

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: P243013

Luminaire Tested: **S121DR-H490D830-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243013  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-52)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S121DR-H490D830-X4F0-XX-UDD-D-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1739.5 lumens  
Efficiency: N/A  
Efficacy: 101.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.34 / 1.43  
Luminous Opening: Rectangular w/ Sides (W: 0.09' x L: 3.88' x H: 0.08')  
CIE Type: Semi-Direct

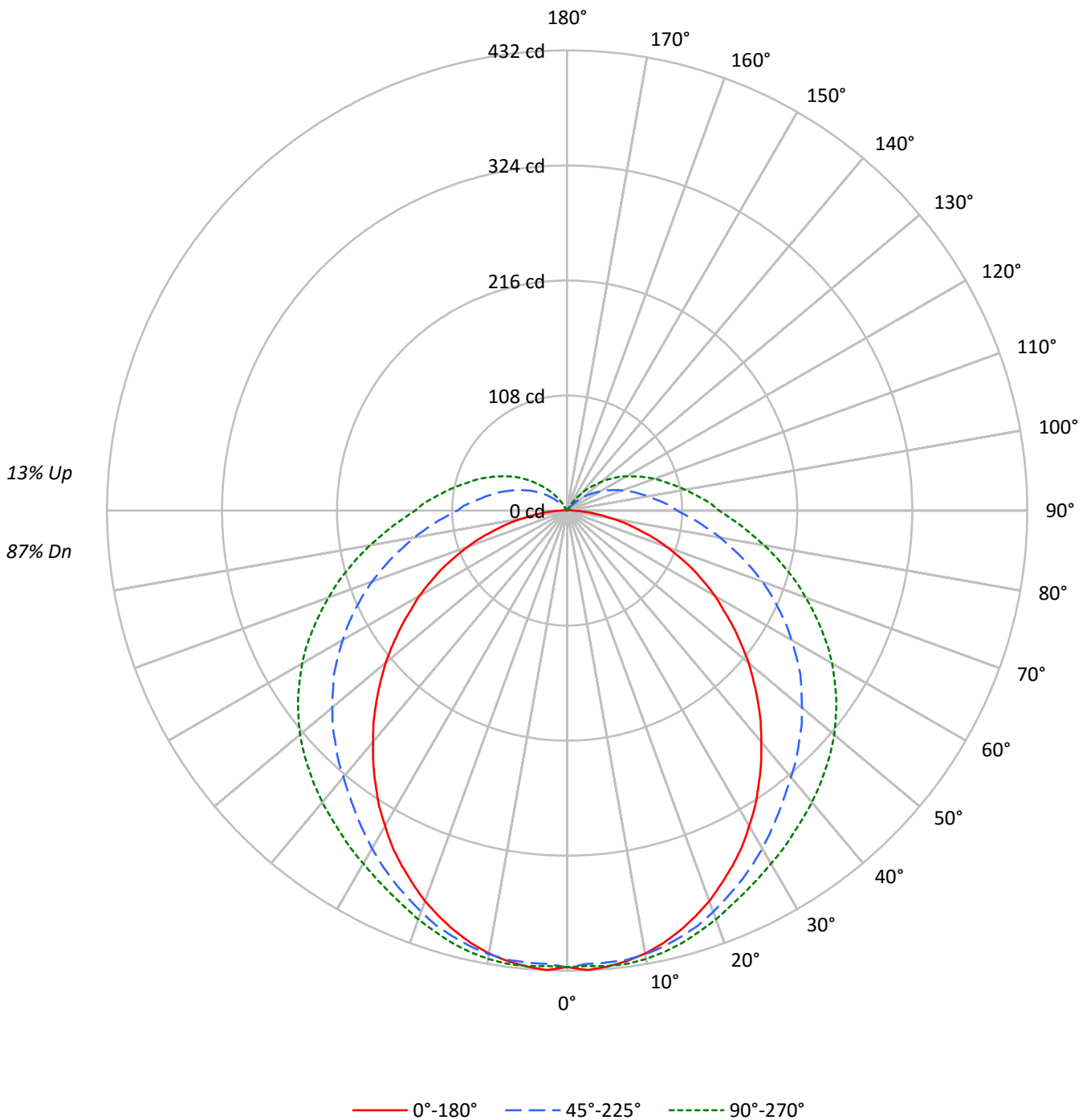
Input Watts (W): 17.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	116	116	116	116	112	112	112	112	104	104	104	97	97	97	90	90	90	87
1	103	97	92	87	99	94	89	84	87	83	79	81	78	75	75	72	70	67
2	93	83	75	69	89	80	73	67	74	69	63	69	64	60	64	60	57	54
3	84	72	63	56	80	70	61	55	65	58	52	60	54	50	56	51	47	44
4	76	64	54	47	73	61	53	46	57	50	44	53	47	42	49	44	40	37
5	70	56	47	40	67	54	46	39	51	43	37	47	41	36	44	39	34	32
6	65	51	41	34	62	49	40	34	46	38	32	43	36	31	40	34	30	27
7	60	46	37	30	57	44	36	30	41	34	29	39	32	27	36	31	26	24
8	55	42	33	27	53	40	32	26	38	31	25	36	29	24	33	28	23	21
9	52	38	30	24	50	37	29	24	35	28	23	33	26	22	31	25	21	19
10	48	35	27	22	47	34	26	21	32	25	21	30	24	20	29	23	19	17

