

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: P243390

Luminaire Tested: S123RDRP-H340D830-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243390
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-H340D830-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

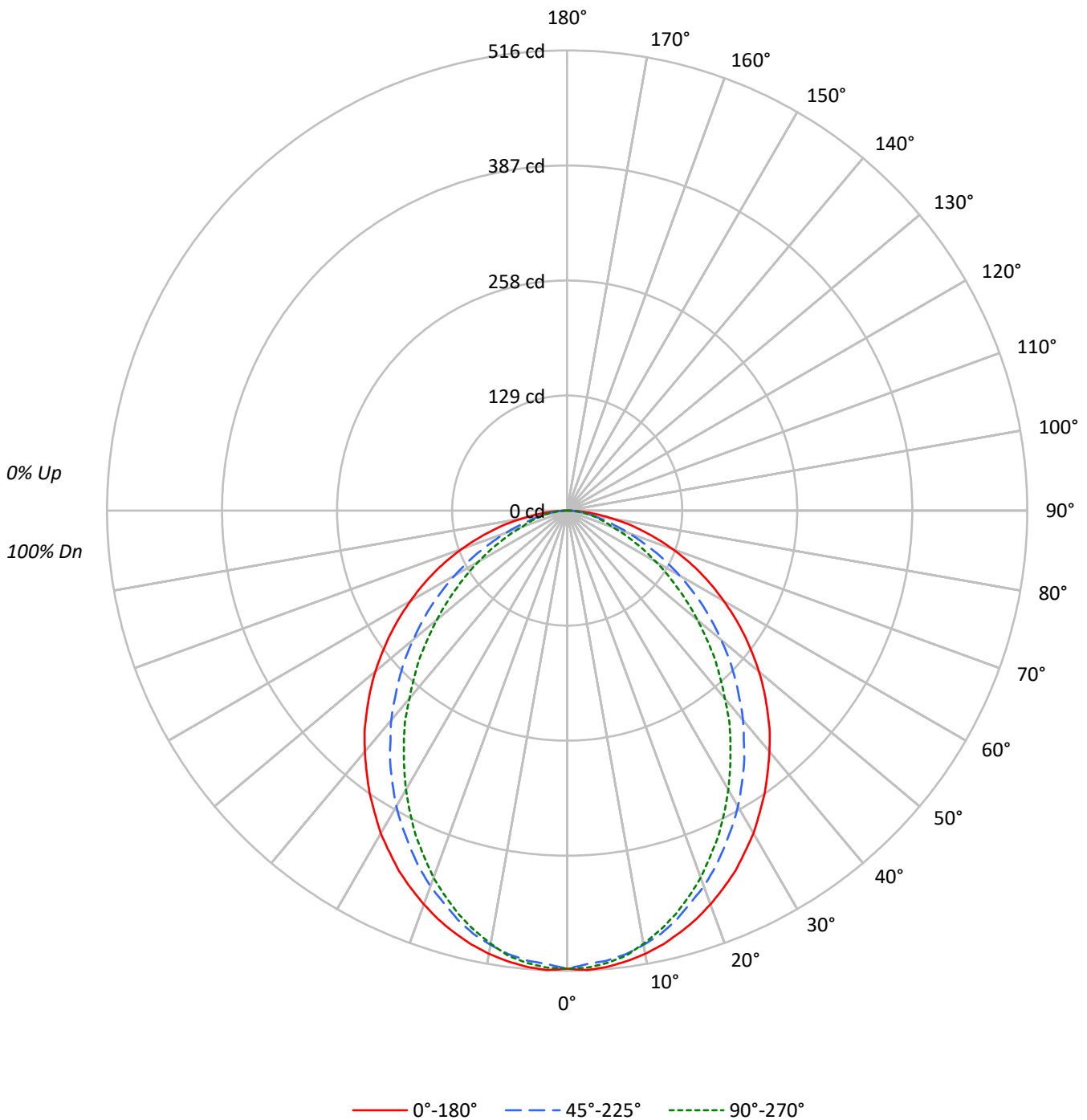
Lumens per Lamp: N/A
Luminaire Lumens: 1159.9 lumens
Efficiency: N/A
Efficacy: 103.6 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

