

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: P243409

Luminaire Tested: S123RDRP-H340D935-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243409  
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-H340D935-X4F0-XX-UDD-F-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

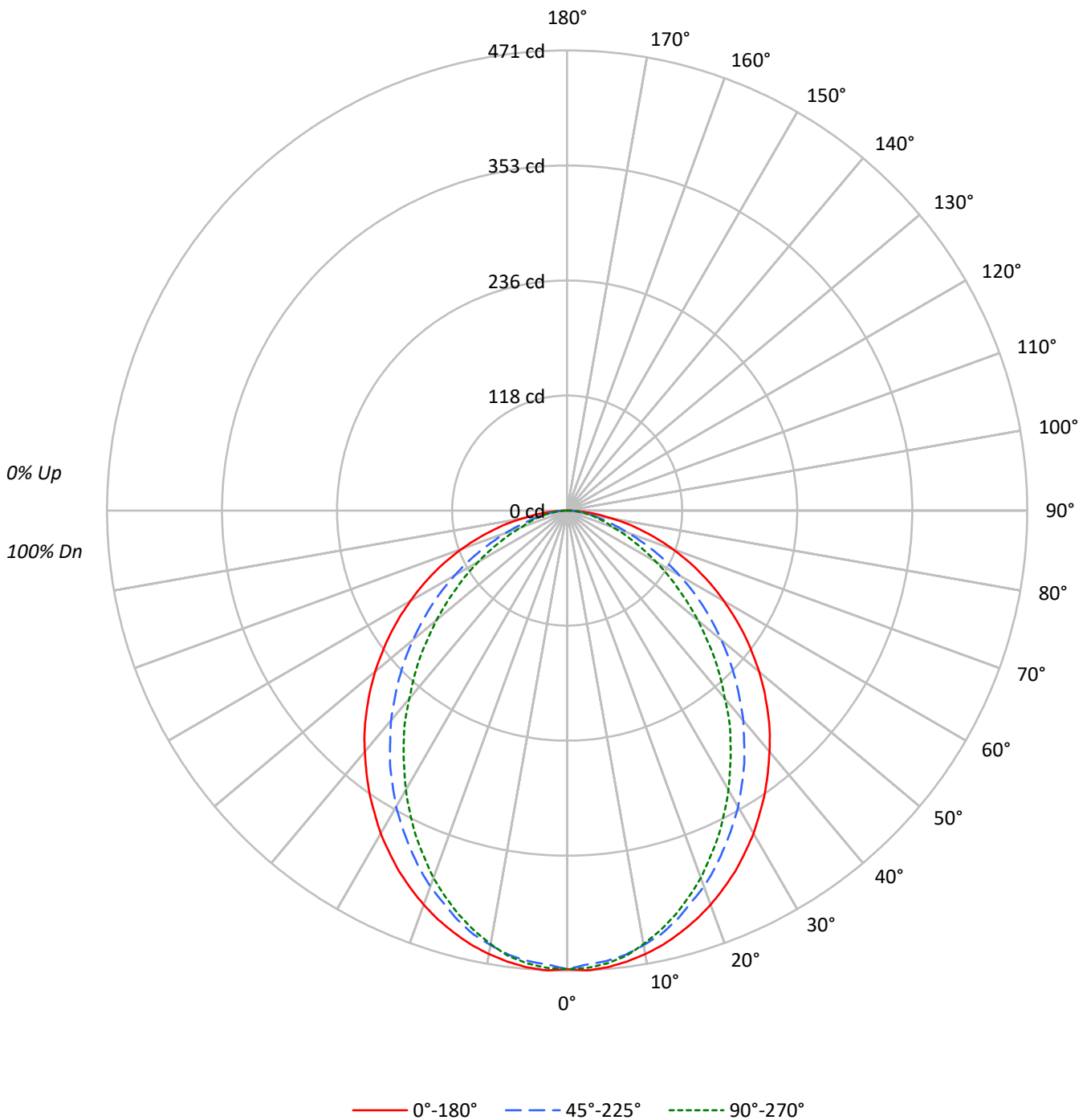
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1059.6 lumens  
Efficiency: N/A  
Efficacy: 94.6 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): 11.2  
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																		
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°	5688	5688	5688
5°	5710	5631	5662
10°	5674	5558	5546
15°	5613	5441	5373
20°	5538	5282	5161
25°	5447	5090	4907
30°	5342	4899	4622
35°	5222	4677	4315
40°	5098	4437	3975
45°	4975	4171	3658
50°	4839	3881	3291
55°	4677	3580	2916
60°	4492	3224	2543
65°	4311	2822	2171
70°	4061	2364	1737
75°	3747	1873	1653
80°	3274	1661	1508
85°	2754	1460	1405

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4975 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.1	4.2
10°-20°	122.9	11.6
20°-30°	176.9	16.7
30°-40°	199.3	18.8
40°-50°	190.4	18.0
50°-60°	155.7	14.7
60°-70°	104.5	9.9
70°-80°	52.1	4.9
80°-90°	13.5	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°	344.0	32.5
0°-40°	543.3	51.3
0°-60°	889.4	83.9
0°-90°	1059.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1059.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	469	469	469	469	469	
5°	469	468	463	466	465	45
15°	447	444	434	431	428	126
25°	407	398	381	372	367	187
35°	353	339	316	298	292	221
45°	290	273	243	222	213	224
55°	221	202	169	146	138	198
65°	150	129	98	80	76	149
75°	80	61	40	36	35	85
85°	20	12	10	10	10	23
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°	469.3	469.3	469.3	469.3	469.3	469.3	469.3	469.3	469.3	469.3	469.3
2.5°	471.1	470.0	468.6	468.9	469.3	469.7	469.7	469.3	468.2	466.8	465.0
5°	469.3	468.2	466.8	466.8	467.5	467.5	467.5	467.1	466.1	464.6	462.8
