

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: P199488

Luminaire Tested: **S124-DIW-U2-1-40-0048-1D-UDD-1-NA-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P199488  
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-U2-1-40-0048-1D-UDD-1-NA-W  
Description: DEFINE 4-INCH DIRECT/INDIRECT WALL LED LUMINAIRE  
UPLIGHT LL2-4000K, NO LENS  
DOWNLIGHT LL1-4000K, SATIN WHITE DIFFUSER  
Light Source: -  
757G  
Ballast/Driver: ELECTRONIC DRIVERS

**Summary**

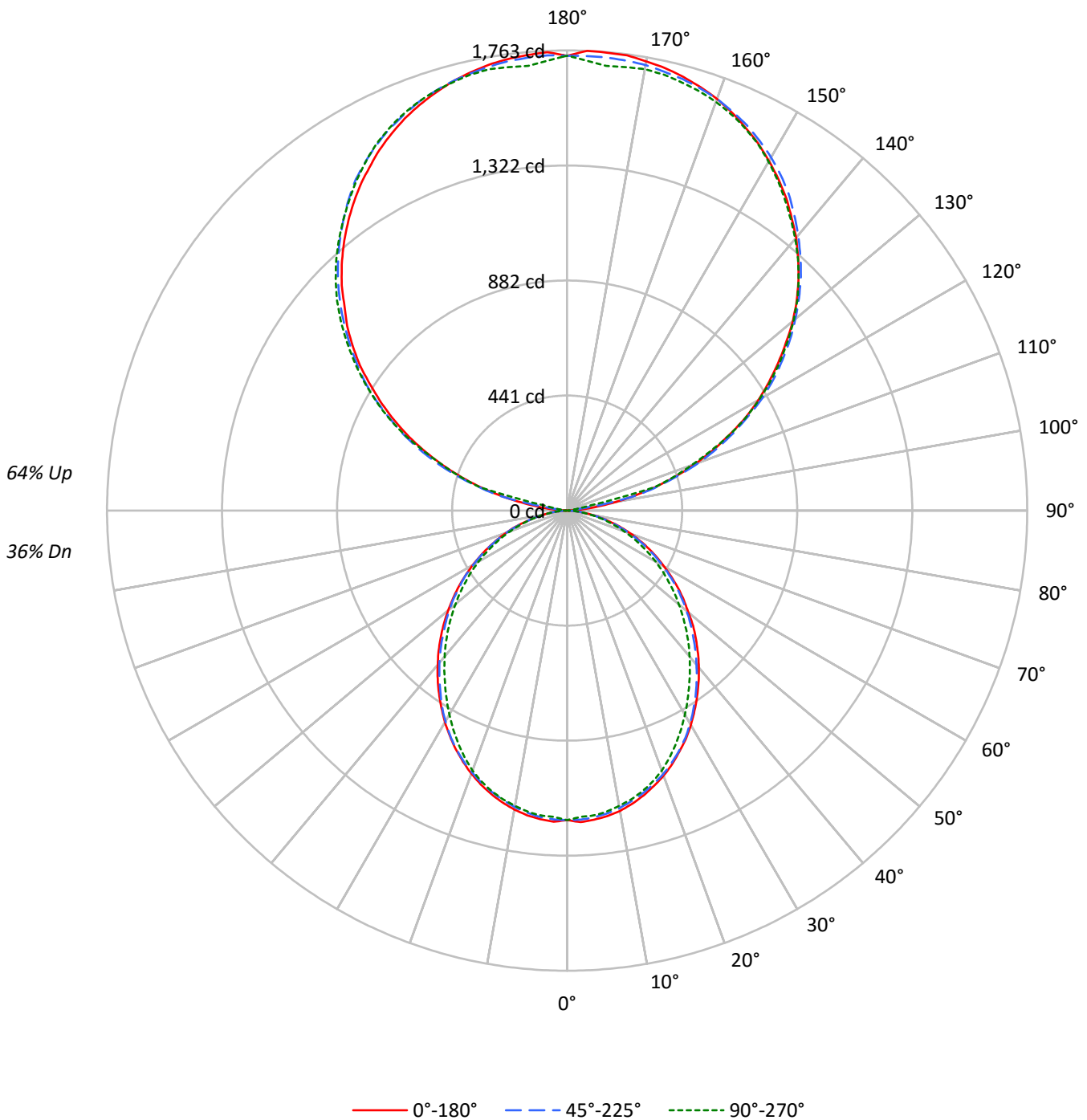
Lumens per Lamp: N/A  
Luminaire Lumens: 8164.8 lumens  
Efficiency: N/A  
Efficacy: 124.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.14 / 1.28  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4.08' x H: 0.38')  
CIE Type: Semi-Indirect

