

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: P915877

Luminaire Tested: DFN2DIP-4P3F0-050D020US930-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915877
REPORT IS A COMBINATION OF REPORTS P900556 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D020US930-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

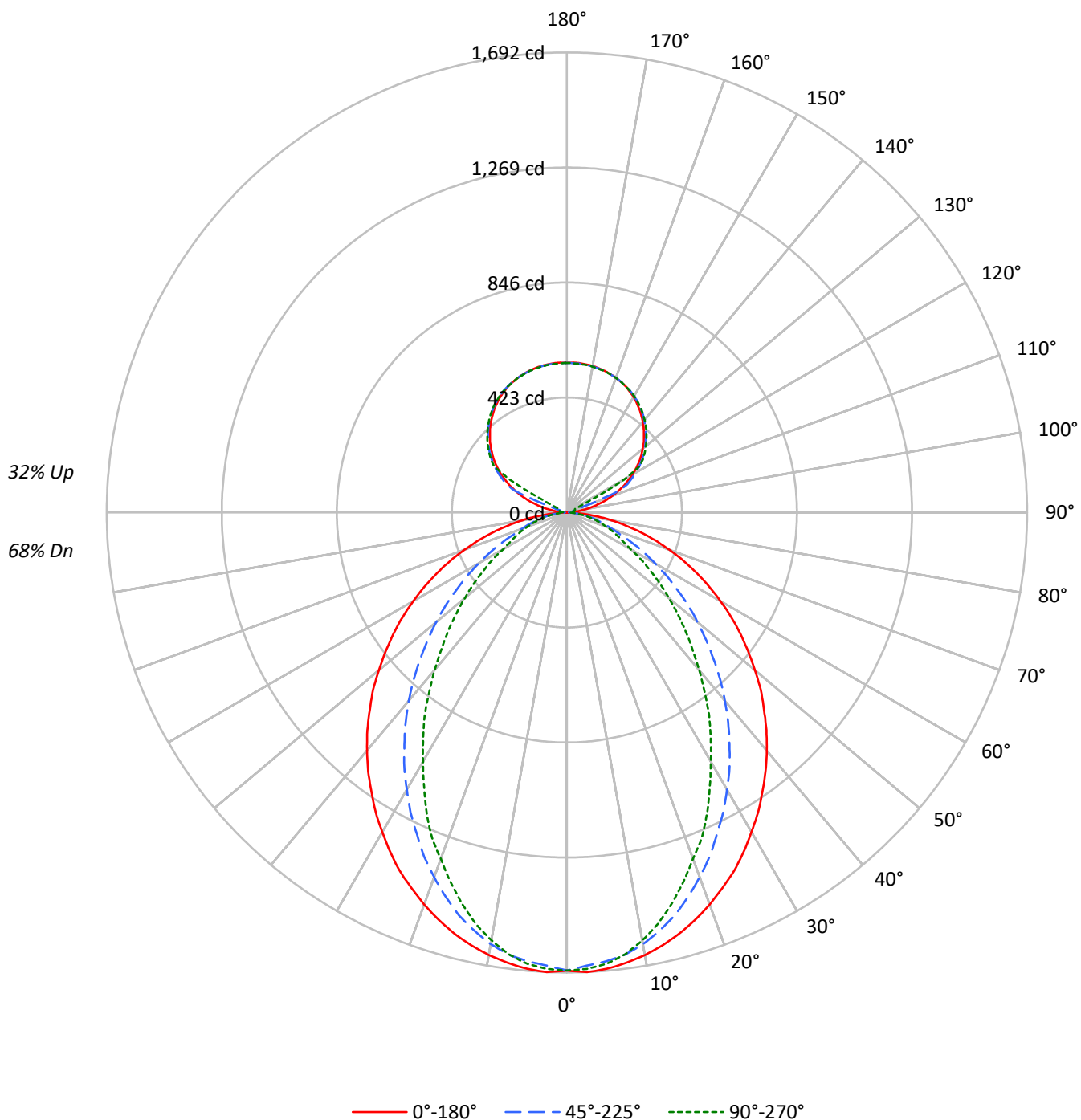
Lumens per Lamp: N/A
Luminaire Lumens: 5079.3 lumens
Efficiency: N/A
Efficacy: 79.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

