9	1067.4	1096.3	1111.8	1110.7
42.5°	1068.4	1070.5	1047.8	1012.7	990.0	1006.5	1033.3	1054.0	1048.8
45°	1004.4	1010.6	983.8	951.8	928.0	945.6	967.2	993.1	984.8
47.5°	942.5	949.7	921.8	888.8	866.1	884.7	906.3	934.2	921.8
50°	872.3	886.7	859.9	826.9	804.1	821.7	847.5	871.2	856.8
52.5°	811.4	821.7	798.0	766.0	744.3	758.7	784.5	808.3	792.8
55°	748.4	759.8	736.0	704.0	683.4	697.8	720.5	744.3	728.8
57.5°	682.3	693.7	672.0	643.1	623.5	639.0	662.7	679.2	664.8
60°	618.3	632.8	609.0	581.2	564.7	577.0	595.6	615.2	600.8
62.5°	556.4	569.8	547.1	521.3	505.8	517.2	536.8	552.3	538.8
65°	496.5	504.8	485.2	461.4	448.0	455.2	472.8	490.3	476.9
67.5°	435.6	443.9	424.3	403.6	390.2	397.4	411.9	428.4	416.0
70°	373.7	380.9	364.4	345.8	334.5	341.7	355.1	367.5	356.1
72.5°	314.8	320.0	304.5	290.1	281.8	287.0	296.3	307.6	302.5
75°	255.0	261.2	245.7	233.3	226.1	228.1	235.4	244.7	236.4
77.5°	198.2	204.4	192.0	182.7	178.6	179.6	184.8	192.0	181.7
80°	145.6	150.7	143.5	135.2	131.1	133.2	136.3	140.4	136.3
82.5°	98.1	103.2	98.1	92.9	89.8	91.9	92.9	95.0	91.9
85°	57.8	61.9	58.8	55.7	54.7	54.7	55.7	57.8	54.7
87.5°	25.8	28.9	26.8	24.8	21.7	22.7	23.7	25.8	23.7
90°	2.1	5.2	4.1	3.1	3.1	3.1	4.1	5.2	2.1
92.5°	7.0	3.7	3.7	3.7	3.7	3.7	3.7	4.1	4.8
95°	21.7	14.0	5.5	5.9	5.9	5.9	5.9	9.6	19.5
97.5°	42.4	49.4	10.7	7.0	7.0	7.0	10.7	46.8	39.4
100°	67.1	73.7	53.8	16.9	12.5	15.8	47.2	69.6	63.7
102.5°	94.7	103.2	99.1	55.6	32.1	47.5	96.2	98.7	92.1
105°	125.3	132.6	128.6	130.4	123.4	125.6	125.6	127.1	121.6
107.5°	155.5	161.7	159.5	158.1	152.5	154.0	157.7	156.9	150.7
110°	185.7	191.9	191.9	187.2	180.5	183.1	189.0	185.3	180.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	215.9	220.7	221.8	219.2	211.5	215.2	218.5	212.6	209.3
115°	244.3	251.3	250.5	250.9	245.4	245.4	247.2	242.8	238.0
117.5°	274.8	280.0	278.9	279.3	275.6	274.1	273.7	270.8	265.6
120°	301.7	307.6	308.4	305.8	303.2	300.3	302.1	298.1	292.5
122.5°	327.2	333.8	334.9	332.3	329.7	326.4	327.9	323.5	318.3
125°	352.2	359.6	359.6	357.7	355.2	351.8	351.5	347.8	345.9
127.5°	377.3	385.7	384.3	382.4	380.2	376.5	374.7	372.5	369.5
130°	402.7	408.6	407.1	405.6	404.2	399.7	398.3	396.1	392.7
132.5°	425.9	429.2	429.9	427.0	427.0	421.5	421.1	418.5	412.6
135°	447.3	450.6	452.1	447.6	447.6	442.1	443.2	439.5	435.8
137.5°	467.5	470.1	471.9	466.8	467.2	462.0	463.8	457.6	456.1
140°	487.1	488.2	491.5	485.9	485.2	480.8	483.4	477.1	475.3
142.5°	504.4	505.8	509.9	504.0	502.2	498.8	502.2	494.4	493.3
145°	522.1	522.4	528.3	521.3	519.1	516.5	520.6	511.4	510.6
147.5°	537.5	536.8	543.8	537.9	535.7	533.1	537.5	526.8	526.8
150°	551.9	551.2	557.8	553.0	550.8	548.6	551.2	541.2	541.2
152.5°	565.9	563.3	569.9	565.9	565.2	561.8	564.1	554.5	555.9
155°	577.7	575.1	581.4	578.1	576.6	574.0	575.5	566.3	568.5
157.5°	589.1	585.1	590.6	589.1	586.5	585.1	585.1	577.7	580.3
160°	599.1	594.3	599.1	596.8	594.6	592.8	594.3	586.9	590.2
162.5°	607.2	602.7	605.3	602.4	601.3	598.3	601.3	595.4	599.1
165°	613.8	609.0	610.8	606.8	606.1	603.8	607.5	603.5	607.2
167.5°	619.7	615.3	614.5	610.5	610.5	607.5	611.9	609.7	613.4
170°	623.7	620.1	618.6	612.7	612.7	610.1	616.4	614.5	618.9
172.5°	627.8	623.0	620.4	614.2	611.6	611.9	619.7	618.2	622.6
175°	628.5	624.8	621.9	615.3	610.5	613.8	621.5	621.9	625.2
177.5°	629.3	625.6	621.9	616.4	615.6	614.9	623.0	622.6	627.4
180°	621.9	621.9	621.9	621.9	621.9	621.9	621.9	621.9	621.9

(END OF REPORT)