

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: P921337

Luminaire Tested: DFN2DIP-4P3F0-050D030US940-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921337
REPORT IS A COMBINATION OF REPORTS P900566 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D030US940-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

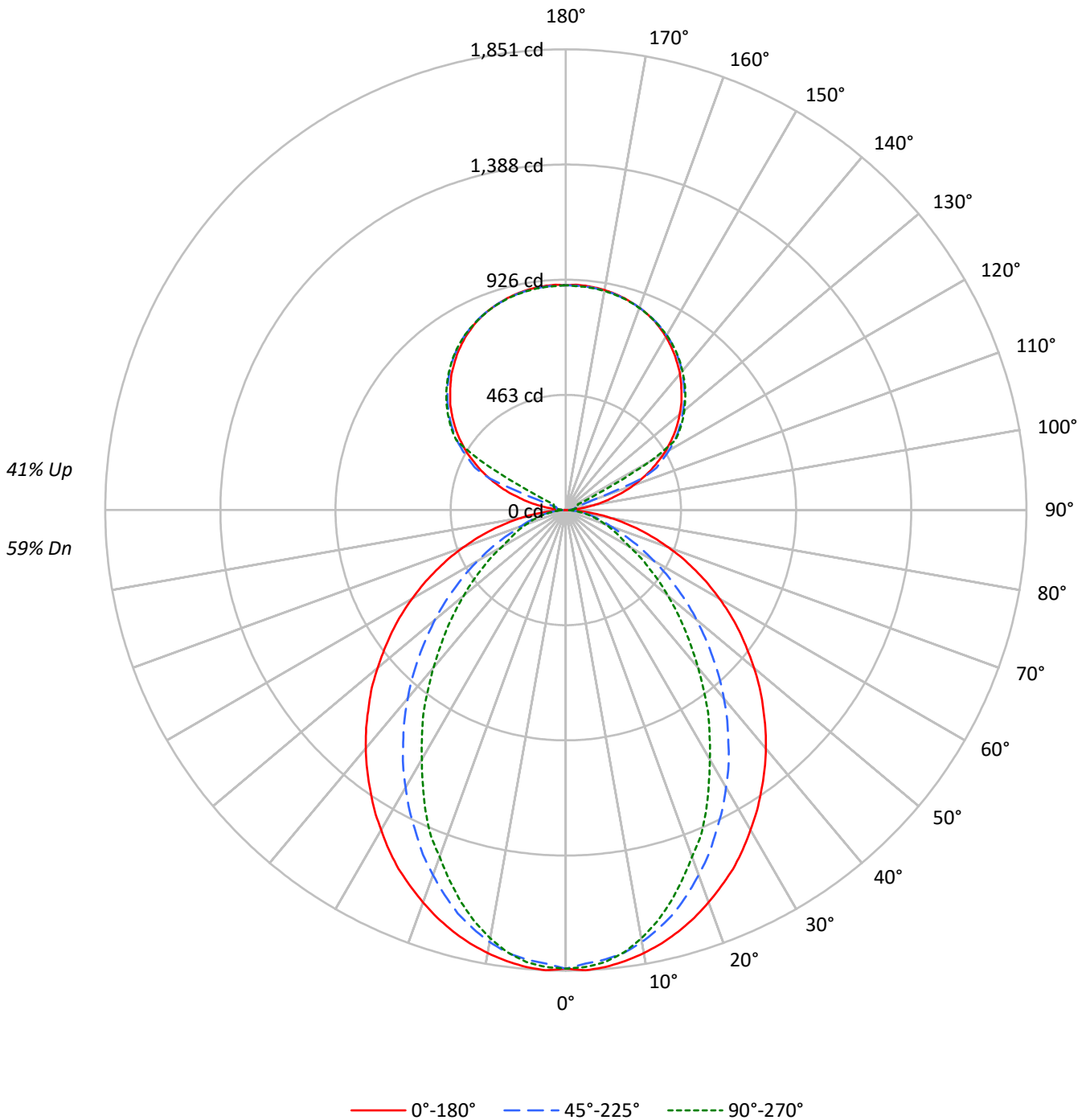
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6438.2 lumens
Efficiency: N/A
Efficacy: 90.6 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: General Diffuse