Input Watts (W): 65.5  
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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	43	43	43	36
1	95	91	87	83	86	82	79	76	66	64	62	52	50	49	38	37	37	30
2	86	79	73	68	78	72	67	62	58	55	51	45	43	41	34	32	31	26
3	79	70	62	57	71	63	57	52	51	47	43	40	37	35	30	28	26	22
4	72	61	54	48	65	56	49	44	46	41	37	36	32	30	27	25	23	19
5	66	55	47	41	60	50	43	38	41	36	32	32	29	26	24	22	20	16
6	61	49	41	35	55	45	38	33	37	31	28	29	25	22	22	19	17	14
7	56	44	36	31	51	40	34	29	33	28	24	26	23	20	20	17	16	13
8	52	40	32	27	47	37	30	25	30	25	21	24	20	18	18	16	14	11
9	48	36	29	24	44	33	27	23	28	23	19	22	18	16	17	14	13	10
10	45	33	26	22	41	31	24	20	25	21	17	20	17	14	16	13	11	9

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

	0°	90°	180°
0°	9378	9378	9378
5°	9362	8472	9345
10°	9230	7697	9190
15°	9029	7005	8983
20°	8799	6327	8735
25°	8519	5643	8441
30°	8226	4997	8120
35°	7876	4402	7766
40°	7525	3876	7395
45°	7146	3393	7006
50°	6719	2936	6599
55°	6336	2510	6170
60°	5861	2104	5694
65°	5392	1706	5178
70°	4791	1313	4568
75°	4030	923	3737
80°	3027	562	2833
85°	1780	249	1682