7.5°	465.7	465.0	463.2	463.5	463.9	463.9	463.9	463.5	462.1	460.3	458.5
10°	461.0	459.9	458.5	458.5	458.8	458.8	458.8	458.1	456.3	454.2	451.6
12.5°	454.9	453.8	452.4	452.4	452.4	452.4	452.4	451.3	448.4	446.2	444.1
15°	447.3	446.2	444.8	444.8	444.4	444.1	443.3	441.5	439.0	436.5	433.6
17.5°	439.0	437.6	435.8	435.4	435.1	434.7	433.6	432.5	428.9	425.3	421.0
20°	429.3	427.8	426.0	425.7	424.6	423.5	422.8	420.6	416.7	412.3	409.5
22.5°	418.5	417.0	415.2	414.5	412.3	411.6	410.5	407.3	403.0	399.0	395.8
25°	407.3	405.5	403.3	402.3	399.7	398.3	397.9	393.2	388.9	384.6	380.6
27.5°	394.3	392.9	391.1	388.9	386.4	384.6	383.9	379.5	374.1	369.1	365.5
30°	381.7	379.5	377.7	375.2	371.6	369.8	368.4	364.0	359.4	353.2	350.0
32.5°	366.9	365.5	363.3	360.8	357.2	355.8	353.6	348.2	342.1	337.7	332.7
35°	352.9	351.4	348.2	345.7	340.6	339.2	337.0	332.3	325.5	320.4	316.1
37.5°	337.4	335.6	333.0	329.4	325.1	323.3	320.4	315.7	307.8	302.8	297.4
40°	322.2	319.7	316.8	312.9	308.5	306.7	304.2	297.4	290.9	285.1	280.4
42.5°	307.1	304.2	300.6	297.0	292.3	289.8	286.9	280.4	273.2	267.8	261.3
45°	290.2	288.0	284.4	280.1	274.7	272.9	269.6	262.8	255.6	249.8	243.3
47.5°	273.6	271.1	267.4	263.1	257.7	255.2	251.9	245.1	237.9	230.7	224.9
50°	256.6	254.1	249.8	245.5	240.4	237.2	234.3	227.4	219.5	213.0	205.8
52.5°	238.6	236.4	232.8	228.5	222.0	219.5	216.6	209.1	201.5	193.9	187.4
55°	221.3	219.9	215.5	211.2	204.4	201.5	198.6	190.7	183.1	175.5	169.4
57.5°	203.3	202.2	197.9	192.8	186.7	183.8	180.2	172.3	165.1	157.5	151.0
60°	185.3	184.2	179.9	174.8	169.0	165.4	161.5	155.4	147.1	140.2	133.0
62.5°	168.0	166.5	162.9	157.5	151.0	147.4	143.8	136.6	129.0	121.8	115.3
65°	150.3	148.5	144.2	138.8	132.6	129.4	125.8	118.9	111.4	104.5	98.4
67.5°	132.6	130.8	126.2	121.8	114.6	111.4	108.1	101.3	94.1	87.2	81.5
70°	114.6	112.8	109.2	103.4	97.3	94.1	90.8	83.6	77.1	72.1	66.7
72.5°	97.0	95.5	91.9	86.5	80.7	77.5	73.9	67.8	62.0	56.6	52.6