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

TEST NUMBER: P243390

CATALOG NUMBER: S123RDRP-H340D830-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	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°	6227	6227	6227
5°	6250	6164	6198
10°	6212	6085	6070
15°	6145	5957	5883
20°	6061	5781	5650
25°	5964	5573	5372
30°	5849	5362	5058
35°	5716	5120	4723
40°	5582	4858	4351
45°	5444	4565	4004
50°	5297	4249	3602
55°	5120	3920	3193
60°	4916	3530	2783
65°	4718	3089	2378
70°	4448	2587	1903
75°	4103	2051	1812
80°	3581	1815	1654
85°	3018	1585	1530

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5444 cd/sqm



TEST NUMBER: P243390

CATALOG NUMBER: S123RDRP-H340D830-X4F0-XX-UDD-F-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	48.3	4.2
10°-20°	134.6	11.6
20°-30°	193.7	16.7
30°-40°	218.2	18.8
40°-50°	208.4	18.0
50°-60°	170.4	14.7
60°-70°	114.4	9.9
70°-80°	57.1	4.9
80°-90°	14.8	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°	376.6	32.5
0°-40°	594.8	51.3
0°-60°	973.6	83.9
0°-90°	1159.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1159.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	514	514	514	514	514	
5°	514	512	507	511	509	49
15°	490	486	475	472	469	138
25°	446	436	417	408	402	205
35°	386	371	346	327	319	241
45°	318	299	266	243	234	245
55°	242	221	186	160	151	216
65°	164	142	108	88	83	163
75°	88	67	44	40	39	93
85°	22	13	11	11	11	25
90°	0	0	0	0	0	



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CATALOG NUMBER: S123RDRP-H340D830-X4F0-XX-UDD-F-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7
2.5°	515.7	514.5	513.0	513.3	513.7	514.1	514.1	513.7	512.6	511.0	509.0
5°	513.7	512.6	511.0	511.0	511.8	511.8	511.8	511.4	510.2	508.6	506.6
7.5°	509.8	509.0	507.0	507.4	507.8	507.8	507.8	507.4	505.8	503.9	501.9
10°	504.7	503.5	501.9	501.9	502.3	502.3	502.3	501.5	499.5	497.2	494.4
12.5°	498.0	496.8	495.2	495.2	495.2	495.2	495.2	494.0	490.9	488.5	486.1
15°	489.7	488.5	486.9	486.9	486.5	486.1	485.3	483.4	480.6	477.8	474.7
17.5°	480.6	479.0	477.0	476.6	476.3	475.9	474.7	473.5	469.5	465.6	460.9
20°	469.9	468.4	466.4	466.0	464.8	463.6	462.8	460.5	456.1	451.4	448.2
22.5°	458.1	456.5	454.6	453.8	451.4	450.6	449.4	445.9	441.1	436.8	433.2
25°	445.9	443.9	441.5	440.3	437.6	436.0	435.6	430.5	425.7	421.0	416.7
27.5°	431.7	430.1	428.1	425.7	423.0	421.0	420.2	415.5	409.6	404.0	400.1
30°	417.9	415.5	413.5	410.8	406.8	404.8	403.3	398.5	393.4	386.7	383.1
32.5°	401.7	400.1	397.7	395.0	391.0	389.4	387.1	381.2	374.5	369.7	364.2
35°	386.3	384.7	381.2	378.4	372.9	371.3	368.9	363.8	356.3	350.8	346.0
37.5°	369.3	367.4	364.6	360.6	355.9	353.9	350.8	345.6	337.0	331.4	325.5
40°	352.8	350.0	346.8	342.5	337.8	335.8	333.0	325.5	318.4	312.1	307.0
42.5°	336.2	333.0	329.1	325.1	320.0	317.2	314.1	307.0	299.1	293.2	286.1
45°	317.6	315.3	311.3	306.6	300.7	298.7	295.1	287.6	279.8	273.4	266.3
47.5°	299.5	296.7	292.8	288.0	282.1	279.4	275.8	268.3	260.4	252.5	246.2
50°	280.9	278.2	273.4	268.7	263.2	259.6	256.5	249.0	240.3	233.2	225.3
52.5°	261.2	258.8	254.9	250.2	243.1	240.3	237.1	228.9	220.6	212.3	205.2
55°	242.3	240.7	236.0	231.2	223.7	220.6	217.4	208.7	200.4	192.2	185.5
57.5°	222.5	221.4	216.6	211.1	204.4	201.2	197.3	188.6	180.7	172.4	165.3
60°	202.8	201.6	196.9	191.4	185.1	181.1	176.8	170.1	161.0	153.5	145.6
62.5°	183.9	182.3	178.3	172.4	165.3	161.4	157.4	149.5	141.3	133.4	126.3
65°	164.5	162.6	157.8	151.9	145.2	141.7	137.7	130.2	121.9	114.4	107.7
67.5°	145.2	143.2	138.1	133.4	125.5	121.9	118.4	110.9	103.0	95.5	89.2
70°	125.5	123.5	119.6	113.2	106.5	103.0	99.4	91.5	84.4	78.9	73.0
72.5°	106.1	104.6	100.6	94.7	88.4	84.8	80.9	74.2	67.9	61.9	57.6
75°	87.6	85.2	81.7	76.2	69.8	66.7	63.9	57.2	51.3	47.3	43.8
77.5°	69.8	67.1	63.1	58.8	52.9	49.7	47.0	41.4	37.5	34.7	33.9
80°	51.3	50.9	47.0	42.2	37.1	34.7	32.0	28.4	27.2	26.8	26.0
82.5°	35.9	34.3	31.2	26.8	22.9	21.3	20.5	19.7	18.9	18.9	18.2
85°	21.7	20.1	17.4	13.8	13.0	12.6	12.2	12.2	11.8	11.4	11.4
87.5°	9.5	7.9	5.9	5.5	5.1	5.1	5.5	5.5	5.5	5.1	5.1
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: P243390

