

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: P915965

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

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915965
REPORT IS A COMBINATION OF REPORTS P900604 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D030US930-RLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

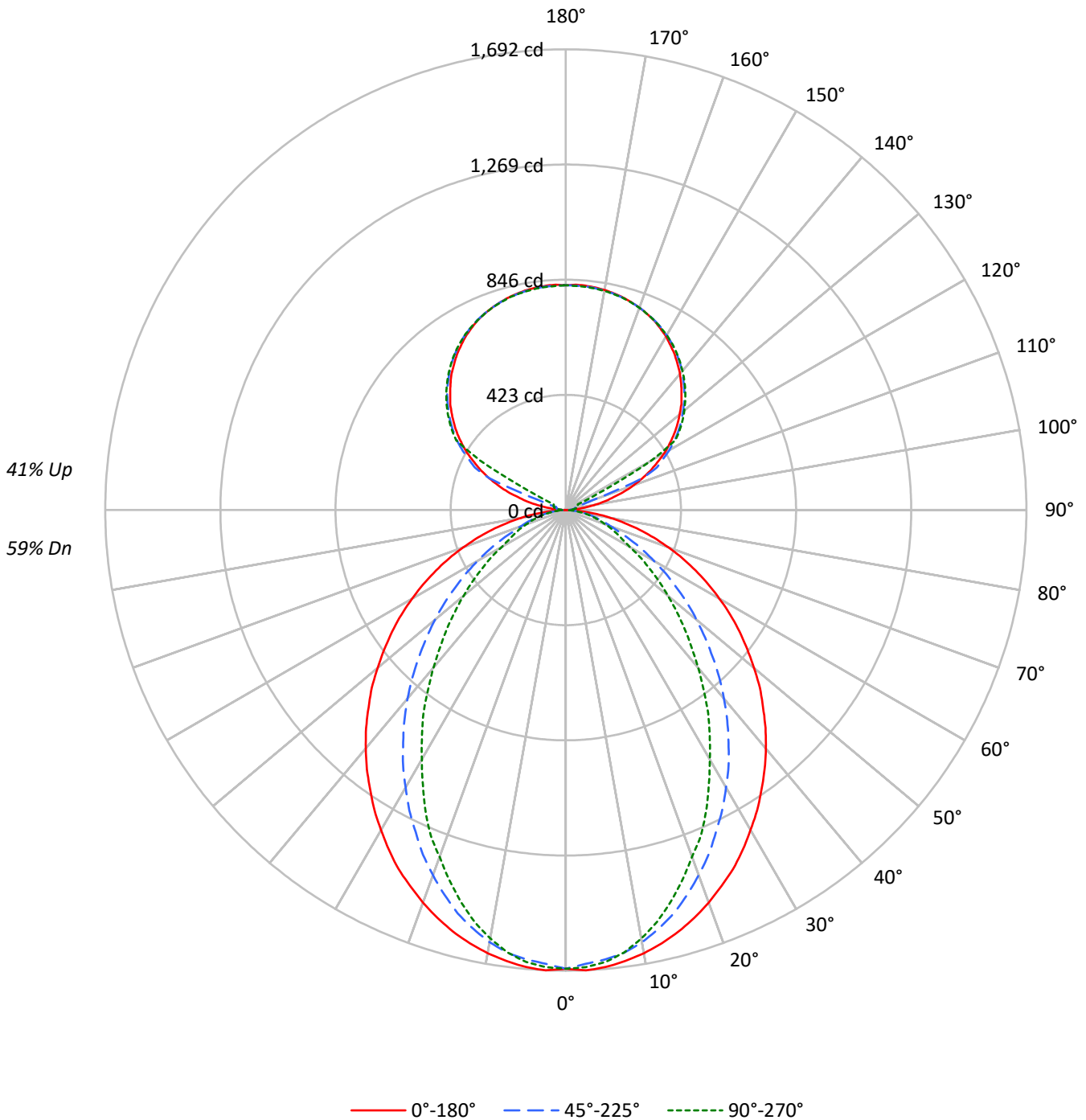
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5886.4 lumens
Efficiency: N/A
Efficacy: 80.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

