

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P243417

Luminaire Tested: S123RDRP-H1000D940-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243417
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-64)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDRP-H1000D940-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

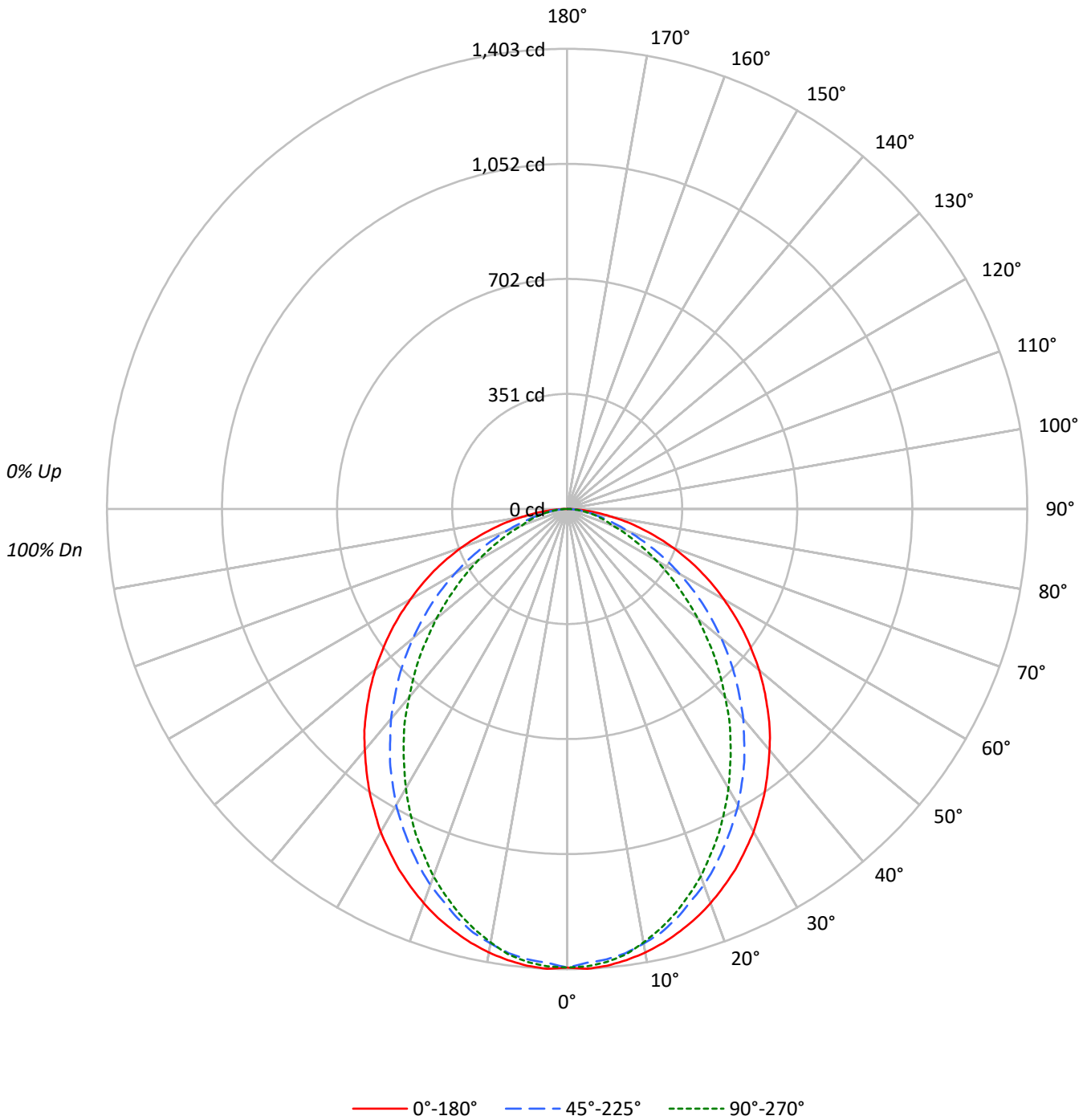
Lumens per Lamp: N/A
Luminaire Lumens: 3156.3 lumens
Efficiency: N/A
Efficacy: 100.2 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

Input Watts (W): 31.5
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: 24 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	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	110	105	101	98	107	103	99	96	99	96	93	95	93	90	91	89	88	86					86			
2	101	93	87	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73					73			
3	92	82	75	69	90	81	74	68	78	72	67	75	70	66	73	68	65	62					62			
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56	54					54			
5	78	66	58	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47					47			
6	73	60	51	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42					42			
7	67	55	46	40	66	54	46	40	52	45	40	51	44	40	49	44	39	37					37			
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	34					34			
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30					30			
10	55	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	29	28					28			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	16945	16945	16945
5°	17010	16774	16867
10°	16903	16559	16519
15°	16721	16209	16007
20°	16495	15733	15373
25°	16227	15164	14618
30°	15915	14593	13765
35°	15555	13933	12853
40°	15189	13217	11842
45°	14816	12425	10895
50°	14416	11561	9800
55°	13933	10664	8690
60°	13379	9605	7573
65°	12841	8406	6468
70°	12099	7038	5174
75°	11165	5582	4927
80°	9745	4949	4495
85°	8219	4325	4186

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 14816 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	131.5	4.2
10°-20°	366.1	11.6
20°-30°	527.1	16.7
30°-40°	593.7	18.8
40°-50°	567.2	18.0
50°-60°	463.8	14.7
60°-70°	311.4	9.9
70°-80°	155.3	4.9
80°-90°	40.2	1.3
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°	1024.7	32.5
0°-40°	1618.4	51.3
0°-60°	2649.4	83.9
