

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: P243389

Luminaire Tested: S123RDRP-H1165D927-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243389
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-H1165D927-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

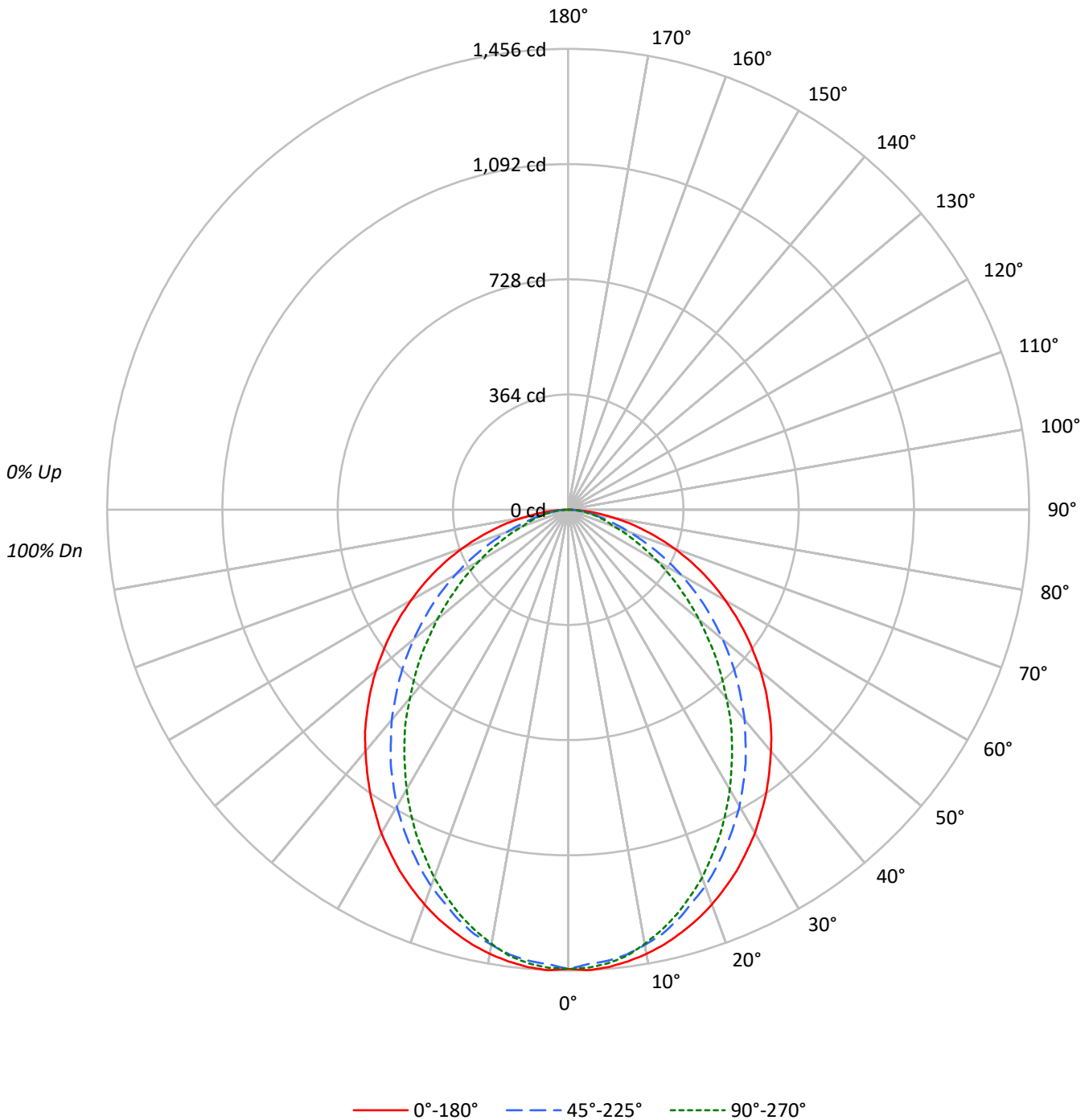
Lumens per Lamp: N/A
Luminaire Lumens: 3275.6 lumens
Efficiency: N/A
Efficacy: 86.9 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

Input Watts (W): 37.7
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: 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																		
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	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°	17585	17585	17585
5°	17653	17409	17504
10°	17542	17185	17144
15°	17353	16822	16612
20°	17118	16328	15955
25°	16841	15738	15172
30°	16516	15144	14286
35°	16142	14460	13340
40°	15763	13717	12290
45°	15376	12892	11309
50°	14961	11999	10170
55°	14459	11067	9019
60°	13884	9968	7862
65°	13328	8725	6711
70°	12556	7304	5369
75°	11586	5793	5114
80°	10115	5131	4670
85°	8525	4492	4339

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 15376 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.5	4.2
10°-20°	380.0	11.6
20°-30°	547.0	16.7
30°-40°	616.2	18.8
40°-50°	588.6	18.0
50°-60°	481.3	14.7
60°-70°	323.2	9.9
70°-80°	161.2	4.9
80°-90°	41.7	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°	1063.5	32.5
0°-40°	1679.6	51.3
0°-60°	2749.6	83.9
0°-90°	3275.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3275.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1451	1451	1451	1451	1451	
5°	1451	1445	1431	1442	1439	138
15°	1383	1373	1340	1333	1324	390
25°	1259	1231	1177	1151	1134	580
35°	1091	1049	977	923	902	682
45°	897	844	752	686	660	692
55°	684	623	524	451	427	611
65°	465	400	304	248	234	460
75°	247	188	124	111	109	262
85°	61	36	32	30	31	71
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°	1450.8	1450.8	1450.8	1450.8	1450.8	1450.8	1450.8	1450.8	1450.8	1450.8	1450.8
2.5°	1456.4	1453.0	1448.6	1449.7	1450.8	1451.9	1451.9	1450.8	1447.5	1443.0	1437.4
