

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P921945

Luminaire Tested: DFN2DIP-PN2F0-020D020US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921945
REPORT IS A COMBINATION OF REPORTS P900981 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D020US940-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

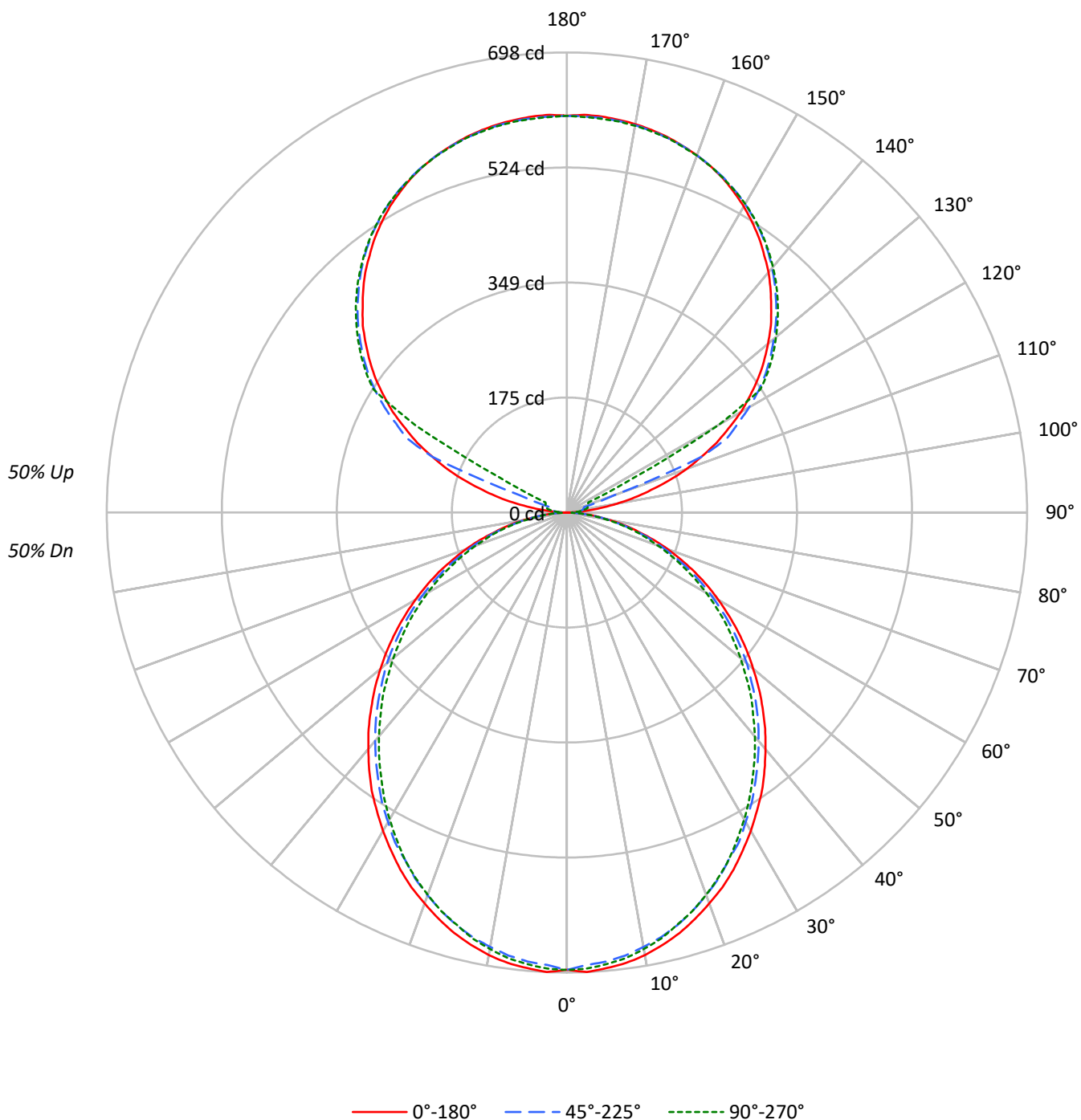
Lumens per Lamp: N/A
Luminaire Lumens: 3531.2 lumens
Efficiency: N/A
Efficacy: 109.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 32.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	107	107	107	107	99	99	99	99	83	83	83		69	69	69		56
1	98	93	90	86	90	86	83	80	73	71	68		61	59	58		50
2	89	82	75	70	82	76	70	66	64	60	57		53	51	48		44
3	81	72	64	59	75	66	60	55	56	52	48		47	44	41		39
4	74	64	56	50	68	59	52	47	50	45	41		42	38	35		35
5	68	57	48	42	63	53	45	40	45	39	35		38	34	30		31
6	63	51	43	37	58	47	40	35	40	35	31		34	30	27		28
7	58	46	38	32	53	43	36	30	37	31	27		31	27	23		26
8	54	42	34	29	50	39	32	27	33	28	24		28	24	21		24
9	50	38	30	25	46	35	29	24	31	25	21		26	22	19		22
10	47	35	28	23	43	33	26	22	28	23	19		24	20	17		20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1503	1503	1503
5°	1503	1479	1490
10°	1488	1456	1467
15°	1464	1428	1434
20°	1432	1392	1399
25°	1400	1349	1360
30°	1361	1309	1310
35°	1324	1262	1258
40°	1277	1214	1208
45°	1232	1166	1157
50°	1182	1116	1098
55°	1129	1058	1043
60°	1069	990	980
65°	1004	918	906
70°	920	831	826
75°	806	727	749
80°	668	593	606
85°	452	374	381

