

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: P242177

Luminaire Tested: **S121DR-S490D940-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242177
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-13)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S121DR-S490D940-X4F0-XX-UDD-D-W
Description: DEFINE 1 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: 1749.6 lumens
Efficiency: N/A
Efficacy: 93.1 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.34 / 1.44
Luminous Opening: Rectangular w/ Sides (W: 0.09' x L: 3.88' x H: 0.08')
CIE Type: Semi-Direct

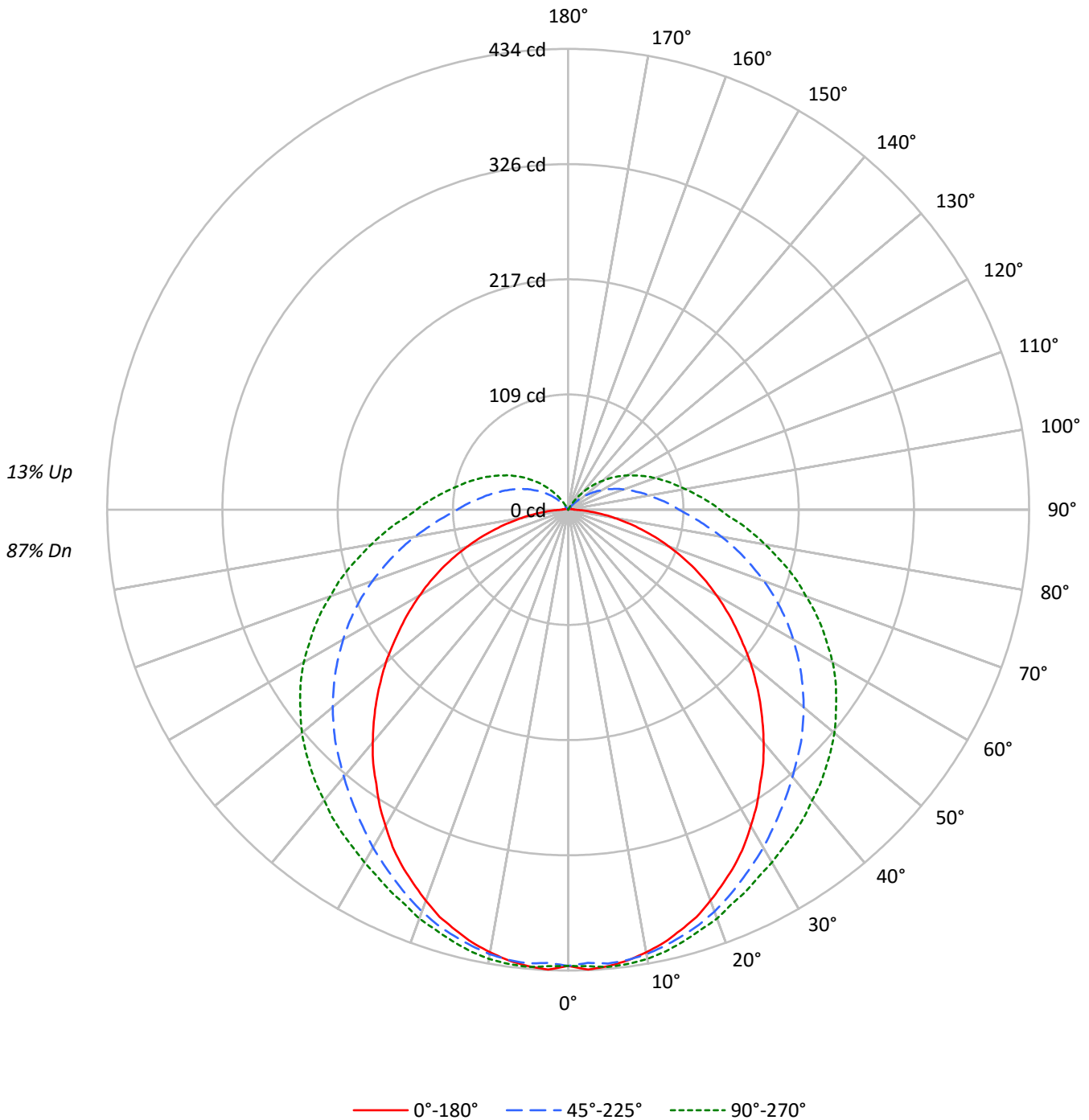
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	77	75	75	72	70	67
2	93	83	75	69	89	80	73	67	74	68	63	69	64	60	64	60	57	54
3	84	72	63	56	80	70	61	55	65	58	52	60	54	49	56	51	47	44
4	76	63	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	28	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	23	35	28	23	33	26	22	31	25	21	19
10	48	35	27	22	47	34	26	21	32	25	20	30	24	20	29	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12729	12729	12729
5°	12810	12079	11927
10°	12685	11486	11174
15°	12499	10870	10423
20°	12258	10287	9763
25°	11979	9691	9160
30°	11618	9167	8671
35°	11225	8669	8280
40°	10874	8250	7916
45°	10481	7900	7614
50°	10072	7549	7324
55°	9628	7202	7011
60°	9215	6853	6709
65°	8800	6506	6364
70°	8221	6130	5995
75°	7535	5754	5672
80°	6722	5379	5316
85°	5758	5028	5011



