

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: P243393

Luminaire Tested: S123RDRP-H1000D830-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243393
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-H1000D830-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

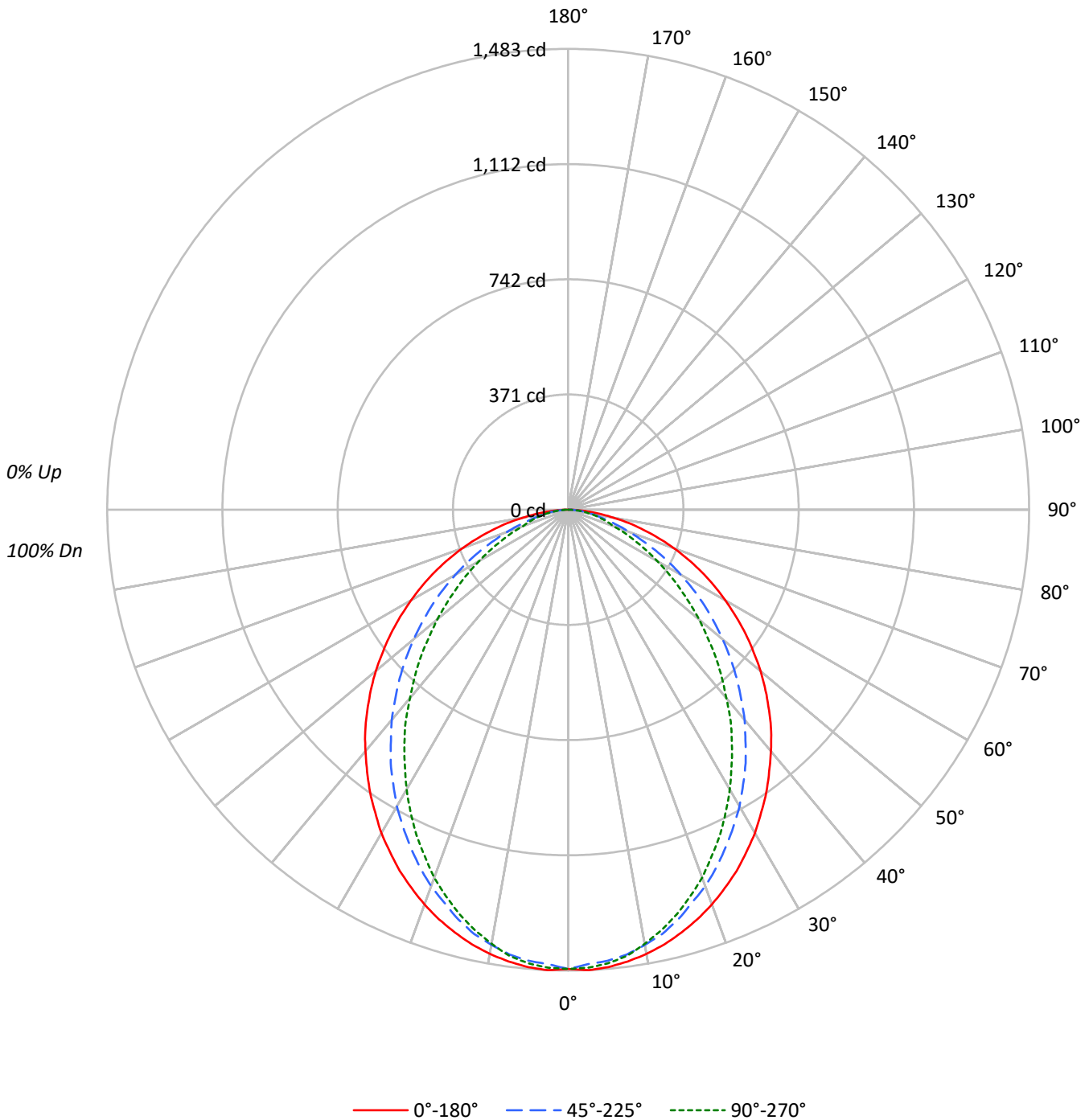
Lumens per Lamp: N/A
Luminaire Lumens: 3336.3 lumens
Efficiency: N/A
Efficacy: 105.9 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P243393