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	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°	2100	2100	2100
5°	2102	2065	2079
10°	2080	2023	2011
15°	2050	1955	1906
20°	2011	1862	1777
25°	1971	1757	1652
30°	1917	1650	1495
35°	1865	1535	1356
40°	1811	1416	1198
45°	1749	1285	1054
50°	1685	1152	914
55°	1618	1010	779
60°	1540	862	641
65°	1450	712	576
70°	1341	572	520
75°	1205	501	472
80°	1007	416	407
85°	683	272	302

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1749 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.7	2.7
10°-20°	474.1	7.4
20°-30°	665.6	10.3
30°-40°	725.6	11.3
40°-50°	666.9	10.4
50°-60°	523.7	8.1
60°-70°	340.9	5.3
70°-80°	175.5	2.7
80°-90°	46.4	0.7
90°-100°	29.8	0.5
100°-110°	111.0	1.7
110°-120°	294.3	4.6
120°-130°	488.2	7.6
130°-140°	518.5	8.1
140°-150°	481.9	7.5
150°-160°	387.5	6.0
160°-170°	249.7	3.9
170°-180°	85.9	1.3
0°-30°	1312.4	20.4
0°-40°	2038.0	31.7
0°-60°	3228.6	50.1
0°-90°	3791.4	58.9
90°-120°	435.1	6.8
90°-150°	1923.7	29.9
90°-180°	2647.0	41.1
0°-180°	6438.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1843	1843	1843	1843	1843	
5°	1843	1834	1813	1828	1823	175
15°	1753	1734	1678	1646	1629	494
25°	1591	1538	1427	1359	1334	732
35°	1371	1286	1139	1034	997	858
45°	1121	1009	834	715	675	865
55°	852	722	542	442	410	761
65°	575	440	290	234	228	570
75°	307	190	133	122	120	324
85°	72	37	32	32	32	82
90°	1	8	13	16	18	6
95°	42	21	25	29	28	50
105°	199	218	40	47	50	212
115°	376	387	403	101	54	370
125°	531	540	552	557	559	474
135°	657	668	674	680	679	508
145°	762	762	773	777	774	477
155°	840	834	841	845	840	387
165°	884	881	883	887	883	250
175°	905	900	902	906	900	86
180°	903	903	903	903	903	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1842.7	1842.7	1842.7	1842.7	1842.7
2.5°	1851.0	1842.7	1824.4	1841.1	1837.7
5°	1842.7	1834.4	1812.7	1827.6	1822.7
7.5°	1827.6	1817.8	1794.4	1801.0	1792.6
10°	1807.7	1796.0	1762.7	1757.7	1747.7
12.5°	1782.7	1767.7	1722.6	1712.7	1694.2
15°	1752.7	1734.3	1677.7	1646.0	1629.3
17.5°	1717.6	1691.0	1620.9	1584.2	1557.5
20°	1677.7	1644.2	1560.8	1519.3	1482.5
22.5°	1634.3	1595.9	1499.1	1442.5	1417.6
25°	1590.9	1537.5	1427.4	1359.1	1334.0
27.5°	1539.3	1482.5	1360.8	1282.4	1244.0
30°	1484.3	1420.8	1287.4	1202.4	1157.3
32.5°	1430.8	1354.1	1217.5	1117.3	1075.6
35°	1370.8	1285.8	1139.1	1033.9	997.2
37.5°	1312.4	1220.7	1065.7	950.5	908.9
40°	1250.7	1150.8	988.8	870.5	827.2
42.5°	1187.4	1080.7	912.2	788.7	747.2
45°	1120.7	1008.9	833.8	715.3	675.3
47.5°	1057.3	939.0	758.8	640.3	603.7
50°	987.3	868.9	685.5	570.2	535.4
52.5°	918.8	793.7	615.4	505.3	473.7
55°	852.1	722.0	541.9	441.9	410.3
57.5°	783.8	650.4	477.0	383.6	356.9
60°	713.7	580.3	408.5	323.6	296.9
62.5°	645.4	512.0	350.2	270.2	256.9
65°	575.3	440.2	290.2	233.5	228.5
67.5°	508.6	373.5	233.5	205.1	200.1
70°	438.6	308.5	193.4	176.7	170.0
72.5°	371.9	248.4	161.8	148.5	145.1
75°	306.8	190.0	133.4	121.7	120.1
77.5°	241.8	135.0	105.1	98.4	95.0
80°	181.7	96.8	80.0	73.4	73.4
82.5°	126.7	65.1	55.0	51.6	51.6
85°	71.7	36.6	31.7	31.7	31.7
87.5°	26.8	13.3	13.3	11.7	11.7
90°	0.6	7.8	13.0	16.4	17.6
92.5°	16.4	13.7	15.7	17.0	17.6
95°	42.4	20.9	25.4	28.8	28.1
97.5°	76.4	22.9	33.3	35.3	35.9
100°	115.7	26.1	37.3	42.4	43.8
102.5°	158.7	157.5	38.5	45.7	47.7
105°	198.6	218.2	39.9	47.0	49.7
107.5°	245.0	261.3	41.2	48.3	51.0
110°	289.4	303.1	114.3	49.0	51.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	331.3	343.0	331.9	50.3	52.3
115°	375.6	386.7	403.1	100.6	53.6
117.5°	414.2	427.2	438.4	344.9	173.8
120°	457.3	467.1	478.8	486.7	398.5
122.5°	493.8	504.4	517.5	521.3	522.0
125°	531.1	539.6	552.1	556.6	558.6
127.5°	565.1	574.2	584.1	590.6	591.2
130°	597.1	607.6	614.7	621.9	621.3
132.5°	629.7	638.3	645.4	651.3	650.7
135°	657.2	667.7	673.5	680.1	678.8
137.5°	685.9	693.8	700.3	706.9	704.9
140°	714.0	719.3	726.4	732.3	729.1
142.5°	737.6	742.2	750.6	755.8	752.6
145°	762.4	761.7	772.8	777.4	774.1
147.5°	783.9	781.9	793.1	796.3	793.7
150°	804.9	800.3	810.7	814.6	811.4
152.5°	822.4	817.3	827.1	831.0	826.4
155°	839.5	833.7	841.4	845.3	840.2
157.5°	853.2	848.0	853.9	858.4	853.2
160°	865.0	861.0	865.0	868.9	864.2
162.5°	875.4	871.5	874.8	879.3	873.4
165°	884.5	880.7	882.6	887.2	882.6
167.5°	891.7	887.8	889.7	894.4	888.5
170°	897.6	893.7	895.0	899.6	893.7
172.5°	901.5	897.6	898.9	903.5	897.6
175°	904.7	900.2	901.5	906.1	899.6
177.5°	906.1	901.5	902.2	906.8	900.9
180°	902.9	902.9	902.9	902.9	902.9



