

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P242671

Luminaire Tested: **S124DR-S1020D830-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242671  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-16)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124DR-S1020D830-X4F0-XX-UDD-D-W  
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3659.5 lumens  
Efficiency: N/A  
Efficacy: 105.2 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')  
CIE Type: Direct

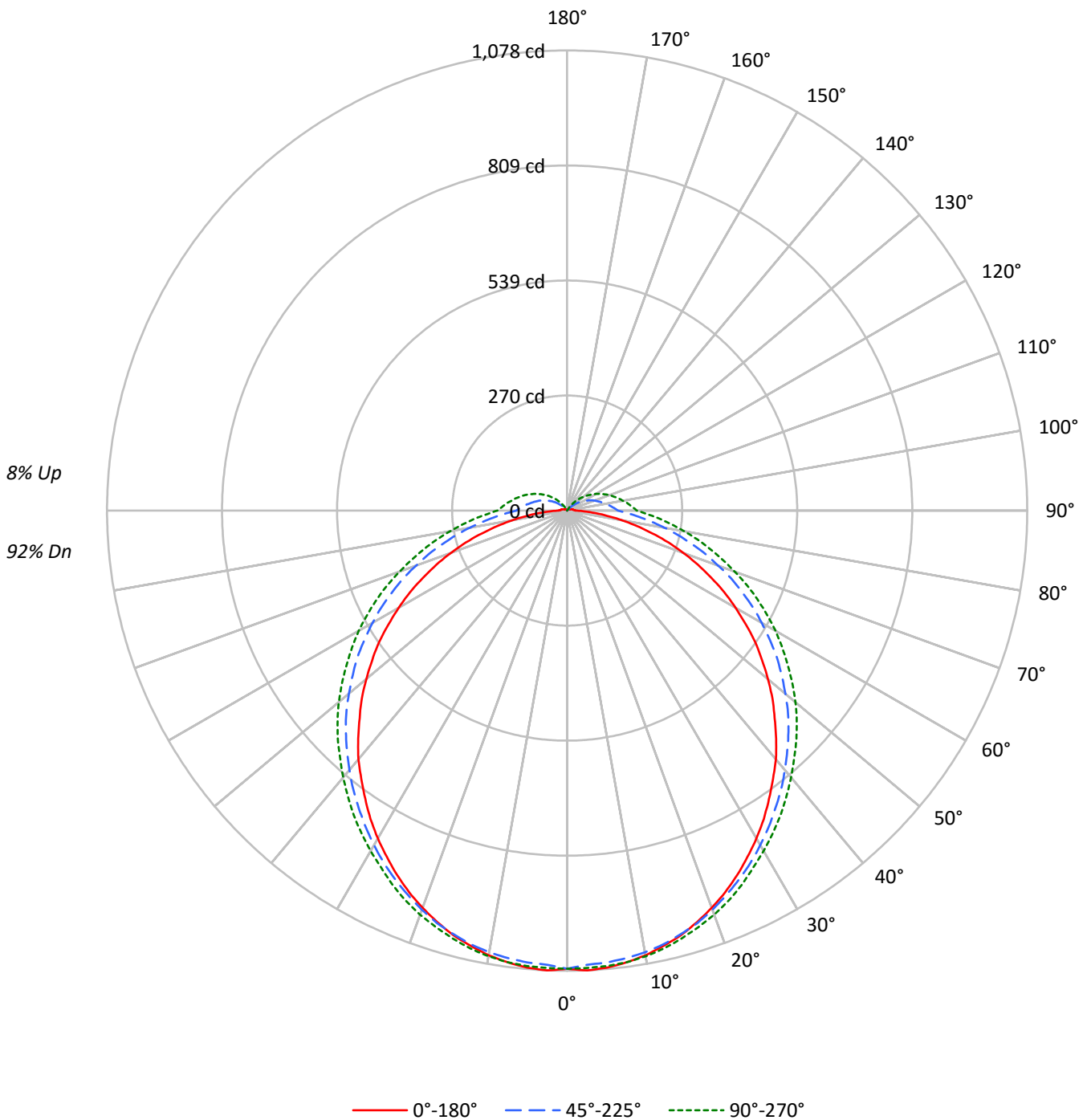
Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	117	117	117	117	114	114	114	114	107	107	107	101	101	101	95	95	95	92
1	105	100	95	91	102	97	93	89	91	88	84	86	83	80	81	79	77	74
2	95	86	79	73	92	84	77	71	79	73	68	74	70	66	70	67	63	60
3	87	75	67	60	83	73	65	59	69	62	57	65	60	55	62	57	53	50
4	79	66	57	50	76	65	56	49	61	54	48	58	52	47	55	49	45	43
5	73	59	50	43	70	58	49	42	55	47	41	52	45	40	49	44	39	37
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	45	39	34	32
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	35	30	28
8	58	44	35	29	56	43	35	29	41	33	28	39	32	28	37	31	27	25
9	54	40	32	26	52	39	31	26	38	30	25	36	29	25	34	29	24	22
10	50	37	29	24	49	36	29	23	35	28	23	33	27	23	32	26	22	20

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	9541	9541	9541
5°	9571	9314	9339
10°	9511	9153	9139
15°	9425	8968	8909
20°	9296	8764	8685
25°	9150	8538	8441
30°	8994	8312	8189
35°	8815	8081	7968
40°	8672	7861	7738
45°	8460	7657	7539
50°	8281	7423	7328
55°	8097	7200	7082
60°	7807	6918	6855
65°	7491	6614	6578
70°	7109	6268	6256
75°	6572	5886	5959
80°	5977	5509	5658
85°	5215	5156	5452