0°-90°	3156.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3156.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1398	1398	1398	1398	1398	
5°	1398	1393	1379	1389	1386	133
15°	1332	1323	1292	1284	1276	376
25°	1213	1186	1134	1109	1093	558
35°	1051	1010	942	889	869	657
45°	864	813	725	661	636	667
55°	659	600	505	435	411	589
65°	448	386	293	239	226	443
75°	238	182	119	107	105	253
85°	59	34	31	29	30	69
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0
2.5°	1403.3	1400.1	1395.8	1396.9	1398.0	1399.0	1399.0	1398.0	1394.7	1390.5	1385.1
5°	1398.0	1394.7	1390.5	1390.5	1392.6	1392.6	1392.6	1391.5	1388.3	1384.0	1378.6
7.5°	1387.2	1385.1	1379.7	1380.8	1381.9	1381.9	1381.9	1380.8	1376.5	1371.1	1365.8
10°	1373.3	1370.1	1365.8	1365.8	1366.8	1366.8	1366.8	1364.7	1359.3	1352.9	1345.4
12.5°	1355.0	1351.8	1347.5	1347.5	1347.5	1347.5	1347.5	1344.3	1335.7	1329.2	1322.8
15°	1332.5	1329.2	1325.0	1325.0	1323.9	1322.8	1320.7	1315.3	1307.8	1300.3	1291.7
17.5°	1307.8	1303.5	1298.1	1297.0	1296.0	1294.9	1291.7	1288.4	1277.7	1267.0	1254.1
20°	1278.8	1274.5	1269.1	1268.0	1264.8	1261.6	1259.5	1253.0	1241.2	1228.3	1219.7
22.5°	1246.6	1242.3	1236.9	1234.8	1228.3	1226.2	1223.0	1213.3	1200.4	1188.6	1178.9
25°	1213.3	1207.9	1201.5	1198.3	1190.7	1186.4	1185.4	1171.4	1158.5	1145.6	1133.8
27.5°	1174.6	1170.3	1165.0	1158.5	1151.0	1145.6	1143.5	1130.6	1114.5	1099.5	1088.7
30°	1137.1	1130.6	1125.2	1117.7	1107.0	1101.6	1097.3	1084.4	1070.5	1052.2	1042.6
32.5°	1093.0	1088.7	1082.3	1074.8	1064.0	1059.7	1053.3	1037.2	1018.9	1006.1	991.0
35°	1051.2	1046.9	1037.2	1029.7	1014.7	1010.4	1003.9	990.0	969.6	954.5	941.6
37.5°	1005.0	999.6	992.1	981.4	968.5	963.1	954.5	940.6	916.9	901.9	885.8
40°	959.9	952.4	943.8	932.0	919.1	913.7	906.2	885.8	866.5	849.3	835.3
42.5°	914.8	906.2	895.5	884.7	870.8	863.3	854.7	835.3	813.9	797.8	778.4
45°	864.3	857.9	847.2	834.3	818.2	812.8	803.1	782.7	761.3	744.1	724.8
47.5°	814.9	807.4	796.7	783.8	767.7	760.2	750.5	730.1	708.6	687.2	670.0
50°	764.5	757.0	744.1	731.2	716.2	706.5	697.9	677.5	653.9	634.6	613.1
52.5°	710.8	704.4	693.6	680.7	661.4	653.9	645.3	622.8	600.2	577.7	558.3
55°	659.3	655.0	642.1	629.2	608.8	600.2	591.6	568.0	545.4	522.9	504.6
57.5°	605.6	602.3	589.5	574.4	556.2	547.6	536.9	513.2	491.8	469.2	449.9
