

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: P242695

Luminaire Tested: **S124DR-S1020D940-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242695  
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-S1020D940-X4F0-XX-UDD-D-W  
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3462.2 lumens  
Efficiency: N/A  
Efficacy: 99.5 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

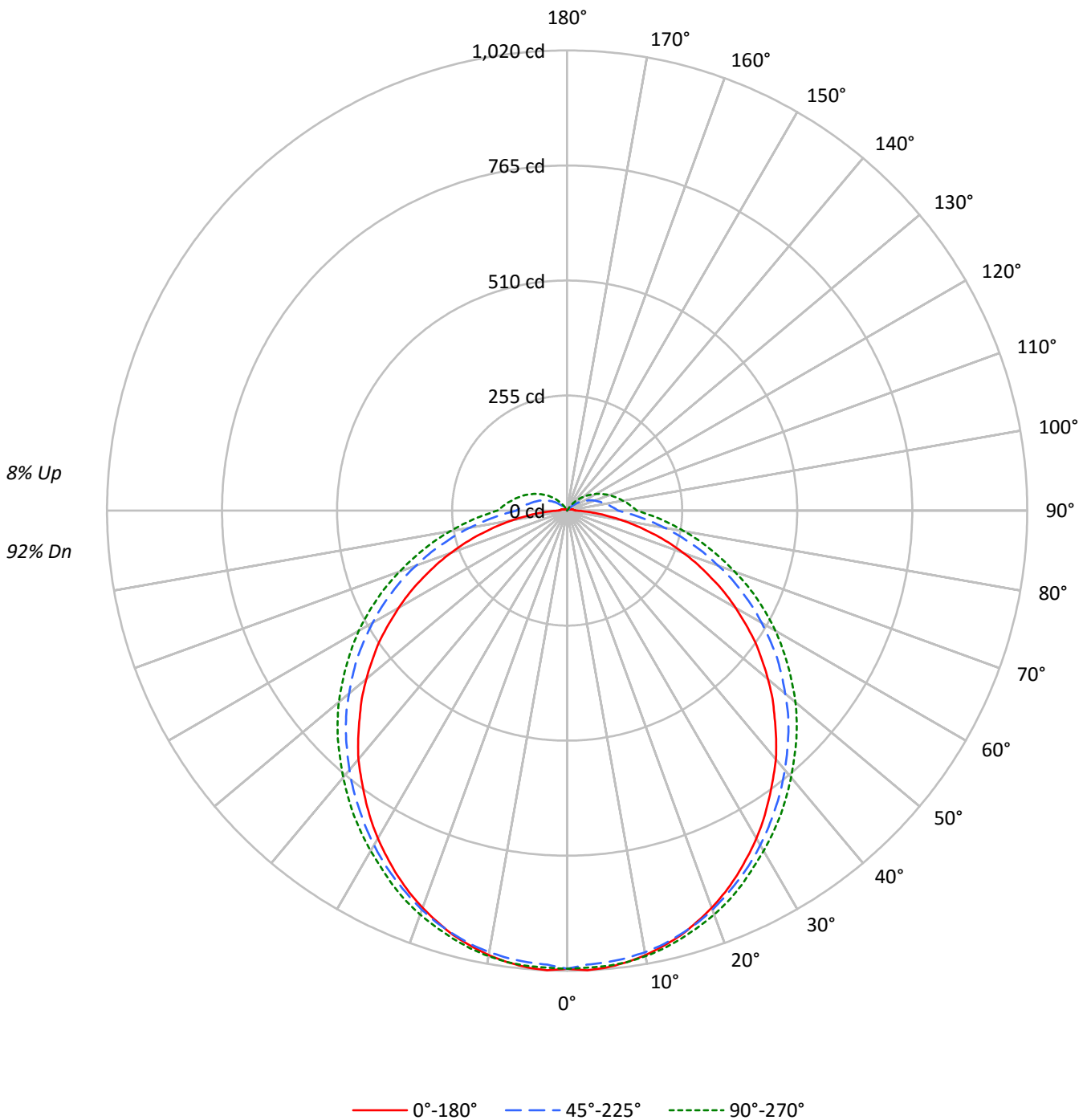
Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	9027	9027	9027
5°	9054	8812	8835
10°	8998	8660	8647
15°	8916	8484	8429
20°	8795	8292	8216
25°	8657	8077	7985
30°	8508	7864	7748
35°	8340	7646	7538
40°	8204	7437	7321
45°	8004	7244	7133
50°	7835	7022	6933
55°	7659	6811	6700
60°	7387	6545	6486
65°	7087	6259	6224
70°	6726	5930	5919
75°	6219	5568	5637
80°	5653	5213	5353
85°	4937	4877	5158