CATALOG NUMBER: S123RDRP-H340D830-X4F0-XX-UDD-F-W

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7	513.7
2.5°	509.8	511.8	513.0	513.3	513.3	513.3	513.7	513.7	513.3	513.0
5°	507.0	509.0	509.8	510.6	510.6	510.6	510.6	510.6	510.2	509.4
7.5°	502.7	503.9	505.1	504.7	504.7	504.3	503.9	504.3	503.5	503.5
10°	494.8	496.0	496.8	495.6	495.6	496.0	496.0	495.6	494.4	493.2
12.5°	485.7	486.9	485.7	486.1	485.3	484.5	484.1	483.8	482.6	481.8
15°	473.9	473.9	473.1	473.1	471.9	470.3	469.9	470.3	468.8	468.8
17.5°	460.9	460.1	458.9	458.1	457.7	457.7	456.1	456.1	454.2	453.8
20°	446.7	445.9	444.7	442.7	441.9	442.3	440.7	439.6	438.4	438.0
22.5°	431.7	429.7	428.5	426.5	425.0	425.0	423.8	421.8	420.6	419.4
25°	414.7	412.7	410.4	408.8	407.6	405.6	404.8	403.3	402.1	401.7
27.5°	397.3	394.2	391.0	389.4	388.7	386.3	385.1	384.3	382.0	381.6
30°	378.8	376.4	372.5	369.7	367.7	368.1	365.4	363.8	362.6	361.4
32.5°	361.0	357.1	353.1	349.6	347.2	346.8	344.1	342.5	341.3	340.1
35°	340.9	337.0	332.2	329.1	326.7	325.5	322.8	322.0	320.0	319.2
37.5°	320.8	316.5	311.7	307.8	306.2	303.4	302.2	300.3	298.7	298.7
40°	301.1	295.9	291.2	286.5	284.5	282.9	279.8	278.2	276.2	275.0
42.5°	280.5	274.6	270.3	265.9	263.2	262.0	258.4	256.5	254.5	254.1
45°	260.0	254.1	248.6	244.2	243.1	240.7	237.1	234.4	234.0	233.6
47.5°	239.1	233.2	228.1	223.3	221.8	219.0	216.6	214.7	212.3	211.1
50°	219.0	213.1	207.5	202.4	200.4	198.1	195.7	192.9	192.2	191.0
52.5°	198.9	192.2	186.2	181.5	179.9	178.0	175.2	172.8	171.6	170.9
55°	178.3	171.6	166.5	161.8	159.8	158.6	155.5	153.5	151.9	151.1
57.5°	158.2	151.5	146.8	143.2	140.5	139.3	136.1	134.2	133.4	133.0
60°	139.3	133.0	127.8	124.3	121.9	120.7	118.4	116.4	115.2	114.8
62.5°	120.3	114.8	110.1	106.5	105.0	103.4	101.4	99.8	98.6	98.6
65°	102.2	96.7	92.3	89.6	88.0	87.2	84.8	84.0	82.9	82.9
67.5°	84.4	80.5	77.3	73.8	72.6	72.6	70.2	69.4	68.7	68.7
70°	69.1	65.5	61.9	60.0	58.8	58.4	56.4	55.2	54.5	53.7
72.5°	54.1	50.9	47.7	47.3	47.3	47.0	47.0	46.2	46.2	46.6
75°	41.4	40.6	39.9	39.9	39.5	39.1	39.1	38.7	38.7	38.7
77.5°	33.1	32.7	32.4	32.0	32.0	31.6	31.2	31.2	31.2	31.2
80°	25.3	24.9	24.9	24.5	24.1	24.5	24.1	24.1	23.7	23.7
82.5°	17.8	17.8	17.8	17.4	17.4	17.4	17.4	17.0	17.0	17.4
85°	11.0	11.0	11.0	11.0	10.7	11.0	10.7	10.7	10.7	11.0
87.5°	4.7	5.1	4.7	5.1	5.1	4.7	4.7	4.7	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