60°	551.9	548.7	535.8	520.7	503.6	492.8	481.0	462.8	438.1	417.7	396.2
62.5°	500.3	496.1	485.3	469.2	449.9	439.1	428.4	406.9	384.4	362.9	343.6
65°	447.7	442.4	429.5	413.4	395.1	385.5	374.7	354.3	331.8	311.4	293.1
67.5°	395.1	389.8	375.8	362.9	341.4	331.8	322.1	301.7	280.2	259.8	242.7
70°	341.4	336.1	325.3	308.2	289.9	280.2	270.6	249.1	229.8	214.7	198.6
72.5°	288.8	284.5	273.8	257.7	240.5	230.8	220.1	201.9	184.7	168.6	156.8
75°	238.4	231.9	222.3	207.2	190.0	181.5	173.9	155.7	139.6	128.8	119.2
77.5°	190.0	182.5	171.8	160.0	143.9	135.3	127.8	112.7	102.0	94.5	92.3
80°	139.6	138.5	127.8	114.9	100.9	94.5	87.0	77.3	74.1	73.0	70.9
82.5°	97.7	93.4	84.8	73.0	62.3	58.0	55.8	53.7	51.5	51.5	49.4
85°	59.1	54.8	47.2	37.6	35.4	34.4	33.3	33.3	32.2	31.1	31.1
87.5°	25.8	21.5	16.1	15.0	14.0	14.0	15.0	15.0	15.0	14.0	14.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0
2.5°	1387.2	1392.6	1395.8	1396.9	1396.9	1396.9	1398.0	1398.0	1396.9	1395.8
5°	1379.7	1385.1	1387.2	1389.4	1389.4	1389.4	1389.4	1389.4	1388.3	1386.2
7.5°	1367.9	1371.1	1374.3	1373.3	1373.3	1372.2	1371.1	1372.2	1370.1	1370.1
10°	1346.4	1349.6	1351.8	1348.6	1348.6	1349.6	1349.6	1348.6	1345.4	1342.1
12.5°	1321.7	1325.0	1321.7	1322.8	1320.7	1318.5	1317.4	1316.4	1313.1	1311.0
15°	1289.5	1289.5	1287.4	1287.4	1284.2	1279.9	1278.8	1279.9	1275.6	1275.6
17.5°	1254.1	1251.9	1248.7	1246.6	1245.5	1245.5	1241.2	1241.2	1235.8	1234.8
20°	1215.4	1213.3	1210.1	1204.7	1202.6	1203.6	1199.3	1196.1	1192.9	1191.8
22.5°	1174.6	1169.3	1166.0	1160.7	1156.4	1156.4	1153.2	1147.8	1144.6	1141.4
25°	1128.5	1123.1	1116.7	1112.4	1109.1	1103.8	1101.6	1097.3	1094.1	1093.0
27.5°	1081.2	1072.6	1064.0	1059.7	1057.6	1051.2	1047.9	1045.8	1039.3	1038.3
30°	1030.8	1024.3	1013.6	1006.1	1000.7	1001.8	994.3	990.0	986.7	983.5
32.5°	982.4	971.7	961.0	951.3	944.9	943.8	936.3	932.0	928.8	925.5
35°	927.7	916.9	904.1	895.5	889.0	885.8	878.3	876.1	870.8	868.6
37.5°	872.9	861.1	848.2	837.5	833.2	825.7	822.5	817.1	812.8	812.8
40°	819.2	805.3	792.4	779.5	774.1	769.8	761.3	757.0	751.6	748.4
42.5°	763.4	747.3	735.5	723.7	716.2	712.9	703.3	697.9	692.5	691.5
45°	707.6	691.5	676.4	664.6	661.4	655.0	645.3	637.8	636.7	635.6
47.5°	650.7	634.6	620.6	607.7	603.4	595.9	589.5	584.1	577.7	574.4