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1232 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.3	1.8
10°-20°	183.8	5.2
20°-30°	270.1	7.6
30°-40°	313.7	8.9
40°-50°	313.3	8.9
50°-60°	273.2	7.7
60°-70°	201.9	5.7
70°-80°	114.2	3.2
80°-90°	31.2	0.9
90°-100°	19.8	0.6
100°-110°	74.0	2.1
110°-120°	196.2	5.6
120°-130°	325.4	9.2
130°-140°	345.7	9.8
140°-150°	321.3	9.1
150°-160°	258.3	7.3
160°-170°	166.4	4.7
170°-180°	57.3	1.6
0°-30°	519.1	14.7
0°-40°	832.8	23.6
0°-60°	1419.3	40.2
0°-90°	1766.7	50.0
90°-120°	290.0	8.2
90°-150°	1282.5	36.3
90°-180°	1765.0	50.0
0°-180°	3531.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	694	694	694	694	694	
5°	694	691	684	689	688	66
15°	661	657	648	651	647	186
25°	598	592	581	582	581	275
35°	516	509	498	494	491	322
45°	420	415	405	398	395	324
55°	318	314	306	298	294	284
65°	214	210	204	198	194	212
75°	112	111	107	103	105	120
85°	27	27	26	24	23	30
90°	0	5	9	11	12	3
95°	28	14	17	19	19	33
105°	132	145	27	31	33	141
115°	250	258	269	67	36	247
125°	354	360	368	371	372	316
135°	438	445	449	453	452	338
145°	508	508	515	518	516	318
155°	560	556	561	564	560	258
165°	590	587	588	592	588	167
175°	603	600	601	604	600	57
180°	602	602	602	602	602	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	693.9	693.9	693.9	693.9	693.9
2.5°	697.9	694.6	687.2	693.9	692.7
5°	693.9	691.3	683.9	689.3	688.0
7.5°	689.3	685.3	678.0	683.3	682.0
10°	682.0	677.3	669.3	674.6	672.6
12.5°	671.9	668.0	660.0	663.3	661.9
15°	660.6	656.7	647.9	650.6	647.3
17.5°	646.6	642.7	633.9	637.2	633.9
20°	631.2	627.2	617.9	619.9	617.2
22.5°	615.9	609.9	601.2	601.2	599.9
25°	597.9	592.5	581.2	582.5	581.2
27.5°	577.8	573.2	564.5	562.6	559.2
30°	557.9	552.5	542.5	540.6	537.8
32.5°	536.5	532.5	521.8	517.8	515.1
35°	515.9	509.2	498.5	494.5	491.1
37.5°	492.5	486.4	475.7	471.1	467.7
40°	468.4	463.1	452.4	446.5	443.7
42.5°	445.1	439.7	429.1	422.4	418.4
45°	419.7	415.1	405.0	397.7	395.0
47.5°	395.0	390.4	379.7	372.3	368.4
50°	369.0	365.7	356.3	347.0	343.7
52.5°	343.7	338.9	330.3	323.0	318.3
55°	317.6	313.6	305.6	297.7	294.3
57.5°	291.6	288.3	279.6	271.6	268.9
60°	265.6	263.0	253.6	246.2	244.2
62.5°	240.2	235.5	228.9	222.2	219.5
65°	214.2	210.2	203.6	197.5	194.2
67.5°	187.5	184.1	178.2	173.5	170.9
70°	162.8	160.2	154.1	149.5	146.9
72.5°	137.5	134.8	131.4	126.8	124.8
75°	112.1	110.8	107.4	103.4	104.8
77.5°	89.4	86.8	85.3	83.4	81.4
80°	66.8	66.1	64.7	62.7	61.3
82.5°	45.4	45.4	44.8	42.1	42.1
85°	27.3	26.7	26.0	24.0	23.4
87.5°	12.0	10.7	9.4	7.4	6.7
90°	0.4	5.3	8.6	10.9	11.8
92.5°	10.9	9.2	10.4	11.3	11.8
95°	28.3	13.9	16.9	19.2	18.7
97.5°	50.9	15.2	22.2	23.5	24.0
100°	77.1	17.4	24.8	28.3	29.2
102.5°	105.8	105.0	25.7	30.5	31.8
105°	132.4	145.4	26.6	31.3	33.1
107.5°	163.4	174.2	27.5	32.2	34.0
110°	193.0	202.1	76.2	32.7	34.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	220.8	228.6	221.2	33.5	34.9
115°	250.4	257.8	268.8	67.1	35.8
117.5°	276.1	284.8	292.2	230.0	115.8
120°	304.9	311.4	319.2	324.5	265.6
122.5°	329.2	336.2	344.9	347.5	348.0
125°	354.1	359.7	368.0	371.0	372.4
127.5°	376.7	382.8	389.4	393.7	394.1
130°	398.1	405.0	409.8	414.6	414.2
132.5°	419.8	425.5	430.3	434.2	433.8
135°	438.2	445.1	449.0	453.4	452.5
137.5°	457.3	462.5	466.9	471.3	469.9
140°	476.0	479.6	484.3	488.2	486.1
142.5°	491.7	494.8	500.4	503.9	501.7
145°	508.3	507.8	515.2	518.3	516.1
147.5°	522.6	521.3	528.7	530.8	529.1
150°	536.5	533.5	540.5	543.1	540.9
152.5°	548.3	544.8	551.3	554.0	550.9
155°	559.6	555.7	561.0	563.6	560.1
157.5°	568.8	565.3	569.3	572.3	568.8
160°	576.7	574.0	576.7	579.3	576.2
162.5°	583.5	580.9	583.2	586.2	582.3
165°	589.7	587.1	588.4	591.5	588.4
167.5°	594.5	591.8	593.2	596.3	592.3
170°	598.4	595.8	596.6	599.7	595.8
172.5°	601.0	598.4	599.3	602.4	598.4
175°	603.2	600.1	601.0	604.0	599.7
177.5°	604.0	601.0	601.5	604.5	600.6
180°	601.9	601.9	601.9	601.9	601.9

