

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: P915963

Luminaire Tested: DFN2DIP-4P4F0-050D030US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915963
REPORT IS A COMBINATION OF REPORTS P900603 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D030US930-FLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

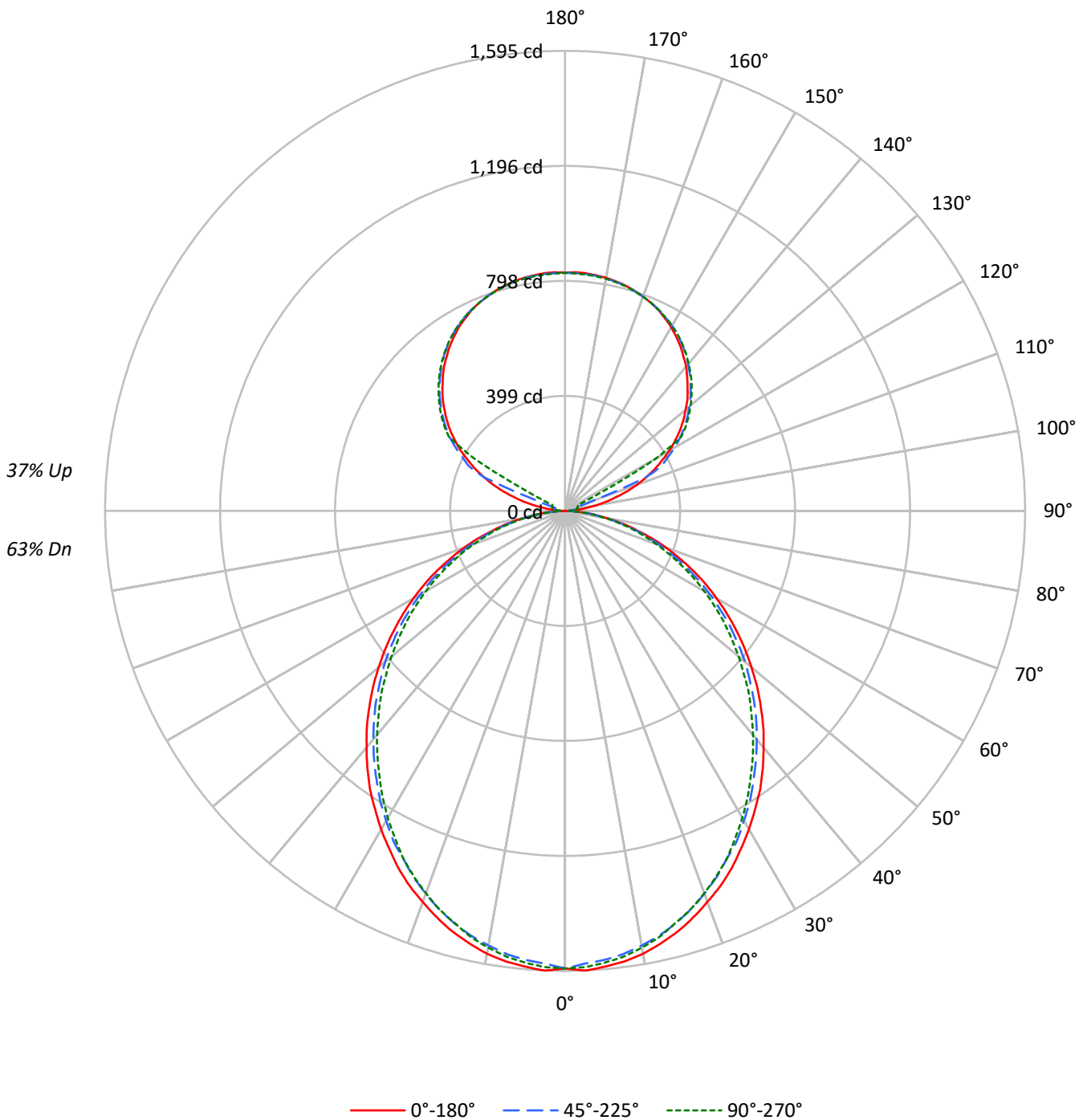
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6457.2 lumens
Efficiency: N/A
Efficacy: 88.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 73.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P915963
CATALOG NUMBER: DFN2DIP-4P4F0-050D030US930-FLLONL

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1029	1029	1029
5°	1031	1015	1022
10°	1022	1002	1008
15°	1007	986	987
20°	987	963	965
25°	967	936	940
30°	942	911	908
35°	918	881	874
40°	889	851	842
45°	859	821	809
50°	827	789	770
55°	793	753	735
60°	755	709	695
65°	714	665	647
70°	661	610	597
75°	588	545	550
80°	500	462	460
85°	363	317	310

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 859 cd/sqm



TEST NUMBER: P915963

CATALOG NUMBER: DFN2DIP-4P4F0-050D030US930-FLLONL

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



TEST NUMBER: P915963

CATALOG NUMBER: DFN2DIP-4P4F0-050D030US930-FLLONL

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	8.47	9.46	9.31	10.32	11.40	8.03	9.01	8.87	9.88	10.96
	3H	10.15	11.03	11.00	11.91	13.01	9.66	10.54	10.51	11.42	12.52
	4H	10.74	11.58	11.61	12.46	13.58	10.25	11.09	11.12	11.97	13.08
	6H	11.15	11.93	12.04	12.81	13.94	10.65	11.43	11.54	12.31	13.44
	8H	11.27	12.00	12.16	12.91	14.04	10.76	11.50	11.65	12.40	13.53
	12H	11.32	12.02	12.22	12.92	14.08	10.81	11.51	11.71	12.41	13.57
4H	2H	8.95	9.79	9.82	10.67	11.78	8.59	9.43	9.47	10.31	11.43
	3H	10.83	11.53	11.72	12.44	13.58	10.42	11.12	11.31	12.04	13.17
	4H	11.56	12.19	12.45	13.10	14.26	11.13	11.77	12.03	12.68	13.84
	6H	12.08	12.63	13.00	13.57	14.73	11.65	12.20	12.56	13.13	14.29
	8H	12.24	12.75	13.15	13.68	14.85	11.80	12.32	12.72	13.24	14.42
	12H	12.32	12.78	13.26	13.73	14.91	11.87	12.34	12.81	13.28	14.46
8H	4H	11.76	12.28	12.68	13.20	14.38	11.39	11.90	12.30	12.83	14.00
	6H	12.41	12.83	13.35	13.80	14.97	12.02	12.45	12.97	13.42	14.59
	8H	12.63	13.01	13.58	13.97	15.16	12.24	12.62	13.19	13.58	14.77
	12H	12.77	13.11	13.73	14.06	15.30	12.36	12.69	13.32	13.65	14.89
12H	4H	11.76	12.22	12.69	13.16	14.34	11.39	11.85	12.32	12.80	13.98
	6H	12.44	12.82	13.39	13.77	14.97	12.07	12.44	13.02	13.40	14.59
	8H	12.69	13.02	13.65	13.97	15.21	12.31	12.64	13.27	13.59	14.83