TEST NUMBER: P243390
 CATALOG NUMBER: S123RDRP-H340D830-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	17.88	19.43	18.24	19.75	20.06	15.07	16.63	15.44	16.94	17.25
	3H	19.71	21.10	20.08	21.43	21.79	16.15	17.54	16.52	17.87	18.23
	4H	20.39	21.70	20.79	22.05	22.43	16.54	17.85	16.94	18.20	18.58
	6H	20.89	22.10	21.30	22.47	22.86	16.87	18.08	17.28	18.44	18.84
	8H	21.05	22.20	21.47	22.59	22.99	16.98	18.13	17.40	18.52	18.92
	12H	21.15	22.25	21.58	22.63	23.06	17.05	18.16	17.48	18.54	18.97
4H	2H	18.12	19.43	18.52	19.78	20.16	15.79	17.10	16.19	17.45	17.83
	3H	20.11	21.20	20.52	21.60	22.00	17.01	18.10	17.42	18.50	18.90
	4H	20.90	21.88	21.33	22.30	22.73	17.50	18.48	17.93	18.90	19.33
	6H	21.52	22.37	21.97	22.81	23.27	17.92	18.78	18.38	19.22	19.68
	8H	21.72	22.52	22.18	22.96	23.43	18.07	18.87	18.53	19.31	19.78
	12H	21.86	22.58	22.35	23.06	23.53	18.18	18.89	18.66	19.37	19.84
8H	4H	20.94	21.73	21.40	22.18	22.65	17.82	18.62	18.28	19.06	19.53
	6H	21.60	22.26	22.10	22.75	23.23	18.33	18.99	18.83	19.48	19.96
	8H	21.84	22.44	22.36	22.95	23.43	18.54	19.13	19.05	19.64	20.13
	12H	22.04	22.56	22.54	23.05	23.61	18.71	19.24	19.22	19.73	20.29
12H	4H	20.92	21.64	21.41	22.12	22.59	17.85	18.57	18.34	19.05	19.52
	6H	21.59	22.18	22.10	22.69	23.18	18.39	18.98	18.90	19.49	19.98
	8H	21.86	22.39	22.37	22.88	23.44	18.65	19.17	19.15	19.66	20.23