

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: P915879

Luminaire Tested: DFN2DIP-4P3F0-050D030US930-FLLONL

Issue Date: 11/21/2024

**Test Information**

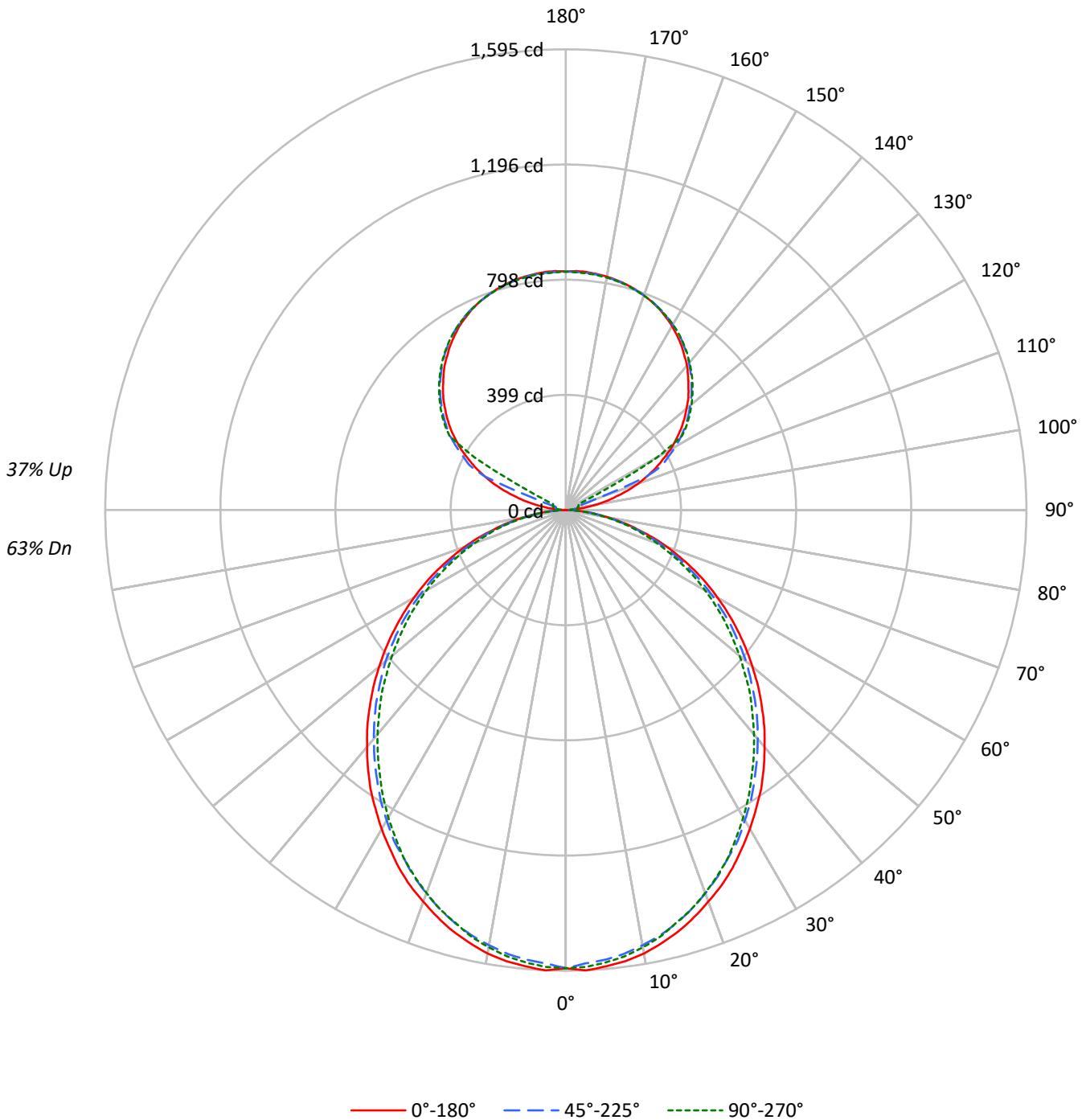
Test Method: LM-79-2019  
Report Number: P915879  
REPORT IS A COMBINATION OF REPORTS P900565 AND P897473  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-4P3F0-050D030US930-FLLONL  
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6457.2 lumens  
Efficiency: N/A  
Efficacy: 90.8 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): 71.1  
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	50	30	10
RCR																				
0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	68	68	68	63		
1	101	96	92	89	94	90	87	84	79	77	74	69	67	65	60	58	57	53		
2	92	84	78	72	86	79	73	69	69	65	62	61	58	55	53	50	48	44		
3	84	74	66	60	78	70	63	57	61	56	52	54	50	46	47	44	41	37		
4	77	65	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35	32		
5	70	58	50	44	66	55	48	42	49	43	38	43	38	34	38	34	31	28		
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27	25		
7	60	47	39	34	56	45	38	32	40	34	30	35	31	27	31	27	24	22		
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22	19		
9	52	40	32	27	49	37	30	26	34	28	24	30	25	22	27	23	20	18		
10	49	36	29	24	46	34	28	23	31	25	21	28	23	20	25	21	18	16		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1808	1808	1808
5°	1809	1781	1794
10°	1794	1756	1769
15°	1766	1726	1730
20°	1729	1685	1691
25°	1693	1635	1645
30°	1647	1590	1588
35°	1604	1536	1527
40°	1551	1481	1469
45°	1497	1426	1409
50°	1439	1369	1341
55°	1379	1302	1277
60°	1310	1224	1205
65°	1234	1142	1119
70°	1138	1042	1027
75°	1006	923	940
80°	845	770	777
85°	596	510	509