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			0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50	30	10	0
RCR																				
0	111	111	111	111	105	105	105	105	93	93	93		83	83	83		73	73	73	68
1	103	98	95	91	97	93	90	87	83	81	78		74	72	70		65	64	63	59
2	94	87	81	76	88	82	77	72	74	69	66		66	63	60		58	56	54	50
3	86	77	70	64	81	73	66	61	66	60	56		59	55	51		52	49	47	43
4	79	69	61	55	75	65	58	53	59	53	49		53	48	45		47	44	41	38
5	73	62	53	48	69	59	51	46	53	47	42		48	43	39		43	39	36	33
6	68	56	47	42	64	53	46	40	48	42	38		43	39	35		39	35	32	30
7	63	50	43	37	59	48	41	36	44	38	33		40	35	31		36	32	29	26
8	58	46	38	33	55	44	37	32	40	34	30		37	32	28		33	29	26	24
9	55	42	35	30	52	41	34	29	37	31	27		34	29	25		31	27	24	22
10	51	39	32	27	48	37	31	26	34	29	25		31	27	23		29	25	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1920	1920	1920
5°	1922	1888	1901
10°	1902	1850	1839
15°	1874	1788	1742
20°	1838	1702	1624
25°	1802	1607	1511
30°	1753	1509	1367
35°	1705	1404	1240
40°	1656	1295	1095
45°	1599	1175	964
50°	1541	1053	835
55°	1479	924	712
60°	1408	788	586
65°	1326	651	527
70°	1226	523	476
75°	1101	458	431
80°	921	380	372
85°	624	248	275

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1599 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	10.93	11.94	11.73	12.75	13.74	6.90	7.90	7.69	8.71	9.70
	3H	12.62	13.52	13.42	14.34	15.35	8.09	8.99	8.90	9.81	10.82
	4H	13.23	14.08	14.06	14.91	15.94	8.54	9.39	9.37	10.22	11.25
	6H	13.66	14.44	14.49	15.28	16.32	8.87	9.65	9.70	10.48	11.52
	8H	13.79	14.53	14.63	15.39	16.43	8.96	9.70	9.80	10.55	11.60
	12H	13.86	14.56	14.70	15.41	16.48	9.01	9.71	9.85	10.56	11.63
4H	2H	10.97	11.82	11.80	12.65	13.67	7.51	8.36	8.34	9.18	10.21
	3H	12.81	13.52	13.65	14.37	15.42	8.87	9.57	9.71	10.43	11.48
	4H	13.51	14.15	14.36	15.00	16.08	9.42	10.06	10.27	10.91	11.99
	6H	14.03	14.58	14.89	15.46	16.54	9.84	10.39	10.71	11.27	12.35
	8H	14.20	14.72	15.07	15.59	16.68	9.97	10.48	10.84	11.36	12.45
	12H	14.30	14.77	15.19	15.66	16.76	10.04	10.50	10.92	11.40	12.49
8H	4H	13.49	14.00	14.36	14.88	15.97	9.71	10.22	10.58	11.10	12.19
	6H	14.05	14.48	14.95	15.40	16.49	10.22	10.65	11.12	11.57	12.66
	8H	14.27	14.64	15.17	15.56	16.66	10.41	10.79	11.32	11.70	12.80
	12H	14.41	14.74	15.32	15.65	16.80	10.53	10.86	11.44	11.77	12.93
12H	4H	13.45	13.91	14.33	14.80	15.90	9.72	10.18	10.61	11.08	12.17
	6H	14.03	14.41	14.94	15.32	16.42	10.27	10.65	11.18	11.56	12.67
	8H	14.25	14.59	15.16	15.49	16.65	10.48	10.82	11.39	11.72	12.88