75°	80.0	77.9	74.6	69.6	63.8	60.9	58.4	52.3	46.9	43.3	40.0
77.5°	63.8	61.3	57.7	53.7	48.3	45.4	42.9	37.8	34.2	31.7	31.0
80°	46.9	46.5	42.9	38.6	33.9	31.7	29.2	26.0	24.9	24.5	23.8
82.5°	32.8	31.4	28.5	24.5	20.9	19.5	18.7	18.0	17.3	17.3	16.6
85°	19.8	18.4	15.9	12.6	11.9	11.5	11.2	11.2	10.8	10.5	10.5
87.5°	8.7	7.2	5.4	5.0	4.7	4.7	5.0	5.0	5.0	4.7	4.7
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°	469.3	469.3	469.3	469.3	469.3	469.3	469.3	469.3	469.3	469.3
2.5°	465.7	467.5	468.6	468.9	468.9	468.9	469.3	469.3	468.9	468.6
5°	463.2	465.0	465.7	466.4	466.4	466.4	466.4	466.4	466.1	465.3
7.5°	459.2	460.3	461.4	461.0	461.0	460.6	460.3	460.6	459.9	459.9
10°	452.0	453.1	453.8	452.7	452.7	453.1	453.1	452.7	451.6	450.6
12.5°	443.7	444.8	443.7	444.1	443.3	442.6	442.3	441.9	440.8	440.1
15°	432.9	432.9	432.2	432.2	431.1	429.6	429.3	429.6	428.2	428.2
17.5°	421.0	420.3	419.2	418.5	418.1	418.1	416.7	416.7	414.9	414.5
20°	408.0	407.3	406.2	404.4	403.7	404.1	402.6	401.5	400.4	400.1
22.5°	394.3	392.5	391.4	389.6	388.2	388.2	387.1	385.3	384.2	383.1
25°	378.8	377.0	374.9	373.4	372.3	370.5	369.8	368.4	367.3	366.9
27.5°	363.0	360.1	357.2	355.8	355.0	352.9	351.8	351.1	348.9	348.5
30°	346.0	343.9	340.3	337.7	335.9	336.3	333.8	332.3	331.2	330.2
32.5°	329.8	326.2	322.6	319.4	317.2	316.8	314.3	312.9	311.8	310.7
35°	311.4	307.8	303.5	300.6	298.4	297.4	294.8	294.1	292.3	291.6
37.5°	293.0	289.1	284.7	281.1	279.7	277.2	276.1	274.3	272.9	272.9
40°	275.0	270.3	266.0	261.7	259.9	258.4	255.6	254.1	252.3	251.2
42.5°	256.3	250.9	246.9	242.9	240.4	239.3	236.1	234.3	232.5	232.1
45°	237.5	232.1	227.1	223.1	222.0	219.9	216.6	214.1	213.7	213.4
47.5°	218.4	213.0	208.3	204.0	202.6	200.0	197.9	196.1	193.9	192.8
50°	200.0	194.6	189.6	184.9	183.1	180.9	178.8	176.3	175.5	174.5
52.5°	181.7	175.5	170.1	165.8	164.4	162.6	160.0	157.9	156.8	156.1
55°	162.9	156.8	152.1	147.8	146.0	144.9	142.0	140.2	138.8	138.0
57.5°	144.5	138.4	134.1	130.8	128.3	127.2	124.4	122.5	121.8	121.5