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1497 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.3	2.3
10°-20°	420.0	6.5
20°-30°	617.3	9.6
30°-40°	717.0	11.1
40°-50°	716.1	11.1
50°-60°	624.4	9.7
60°-70°	461.6	7.1
70°-80°	261.1	4.0
80°-90°	70.4	1.1
90°-100°	27.2	0.4
100°-110°	101.5	1.6
110°-120°	269.1	4.2
120°-130°	446.3	6.9
130°-140°	474.1	7.3
140°-150°	440.6	6.8
150°-160°	354.3	5.5
160°-170°	228.3	3.5
170°-180°	78.6	1.2
0°-30°	1186.6	18.4
0°-40°	1903.6	29.5
0°-60°	3244.1	50.2
0°-90°	4037.2	62.5
90°-120°	397.8	6.2
90°-150°	1758.9	27.2
90°-180°	2420.0	37.5
0°-180°	6457.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1586	1586	1586	1586	1586	
5°	1586	1580	1563	1576	1573	151
15°	1510	1501	1481	1487	1480	425
25°	1367	1354	1328	1332	1328	629
35°	1179	1164	1139	1130	1123	736
45°	959	949	926	909	903	740
55°	726	717	698	680	673	649
65°	490	480	465	452	444	484
75°	256	253	246	236	240	273
85°	62	61	60	55	53	70
90°	1	7	12	15	16	6
95°	39	19	23	26	26	46
105°	182	200	36	43	45	194
115°	343	354	368	92	49	338
125°	486	493	505	509	511	433
135°	601	610	616	622	621	464
145°	697	696	707	711	708	436
155°	768	762	769	773	768	354
165°	809	805	807	811	807	228
175°	827	823	824	828	822	79
180°	826	826	826	826	826	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1586.2	1586.2	1586.2	1586.2	1586.2
2.5°	1595.4	1587.8	1571.0	1586.2	1583.3
5°	1586.2	1580.2	1563.3	1575.5	1572.6
7.5°	1575.5	1566.4	1549.6	1561.9	1558.9
10°	1558.9	1548.2	1529.9	1542.0	1537.5
12.5°	1535.9	1526.8	1508.5	1516.1	1513.0
15°	1509.9	1500.9	1481.0	1487.2	1479.5
17.5°	1477.9	1468.8	1448.9	1456.5	1448.9
20°	1442.8	1433.8	1412.4	1416.9	1411.0
22.5°	1407.9	1394.1	1374.2	1374.2	1371.1
25°	1366.6	1354.5	1328.5	1331.5	1328.5
27.5°	1320.8	1310.1	1290.4	1285.8	1278.2
30°	1275.1	1262.9	1240.1	1235.5	1229.4
32.5°	1226.3	1217.2	1192.8	1183.6	1177.5
35°	1179.0	1163.8	1139.4	1130.2	1122.6
37.5°	1125.6	1111.9	1087.4	1076.8	1069.2
40°	1070.8	1058.5	1034.0	1020.4	1014.3
42.5°	1017.4	1005.1	980.8	965.4	956.3
45°	959.4	948.8	925.8	909.1	902.9
47.5°	902.9	892.3	867.9	851.0	842.0
50°	843.4	835.8	814.5	793.1	785.5
52.5°	785.5	774.8	755.0	738.3	727.6
55°	726.1	716.9	698.5	680.3	672.7
57.5°	666.5	658.9	639.0	620.8	614.6
60°	607.0	601.0	579.7	562.8	558.3
62.5°	549.1	538.4	523.2	507.9	501.8
65°	489.7	480.5	465.2	451.5	443.8
67.5°	428.7	420.9	407.3	396.6	390.4
70°	372.2	366.1	352.3	341.6	335.7
72.5°	314.3	308.1	300.5	289.8	285.3
75°	256.2	253.2	245.5	236.4	239.5
77.5°	204.4	198.2	195.2	190.6	186.1
80°	152.6	151.0	147.9	143.4	140.3
82.5°	103.7	103.7	102.2	96.1	96.1
85°	62.5	61.0	59.5	54.9	53.4
87.5°	27.5	24.5	21.4	16.8	15.2
90°	0.6	7.2	11.9	15.0	16.1
92.5°	15.0	12.6	14.3	15.6	16.1
95°	38.8	19.1	23.2	26.3	25.7
97.5°	69.9	21.0	30.4	32.3	32.9
100°	105.7	23.9	34.1	38.8	40.0
102.5°	145.1	144.0	35.2	41.7	43.6
105°	181.6	199.5	36.4	43.0	45.4
107.5°	224.0	238.9	37.7	44.2	46.6
110°	264.6	277.1	104.5	44.8	47.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	302.9	313.6	303.5	46.0	47.8
115°	343.4	353.6	368.5	92.0	49.0
117.5°	378.7	390.6	400.8	315.4	158.9
120°	418.1	427.1	437.8	445.0	364.4
122.5°	451.5	461.1	473.1	476.6	477.3
125°	485.6	493.3	504.8	508.9	510.7
127.5°	516.7	525.0	534.0	540.0	540.5
130°	545.9	555.5	562.1	568.6	568.1
132.5°	575.8	583.6	590.1	595.5	594.9
135°	600.9	610.5	615.8	621.8	620.6
137.5°	627.1	634.3	640.3	646.3	644.5
140°	652.8	657.6	664.1	669.5	666.6
142.5°	674.4	678.6	686.3	691.0	688.1
145°	697.1	696.4	706.6	710.8	707.8
147.5°	716.7	714.9	725.1	728.1	725.7
150°	735.9	731.7	741.3	744.8	741.8
152.5°	751.9	747.2	756.2	759.8	755.6
155°	767.5	762.2	769.3	772.9	768.2
157.5°	780.1	775.3	780.7	784.9	780.1
160°	790.8	787.3	790.8	794.4	790.2
162.5°	800.4	796.8	799.8	804.0	798.6
165°	808.7	805.2	807.0	811.1	807.0
167.5°	815.3	811.7	813.5	817.7	812.4
170°	820.7	817.1	818.3	822.5	817.1
172.5°	824.3	820.7	821.9	826.1	820.7
175°	827.2	823.0	824.3	828.4	822.5
177.5°	828.4	824.3	824.9	829.1	823.7
180°	825.5	825.5	825.5	825.5	825.5