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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	10.48	11.39	11.37	12.29	13.43	6.44	7.35	7.33	8.25	9.39
	3H	12.16	12.97	13.06	13.88	15.05	7.63	8.44	8.53	9.35	10.52
	4H	12.77	13.54	13.68	14.45	15.63	8.08	8.85	8.99	9.76	10.94
	6H	13.19	13.90	14.12	14.82	16.01	8.40	9.11	9.32	10.03	11.22
	8H	13.32	13.99	14.25	14.93	16.12	8.49	9.16	9.42	10.10	11.29
	12H	13.38	14.02	14.32	14.95	16.17	8.53	9.17	9.47	10.10	11.32
4H	2H	10.51	11.28	11.43	12.19	13.37	7.05	7.81	7.96	8.73	9.91
	3H	12.34	12.98	13.27	13.92	15.11	8.40	9.03	9.32	9.98	11.17
	4H	13.03	13.61	13.97	14.55	15.77	8.94	9.52	9.88	10.46	11.68
	6H	13.55	14.05	14.50	15.01	16.23	9.36	9.86	10.31	10.82	12.04
	8H	13.72	14.19	14.67	15.15	16.38	9.49	9.95	10.44	10.91	12.14
	12H	13.82	14.24	14.79	15.21	16.45	9.55	9.97	10.52	10.95	12.18
8H	4H	13.00	13.47	13.96	14.43	15.66	9.23	9.69	10.18	10.65	11.88
	6H	13.57	13.95	14.55	14.95	16.18	9.74	10.12	10.72	11.12	12.35
	8H	13.78	14.12	14.77	15.11	16.36	9.92	10.26	10.91	11.25	12.50
	12H	13.92	14.22	14.91	15.20	16.50	10.04	10.34	11.03	11.32	12.62
12H	4H	12.96	13.38	13.93	14.35	15.59	9.23	9.65	10.20	10.63	11.86
	6H	13.54	13.88	14.53	14.87	16.12	9.79	10.13	10.77	11.12	12.36
	8H	13.76	14.06	14.75	15.04	16.34	9.99	10.29	10.98	11.28	12.57