

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: P243404

Luminaire Tested: S123RDRP-H340D930-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243404
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-H340D930-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

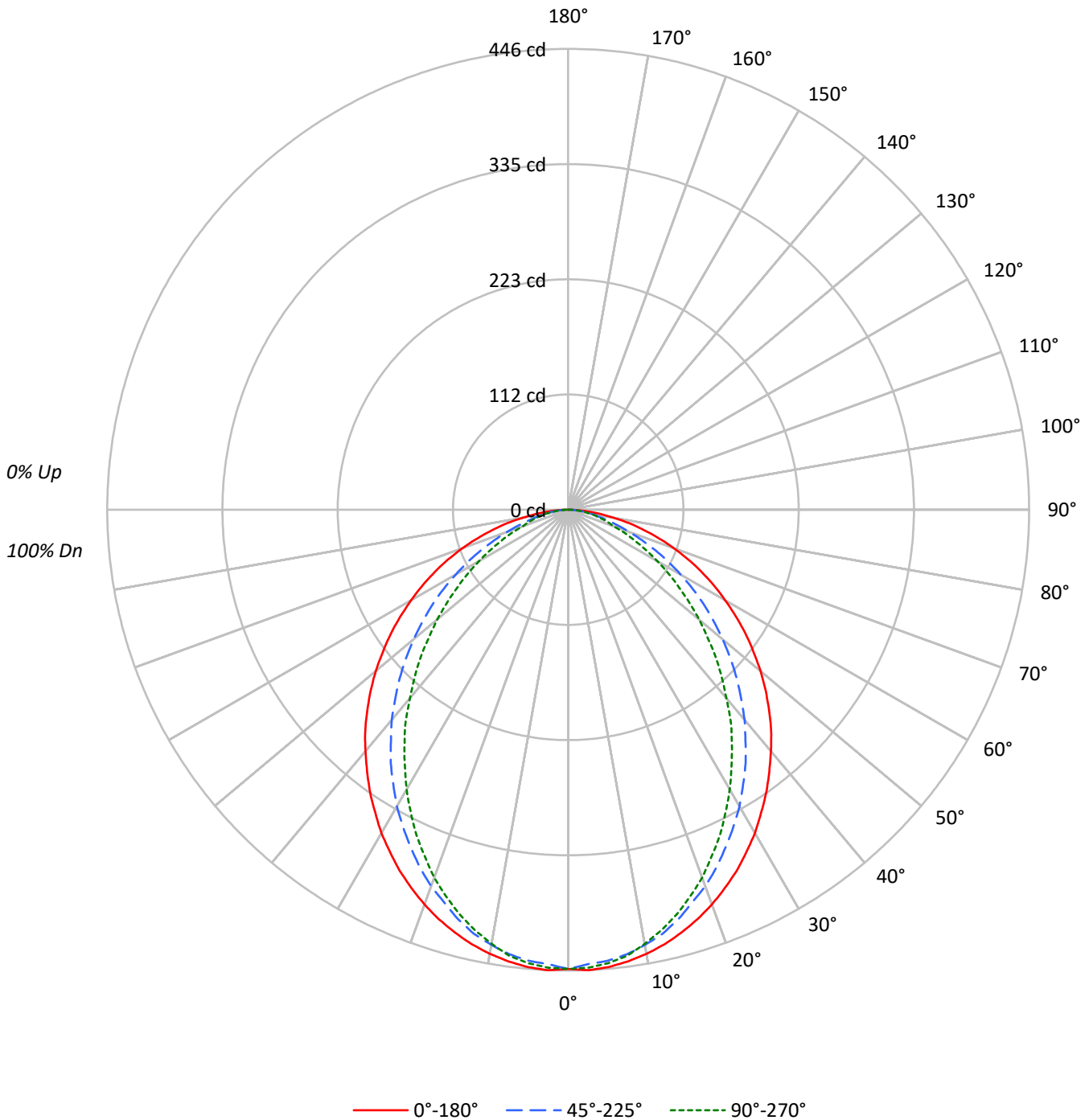
Lumens per Lamp: N/A
Luminaire Lumens: 1003.3 lumens
Efficiency: N/A
Efficacy: 89.6 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

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				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°	5387	5387	5387
5°	5407	5332	5361
10°	5373	5264	5251
15°	5316	5153	5089
20°	5243	5001	4887
25°	5158	4820	4648
30°	5058	4638	4375
35°	4944	4429	4086
40°	4828	4201	3764
45°	4711	3950	3464
50°	4582	3675	3115
55°	4429	3390	2762
60°	4252	3052	2407
65°	4081	2673	2056
70°	3845	2236	1644
75°	3550	1775	1564
80°	3099	1571	1431
85°	2615	1377	1335

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4711 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.8	4.2
10°-20°	116.4	11.6
20°-30°	167.6	16.7
30°-40°	188.7	18.8
40°-50°	180.3	18.0
50°-60°	147.4	14.7
60°-70°	99.0	9.9
70°-80°	49.4	4.9
80°-90°	12.8	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°	325.7	32.5
0°-40°	514.5	51.3
0°-60°	842.2	83.9
0°-90°	1003.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1003.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	444	444	444	444	444	
5°	444	443	438	442	441	42
15°	424	420	411	408	406	119
25°	386	377	360	353	348	178
35°	334	321	299	283	276	209
45°	275	258	230	210	202	212
55°	210	191	160	138	131	187
65°	142	122	93	76	72	141
75°	76	58	38	34	33	80
85°	19	11	10	9	10	22
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°	444.4	444.4	444.4	444.4	444.4	444.4	444.4	444.4	444.4	444.4	444.4
2.5°	446.1	445.1	443.7	444.0	444.4	444.7	444.7	444.4	443.4	442.0	440.3
5°	444.4	443.4	442.0	442.0	442.7	442.7	442.7	442.3	441.3	439.9	438.2