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

	0°	45°	90°
0°	12699	12699	12699
5°	12759	11995	11845
10°	12658	11427	11114
15°	12456	10834	10400
20°	12208	10241	9730
25°	11899	9671	9134
30°	11551	9137	8653
35°	11175	8632	8251
40°	10767	8207	7920
45°	10386	7849	7611
50°	9996	7507	7329
55°	9543	7189	7022
60°	9152	6814	6702
65°	8719	6459	6352
70°	8123	6095	5995
75°	7386	5710	5648
80°	6494	5349	5307
85°	5649	5011	4996



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.8	2.3
10°-20°	117.1	6.7
20°-30°	177.2	10.2
30°-40°	216.5	12.4
40°-50°	235.1	13.5
50°-60°	232.0	13.3
60°-70°	207.8	11.9
70°-80°	167.2	9.6
80°-90°	120.8	6.9
90°-100°	86.5	5.0
100°-110°	61.8	3.6
110°-120°	40.9	2.3
120°-130°	23.2	1.3
130°-140°	10.4	0.6
140°-150°	2.2	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	335.1	19.3
0°-40°	551.6	31.7
0°-60°	1018.6	58.6
0°-90°	1514.4	87.1
90°-120°	189.2	10.9
90°-150°	225.0	12.9
90°-180°	225.0	12.9
0°-180°	1739.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	429	429	429	429	429	
5°	430	429	426	430	429	41
15°	408	413	414	420	420	115
25°	368	377	385	393	395	169
35°	314	330	346	364	370	196
45°	253	277	308	334	343	195
55°	190	222	267	298	308	170
65°	130	170	219	253	263	128
75°	70	118	170	203	213	74
85°	21	70	123	155	164	22
90°	5	53	103	134	143	4
95°	4	42	90	119	128	3
105°	2	25	66	91	99	2
115°	1	12	45	68	75	1
125°	1	1	28	47	53	0
135°	0	0	11	26	31	0
145°	0	0	0	7	11	0
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°	428.6	428.6	428.6	428.6	428.6
2.5°	431.7	429.2	426.0	429.2	427.9
5°	429.8	428.6	426.0	430.4	429.2
7.5°	426.7	426.7	425.4	429.8	429.2
10°	422.3	423.5	422.9	427.9	427.3
12.5°	416.0	418.5	419.1	424.8	424.2
15°	408.4	412.8	414.1	419.8	419.8
17.5°	399.6	405.3	408.4	414.1	414.1
20°	390.2	396.5	400.9	407.8	408.4
22.5°	378.9	387.7	392.7	400.9	401.5
25°	367.6	377.0	384.6	393.4	395.2
27.5°	355.7	366.3	375.8	385.8	389.0
30°	341.8	353.8	366.3	378.3	382.7
32.5°	328.6	342.5	356.3	371.4	377.0
35°	313.6	329.9	346.2	364.5	370.1
37.5°	299.1	316.7	336.2	356.9	363.8
40°	283.4	303.5	326.8	350.0	357.5
42.5°	268.9	289.7	318.0	341.8	350.6
45°	253.2	277.1	307.9	334.3	343.1
47.5°	237.5	263.3	298.5	325.5	335.6
50°	222.4	249.5	287.8	317.3	327.4
52.5°	206.1	236.9	277.1	307.3	318.0
55°	190.4	222.4	267.1	297.8	308.5
57.5°	174.1	210.5	255.1	287.8	297.8
60°	160.2	196.7	243.2	276.5	287.2
62.5°	144.5	183.5	231.9	264.5	275.9
65°	130.1	170.3	219.3	253.2	263.3
67.5°	113.7	157.1	207.4	240.7	250.7
70°	99.3	143.9	194.8	228.1	238.2
72.5°	84.8	131.3	182.2	216.2	226.2
75°	69.7	117.5	169.7	203.0	213.0
77.5°	56.6	104.9	157.1	190.4	200.5
80°	42.7	92.4	145.8	178.5	187.9
82.5°	31.4	81.1	133.8	166.5	175.3
85°	20.7	70.4	123.2	154.6	164.0
87.5°	11.9	61.0	112.5	143.9	152.7
90°	5.0	52.8	103.1	133.8	142.6
92.5°	3.8	47.8	97.4	126.9	135.7
95°	3.8	42.1	89.9	118.8	127.6
97.5°	3.1	37.1	82.9	111.2	119.4
100°	2.5	32.7	77.3	104.3	112.5
102.5°	2.5	28.9	71.0	97.4	105.6
105°	1.9	25.1	66.0	91.1	98.7
107.5°	1.9	21.4	60.3	85.5	93.0
110°	1.3	18.2	55.3	79.8	87.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1.3	15.1	50.3	74.1	81.1
115°	1.3	11.9	45.2	68.5	75.4
117.5°	0.6	8.8	40.8	62.8	69.7
120°	0.6	6.3	36.4	57.2	64.1
122.5°	0.6	3.1	31.4	52.2	59.1
125°	0.6	1.3	27.6	47.1	53.4
127.5°	0.0	0.0	23.2	41.5	47.8
130°	0.0	0.0	18.9	36.4	42.1
132.5°	0.0	0.0	15.1	31.4	36.4
135°	0.0	0.0	10.7	26.4	31.4
137.5°	0.0	0.0	6.9	21.4	26.4
140°	0.0	0.0	3.1	16.3	20.7
142.5°	0.0	0.0	0.6	11.9	15.7
145°	0.0	0.0	0.0	6.9	11.3
147.5°	0.0	0.0	0.0	2.5	6.3
150°	0.0	0.0	0.0	0.0	1.9
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)