60°	127.2	121.5	116.8	113.5	111.4	110.3	108.1	106.3	105.2	104.9
62.5°	109.9	104.9	100.6	97.3	95.9	94.4	92.6	91.2	90.1	90.1
65°	93.4	88.3	84.3	81.8	80.4	79.7	77.5	76.8	75.7	75.7
67.5°	77.1	73.5	70.6	67.4	66.3	66.3	64.2	63.4	62.7	62.7
70°	63.1	59.8	56.6	54.8	53.7	53.3	51.5	50.5	49.7	49.0
72.5°	49.4	46.5	43.6	43.3	43.3	42.9	42.9	42.2	42.2	42.5
75°	37.8	37.1	36.4	36.4	36.0	35.7	35.7	35.3	35.3	35.3
77.5°	30.3	29.9	29.6	29.2	29.2	28.8	28.5	28.5	28.5	28.5
80°	23.1	22.7	22.7	22.3	22.0	22.3	22.0	22.0	21.6	21.6
82.5°	16.2	16.2	16.2	15.9	15.9	15.9	15.9	15.5	15.5	15.9
85°	10.1	10.1	10.1	10.1	9.7	10.1	9.7	9.7	9.7	10.1
87.5°	4.3	4.7	4.3	4.7	4.7	4.3	4.3	4.3	4.3	4.3
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	17.56	19.12	17.93	19.43	19.75	14.76	16.31	15.12	16.63	16.94
	3H	19.39	20.79	19.77	21.12	21.48	15.83	17.23	16.21	17.56	17.92
	4H	20.08	21.39	20.48	21.74	22.11	16.23	17.54	16.63	17.89	18.27
	6H	20.58	21.79	20.99	22.15	22.55	16.55	17.76	16.96	18.13	18.52
	8H	20.73	21.89	21.16	22.28	22.68	16.66	17.81	17.09	18.20	18.60
	12H	20.83	21.94	21.26	22.32	22.75	16.74	17.84	17.17	18.22	18.65
4H	2H	17.80	19.12	18.20	19.46	19.84	15.48	16.79	15.88	17.14	17.51
	3H	19.79	20.88	20.21	21.28	21.68	16.70	17.79	17.11	18.19	18.59
	4H	20.58	21.57	21.02	21.98	22.42	17.18	18.17	17.62	18.58	19.02
	6H	21.20	22.06	21.66	22.50	22.96	17.61	18.46	18.06	18.90	19.36
	8H	21.41	22.20	21.87	22.65	23.11	17.75	18.55	18.21	18.99	19.46
	12H	21.55	22.26	22.03	22.74	23.21	17.86	18.58	18.34	19.05	19.52
8H	4H	20.62	21.42	21.08	21.86	22.33	17.50	18.30	17.96	18.74	19.21
	6H	21.29	21.95	21.78	22.44	22.92	18.02	18.68	18.51	19.17	19.64
	8H	21.53	22.12	22.04	22.63	23.12	18.22	18.81	18.73	19.32	19.81
	12H	21.72	22.25	22.23	22.74	23.30	18.40	18.92	18.90	19.41	19.98
12H	4H	20.61	21.32	21.09	21.80	22.27	17.54	18.25	18.02	18.73	19.20
	6H	21.27	21.87	21.79	22.38	22.86	18.07	18.67	18.59	19.18	19.66
	8H	21.55	22.07	22.06	22.57	23.13	18.33	18.85	18.84	19.35	19.91