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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	10.38	11.36	11.22	12.23	13.31	9.93	10.92	10.77	11.78	12.86
	3H	12.04	12.93	12.90	13.80	14.91	11.55	12.44	12.41	13.31	14.42
	4H	12.63	13.47	13.50	14.35	15.47	12.14	12.98	13.01	13.86	14.97
	6H	13.04	13.81	13.92	14.69	15.83	12.54	13.31	13.42	14.19	15.32
	8H	13.14	13.88	14.03	14.78	15.91	12.64	13.38	13.53	14.28	15.41
	12H	13.19	13.89	14.09	14.79	15.95	12.68	13.38	13.58	14.28	15.44
4H	2H	10.85	11.69	11.72	12.57	13.68	10.49	11.33	11.37	12.21	13.33
	3H	12.72	13.42	13.61	14.33	15.46	12.31	13.01	13.20	13.92	15.06
	4H	13.44	14.07	14.33	14.98	16.14	13.01	13.65	13.91	14.56	15.72
	6H	13.95	14.50	14.87	15.44	16.60	13.52	14.07	14.44	15.00	16.17
	8H	14.10	14.62	15.02	15.55	16.72	13.67	14.18	14.58	15.11	16.28
	12H	14.18	14.65	15.12	15.59	16.77	13.73	14.20	14.67	15.14	16.32
8H	4H	13.64	14.15	14.55	15.08	16.25	13.26	13.78	14.18	14.70	15.88
	6H	14.27	14.70	15.21	15.66	16.84	13.89	14.31	14.83	15.28	16.45
	8H	14.49	14.86	15.44	15.82	17.02	14.10	14.47	15.05	15.43	16.62
	12H	14.62	14.95	15.58	15.91	17.15	14.21	14.54	15.17	15.50	16.74
12H	4H	13.63	14.09	14.56	15.04	16.22	13.26	13.72	14.20	14.67	15.85
	6H	14.30	14.68	15.25	15.64	16.83	13.93	14.30	14.88	15.26	16.45
	8H	14.54	14.87	15.50	15.83	17.07	14.16	14.49	15.12	15.45	16.69