

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: P242173

Luminaire Tested: **S121DR-S685D935-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242173  
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-S685D935-X4F0-XX-UDD-D-W  
Description: DEFINE 1 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2352.7 lumens  
Efficiency: N/A  
Efficacy: 89.5 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

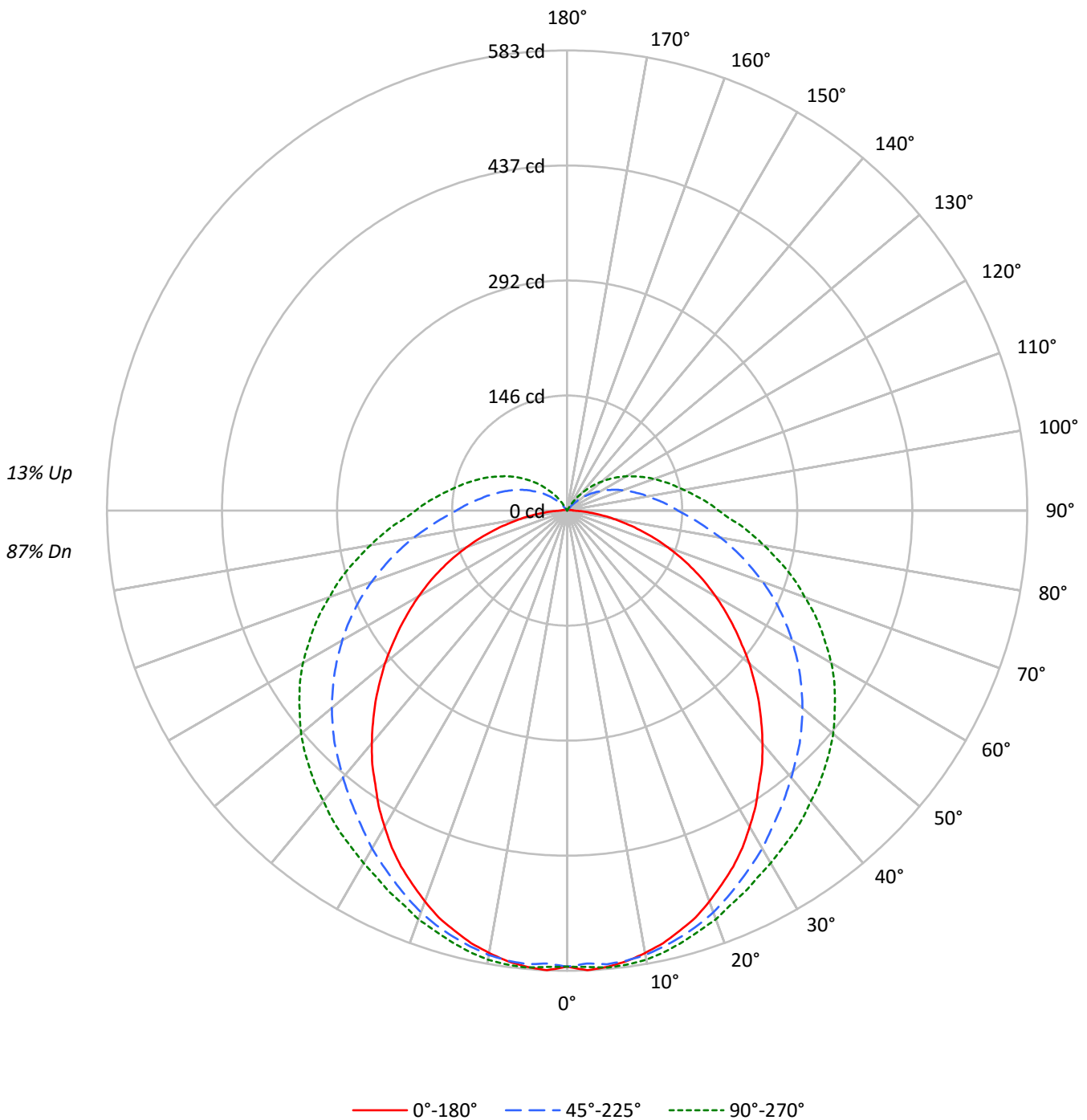
Input Watts (W): 26.3  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	17117	17117	17117
5°	17227	16244	16039
10°	17058	15447	15026
15°	16805	14620	14015
20°	16485	13836	13127
25°	16110	13033	12319
30°	15626	12327	11660
35°	15095	11656	11134
40°	14624	11093	10643
45°	14091	10623	10238
50°	13542	10152	9849
55°	12946	9687	9426
60°	12398	9216	9021
65°	11829	8747	8557
70°	11059	8245	8061
75°	10131	7735	7626
80°	9034	7235	7149
85°	7750	6760	6742