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

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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	0
RCR																					
0	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59			59
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	55	51			51
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	51	49	48	43			43
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	43	41	37			37
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36	33			33
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32	29			29
6	66	54	46	40	61	51	44	38	45	39	35	40	35	32	35	31	28	26			26
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25	23			23
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23	21			21
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	23	21	19			19
10	50	38	31	26	46	36	29	25	32	27	23	29	24	21	25	22	19	17			17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1093	1093	1093
5°	1095	1076	1083
10°	1084	1055	1048
15°	1069	1021	994
20°	1050	973	927
25°	1029	919	863
30°	1002	864	782
35°	976	805	710
40°	949	744	628
45°	918	676	553
50°	885	607	480
55°	851	534	410
60°	812	457	338
65°	767	379	305
70°	713	306	276
75°	644	271	252
80°	545	228	220
85°	381	154	168

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 918 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.9	2.7
10°-20°	433.5	7.4
20°-30°	608.6	10.3
30°-40°	663.4	11.3
40°-50°	609.7	10.4
50°-60°	478.8	8.1
60°-70°	311.7	5.3
70°-80°	160.4	2.7
80°-90°	42.4	0.7
90°-100°	27.2	0.5
100°-110°	101.5	1.7
110°-120°	269.1	4.6
120°-130°	446.3	7.6
130°-140°	474.1	8.1
140°-150°	440.6	7.5
150°-160°	354.3	6.0
160°-170°	228.3	3.9
170°-180°	78.6	1.3
0°-30°	1200.0	20.4
0°-40°	1863.4	31.7
0°-60°	2951.9	50.1
0°-90°	3466.4	58.9
90°-120°	397.8	6.8
90°-150°	1758.9	29.9
90°-180°	2420.0	41.1
0°-180°	5886.4	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°	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°	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°	0.6	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: P915965

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

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	8.27	9.18	9.15	10.08	11.22	4.23	5.14	5.11	6.04	7.18
	3H	9.96	10.77	10.85	11.68	12.84	5.42	6.24	6.32	7.15	8.31
	4H	10.57	11.34	11.48	12.25	13.43	5.88	6.65	6.79	7.56	8.74
	6H	11.00	11.71	11.93	12.63	13.82	6.20	6.91	7.13	7.83	9.02
	8H	11.13	11.81	12.07	12.74	13.93	6.30	6.97	7.23	7.91	9.10
	12H	11.20	11.84	12.14	12.77	13.98	6.34	6.98	7.28	7.92	9.13
4H	2H	8.30	9.06	9.21	9.98	11.15	4.84	5.60	5.75	6.52	7.69
	3H	10.14	10.77	11.06	11.72	12.91	6.20	6.83	7.12	7.78	8.97
	4H	10.84	11.42	11.77	12.36	13.57	6.75	7.33	7.69	8.27	9.49
	6H	11.36	11.86	12.31	12.83	14.04	7.17	7.67	8.12	8.64	9.85
	8H	11.54	12.01	12.50	12.97	14.20	7.30	7.77	8.26	8.73	9.96
	12H	11.64	12.06	12.62	13.04	14.28	7.37	7.79	8.35	8.77	10.00
8H	4H	10.81	11.28	11.76	12.24	13.47	7.04	7.50	7.99	8.46	9.69
	6H	11.39	11.77	12.36	12.77	14.00	7.56	7.95	8.54	8.95	10.17
	8H	11.61	11.95	12.59	12.94	14.18	7.75	8.09	8.74	9.08	10.33
	12H	11.75	12.05	12.74	13.04	14.33	7.88	8.18	8.87	9.16	10.45
12H	4H	10.77	11.19	11.74	12.16	13.40	7.05	7.47	8.02	8.44	9.68
	6H	11.36	11.70	12.35	12.69	13.94	7.61	7.95	8.60	8.94	10.19
	8H	11.59	11.89	12.58	12.87	14.17	7.83	8.13	8.82	9.11	10.40