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	96.2	2.8
10°-20°	275.7	8.0
20°-30°	416.8	12.0
30°-40°	504.3	14.6
40°-50°	533.1	15.4
50°-60°	501.7	14.5
60°-70°	416.3	12.0
70°-80°	292.2	8.4
80°-90°	164.7	4.8
90°-100°	98.1	2.8
100°-110°	72.6	2.1
110°-120°	48.7	1.4
120°-130°	27.4	0.8
130°-140°	11.9	0.3
140°-150°	2.3	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	788.7	22.8
0°-40°	1293.0	37.3
0°-60°	2327.9	67.2
0°-90°	3201.1	92.5
90°-120°	219.4	6.3
90°-150°	261.1	7.5
90°-180°	261.0	7.5
0°-180°	3462.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1016	1016	1016	1016	1016	
5°	1017	1013	1005	1014	1013	97
15°	974	976	972	982	981	275
25°	892	898	902	914	915	411
35°	780	794	805	821	824	488
45°	650	672	694	713	719	503
55°	509	533	567	590	597	454
65°	352	389	428	456	465	350
75°	196	238	285	317	328	208
85°	60	108	159	193	205	63
90°	18	64	113	146	155	12
95°	15	52	99	130	140	12
105°	10	33	75	104	113	12
115°	7	17	53	78	86	7
125°	4	3	32	53	60	4
135°	2	2	10	28	35	2
145°	1	0	0	7	11	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°	1015.5	1015.5	1015.5	1015.5	1015.5
2.5°	1020.0	1016.6	1007.5	1015.5	1014.3
5°	1016.6	1013.2	1005.2	1014.3	1013.2
7.5°	1009.8	1007.5	1000.7	1010.9	1009.8
10°	1000.7	999.6	993.9	1004.1	1003.0
12.5°	988.2	988.2	984.8	993.9	993.9
15°	974.5	975.7	972.3	982.5	981.4
17.5°	956.3	959.8	958.6	968.9	967.7
20°	937.0	940.4	941.6	952.9	952.9
22.5°	915.4	920.0	922.2	933.6	935.9
25°	891.5	898.3	901.8	914.3	915.4
27.5°	865.4	875.6	880.2	891.5	892.7
30°	839.2	848.3	856.3	868.8	871.1
32.5°	810.8	822.2	831.3	846.0	848.3
35°	780.1	793.7	805.1	821.0	824.4
37.5°	749.4	765.3	778.9	794.9	798.3
40°	719.8	734.6	750.5	767.6	772.1
42.5°	685.7	702.8	722.1	741.4	744.8
45°	650.4	672.1	693.7	713.0	718.7
47.5°	617.5	639.1	664.1	683.4	690.2
50°	581.1	606.1	631.1	653.9	660.7
52.5°	544.7	569.7	599.3	622.0	628.8
55°	509.4	533.3	567.4	590.2	597.0
57.5°	469.6	499.2	532.2	559.5	565.2
60°	431.0	460.5	498.1	524.2	533.3
62.5°	393.5	426.4	464.0	490.1	499.2
65°	352.5	388.9	427.6	456.0	465.1
67.5°	313.9	352.5	393.5	421.9	431.0
70°	274.1	312.7	355.9	386.6	394.6
72.5°	235.4	275.2	321.8	351.4	360.5
75°	195.6	237.7	285.4	317.3	327.5
77.5°	158.1	202.4	252.4	284.3	295.7
80°	123.9	169.4	219.5	253.6	262.7
82.5°	89.8	137.6	187.6	222.9	233.1
85°	60.3	108.0	159.2	193.3	204.7
87.5°	37.5	84.1	134.2	167.2	177.4
90°	18.2	63.7	112.6	145.6	154.7
92.5°	17.1	56.9	105.8	137.6	146.7
95°	14.8	52.3	98.9	129.6	139.9
97.5°	13.6	46.6	93.2	122.8	133.0
100°	12.5	42.1	86.4	117.1	125.1
102.5°	12.5	37.5	80.7	110.3	119.4
105°	10.2	33.0	75.1	103.5	112.6
107.5°	10.2	29.6	69.4	97.8	105.8
110°	9.1	25.0	64.8	91.0	100.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	8.0	21.6	59.1	84.1	93.2
115°	6.8	17.1	53.4	78.5	86.4
117.5°	6.8	13.6	47.8	71.6	80.7
120°	5.7	9.1	42.1	64.8	73.9
122.5°	5.7	5.7	36.4	59.1	67.1
125°	4.5	3.4	31.8	53.4	60.3
127.5°	4.5	3.4	26.2	46.6	54.6
130°	3.4	2.3	20.5	40.9	47.8
132.5°	3.4	2.3	15.9	35.3	42.1
135°	2.3	2.3	10.2	28.4	35.3
137.5°	2.3	1.1	5.7	22.7	28.4
140°	2.3	1.1	2.3	17.1	22.7
142.5°	1.1	1.1	0.0	12.5	17.1
145°	1.1	0.0	0.0	6.8	11.4
147.5°	1.1	0.0	0.0	1.1	5.7
150°	1.1	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)