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	8.57	9.44	9.53	10.41	11.68	8.14	9.00	9.09	9.97	11.24
	3H	10.21	10.99	11.18	11.97	13.26	9.73	10.51	10.70	11.49	12.78
	4H	10.79	11.52	11.77	12.51	13.81	10.31	11.04	11.29	12.02	13.33
	6H	11.17	11.85	12.17	12.84	14.15	10.69	11.36	11.68	12.35	13.67
	8H	11.27	11.91	12.27	12.92	14.23	10.78	11.42	11.78	12.43	13.74
	12H	11.31	11.92	12.31	12.92	14.26	10.82	11.43	11.82	12.43	13.77
4H	2H	9.03	9.76	10.01	10.74	12.04	8.68	9.41	9.66	10.39	11.69
	3H	10.87	11.48	11.86	12.49	13.81	10.47	11.08	11.47	12.09	13.41
	4H	11.57	12.12	12.57	13.13	14.47	11.15	11.71	12.16	12.72	14.06
	6H	12.06	12.54	13.08	13.57	14.91	11.64	12.12	12.66	13.15	14.49
	8H	12.20	12.65	13.22	13.67	15.03	11.78	12.23	12.80	13.25	14.60
	12H	12.27	12.67	13.30	13.71	15.07	11.83	12.24	12.87	13.28	14.63
8H	4H	11.75	12.20	12.77	13.22	14.58	11.38	11.83	12.40	12.86	14.21
	6H	12.36	12.73	13.40	13.80	15.14	11.98	12.36	13.03	13.42	14.77
	8H	12.57	12.89	13.62	13.94	15.31	12.18	12.51	13.23	13.56	14.93
	12H	12.68	12.97	13.74	14.02	15.43	12.29	12.58	13.34	13.62	15.03
12H	4H	11.73	12.14	12.77	13.18	14.54	11.37	11.78	12.41	12.82	14.18
	6H	12.38	12.71	13.43	13.76	15.13	12.02	12.35	13.07	13.40	14.77
	8H	12.61	12.90	13.66	13.94	15.35	12.24	12.53	13.29	13.57	14.98

END OF REPORT