

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: P918603

Luminaire Tested: DFN2DIP-4P3F0-050D020US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918603
REPORT IS A COMBINATION OF REPORTS P900555 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D020US935-FLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

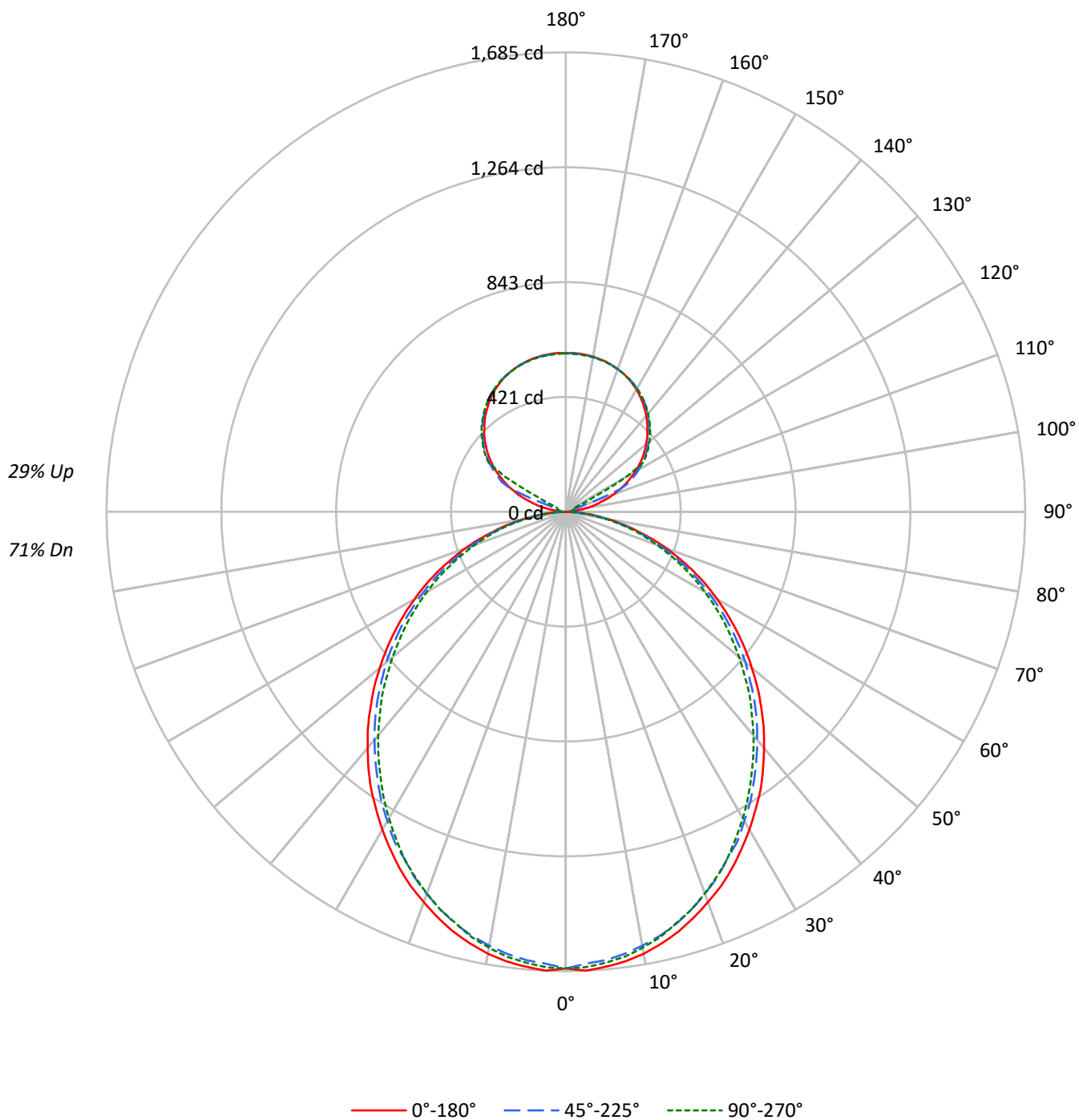
Lumens per Lamp: N/A
Luminaire Lumens: 5966.7 lumens
Efficiency: N/A
Efficacy: 92.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 64.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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	30	10
RCR																	
0	112	112	112	112	106	106	106	106	95	95	95	85	85	85	76	76	76
1	103	98	94	90	97	93	90	86	84	81	78	75	73	71	67	66	64
2	93	86	79	74	88	81	76	71	73	69	65	66	62	59	59	56	54
3	85	75	68	62	80	72	65	59	65	59	55	58	54	50	52	49	46
4	78	67	59	52	74	64	56	50	58	52	47	52	47	43	47	43	40
5	72	60	51	45	68	57	49	44	52	45	40	47	42	38	42	38	35
6	66	54	45	39	63	51	44	38	47	40	35	42	37	33	38	34	31
7	61	49	40	35	58	47	39	34	42	36	31	39	33	29	35	31	27
8	57	44	36	31	54	42	35	30	39	33	28	35	30	26	32	28	24
9	53	41	33	28	50	39	32	27	36	30	25	33	27	24	30	25	22
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	28	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1909	1909	1909
5°	1911	1881	1894
10°	1894	1855	1868
15°	1865	1823	1827
20°	1826	1779	1786
25°	1788	1727	1738
30°	1739	1679	1677
35°	1694	1622	1613
40°	1638	1564	1551
45°	1581	1506	1488
50°	1520	1446	1416
55°	1456	1375	1349
60°	1383	1292	1272
65°	1303	1206	1181
70°	1202	1100	1084
75°	1062	974	993
80°	893	813	821
85°	629	539	538