CATALOG NUMBER: S123RDRP-H1000D830-X4F0-XX-UDD-F-W

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	99	96	99	96	93	95	93	90	91	89	88	86
2	101	93	87	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73
3	92	82	75	69	90	81	74	68	78	72	67	75	70	66	73	68	65	62
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56	54
5	78	66	58	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47
6	73	60	51	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42
7	67	55	46	40	66	54	46	40	52	45	40	51	44	40	49	44	39	37
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	34
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30
10	55	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	29	28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17912	17912	17912
5°	17980	17731	17828
10°	17867	17502	17460
15°	17674	17133	16920
20°	17436	16631	16250
25°	17153	16029	15451
30°	16822	15424	14551
35°	16441	14728	13585
40°	16054	13972	12516
45°	15661	13132	11518
50°	15239	12220	10358
55°	14725	11272	9186
60°	14141	10153	8007
65°	13575	8885	6835
70°	12790	7442	5468
75°	11802	5901	5208
80°	10296	5228	4754
85°	8678	4576	4423

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 15661 cd/sqm



TEST NUMBER: P243393

CATALOG NUMBER: S123RDRP-H1000D830-X4F0-XX-UDD-F-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.0	4.2
10°-20°	387.0	11.6
20°-30°	557.1	16.7
30°-40°	627.6	18.8
40°-50°	599.5	18.0
50°-60°	490.2	14.7
60°-70°	329.2	9.9
70°-80°	164.2	4.9
80°-90°	42.4	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°	1083.1	32.5
0°-40°	1710.7	51.3
0°-60°	2800.4	83.9
0°-90°	3336.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3336.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1478	1478	1478	1478	1478	
5°	1478	1472	1457	1469	1465	140
15°	1408	1398	1365	1357	1348	397
25°	1282	1254	1198	1172	1155	590
35°	1111	1068	995	940	918	695
45°	914	859	766	699	672	705
55°	697	634	533	460	435	622
65°	473	407	310	253	238	468
75°	252	192	126	114	111	267
85°	62	36	33	31	32	73
90°	0	0	0	0	0	



TEST NUMBER: P243393

CATALOG NUMBER: S123RDRP-H1000D830-X4F0-XX-UDD-F-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1477.7	1477.7	1477.7	1477.7	1477.7	1477.7	1477.7	1477.7	1477.7	1477.7	1477.7
2.5°	1483.3	1479.9	1475.4	1476.5	1477.7	1478.8	1478.8	1477.7	1474.3	1469.7	1464.0
5°	1477.7	1474.3	1469.7	1469.7	1472.0	1472.0	1472.0	1470.8	1467.4	1462.9	1457.2
7.5°	1466.3	1464.0	1458.4	1459.5	1460.6	1460.6	1460.6	1459.5	1455.0	1449.3	1443.6