7.5°	441.0	440.3	438.6	438.9	439.3	439.3	439.3	438.9	437.6	435.9	434.1
10°	436.5	435.5	434.1	434.1	434.5	434.5	434.5	433.8	432.1	430.0	427.7
12.5°	430.7	429.7	428.3	428.3	428.3	428.3	428.3	427.3	424.6	422.5	420.5
15°	423.6	422.5	421.2	421.2	420.8	420.5	419.8	418.1	415.7	413.3	410.6
17.5°	415.7	414.3	412.6	412.3	412.0	411.6	410.6	409.6	406.2	402.7	398.6
20°	406.5	405.1	403.4	403.1	402.1	401.0	400.4	398.3	394.6	390.5	387.7
22.5°	396.3	394.9	393.2	392.5	390.5	389.8	388.8	385.7	381.6	377.8	374.8
25°	385.7	384.0	381.9	380.9	378.5	377.1	376.8	372.4	368.3	364.2	360.4
27.5°	373.4	372.0	370.3	368.3	365.9	364.2	363.5	359.4	354.3	349.5	346.1
30°	361.4	359.4	357.7	355.3	351.9	350.2	348.8	344.7	340.3	334.5	331.4
32.5°	347.5	346.1	344.0	341.7	338.2	336.9	334.8	329.7	323.9	319.8	315.0
35°	334.1	332.8	329.7	327.3	322.5	321.2	319.1	314.7	308.2	303.4	299.3
37.5°	319.5	317.8	315.4	312.0	307.9	306.2	303.4	299.0	291.5	286.7	281.6
40°	305.1	302.7	300.0	296.3	292.2	290.5	288.1	281.6	275.4	270.0	265.5
42.5°	290.8	288.1	284.7	281.2	276.8	274.4	271.7	265.5	258.7	253.6	247.4
45°	274.8	272.7	269.3	265.2	260.1	258.4	255.3	248.8	242.0	236.5	230.4
47.5°	259.1	256.7	253.3	249.2	244.0	241.6	238.6	232.1	225.3	218.4	213.0
50°	243.0	240.6	236.5	232.4	227.7	224.6	221.9	215.4	207.9	201.7	194.9
52.5°	225.9	223.9	220.5	216.4	210.2	207.9	205.1	198.0	190.8	183.6	177.5
55°	209.6	208.2	204.1	200.0	193.5	190.8	188.1	180.6	173.4	166.2	160.4
57.5°	192.5	191.5	187.4	182.6	176.8	174.1	170.7	163.1	156.3	149.2	143.0
60°	175.4	174.4	170.3	165.5	160.1	156.7	152.9	147.1	139.3	132.8	125.9
62.5°	159.1	157.7	154.3	149.2	143.0	139.6	136.2	129.4	122.2	115.4	109.2
65°	142.3	140.6	136.5	131.4	125.6	122.5	119.1	112.6	105.5	99.0	93.2
67.5°	125.6	123.9	119.5	115.4	108.5	105.5	102.4	95.9	89.1	82.6	77.1
70°	108.5	106.8	103.4	98.0	92.2	89.1	86.0	79.2	73.0	68.3	63.1
72.5°	91.8	90.4	87.0	81.9	76.5	73.4	70.0	64.2	58.7	53.6	49.8
75°	75.8	73.7	70.7	65.9	60.4	57.7	55.3	49.5	44.4	41.0	37.9