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	111.7	1.4
10°-20°	314.8	3.9
20°-30°	461.1	5.6
30°-40°	528.5	6.5
40°-50°	521.0	6.4
50°-60°	449.1	5.5
60°-70°	327.4	4.0
70°-80°	178.6	2.2
80°-90°	46.9	0.6
90°-100°	44.4	0.5
100°-110°	352.2	4.3
110°-120°	681.6	8.3
120°-130°	886.3	10.9
130°-140°	962.1	11.8
140°-150°	910.4	11.2
150°-160°	742.7	9.1
160°-170°	480.7	5.9
170°-180°	165.4	2.0
0°-30°	887.5	10.9
0°-40°	1416.0	17.3
0°-60°	2386.1	29.2
0°-90°	2939.0	36.0
90°-120°	1078.2	13.2
90°-150°	3837.0	47.0
90°-180°	5226.0	64.0
0°-180°	8164.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1186	1186	1186	1186	1186	
5°	1189	1180	1172	1179	1187	113
15°	1130	1121	1114	1116	1124	318
25°	1018	1015	986	1007	1009	469
35°	868	859	815	847	856	543
45°	698	683	645	672	684	538
55°	520	511	475	500	506	464
65°	345	337	311	328	331	341
75°	177	171	157	164	164	188
85°	40	41	38	39	38	46
90°	1	3	2	3	1	6
95°	61	16	16	16	55	77
105°	351	360	346	352	341	371
115°	684	702	688	693	667	678
125°	987	1008	995	985	969	883
135°	1253	1267	1254	1242	1221	966
145°	1463	1480	1454	1459	1431	915
155°	1619	1629	1616	1612	1593	747
165°	1720	1712	1698	1702	1701	486
175°	1761	1742	1710	1742	1752	168
180°	1742	1742	1742	1742	1742	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1185.9	1185.9	1185.9	1185.9	1185.9	1185.9	1185.9	1185.9	1185.9
2.5°	1194.5	1180.9	1185.2	1182.3	1174.4	1182.3	1184.5	1180.2	1193.1
5°	1188.8	1175.9	1180.2	1175.9	1172.3	1175.1	1178.7	1173.7	1186.6
7.5°	1180.2	1166.5	1170.1	1166.5	1163.0	1165.8	1168.0	1163.7	1177.3
10°	1168.0	1153.6	1157.2	1152.9	1148.6	1151.5	1153.6	1149.3	1163.0
12.5°	1150.8	1137.1	1140.0	1137.1	1133.6	1134.3	1135.7	1131.4	1145.7
15°	1130.0	1116.3	1121.4	1118.5	1113.5	1116.3	1115.6	1110.6	1124.2
17.5°	1106.3	1093.4	1099.1	1096.3	1089.1	1093.4	1093.4	1085.5	1099.9
20°	1080.5	1066.9	1074.8	1067.6	1059.7	1064.0	1067.6	1058.3	1072.6
22.5°	1051.8	1037.5	1046.8	1033.9	1025.3	1030.3	1038.9	1028.9	1041.8
25°	1018.1	1006.6	1015.3	997.3	985.9	993.0	1006.6	996.6	1008.8
27.5°	985.1	973.7	980.8	960.8	945.0	954.3	971.5	962.9	973.7
30°	948.6	939.3	942.8	919.2	902.7	912.7	932.8	927.8	936.4
32.5°	908.4	901.3	901.3	876.2	858.9	870.4	891.9	890.5	896.2
35°	868.3	864.0	858.9	831.7	815.2	826.0	846.8	852.5	856.1
37.5°	827.4	824.5	815.2	788.7	772.9	784.4	803.7	812.3	814.5
40°	785.1	783.7	770.8	745.7	729.9	741.4	761.4	772.2	771.5
42.5°	742.1	743.5	727.7	703.4	687.6	699.1	717.7	732.0	728.5
45°	697.6	701.9	683.3	661.1	644.6	656.8	671.8	689.7	684.0
47.5°	654.6	659.6	640.3	617.3	601.6	614.5	629.5	648.9	640.3
50°	605.9	615.9	597.2	574.3	558.5	570.7	588.6	605.1	595.1
52.5°	563.6	570.7	554.2	532.0	516.9	527.0	544.9	561.4	550.6
55°	519.8	527.7	511.2	489.0	474.6	484.7	500.5	516.9	506.2
57.5°	473.9	481.8	466.8	446.7	433.1	443.8	460.3	471.8	461.7
60°	429.5	439.5	423.0	403.7	392.2	400.8	413.7	427.3	417.3
62.5°	386.5	395.8	380.0	362.1	351.3	359.2	372.8	383.6	374.3
65°	344.9	350.6	337.0	320.5	311.2	316.2	328.4	340.6	331.2