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.0	2.3
10°-20°	117.6	6.7
20°-30°	177.9	10.2
30°-40°	217.5	12.4
40°-50°	236.1	13.5
50°-60°	233.0	13.3
60°-70°	209.1	12.0
70°-80°	168.3	9.6
80°-90°	121.6	6.9
90°-100°	86.9	5.0
100°-110°	62.2	3.6
110°-120°	41.5	2.4
120°-130°	23.8	1.4
130°-140°	10.8	0.6
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°	336.5	19.2
0°-40°	554.0	31.7
0°-60°	1023.1	58.5
0°-90°	1522.1	87.0
90°-120°	190.6	10.9
90°-150°	227.5	13.0
90°-180°	228.0	13.0
0°-180°	1749.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	430	430	430	430	430	
5°	432	431	429	433	432	41
15°	410	416	416	421	421	116
25°	370	380	385	394	396	170
35°	315	332	348	365	371	197
45°	256	278	310	335	343	197
55°	192	225	268	298	308	172
65°	131	173	221	254	264	130
75°	71	119	171	204	214	75
85°	21	72	124	155	164	22
90°	6	54	104	134	143	4
95°	4	43	90	119	127	3
105°	3	26	66	92	99	3
115°	2	13	46	68	76	2
125°	1	2	28	47	54	1
135°	1	1	11	27	32	0
145°	0	0	0	8	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°	429.6	429.6	429.6	429.6	429.6
2.5°	433.5	431.5	427.1	431.5	430.3
5°	431.5	430.9	429.0	432.8	432.2
7.5°	428.3	429.6	427.7	432.8	431.5
10°	423.2	426.4	425.1	430.3	429.6
12.5°	417.5	421.3	420.7	426.4	425.8
15°	409.8	415.5	415.5	421.3	420.7
17.5°	402.1	407.9	409.8	416.2	414.9
20°	391.8	399.5	402.7	408.5	409.8
22.5°	381.0	390.6	394.4	401.4	402.1
25°	370.1	379.7	385.4	394.4	396.3
27.5°	357.9	368.8	376.5	386.7	389.3
30°	343.8	357.3	367.5	379.0	383.5
32.5°	330.4	345.1	357.3	372.6	377.1
35°	315.0	332.3	347.7	365.0	371.4
37.5°	301.6	319.5	338.1	357.9	365.0
40°	286.2	305.4	328.5	350.2	357.3
42.5°	270.8	292.6	318.9	343.2	350.9
45°	255.5	278.5	309.9	334.9	343.2
47.5°	239.5	265.7	299.6	326.5	335.5
50°	224.1	252.3	289.4	317.6	327.2
52.5°	207.4	238.8	278.5	308.0	317.6
55°	192.1	225.4	267.6	298.4	308.0
57.5°	176.7	211.9	256.1	287.5	298.4
60°	161.3	198.5	244.6	276.6	287.5
62.5°	146.6	185.7	233.1	265.7	275.3
65°	131.3	172.9	220.9	253.5	263.8
67.5°	115.9	159.4	208.7	241.4	251.6
70°	100.5	145.3	195.9	229.2	238.2
72.5°	85.8	132.5	183.1	217.1	226.7
75°	71.1	119.1	171.0	203.6	213.9
77.5°	57.0	106.3	158.8	191.4	200.4
80°	44.2	93.5	146.6	179.3	188.2
82.5°	32.0	82.6	134.5	166.5	176.1
85°	21.1	71.7	123.6	154.9	164.5
87.5°	12.8	62.1	113.3	144.1	151.7
90°	5.8	53.8	104.4	133.8	142.8
92.5°	5.1	48.0	97.3	126.8	135.1
95°	4.5	42.9	90.3	119.1	126.8
97.5°	3.8	37.8	83.2	111.4	119.1
100°	3.2	33.3	77.5	104.4	112.0
102.5°	3.2	29.5	71.7	97.3	105.0
105°	2.6	25.6	65.9	91.6	99.2
107.5°	2.6	22.4	60.8	85.8	92.8
110°	2.6	19.2	55.7	80.0	87.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.9	16.0	51.2	74.3	81.3
115°	1.9	12.8	46.1	68.5	75.6
117.5°	1.9	9.6	41.6	63.4	69.8
120°	1.3	7.0	36.5	58.3	64.7
122.5°	1.3	4.5	32.7	52.5	58.9
125°	1.3	1.9	28.2	47.4	53.8
127.5°	1.3	0.6	23.7	42.3	48.0
130°	0.6	0.6	19.8	37.1	42.3
132.5°	0.6	0.6	15.4	32.0	37.8
135°	0.6	0.6	10.9	26.9	32.0
137.5°	0.6	0.0	7.0	21.8	26.3
140°	0.6	0.0	3.8	17.3	21.1
142.5°	0.6	0.0	0.6	12.2	16.6
145°	0.0	0.0	0.0	7.7	10.9
147.5°	0.0	0.0	0.0	3.2	6.4
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)