77.5°	60.4	58.0	54.6	50.9	45.7	43.0	40.6	35.8	32.4	30.0	29.4
80°	44.4	44.0	40.6	36.5	32.1	30.0	27.6	24.6	23.6	23.2	22.5
82.5°	31.1	29.7	27.0	23.2	19.8	18.4	17.7	17.1	16.4	16.4	15.7
85°	18.8	17.4	15.0	11.9	11.3	10.9	10.6	10.6	10.2	9.9	9.9
87.5°	8.2	6.8	5.1	4.8	4.4	4.4	4.8	4.8	4.8	4.4	4.4
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°	444.4	444.4	444.4	444.4	444.4	444.4	444.4	444.4	444.4	444.4
2.5°	441.0	442.7	443.7	444.0	444.0	444.0	444.4	444.4	444.0	443.7
5°	438.6	440.3	441.0	441.7	441.7	441.7	441.7	441.7	441.3	440.6
7.5°	434.8	435.9	436.9	436.5	436.5	436.2	435.9	436.2	435.5	435.5
10°	428.0	429.0	429.7	428.7	428.7	429.0	429.0	428.7	427.7	426.6
12.5°	420.2	421.2	420.2	420.5	419.8	419.1	418.8	418.4	417.4	416.7
15°	409.9	409.9	409.2	409.2	408.2	406.8	406.5	406.8	405.5	405.5
17.5°	398.6	398.0	396.9	396.3	395.9	395.9	394.6	394.6	392.8	392.5
20°	386.4	385.7	384.7	382.9	382.3	382.6	381.2	380.2	379.2	378.9
22.5°	373.4	371.7	370.7	369.0	367.6	367.6	366.6	364.9	363.8	362.8
25°	358.7	357.0	355.0	353.6	352.6	350.9	350.2	348.8	347.8	347.5
27.5°	343.7	341.0	338.2	336.9	336.2	334.1	333.1	332.4	330.4	330.0
30°	327.7	325.6	322.2	319.8	318.1	318.4	316.1	314.7	313.7	312.6
32.5°	312.3	308.9	305.5	302.4	300.4	300.0	297.6	296.3	295.2	294.2
35°	294.9	291.5	287.4	284.7	282.6	281.6	279.2	278.5	276.8	276.1
37.5°	277.5	273.7	269.6	266.2	264.9	262.5	261.4	259.7	258.4	258.4
40°	260.4	256.0	251.9	247.8	246.1	244.7	242.0	240.6	238.9	237.9
42.5°	242.7	237.6	233.8	230.0	227.7	226.6	223.6	221.9	220.1	219.8
45°	224.9	219.8	215.0	211.3	210.2	208.2	205.1	202.7	202.4	202.1
47.5°	206.8	201.7	197.3	193.2	191.8	189.4	187.4	185.7	183.6	182.6
50°	189.4	184.3	179.5	175.1	173.4	171.3	169.3	166.9	166.2	165.2
52.5°	172.0	166.2	161.1	157.0	155.6	153.9	151.5	149.5	148.5	147.8
55°	154.3	148.5	144.0	139.9	138.2	137.2	134.5	132.8	131.4	130.7
57.5°	136.9	131.1	127.0	123.9	121.5	120.5	117.8	116.0	115.4	115.0