10°	1451.6	1448.1	1443.6	1443.6	1444.7	1444.7	1444.7	1442.5	1436.8	1430.0	1422.0
12.5°	1432.3	1428.9	1424.3	1424.3	1424.3	1424.3	1424.3	1420.9	1411.8	1405.0	1398.2
15°	1408.4	1405.0	1400.5	1400.5	1399.3	1398.2	1395.9	1390.3	1382.3	1374.4	1365.3
17.5°	1382.3	1377.8	1372.1	1371.0	1369.8	1368.7	1365.3	1361.9	1350.5	1339.2	1325.6
20°	1351.7	1347.1	1341.5	1340.3	1336.9	1333.5	1331.3	1324.4	1312.0	1298.3	1289.3
22.5°	1317.6	1313.1	1307.4	1305.2	1298.3	1296.1	1292.7	1282.5	1268.8	1256.3	1246.1
25°	1282.5	1276.8	1270.0	1266.6	1258.6	1254.1	1252.9	1238.2	1224.6	1211.0	1198.5
27.5°	1241.6	1237.1	1231.4	1224.6	1216.6	1211.0	1208.7	1195.1	1178.0	1162.2	1150.8
30°	1201.9	1195.1	1189.4	1181.4	1170.1	1164.4	1159.9	1146.3	1131.5	1112.2	1102.0
32.5°	1155.3	1150.8	1144.0	1136.0	1124.7	1120.2	1113.4	1096.3	1077.0	1063.4	1047.5
35°	1111.1	1106.5	1096.3	1088.4	1072.5	1068.0	1061.1	1046.4	1024.8	1008.9	995.3
37.5°	1062.3	1056.6	1048.7	1037.3	1023.7	1018.0	1008.9	994.2	969.2	953.3	936.3
40°	1014.6	1006.7	997.6	985.1	971.5	965.8	957.9	936.3	915.9	897.7	883.0
42.5°	966.9	957.9	946.5	935.2	920.4	912.5	903.4	883.0	860.3	843.2	822.8
45°	913.6	906.8	895.4	881.8	864.8	859.1	848.9	827.4	804.7	786.5	766.1
47.5°	861.4	853.5	842.1	828.5	811.5	803.5	793.3	771.7	749.0	726.3	708.2
50°	808.1	800.1	786.5	772.9	757.0	746.8	737.7	716.1	691.2	670.7	648.0
52.5°	751.3	744.5	733.2	719.5	699.1	691.2	682.1	658.2	634.4	610.6	590.2
55°	696.8	692.3	678.7	665.1	643.5	634.4	625.3	600.4	576.5	552.7	533.4
57.5°	640.1	636.7	623.1	607.2	587.9	578.8	567.5	542.5	519.8	496.0	475.5
60°	583.3	579.9	566.3	550.4	532.3	520.9	508.4	489.1	463.0	441.5	418.8
62.5°	528.9	524.3	513.0	496.0	475.5	464.2	452.8	430.1	406.3	383.6	363.2
65°	473.3	467.6	454.0	436.9	417.6	407.4	396.1	374.5	350.7	329.1	309.8
67.5°	417.6	412.0	397.2	383.6	360.9	350.7	340.5	318.9	296.2	274.6	256.5
70°	360.9	355.2	343.9	325.7	306.4	296.2	286.0	263.3	242.9	227.0	210.0
72.5°	305.3	300.8	289.4	272.4	254.2	244.0	232.7	213.4	195.2	178.2	165.7
75°	252.0	245.1	234.9	219.0	200.9	191.8	183.9	164.6	147.5	136.2	126.0
77.5°	200.9	192.9	181.6	169.1	152.1	143.0	135.1	119.2	107.8	99.9	97.6
80°	147.5	146.4	135.1	121.4	106.7	99.9	91.9	81.7	78.3	77.2	74.9
82.5°	103.3	98.7	89.7	77.2	65.8	61.3	59.0	56.7	54.5	54.5	52.2
85°	62.4	57.9	49.9	39.7	37.5	36.3	35.2	35.2	34.0	32.9	32.9
87.5°	27.2	22.7	17.0	15.9	14.8	14.8	15.9	15.9	15.9	14.8	14.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243393