67.5°	302.6	308.3	294.7	280.3	271.0	276.0	286.1	297.5	288.9
70°	259.5	264.6	253.1	240.2	232.3	237.3	246.6	255.2	247.4
72.5°	218.7	222.3	211.5	201.5	195.7	199.3	205.8	213.7	210.1
75°	177.1	181.4	170.6	162.0	157.0	158.5	163.5	169.9	164.2
77.5°	137.7	142.0	133.4	126.9	124.0	124.8	128.3	133.4	126.2
80°	101.1	104.7	99.7	93.9	91.1	92.5	94.6	97.5	94.6
82.5°	68.1	71.7	68.1	64.5	62.4	63.8	64.5	66.0	63.8
85°	40.2	43.0	40.9	38.7	38.0	38.0	38.7	40.2	38.0
87.5°	17.9	20.1	18.6	17.2	15.1	15.8	16.5	17.9	16.5
90°	1.4	3.6	2.9	2.2	2.2	2.2	2.9	3.6	1.4
92.5°	19.6	10.3	10.3	10.3	10.3	10.3	10.3	11.4	13.4
95°	60.9	39.2	15.5	16.5	16.5	16.5	16.5	26.8	54.7
97.5°	118.7	138.3	29.9	19.6	19.6	19.6	29.9	131.1	110.5
100°	187.9	206.5	150.7	47.5	35.1	44.4	132.1	195.1	178.6
102.5°	265.3	289.0	277.7	155.9	89.8	133.2	269.4	276.7	258.1
105°	351.0	371.6	360.3	365.4	345.8	352.0	352.0	356.1	340.7
107.5°	435.6	453.2	447.0	442.8	427.4	431.5	441.8	439.8	422.2
110°	520.3	537.8	537.8	524.4	505.8	513.0	529.6	519.2	504.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	604.9	618.3	621.4	614.2	592.5	602.9	612.1	595.6	586.3
115°	684.4	704.0	701.9	703.0	687.5	687.5	692.7	680.3	666.9
117.5°	770.1	784.5	781.4	782.5	772.1	768.0	767.0	758.7	744.3
120°	845.4	862.0	864.0	856.8	849.6	841.3	846.5	835.1	819.6
122.5°	916.7	935.2	938.3	931.1	923.9	914.6	918.7	906.3	891.9
125°	986.9	1007.5	1007.5	1002.3	995.1	985.8	984.8	974.5	969.3
127.5°	1057.1	1080.8	1076.7	1071.5	1065.3	1055.0	1049.8	1043.6	1035.4
130°	1128.3	1144.8	1140.7	1136.5	1132.4	1120.0	1115.9	1109.7	1100.4
132.5°	1193.3	1202.6	1204.7	1196.4	1196.4	1180.9	1179.9	1172.7	1156.2
135°	1253.2	1262.5	1266.6	1254.2	1254.2	1238.7	1241.8	1231.5	1221.2
137.5°	1310.0	1317.2	1322.3	1307.9	1308.9	1294.5	1299.6	1282.1	1278.0
140°	1364.7	1367.8	1377.1	1361.6	1359.5	1347.1	1354.3	1336.8	1331.6
142.5°	1413.2	1417.3	1428.7	1412.2	1407.0	1397.7	1407.0	1385.3	1382.2
145°	1462.7	1463.8	1480.3	1460.7	1454.5	1447.3	1458.6	1432.8	1430.7
147.5°	1506.1	1504.0	1523.6	1507.1	1500.9	1493.7	1506.1	1476.2	1476.2
150°	1546.4	1544.3	1562.9	1549.5	1543.3	1537.1	1544.3	1516.4	1516.4
152.5°	1585.6	1578.4	1596.9	1585.6	1583.5	1574.2	1580.4	1553.6	1557.7
155°	1618.6	1611.4	1628.9	1619.6	1615.5	1608.3	1612.4	1586.6	1592.8
157.5°	1650.6	1639.3	1654.7	1650.6	1643.4	1639.3	1639.3	1618.6	1625.8
160°	1678.5	1665.1	1678.5	1672.3	1666.1	1660.9	1665.1	1644.4	1653.7
162.5°	1701.2	1688.8	1696.0	1687.8	1684.7	1676.4	1684.7	1668.2	1678.5
165°	1719.8	1706.4	1711.5	1700.2	1698.1	1691.9	1702.2	1690.9	1701.2
167.5°	1736.3	1723.9	1721.8	1710.5	1710.5	1702.2	1714.6	1708.4	1718.7
170°	1747.6	1737.3	1733.2	1716.7	1716.7	1709.5	1727.0	1721.8	1734.2
172.5°	1759.0	1745.6	1738.4	1720.8	1713.6	1714.6	1736.3	1732.2	1744.6
175°	1761.1	1750.7	1742.5	1723.9	1710.5	1719.8	1741.5	1742.5	1751.8
177.5°	1763.1	1752.8	1742.5	1727.0	1724.9	1722.9	1745.6	1744.6	1758.0
180°	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5

(END OF REPORT)