60°	120.5	115.0	110.6	107.5	105.5	104.4	102.4	100.7	99.7	99.3
62.5°	104.1	99.3	95.2	92.2	90.8	89.4	87.7	86.4	85.3	85.3
65°	88.4	83.6	79.9	77.5	76.1	75.4	73.4	72.7	71.7	71.7
67.5°	73.0	69.6	66.9	63.8	62.8	62.8	60.8	60.1	59.4	59.4
70°	59.7	56.7	53.6	51.9	50.9	50.5	48.8	47.8	47.1	46.4
72.5°	46.8	44.0	41.3	41.0	41.0	40.6	40.6	39.9	39.9	40.3
75°	35.8	35.2	34.5	34.5	34.1	33.8	33.8	33.4	33.4	33.4
77.5°	28.7	28.3	28.0	27.6	27.6	27.3	27.0	27.0	27.0	27.0
80°	21.8	21.5	21.5	21.2	20.8	21.2	20.8	20.8	20.5	20.5
82.5°	15.4	15.4	15.4	15.0	15.0	15.0	15.0	14.7	14.7	15.0
85°	9.6	9.6	9.6	9.6	9.2	9.6	9.2	9.2	9.2	9.6
87.5°	4.1	4.4	4.1	4.4	4.4	4.1	4.1	4.1	4.1	4.1
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	17.37	18.93	17.74	19.24	19.56	14.57	16.12	14.93	16.44	16.75
	3H	19.20	20.60	19.58	20.93	21.29	15.64	17.04	16.02	17.37	17.73
	4H	19.89	21.20	20.29	21.55	21.93	16.04	17.35	16.44	17.70	18.08
	6H	20.39	21.60	20.80	21.96	22.36	16.36	17.58	16.78	17.94	18.33
	8H	20.54	21.70	20.97	22.09	22.49	16.47	17.63	16.90	18.02	18.42
	12H	20.64	21.75	21.07	22.13	22.56	16.55	17.65	16.98	18.04	18.46
4H	2H	17.62	18.93	18.01	19.27	19.65	15.29	16.60	15.69	16.95	17.33
	3H	19.61	20.70	20.02	21.10	21.50	16.51	17.60	16.92	18.00	18.40
	4H	20.40	21.38	20.83	21.79	22.23	17.00	17.98	17.43	18.39	18.83
	6H	21.01	21.87	21.47	22.31	22.77	17.42	18.27	17.87	18.71	19.17
	8H	21.22	22.01	21.68	22.46	22.92	17.56	18.36	18.03	18.81	19.27
	12H	21.36	22.07	21.84	22.55	23.02	17.67	18.39	18.16	18.87	19.34
8H	4H	20.43	21.23	20.90	21.68	22.14	17.31	18.11	17.78	18.56	19.02
	6H	21.10	21.76	21.59	22.25	22.73	17.83	18.49	18.32	18.98	19.46
	8H	21.34	21.93	21.85	22.44	22.93	18.03	18.63	18.55	19.14	19.62
	12H	21.53	22.06	22.04	22.55	23.11	18.21	18.73	18.72	19.22	19.79
12H	4H	20.42	21.14	20.90	21.61	22.08	17.35	18.07	17.83	18.54	19.01
	6H	21.08	21.68	21.60	22.19	22.67	17.88	18.48	18.40	18.99	19.47
	8H	21.36	21.88	21.87	22.38	22.94	18.14	18.67	18.65	19.16	19.72