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	101.7	2.8
10°-20°	291.4	8.0
20°-30°	440.6	12.0
30°-40°	533.0	14.6
40°-50°	563.5	15.4
50°-60°	530.3	14.5
60°-70°	440.1	12.0
70°-80°	308.8	8.4
80°-90°	174.1	4.8
90°-100°	103.7	2.8
100°-110°	76.8	2.1
110°-120°	51.5	1.4
120°-130°	29.0	0.8
130°-140°	12.5	0.3
140°-150°	2.5	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	833.7	22.8
0°-40°	1366.7	37.3
0°-60°	2460.6	67.2
0°-90°	3383.6	92.5
90°-120°	231.9	6.3
90°-150°	275.9	7.5
90°-180°	276.0	7.5
0°-180°	3659.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1073	1073	1073	1073	1073	
5°	1075	1071	1062	1072	1071	102
15°	1030	1031	1028	1038	1037	290
25°	942	950	953	966	968	434
35°	825	839	851	868	871	516
45°	688	710	733	754	760	531
55°	538	564	600	624	631	480
65°	373	411	452	482	492	369
75°	207	251	302	335	346	220
85°	64	114	168	204	216	66
90°	19	67	119	154	164	13
95°	16	55	105	137	148	12
105°	11	35	79	109	119	12
115°	7	18	56	83	91	8
125°	5	4	34	56	64	5
135°	2	2	11	30	37	2
145°	1	0	0	7	12	1
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1073.4	1073.4	1073.4	1073.4	1073.4
2.5°	1078.2	1074.6	1064.9	1073.4	1072.2
5°	1074.6	1071.0	1062.5	1072.2	1071.0
7.5°	1067.4	1064.9	1057.7	1068.6	1067.4
10°	1057.7	1056.5	1050.5	1061.3	1060.1
12.5°	1044.5	1044.5	1040.9	1050.5	1050.5
15°	1030.1	1031.3	1027.7	1038.5	1037.3
17.5°	1010.9	1014.5	1013.3	1024.1	1022.9
20°	990.4	994.0	995.2	1007.3	1007.3
22.5°	967.6	972.4	974.8	986.8	989.2
25°	942.3	949.6	953.2	966.4	967.6
27.5°	914.7	925.5	930.3	942.3	943.5
30°	887.1	896.7	905.1	918.3	920.7
32.5°	857.0	869.0	878.6	894.3	896.7
35°	824.6	839.0	851.0	867.8	871.4
37.5°	792.1	808.9	823.4	840.2	843.8
40°	760.8	776.5	793.3	811.3	816.1
42.5°	724.8	742.8	763.3	783.7	787.3
45°	687.5	710.4	733.2	753.6	759.6
47.5°	652.7	675.5	702.0	722.4	729.6
50°	614.2	640.7	667.1	691.1	698.3
52.5°	575.7	602.2	633.4	657.5	664.7
55°	538.5	563.7	599.8	623.8	631.0
57.5°	496.4	527.7	562.5	591.4	597.4
60°	455.5	486.8	526.5	554.1	563.7
62.5°	415.9	450.7	490.4	518.1	527.7
65°	372.6	411.1	451.9	482.0	491.6
67.5°	331.7	372.6	415.9	445.9	455.5
70°	289.7	330.5	376.2	408.7	417.1
72.5°	248.8	290.9	340.2	371.4	381.0
75°	206.7	251.2	301.7	335.4	346.2
77.5°	167.1	214.0	266.8	300.5	312.5
80°	131.0	179.1	232.0	268.0	277.7
82.5°	95.0	145.4	198.3	235.6	246.4
85°	63.7	114.2	168.3	204.3	216.4
87.5°	39.7	88.9	141.8	176.7	187.5
90°	19.2	67.3	119.0	153.9	163.5
92.5°	18.0	60.1	111.8	145.4	155.1
95°	15.6	55.3	104.6	137.0	147.8
97.5°	14.4	49.3	98.6	129.8	140.6
100°	13.2	44.5	91.3	123.8	132.2
102.5°	13.2	39.7	85.3	116.6	126.2
105°	10.8	34.9	79.3	109.4	119.0
107.5°	10.8	31.3	73.3	103.4	111.8
110°	9.6	26.4	68.5	96.2	105.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	8.4	22.8	62.5	88.9	98.6
115°	7.2	18.0	56.5	82.9	91.3
117.5°	7.2	14.4	50.5	75.7	85.3
120°	6.0	9.6	44.5	68.5	78.1
122.5°	6.0	6.0	38.5	62.5	70.9
125°	4.8	3.6	33.7	56.5	63.7
127.5°	4.8	3.6	27.6	49.3	57.7
130°	3.6	2.4	21.6	43.3	50.5
132.5°	3.6	2.4	16.8	37.3	44.5
135°	2.4	2.4	10.8	30.0	37.3
137.5°	2.4	1.2	6.0	24.0	30.0
140°	2.4	1.2	2.4	18.0	24.0
142.5°	1.2	1.2	0.0	13.2	18.0
145°	1.2	0.0	0.0	7.2	12.0
147.5°	1.2	0.0	0.0	1.2	6.0
150°	1.2	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)