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1581 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.7	2.6
10°-20°	443.6	7.4
20°-30°	651.9	10.9
30°-40°	757.2	12.7
40°-50°	756.2	12.7
50°-60°	659.4	11.1
60°-70°	487.4	8.2
70°-80°	275.8	4.6
80°-90°	73.8	1.2
90°-100°	19.2	0.3
100°-110°	71.4	1.2
110°-120°	189.5	3.2
120°-130°	314.2	5.3
130°-140°	333.8	5.6
140°-150°	310.2	5.2
150°-160°	249.4	4.2
160°-170°	160.7	2.7
170°-180°	55.3	0.9
0°-30°	1253.2	21.0
0°-40°	2010.3	33.7
0°-60°	3425.9	57.4
0°-90°	4263.0	71.4
90°-120°	280.0	4.7
90°-150°	1238.3	20.8
90°-180°	1704.0	28.6
0°-180°	5966.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1675	1675	1675	1675	1675	
5°	1675	1669	1651	1664	1661	159
15°	1595	1585	1564	1570	1562	449
25°	1443	1430	1403	1406	1403	664
35°	1245	1229	1203	1194	1186	778
45°	1013	1002	978	960	954	782
55°	767	757	738	718	710	686
65°	517	507	491	477	469	511
75°	270	267	259	250	253	289
85°	66	64	63	58	56	74
90°	0	5	8	10	11	6
95°	27	13	16	18	18	32
105°	128	140	26	30	32	137
115°	242	249	260	65	34	238
125°	342	347	355	358	360	305
135°	423	430	434	438	437	327
145°	491	490	498	500	498	307
155°	540	537	542	544	541	249
165°	569	567	568	571	568	161
175°	582	580	580	583	579	55
180°	581	581	581	581	581	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1675.1	1675.1	1675.1	1675.1	1675.1
2.5°	1684.8	1676.8	1659.1	1675.1	1672.1
5°	1675.1	1668.8	1651.0	1663.8	1660.8
7.5°	1663.8	1654.2	1636.5	1649.5	1646.2
10°	1646.2	1634.9	1615.7	1628.4	1623.7
12.5°	1621.9	1612.4	1593.1	1601.1	1597.8
15°	1594.6	1585.0	1564.0	1570.5	1562.5
17.5°	1560.7	1551.2	1530.2	1538.2	1530.2
20°	1523.7	1514.2	1491.6	1496.3	1490.0
22.5°	1486.8	1472.2	1451.2	1451.2	1447.9
25°	1443.2	1430.4	1403.0	1406.1	1403.0
27.5°	1394.8	1383.5	1362.7	1357.9	1349.9
30°	1346.6	1333.7	1309.6	1304.8	1298.3
32.5°	1295.0	1285.5	1259.6	1249.9	1243.5
35°	1245.1	1229.1	1203.2	1193.5	1185.5
37.5°	1188.7	1174.2	1148.4	1137.1	1129.1
40°	1130.8	1117.8	1092.0	1077.6	1071.2
42.5°	1074.4	1061.4	1035.8	1019.5	1010.0
45°	1013.2	1001.9	977.7	960.1	953.6
47.5°	953.6	942.3	916.5	898.7	889.2
50°	890.7	882.7	860.1	837.6	829.5
52.5°	829.5	818.2	797.4	779.6	768.4
55°	766.8	757.1	737.7	718.4	710.4
57.5°	703.9	695.9	674.9	655.6	649.0
60°	641.0	634.7	612.2	594.3	589.6
62.5°	579.9	568.6	552.5	536.4	529.9
65°	517.1	507.4	491.3	476.8	468.7
67.5°	452.7	444.5	430.2	418.9	412.3
70°	393.0	386.6	372.0	360.8	354.5
72.5°	331.9	325.4	317.4	306.1	301.3
75°	270.5	267.4	259.2	249.7	253.0
77.5°	215.9	209.3	206.1	201.3	196.6
80°	161.2	159.5	156.2	151.4	148.2
82.5°	109.5	109.5	108.0	101.5	101.5
85°	66.0	64.4	62.9	57.9	56.4
87.5°	29.0	25.8	22.6	17.7	16.1
90°	0.4	5.1	8.4	10.5	11.4
92.5°	10.5	8.9	10.1	10.9	11.4
95°	27.3	13.4	16.4	18.5	18.1
97.5°	49.2	14.7	21.4	22.7	23.2
100°	74.5	16.8	23.9	27.3	28.2
102.5°	102.2	101.3	24.8	29.4	30.7
105°	127.9	140.4	25.7	30.2	31.9
107.5°	157.7	168.2	26.5	31.1	32.8
110°	186.3	195.1	73.6	31.6	33.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	213.2	220.8	213.6	32.4	33.7
115°	241.8	248.9	259.5	64.7	34.5
117.5°	266.6	275.0	282.1	222.1	111.8
120°	294.4	300.7	308.2	313.3	256.5
122.5°	317.9	324.6	333.0	335.5	336.0
125°	341.9	347.3	355.3	358.3	359.6
127.5°	363.8	369.6	376.0	380.1	380.6
130°	384.3	391.1	395.7	400.4	399.9
132.5°	405.4	410.9	415.4	419.2	418.9
135°	423.1	429.8	433.5	437.8	437.0
137.5°	441.5	446.6	450.8	455.0	453.7
140°	459.6	463.0	467.6	471.4	469.3
142.5°	474.8	477.8	483.2	486.5	484.4
145°	490.8	490.3	497.5	500.4	498.3
147.5°	504.6	503.3	510.5	512.6	510.9
150°	518.1	515.1	521.9	524.3	522.3
152.5°	529.4	526.1	532.4	534.9	531.9
155°	540.4	536.6	541.7	544.2	540.8
157.5°	549.2	545.9	549.7	552.6	549.2
160°	556.8	554.2	556.8	559.3	556.4
162.5°	563.4	560.9	563.1	566.0	562.2
165°	569.4	566.9	568.1	571.1	568.1
167.5°	574.0	571.4	572.7	575.7	571.9
170°	577.8	575.2	576.1	579.0	575.2
172.5°	580.3	577.8	578.7	581.6	577.8
175°	582.4	579.5	580.3	583.2	579.0
177.5°	583.2	580.3	580.7	583.7	579.9
180°	581.2	581.2	581.2	581.2	581.2

