

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: P910401

Luminaire Tested: DFN2DIP-4P3F0-040D020US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910401
REPORT IS A COMBINATION OF REPORTS P900554 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-040D020US850-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

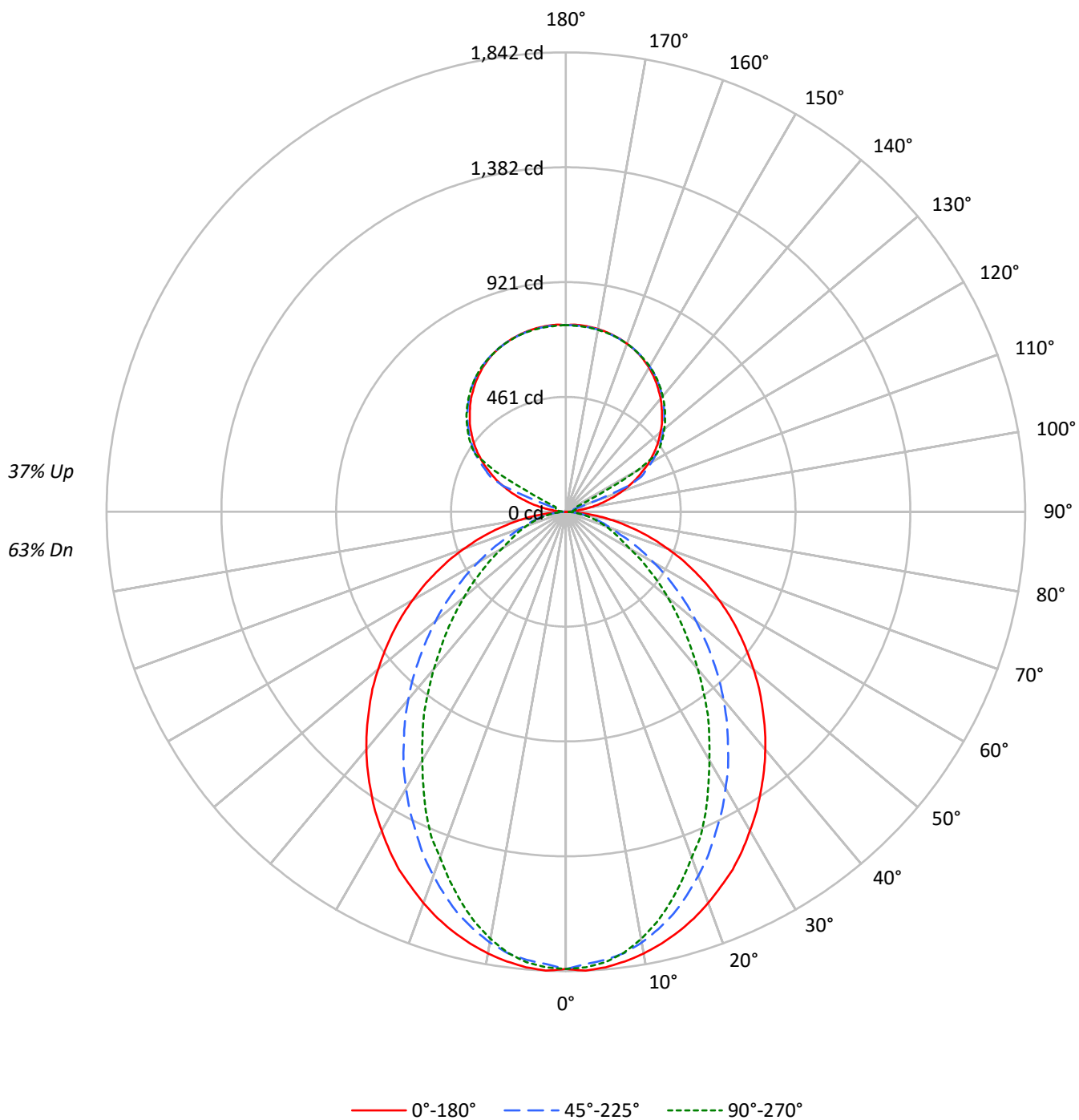
Lumens per Lamp: N/A
Luminaire Lumens: 5966.4 lumens
Efficiency: N/A
Efficacy: 112.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 53
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P910401

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US850-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P910401

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US850-RLLONL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2089	2089	2089
5°	2091	2055	2069
10°	2069	2013	2001
15°	2040	1945	1896
20°	2001	1852	1768
25°	1961	1748	1644
30°	1907	1642	1487
35°	1855	1527	1349
40°	1802	1409	1192
45°	1740	1278	1049
50°	1676	1146	909
55°	1610	1005	775
60°	1532	858	637
65°	1443	709	573
70°	1335	569	517
75°	1198	499	470
80°	1002	414	405
85°	680	270	300