50°	595.9	579.8	564.8	550.8	545.4	539.0	532.6	525.0	522.9	519.7
52.5°	541.1	522.9	506.8	493.9	489.6	484.2	476.7	470.3	467.1	464.9
55°	485.3	467.1	453.1	440.2	434.9	431.6	423.0	417.7	413.4	411.2
57.5°	430.6	412.3	399.4	389.8	382.2	379.0	370.4	365.1	362.9	361.8
60°	379.0	361.8	347.9	338.2	331.8	328.6	322.1	316.7	313.5	312.4
62.5°	327.5	312.4	299.6	289.9	285.6	281.3	275.9	271.6	268.4	268.4
65°	278.1	263.1	251.2	243.7	239.4	237.3	230.8	228.7	225.5	225.5
67.5°	229.8	219.0	210.4	200.8	197.6	197.6	191.1	189.0	186.8	186.8
70°	187.9	178.2	168.6	163.2	160.0	158.9	153.5	150.3	148.2	146.0
72.5°	147.1	138.5	129.9	128.8	128.8	127.8	127.8	125.6	125.6	126.7
75°	112.7	110.6	108.4	108.4	107.4	106.3	106.3	105.2	105.2	105.2
77.5°	90.2	89.1	88.0	87.0	87.0	85.9	84.8	84.8	84.8	84.8
80°	68.7	67.6	67.6	66.6	65.5	66.6	65.5	65.5	64.4	64.4
82.5°	48.3	48.3	48.3	47.2	47.2	47.2	47.2	46.2	46.2	47.2
85°	30.1	30.1	30.1	30.1	29.0	30.1	29.0	29.0	29.0	30.1
87.5°	12.9	14.0	12.9	14.0	14.0	12.9	12.9	12.9	12.9	12.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	21.36	22.91	21.72	23.22	23.54	18.55	20.10	18.92	20.42	20.73
	3H	23.18	24.58	23.56	24.91	25.27	19.62	21.02	20.00	21.35	21.71
	4H	23.87	25.18	24.27	25.53	25.91	20.02	21.33	20.42	21.68	22.06
	6H	24.37	25.58	24.78	25.95	26.34	20.34	21.56	20.76	21.92	22.31
	8H	24.53	25.68	24.95	26.07	26.47	20.45	21.61	20.88	22.00	22.40
	12H	24.63	25.73	25.06	26.11	26.54	20.53	21.63	20.96	22.02	22.44
4H	2H	21.60	22.91	22.00	23.26	23.63	19.27	20.58	19.67	20.93	21.31
	3H	23.59	24.68	24.00	25.08	25.48	20.49	21.58	20.90	21.98	22.38
	4H	24.38	25.36	24.81	25.77	26.21	20.98	21.96	21.41	22.37	22.81
	6H	24.99	25.85	25.45	26.29	26.75	21.40	22.25	21.86	22.70	23.15
	8H	25.20	26.00	25.66	26.44	26.91	21.54	22.34	22.01	22.79	23.25
	12H	25.34	26.06	25.82	26.53	27.00	21.65	22.37	22.14	22.85	23.32
8H	4H	24.41	25.21	24.88	25.66	26.12	21.29	22.09	21.76	22.54	23.00
	6H	25.08	25.74	25.58	26.23	26.71	21.81	22.47	22.31	22.96	23.44
	8H	25.32	25.91	25.83	26.42	26.91	22.01	22.61	22.53	23.12	23.60
	12H	25.51	26.04	26.02	26.53	27.09	22.19	22.71	22.70	23.20	23.77
12H	4H	24.40	25.12	24.88	25.59	26.06	21.33	22.05	21.81	22.53	23.00
	6H	25.07	25.66	25.58	26.17	26.66	21.87	22.46	22.38	22.97	23.46
	8H	25.34	25.87	25.85	26.36	26.92	22.12	22.65	22.63	23.14	23.70