

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: P916551

Luminaire Tested: DFN2DIP-PN2F0-050D020US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916551
REPORT IS A COMBINATION OF REPORTS P900988 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-050D020US930-RLLONL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

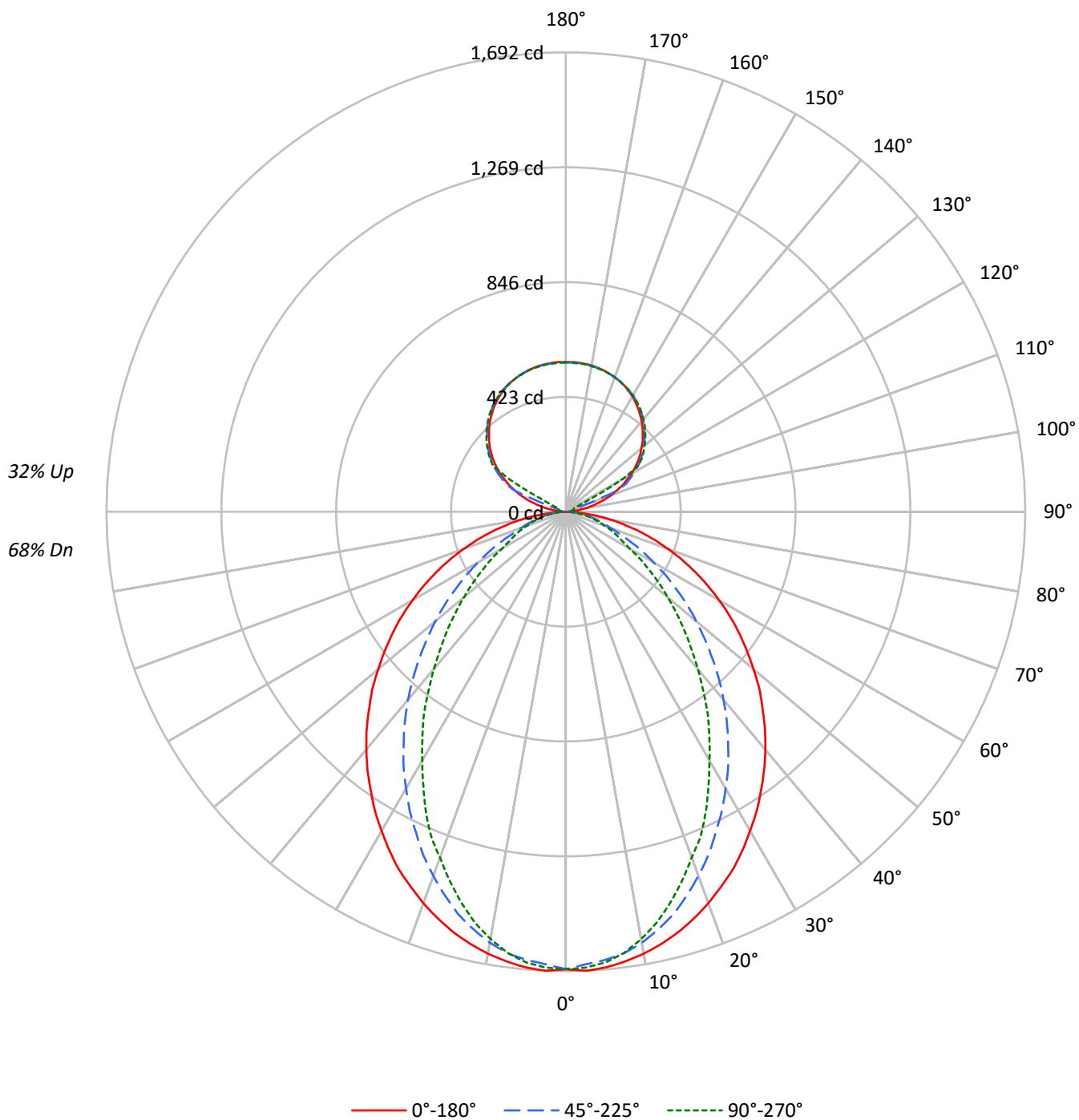
Lumens per Lamp: N/A
Luminaire Lumens: 5079.3 lumens
Efficiency: N/A
Efficacy: 75.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 67
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
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			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	111	111	111	111	105	105	105	105	93	93	93	83	83	83	73	73	73	65	65	65
1	103	98	95	91	97	93	90	87	83	81	78	74	72	70	65	64	63	59	58	57
2	94	87	81	76	88	82	77	72	74	69	66	66	63	60	58	56	54	50	49	48
3	86	77	70	64	81	73	66	61	66	60	56	59	55	51	52	49	47	43	42	41
4	79	69	61	55	75	65	58	53	59	53	49	53	48	45	47	44	41	38	37	36
5	73	62	53	48	69	59	51	46	53	47	42	48	43	39	43	39	36	33	32	31
6	68	56	47	42	64	53	46	40	48	42	38	43	39	35	39	35	32	30	29	28
7	63	50	43	37	59	48	41	36	44	38	33	40	35	31	36	32	29	26	25	24
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26	24	23	22
9	55	42	35	30	52	41	34	29	37	31	27	34	29	25	31	27	24	22	21	20
10	51	39	32	27	48	37	31	26	34	29	25	31	27	23	29	25	22	20	19	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3649	3649	3649
5°	3649	3583	3609
10°	3607	3505	3486
15°	3552	3382	3300
20°	3480	3215	3073
25°	3407	3029	2854
30°	3310	2840	2578
35°	3216	2637	2335
40°	3119	2427	2059
45°	3007	2196	1808
50°	2891	1963	1564
55°	2769	1716	1329
60°	2628	1458	1089
65°	2464	1197	974
70°	2267	953	874
75°	2018	825	784
80°	1661	670	664
85°	1085	416	471