5°	1450.8	1447.5	1443.0	1443.0	1445.2	1445.2	1445.2	1444.1	1440.8	1436.3	1430.8
7.5°	1439.7	1437.4	1431.9	1433.0	1434.1	1434.1	1434.1	1433.0	1428.5	1423.0	1417.4
10°	1425.2	1421.8	1417.4	1417.4	1418.5	1418.5	1418.5	1416.3	1410.7	1404.0	1396.2
12.5°	1406.2	1402.9	1398.4	1398.4	1398.4	1398.4	1398.4	1395.1	1386.2	1379.5	1372.8
15°	1382.8	1379.5	1375.0	1375.0	1373.9	1372.8	1370.6	1365.0	1357.2	1349.4	1340.5
17.5°	1357.2	1352.8	1347.2	1346.1	1345.0	1343.8	1340.5	1337.2	1326.0	1314.9	1301.5
20°	1327.1	1322.7	1317.1	1316.0	1312.6	1309.3	1307.1	1300.4	1288.1	1274.8	1265.8
22.5°	1293.7	1289.2	1283.7	1281.4	1274.8	1272.5	1269.2	1259.2	1245.8	1233.5	1223.5
25°	1259.2	1253.6	1246.9	1243.6	1235.8	1231.3	1230.2	1215.7	1202.3	1189.0	1176.7
27.5°	1219.0	1214.6	1209.0	1202.3	1194.5	1189.0	1186.7	1173.4	1156.6	1141.0	1129.9
30°	1180.0	1173.4	1167.8	1160.0	1148.8	1143.3	1138.8	1125.4	1111.0	1092.0	1082.0
32.5°	1134.4	1129.9	1123.2	1115.4	1104.3	1099.8	1093.1	1076.4	1057.5	1044.1	1028.5
35°	1090.9	1086.4	1076.4	1068.6	1053.0	1048.6	1041.9	1027.4	1006.2	990.6	977.2
37.5°	1043.0	1037.4	1029.6	1018.5	1005.1	999.5	990.6	976.1	951.6	936.0	919.3
40°	996.2	988.4	979.5	967.2	953.8	948.3	940.5	919.3	899.2	881.4	866.9
42.5°	949.4	940.5	929.3	918.2	903.7	895.9	887.0	866.9	844.6	827.9	807.9
45°	897.0	890.3	879.2	865.8	849.1	843.5	833.5	812.3	790.0	772.2	752.1
47.5°	845.8	838.0	826.8	813.4	796.7	788.9	778.9	757.7	735.4	713.1	695.3
50°	793.4	785.6	772.2	758.8	743.2	733.2	724.3	703.1	678.6	658.5	636.3
52.5°	737.7	731.0	719.8	706.5	686.4	678.6	669.7	646.3	622.9	599.5	579.4
55°	684.2	679.7	666.3	653.0	631.8	622.9	614.0	589.5	566.1	542.7	523.7
57.5°	628.5	625.1	611.7	596.1	577.2	568.3	557.1	532.6	510.3	486.9	466.9
60°	572.7	569.4	556.0	540.4	522.6	511.5	499.2	480.3	454.6	433.5	411.2
62.5°	519.3	514.8	503.7	486.9	466.9	455.7	444.6	422.3	398.9	376.6	356.6
65°	464.7	459.1	445.7	429.0	410.1	400.0	388.9	367.7	344.3	323.1	304.2
67.5°	410.1	404.5	390.0	376.6	354.3	344.3	334.3	313.1	290.8	269.7	251.8
70°	354.3	348.8	337.6	319.8	300.9	290.8	280.8	258.5	238.5	222.9	206.1