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	55.2	2.3
10°-20°	158.2	6.7
20°-30°	239.2	10.2
30°-40°	292.5	12.4
40°-50°	317.5	13.5
50°-60°	313.3	13.3
60°-70°	281.2	12.0
70°-80°	226.3	9.6
80°-90°	163.5	6.9
90°-100°	116.8	5.0
100°-110°	83.6	3.6
110°-120°	55.8	2.4
120°-130°	32.1	1.4
130°-140°	14.5	0.6
140°-150°	3.2	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	452.6	19.2
0°-40°	745.0	31.7
0°-60°	1375.8	58.5
0°-90°	2046.7	87.0
90°-120°	256.2	10.9
90°-150°	305.9	13.0
90°-180°	306.0	13.0
0°-180°	2352.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	578	578	578	578	578	
5°	580	580	577	582	581	55
15°	551	559	559	566	566	155
25°	498	511	518	530	533	229
35°	424	447	468	491	499	266
45°	344	374	417	450	462	265
55°	258	303	360	401	414	231
65°	176	232	297	341	355	175
75°	96	160	230	274	288	102
85°	28	96	166	208	221	30
90°	8	72	140	180	192	5
95°	6	58	121	160	170	5
105°	3	34	89	123	134	4
115°	3	17	62	92	102	3
125°	2	3	38	64	72	1
135°	1	1	15	36	43	1
145°	0	0	0	10	15	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°	577.7	577.7	577.7	577.7	577.7
2.5°	582.9	580.3	574.3	580.3	578.6
5°	580.3	579.5	576.9	582.0	581.2
7.5°	576.0	577.7	575.1	582.0	580.3
10°	569.1	573.4	571.7	578.6	577.7
12.5°	561.4	566.5	565.7	573.4	572.6
15°	551.0	558.8	558.8	566.5	565.7
17.5°	540.7	548.5	551.0	559.6	557.9
20°	526.9	537.3	541.6	549.3	551.0
22.5°	512.3	525.2	530.4	539.8	540.7
25°	497.7	510.6	518.3	530.4	533.0
27.5°	481.3	495.9	506.3	520.0	523.5
30°	462.4	480.4	494.2	509.7	515.7
32.5°	444.3	464.1	480.4	501.1	507.1
35°	423.6	446.9	467.5	490.8	499.4
37.5°	405.5	429.6	454.6	481.3	490.8
40°	384.9	410.7	441.7	471.0	480.4
42.5°	364.2	393.5	428.8	461.5	471.8
45°	343.5	374.5	416.7	450.3	461.5
47.5°	322.0	357.3	402.9	439.1	451.2
50°	301.3	339.2	389.2	427.1	440.0
52.5°	279.0	321.2	374.5	414.1	427.1
55°	258.3	303.1	359.9	401.2	414.1
57.5°	237.6	285.0	344.4	386.6	401.2
60°	217.0	266.9	328.9	372.0	386.6
62.5°	197.2	249.7	313.4	357.3	370.2
65°	176.5	232.5	297.0	341.0	354.7
67.5°	155.8	214.4	280.7	324.6	338.4
70°	135.2	195.4	263.5	308.2	320.3
72.5°	115.4	178.2	246.2	291.9	304.8
75°	95.6	160.1	229.9	273.8	287.6
77.5°	76.6	142.9	213.5	257.4	269.5
80°	59.4	125.7	197.2	241.1	253.1
82.5°	43.0	111.1	180.8	223.9	236.8
85°	28.4	96.4	166.2	208.4	221.3
87.5°	17.2	83.5	152.4	193.7	204.1
90°	7.7	72.3	140.3	179.9	192.0
92.5°	6.9	64.6	130.9	170.5	181.7
95°	6.0	57.7	121.4	160.1	170.5
97.5°	5.2	50.8	111.9	149.8	160.1
100°	4.3	44.8	104.2	140.3	150.7
102.5°	4.3	39.6	96.4	130.9	141.2
105°	3.4	34.4	88.7	123.1	133.5
107.5°	3.4	30.1	81.8	115.4	124.8
110°	3.4	25.8	74.9	107.6	117.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	2.6	21.5	68.9	99.9	109.3
115°	2.6	17.2	62.0	92.1	101.6
117.5°	2.6	12.9	56.0	85.2	93.8
120°	1.7	9.5	49.1	78.4	87.0
122.5°	1.7	6.0	43.9	70.6	79.2
125°	1.7	2.6	37.9	63.7	72.3
127.5°	1.7	0.9	31.9	56.8	64.6
130°	0.9	0.9	26.7	49.9	56.8
132.5°	0.9	0.9	20.7	43.0	50.8
135°	0.9	0.9	14.6	36.2	43.0
137.5°	0.9	0.0	9.5	29.3	35.3
140°	0.9	0.0	5.2	23.2	28.4
142.5°	0.9	0.0	0.9	16.4	22.4
145°	0.0	0.0	0.0	10.3	14.6
147.5°	0.0	0.0	0.0	4.3	8.6
150°	0.0	0.0	0.0	0.0	2.6
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)