CATALOG NUMBER: S123RDRP-H1000D830-X4F0-XX-UDD-F-W

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1477.7	1477.7	1477.7	1477.7	1477.7	1477.7	1477.7	1477.7	1477.7	1477.7
2.5°	1466.3	1472.0	1475.4	1476.5	1476.5	1476.5	1477.7	1477.7	1476.5	1475.4
5°	1458.4	1464.0	1466.3	1468.6	1468.6	1468.6	1468.6	1468.6	1467.4	1465.2
7.5°	1445.9	1449.3	1452.7	1451.6	1451.6	1450.4	1449.3	1450.4	1448.1	1448.1
10°	1423.2	1426.6	1428.9	1425.5	1425.5	1426.6	1426.6	1425.5	1422.0	1418.6
12.5°	1397.1	1400.5	1397.1	1398.2	1395.9	1393.7	1392.5	1391.4	1388.0	1385.7
15°	1363.0	1363.0	1360.8	1360.8	1357.4	1352.8	1351.7	1352.8	1348.3	1348.3
17.5°	1325.6	1323.3	1319.9	1317.6	1316.5	1316.5	1312.0	1312.0	1306.3	1305.2
20°	1284.7	1282.5	1279.0	1273.4	1271.1	1272.2	1267.7	1264.3	1260.9	1259.8
22.5°	1241.6	1235.9	1232.5	1226.8	1222.3	1222.3	1218.9	1213.2	1209.8	1206.4
25°	1192.8	1187.1	1180.3	1175.8	1172.4	1166.7	1164.4	1159.9	1156.5	1155.3
27.5°	1142.9	1133.8	1124.7	1120.2	1117.9	1111.1	1107.7	1105.4	1098.6	1097.5
30°	1089.5	1082.7	1071.4	1063.4	1057.7	1058.9	1050.9	1046.4	1043.0	1039.6
32.5°	1038.4	1027.1	1015.7	1005.5	998.7	997.6	989.6	985.1	981.7	978.3
35°	980.6	969.2	955.6	946.5	939.7	936.3	928.4	926.1	920.4	918.1
37.5°	922.7	910.2	896.6	885.2	880.7	872.7	869.3	863.7	859.1	859.1
40°	865.9	851.2	837.6	823.9	818.3	813.7	804.7	800.1	794.4	791.0
42.5°	806.9	789.9	777.4	764.9	757.0	753.6	743.4	737.7	732.0	730.9
45°	747.9	730.9	715.0	702.5	699.1	692.3	682.1	674.1	673.0	671.9
47.5°	687.8	670.7	656.0	642.4	637.8	629.9	623.1	617.4	610.6	607.2
50°	629.9	612.9	597.0	582.2	576.5	569.7	562.9	555.0	552.7	549.3
52.5°	572.0	552.7	535.7	522.1	517.5	511.8	503.9	497.1	493.7	491.4
55°	513.0	493.7	478.9	465.3	459.6	456.2	447.2	441.5	436.9	434.7
57.5°	455.1	435.8	422.2	412.0	404.0	400.6	391.5	385.9	383.6	382.5
60°	400.6	382.5	367.7	357.5	350.7	347.3	340.5	334.8	331.4	330.3
62.5°	346.1	330.3	316.6	306.4	301.9	297.3	291.7	287.1	283.7	283.7
65°	293.9	278.1	265.6	257.6	253.1	250.8	244.0	241.7	238.3	238.3
67.5°	242.9	231.5	222.4	212.2	208.8	208.8	202.0	199.7	197.5	197.5
70°	198.6	188.4	178.2	172.5	169.1	168.0	162.3	158.9	156.6	154.3
72.5°	155.5	146.4	137.3	136.2	136.2	135.1	135.1	132.8	132.8	133.9
75°	119.2	116.9	114.6	114.6	113.5	112.4	112.4	111.2	111.2	111.2
77.5°	95.3	94.2	93.1	91.9	91.9	90.8	89.7	89.7	89.7	89.7
80°	72.6	71.5	71.5	70.4	69.2	70.4	69.2	69.2	68.1	68.1
82.5°	51.1	51.1	51.1	49.9	49.9	49.9	49.9	48.8	48.8	49.9
85°	31.8	31.8	31.8	31.8	30.6	31.8	30.6	30.6	30.6	31.8
87.5°	13.6	14.8	13.6	14.8	14.8	13.6	13.6	13.6	13.6	13.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243393
 CATALOG NUMBER: S123RDRP-H1000D830-X4F0-XX-UDD-F-W

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	21.55	23.10	21.91	23.42	23.73	18.74	20.30	19.11	20.61	20.92
	3H	23.38	24.77	23.76	25.10	25.46	19.82	21.21	20.19	21.54	21.90
	4H	24.06	25.37	24.46	25.72	26.10	20.21	21.53	20.61	21.87	22.25
	6H	24.56	25.77	24.97	26.14	26.53	20.54	21.75	20.95	22.11	22.51
	8H	24.72	25.87	25.14	26.26	26.66	20.64	21.80	21.07	22.19	22.59
	12H	24.82	25.92	25.25	26.31	26.73	20.72	21.83	21.15	22.21	22.64
4H	2H	21.79	23.10	22.19	23.45	23.83	19.46	20.77	19.86	21.12	21.50
	3H	23.78	24.87	24.19	25.27	25.67	20.68	21.77	21.09	22.17	22.57
	4H	24.57	25.55	25.00	25.97	26.40	21.17	22.15	21.60	22.57	23.00
	6H	25.19	26.04	25.64	26.48	26.94	21.59	22.45	22.05	22.89	23.35
	8H	25.39	26.19	25.85	26.63	27.10	21.74	22.53	22.20	22.98	23.44
	12H	25.53	26.25	26.02	26.73	27.20	21.85	22.56	22.33	23.04	23.51
8H	4H	24.61	25.41	25.07	25.85	26.32	21.49	22.29	21.95	22.73	23.20
	6H	25.27	25.93	25.77	26.42	26.90	22.00	22.66	22.50	23.15	23.63
	8H	25.51	26.11	26.03	26.62	27.10	22.21	22.80	22.72	23.31	23.80
	12H	25.71	26.23	26.21	26.72	27.29	22.38	22.90	22.89	23.40	23.96
12H	4H	24.59	25.31	25.08	25.79	26.26	21.53	22.24	22.01	22.72	23.19
	6H	25.26	25.85	25.77	26.36	26.85	22.06	22.65	22.57	23.16	23.65
	8H	25.53	26.06	26.04	26.55	27.11	22.31	22.84	22.82	23.33	23.89