72.5°	299.7	295.3	284.1	267.4	249.6	239.6	228.4	209.5	191.7	174.9	162.7
75°	247.4	240.7	230.7	215.1	197.2	188.3	180.5	161.6	144.9	133.7	123.7
77.5°	197.2	189.4	178.3	166.0	149.3	140.4	132.6	117.0	105.9	98.1	95.8
80°	144.9	143.7	132.6	119.2	104.7	98.1	90.3	80.2	76.9	75.8	73.5
82.5°	101.4	96.9	88.0	75.8	64.6	60.2	57.9	55.7	53.5	53.5	51.3
85°	61.3	56.8	49.0	39.0	36.8	35.7	34.5	34.5	33.4	32.3	32.3
87.5°	26.7	22.3	16.7	15.6	14.5	14.5	15.6	15.6	15.6	14.5	14.5
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°	1450.8	1450.8	1450.8	1450.8	1450.8	1450.8	1450.8	1450.8	1450.8	1450.8
2.5°	1439.7	1445.2	1448.6	1449.7	1449.7	1449.7	1450.8	1450.8	1449.7	1448.6
5°	1431.9	1437.4	1439.7	1441.9	1441.9	1441.9	1441.9	1441.9	1440.8	1438.6
7.5°	1419.6	1423.0	1426.3	1425.2	1425.2	1424.1	1423.0	1424.1	1421.8	1421.8
10°	1397.3	1400.7	1402.9	1399.6	1399.6	1400.7	1400.7	1399.6	1396.2	1392.9
12.5°	1371.7	1375.0	1371.7	1372.8	1370.6	1368.4	1367.2	1366.1	1362.8	1360.6
15°	1338.3	1338.3	1336.0	1336.0	1332.7	1328.2	1327.1	1328.2	1323.8	1323.8
17.5°	1301.5	1299.3	1295.9	1293.7	1292.6	1292.6	1288.1	1288.1	1282.6	1281.4
20°	1261.4	1259.2	1255.8	1250.2	1248.0	1249.1	1244.7	1241.3	1238.0	1236.9
22.5°	1219.0	1213.5	1210.1	1204.6	1200.1	1200.1	1196.8	1191.2	1187.8	1184.5
25°	1171.1	1165.6	1158.9	1154.4	1151.1	1145.5	1143.3	1138.8	1135.5	1134.4
27.5°	1122.1	1113.2	1104.3	1099.8	1097.6	1090.9	1087.6	1085.3	1078.6	1077.5
30°	1069.7	1063.0	1051.9	1044.1	1038.5	1039.6	1031.8	1027.4	1024.0	1020.7
32.5°	1019.6	1008.4	997.3	987.3	980.6	979.5	971.7	967.2	963.9	960.5
35°	962.8	951.6	938.2	929.3	922.6	919.3	911.5	909.3	903.7	901.5
37.5°	905.9	893.7	880.3	869.2	864.7	856.9	853.6	848.0	843.5	843.5
40°	850.2	835.7	822.4	809.0	803.4	799.0	790.0	785.6	780.0	776.7
42.5°	792.3	775.5	763.3	751.0	743.2	739.9	729.9	724.3	718.7	717.6
45°	734.3	717.6	702.0	689.7	686.4	679.7	669.7	661.9	660.8	659.7
47.5°	675.3	658.5	644.1	630.7	626.2	618.4	611.7	606.2	599.5	596.1
50°	618.4	601.7	586.1	571.6	566.1	559.4	552.7	544.9	542.7	539.3
52.5°	561.6	542.7	525.9	512.6	508.1	502.5	494.7	488.1	484.7	482.5
55°	503.7	484.7	470.2	456.9	451.3	447.9	439.0	433.5	429.0	426.8