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3007 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.9	3.1
10°-20°	433.5	8.5
20°-30°	608.6	12.0
30°-40°	663.4	13.1
40°-50°	609.7	12.0
50°-60°	478.8	9.4
60°-70°	311.7	6.1
70°-80°	160.4	3.2
80°-90°	41.9	0.8
90°-100°	18.1	0.4
100°-110°	67.6	1.3
110°-120°	179.4	3.5
120°-130°	297.6	5.9
130°-140°	316.1	6.2
140°-150°	293.8	5.8
150°-160°	236.2	4.6
160°-170°	152.2	3.0
170°-180°	52.4	1.0
0°-30°	1200.0	23.6
0°-40°	1863.4	36.7
0°-60°	2951.9	58.1
0°-90°	3466.0	68.2
90°-120°	265.2	5.2
90°-150°	1172.6	23.1
90°-180°	1613.0	31.8
0°-180°	5079.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1685	1685	1685	1685	1685	
5°	1685	1677	1657	1671	1667	160
15°	1602	1586	1534	1505	1490	452
25°	1455	1406	1305	1243	1220	669
35°	1253	1176	1042	945	912	784
45°	1025	922	762	654	617	791
55°	779	660	496	404	375	696
65°	526	402	265	214	209	521
75°	280	174	122	111	110	297
85°	66	34	29	29	29	75
90°	0	5	8	10	11	5
95°	26	13	16	18	17	31
105°	121	133	24	29	30	129
115°	229	236	246	61	33	225
125°	324	329	336	339	340	289
135°	401	407	410	415	414	309
145°	465	464	471	474	472	291
155°	512	508	513	515	512	236
165°	539	537	538	541	538	152
175°	552	549	550	552	548	52
180°	550	550	550	550	550	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1684.8	1684.8	1684.8	1684.8	1684.8
2.5°	1692.4	1684.8	1668.0	1683.3	1680.2
5°	1684.8	1677.2	1657.3	1671.0	1666.6
7.5°	1671.0	1662.0	1640.6	1646.7	1639.0
10°	1652.8	1642.1	1611.7	1607.0	1597.9
12.5°	1629.9	1616.2	1575.0	1565.9	1549.1
15°	1602.5	1585.7	1533.9	1505.0	1489.7
17.5°	1570.4	1546.1	1482.0	1448.5	1424.0
20°	1533.9	1503.3	1427.1	1389.1	1355.4
22.5°	1494.3	1459.1	1370.7	1318.9	1296.1
25°	1454.6	1405.7	1305.1	1242.7	1219.7
27.5°	1407.4	1355.4	1244.1	1172.5	1137.4
30°	1357.1	1299.0	1177.0	1099.3	1058.1
32.5°	1308.2	1238.0	1113.1	1021.6	983.4
35°	1253.4	1175.6	1041.5	945.3	911.7
37.5°	1200.0	1116.1	974.4	869.0	831.0
40°	1143.5	1052.1	904.1	795.9	756.3
42.5°	1085.7	988.1	834.1	721.1	683.1
45°	1024.7	922.4	762.4	654.0	617.4
47.5°	966.7	858.5	693.8	585.5	552.0
50°	902.7	794.4	626.7	521.4	489.5
52.5°	840.1	725.7	562.6	462.0	433.1
55°	779.1	660.1	495.5	404.1	375.1
57.5°	716.6	594.7	436.1	350.7	326.3
60°	652.6	530.6	373.5	295.9	271.4
62.5°	590.1	468.1	320.2	247.0	234.9
65°	526.0	402.5	265.3	213.5	208.9
67.5°	465.0	341.5	213.5	187.5	183.0
70°	401.0	282.1	176.8	161.6	155.5
72.5°	340.1	227.1	147.9	135.7	132.6
75°	280.5	173.7	122.0	111.3	109.8
77.5°	221.1	123.4	96.1	89.9	86.8
80°	166.2	88.5	73.1	67.1	67.1
82.5°	115.9	59.5	50.3	47.2	47.2
85°	65.5	33.5	28.9	28.9	28.9
87.5°	24.5	12.1	12.1	10.7	10.7
90°	0.4	4.8	7.9	9.9	10.8
92.5°	9.9	8.4	9.5	10.4	10.8
95°	25.8	12.7	15.5	17.5	17.1
97.5°	46.6	13.9	20.3	21.5	21.9
100°	70.5	15.9	22.7	25.8	26.7
102.5°	96.8	96.0	23.5	27.9	29.1
105°	121.1	133.0	24.3	28.6	30.2
107.5°	149.4	159.2	25.1	29.4	31.1
110°	176.4	184.7	69.7	29.9	31.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	201.9	209.0	202.3	30.7	31.9
115°	228.9	235.7	245.7	61.3	32.7
117.5°	252.4	260.4	267.2	210.3	105.9
120°	278.8	284.7	291.9	296.7	242.9
122.5°	301.0	307.4	315.4	317.7	318.2
125°	323.8	328.9	336.5	339.2	340.5
127.5°	344.5	350.0	356.0	360.0	360.4
130°	363.9	370.3	374.7	379.1	378.7
132.5°	383.8	389.1	393.4	397.0	396.6
135°	400.6	407.0	410.5	414.6	413.8
137.5°	418.1	422.9	426.9	430.9	429.7
140°	435.2	438.5	442.8	446.4	444.4
142.5°	449.6	452.4	457.5	460.7	458.7
145°	464.7	464.3	471.1	473.9	471.9
147.5°	477.8	476.6	483.4	485.3	483.8
150°	490.6	487.8	494.2	496.5	494.6
152.5°	501.3	498.1	504.1	506.5	503.7
155°	511.7	508.1	512.9	515.3	512.1
157.5°	520.1	516.9	520.5	523.3	520.1
160°	527.3	524.8	527.3	529.6	526.8
162.5°	533.5	531.2	533.2	536.0	532.4
165°	539.2	536.8	537.9	540.8	537.9
167.5°	543.6	541.1	542.3	545.2	541.5
170°	547.1	544.7	545.5	548.3	544.7
172.5°	549.5	547.1	548.0	550.7	547.1
175°	551.5	548.7	549.5	552.3	548.3
177.5°	552.3	549.5	549.9	552.7	549.1
180°	550.3	550.3	550.3	550.3	550.3