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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	11.26	12.36	12.01	13.13	14.06	10.82	11.91	11.57	12.68	13.61
	3H	12.94	13.92	13.70	14.70	15.66	12.45	13.43	13.21	14.21	15.17
	4H	13.53	14.46	14.31	15.25	16.22	13.04	13.97	13.82	14.76	15.73
	6H	13.94	14.80	14.73	15.59	16.58	13.44	14.30	14.23	15.10	16.08
	8H	14.05	14.87	14.85	15.68	16.67	13.55	14.37	14.35	15.18	16.17
	12H	14.10	14.88	14.91	15.69	16.71	13.60	14.37	14.40	15.18	16.20
4H	2H	11.75	12.68	12.53	13.47	14.44	11.39	12.32	12.18	13.11	14.08
	3H	13.63	14.41	14.43	15.23	16.22	13.22	14.00	14.02	14.82	15.81
	4H	14.35	15.06	15.16	15.88	16.89	13.93	14.63	14.74	15.45	16.47
	6H	14.87	15.48	15.70	16.33	17.35	14.44	15.05	15.27	15.90	16.92
	8H	15.03	15.60	15.86	16.44	17.47	14.59	15.16	15.42	16.00	17.04
	12H	15.11	15.62	15.96	16.49	17.53	14.66	15.17	15.51	16.04	17.08
8H	4H	14.56	15.13	15.39	15.97	17.01	14.18	14.76	15.02	15.60	16.63
	6H	15.20	15.67	16.06	16.55	17.59	14.81	15.29	15.67	16.17	17.20
	8H	15.42	15.84	16.29	16.72	17.77	15.02	15.44	15.89	16.32	17.37
	12H	15.55	15.93	16.43	16.80	17.90	15.14	15.51	16.02	16.39	17.49
12H	4H	14.56	15.07	15.41	15.93	16.97	14.19	14.70	15.04	15.57	16.60
	6H	15.23	15.65	16.10	16.53	17.58	14.85	15.28	15.72	16.16	17.21
	8H	15.48	15.85	16.35	16.72	17.82	15.10	15.47	15.97	16.34	17.44

END OF REPORT