57.5°	446.8	427.9	414.5	404.5	396.7	393.3	384.4	378.9	376.6	375.5
60°	393.3	375.5	361.0	351.0	344.3	341.0	334.3	328.7	325.4	324.3
62.5°	339.9	324.3	310.9	300.9	296.4	291.9	286.4	281.9	278.6	278.6
65°	288.6	273.0	260.7	252.9	248.5	246.3	239.6	237.3	234.0	234.0
67.5°	238.5	227.3	218.4	208.4	205.0	205.0	198.3	196.1	193.9	193.9
70°	195.0	185.0	174.9	169.4	166.0	164.9	159.3	156.0	153.8	151.5
72.5°	152.7	143.7	134.8	133.7	133.7	132.6	132.6	130.4	130.4	131.5
75°	117.0	114.8	112.5	112.5	111.4	110.3	110.3	109.2	109.2	109.2
77.5°	93.6	92.5	91.4	90.3	90.3	89.1	88.0	88.0	88.0	88.0
80°	71.3	70.2	70.2	69.1	68.0	69.1	68.0	68.0	66.9	66.9
82.5°	50.1	50.1	50.1	49.0	49.0	49.0	49.0	47.9	47.9	49.0
85°	31.2	31.2	31.2	31.2	30.1	31.2	30.1	30.1	30.1	31.2
87.5°	13.4	14.5	13.4	14.5	14.5	13.4	13.4	13.4	13.4	13.4
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	21.49	23.04	21.85	23.35	23.67	18.68	20.23	19.04	20.55	20.86
	3H	23.31	24.71	23.69	25.04	25.40	19.75	21.15	20.13	21.48	21.84
	4H	24.00	25.31	24.40	25.66	26.04	20.15	21.46	20.55	21.81	22.19
	6H	24.50	25.71	24.91	26.08	26.47	20.47	21.68	20.88	22.05	22.44
	8H	24.66	25.81	25.08	26.20	26.60	20.58	21.74	21.01	22.12	22.53
	12H	24.75	25.86	25.18	26.24	26.67	20.66	21.76	21.09	22.14	22.57
4H	2H	21.73	23.04	22.13	23.39	23.76	19.40	20.71	19.80	21.06	21.43
	3H	23.72	24.81	24.13	25.21	25.61	20.62	21.71	21.03	22.11	22.51
	4H	24.51	25.49	24.94	25.90	26.34	21.11	22.09	21.54	22.50	22.94
	6H	25.12	25.98	25.58	26.42	26.88	21.53	22.38	21.98	22.82	23.28
	8H	25.33	26.12	25.79	26.57	27.03	21.67	22.47	22.13	22.91	23.38
	12H	25.47	26.18	25.95	26.66	27.13	21.78	22.50	22.26	22.98	23.45
8H	4H	24.54	25.34	25.01	25.79	26.25	21.42	22.22	21.89	22.67	23.13
	6H	25.21	25.87	25.71	26.36	26.84	21.94	22.60	22.43	23.09	23.57
	8H	25.45	26.04	25.96	26.55	27.04	22.14	22.74	22.66	23.24	23.73
	12H	25.64	26.17	26.15	26.66	27.22	22.32	22.84	22.83	23.33	23.90
12H	4H	24.53	25.25	25.01	25.72	26.19	21.46	22.18	21.94	22.65	23.12
	6H	25.19	25.79	25.71	26.30	26.78	21.99	22.59	22.51	23.10	23.58
	8H	25.47	25.99	25.98	26.49	27.05	22.25	22.77	22.76	23.27	23.83