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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	13.08	14.09	13.87	14.90	15.88	9.05	10.06	9.84	10.86	11.85
	3H	14.75	15.65	15.56	16.47	17.49	10.24	11.14	11.04	11.95	12.97
	4H	15.36	16.20	16.18	17.03	18.06	10.68	11.53	11.50	12.35	13.38
	6H	15.77	16.55	16.60	17.38	18.43	11.00	11.78	11.83	12.61	13.65
	8H	15.89	16.63	16.73	17.49	18.53	11.08	11.83	11.93	12.68	13.72
	12H	15.95	16.66	16.80	17.50	18.57	11.12	11.83	11.97	12.68	13.74
4H	2H	13.12	13.97	13.94	14.79	15.82	9.66	10.50	10.48	11.33	12.36
	3H	14.94	15.64	15.78	16.50	17.55	11.00	11.71	11.84	12.57	13.61
	4H	15.62	16.26	16.47	17.12	18.19	11.54	12.18	12.39	13.04	14.11
	6H	16.13	16.68	16.99	17.56	18.64	11.95	12.50	12.82	13.38	14.46
	8H	16.29	16.81	17.16	17.69	18.77	12.07	12.59	12.94	13.47	14.55
	12H	16.39	16.85	17.27	17.75	18.84	12.14	12.60	13.03	13.50	14.59
8H	4H	15.60	16.11	16.47	16.99	18.08	11.82	12.34	12.69	13.21	14.30
	6H	16.15	16.57	17.04	17.49	18.58	12.32	12.75	13.22	13.67	14.76
	8H	16.35	16.73	17.26	17.64	18.75	12.50	12.88	13.41	13.79	14.90
	12H	16.48	16.82	17.39	17.72	18.88	12.61	12.95	13.52	13.85	15.01
12H	4H	15.56	16.02	16.45	16.92	18.01	11.83	12.30	12.72	13.19	14.28
	6H	16.12	16.50	17.03	17.41	18.52	12.37	12.75	13.28	13.66	14.76
	8H	16.34	16.67	17.25	17.57	18.73	12.57	12.90	13.48	13.81	14.97