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1740 cd/sqm

TEST NUMBER: P910401

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US850-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.8	2.9
10°-20°	471.7	7.9
20°-30°	662.3	11.1
30°-40°	721.9	12.1
40°-50°	663.5	11.1
50°-60°	521.1	8.7
60°-70°	339.2	5.7
70°-80°	174.6	2.9
80°-90°	45.9	0.8
90°-100°	24.7	0.4
100°-110°	92.0	1.5
110°-120°	244.0	4.1
120°-130°	404.8	6.8
130°-140°	429.9	7.2
140°-150°	399.6	6.7
150°-160°	321.3	5.4
160°-170°	207.0	3.5
170°-180°	71.2	1.2
0°-30°	1305.8	21.9
0°-40°	2027.7	34.0
0°-60°	3212.2	53.8
0°-90°	3771.9	63.2
90°-120°	360.7	6.0
90°-150°	1595.0	26.7
90°-180°	2194.0	36.8
0°-180°	5966.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1833	1833	1833	1833	1833	
5°	1833	1825	1804	1818	1814	174
15°	1744	1726	1669	1638	1621	491
25°	1583	1530	1420	1352	1327	728
35°	1364	1279	1133	1029	992	854
45°	1115	1004	830	712	672	861
55°	848	718	539	440	408	758
65°	572	438	289	232	227	568
75°	305	189	133	121	120	323
85°	71	36	32	32	32	82
90°	1	6	11	14	15	6
95°	35	17	21	24	23	42
105°	165	181	33	39	41	176
115°	311	321	334	83	44	307
125°	440	447	458	462	463	393
135°	545	554	558	564	563	421
145°	632	632	641	645	642	395
155°	696	691	698	701	697	321
165°	733	730	732	736	732	207
175°	750	746	748	751	746	71
180°	749	749	749	749	749	

TEST NUMBER: P910401

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US850-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1833.4	1833.4	1833.4	1833.4	1833.4
2.5°	1841.7	1833.4	1815.1	1831.8	1828.4
5°	1833.4	1825.1	1803.5	1818.4	1813.5
7.5°	1818.4	1808.6	1785.4	1791.8	1783.6
10°	1798.6	1786.9	1753.8	1748.7	1738.9
12.5°	1773.7	1758.8	1713.8	1704.0	1685.7
15°	1743.8	1725.5	1669.2	1637.7	1621.1
17.5°	1709.0	1682.4	1612.6	1576.2	1549.6
20°	1669.2	1635.9	1552.9	1511.6	1475.0
22.5°	1626.0	1587.9	1491.5	1435.2	1410.4
25°	1582.9	1529.8	1420.2	1352.3	1327.3
27.5°	1531.5	1475.0	1353.9	1275.9	1237.6
30°	1476.7	1413.5	1280.8	1196.3	1151.5
32.5°	1423.6	1347.2	1211.2	1111.7	1070.1
35°	1364.0	1279.2	1133.3	1028.7	992.1
37.5°	1305.8	1214.5	1060.2	945.6	904.3
40°	1244.4	1144.9	983.9	866.1	823.0
42.5°	1181.3	1075.2	907.6	784.7	743.4
45°	1115.0	1003.8	829.6	711.8	671.9
47.5°	1052.0	934.2	755.0	637.1	600.6
50°	982.2	864.5	681.9	567.4	532.7
52.5°	914.1	789.7	612.3	502.7	471.2
55°	847.8	718.4	539.2	439.7	408.2
57.5°	779.8	647.1	474.5	381.6	355.1
60°	710.1	577.3	406.4	321.9	295.4
62.5°	642.2	509.5	348.3	268.8	255.6
65°	572.5	437.9	288.7	232.3	227.2
67.5°	506.1	371.6	232.3	204.1	199.1
70°	436.4	307.0	192.4	175.9	169.1
72.5°	370.1	247.2	160.9	147.7	144.4
75°	305.2	189.1	132.7	121.1	119.6
77.5°	240.7	134.3	104.6	97.9	94.5
80°	180.8	96.3	79.5	73.1	73.1
82.5°	126.1	64.8	54.8	51.3	51.3
85°	71.3	36.5	31.5	31.5	31.5
87.5°	26.6	13.2	13.2	11.6	11.6
90°	0.6	6.5	10.8	13.5	14.6
92.5°	13.5	11.4	13.0	14.1	14.6
95°	35.2	17.3	21.1	23.8	23.3
97.5°	63.3	19.0	27.6	29.3	29.8
100°	95.9	21.6	30.8	35.2	36.3
102.5°	131.6	130.5	31.9	37.9	39.6
105°	164.7	180.9	33.0	38.9	41.1
107.5°	203.2	216.6	34.2	40.0	42.3
110°	240.0	251.3	94.8	40.7	42.8



TEST NUMBER: P910401

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US850-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	274.6	284.3	275.1	41.7	43.4
115°	311.4	320.6	334.3	83.4	44.5
117.5°	343.3	354.2	363.4	286.0	144.1
120°	379.2	387.3	397.0	403.6	330.4
122.5°	409.4	418.1	429.0	432.2	432.8
125°	440.4	447.4	457.7	461.5	463.1
127.5°	468.6	476.1	484.3	489.6	490.2
130°	495.1	503.7	509.7	515.7	515.1
132.5°	522.1	529.2	535.1	540.0	539.5
135°	545.0	553.6	558.4	563.9	562.8
137.5°	568.7	575.2	580.7	586.1	584.4
140°	592.0	596.4	602.3	607.2	604.5
142.5°	611.5	615.4	622.4	626.7	623.9
145°	632.1	631.6	640.8	644.6	641.9
147.5°	650.0	648.3	657.5	660.2	658.1
150°	667.3	663.5	672.2	675.4	672.7
152.5°	681.9	677.6	685.7	689.0	685.1
155°	696.0	691.1	697.7	700.9	696.6
157.5°	707.4	703.1	708.0	711.8	707.4
160°	717.2	713.9	717.2	720.4	716.6
162.5°	725.7	722.5	725.3	729.1	724.2
165°	733.4	730.2	731.7	735.6	731.7
167.5°	739.4	736.0	737.7	741.6	736.6
170°	744.2	740.9	742.0	745.8	740.9
172.5°	747.5	744.2	745.4	749.1	744.2
175°	750.1	746.4	747.5	751.2	745.8
177.5°	751.2	747.5	748.0	751.8	746.9
180°	748.6	748.6	748.6	748.6	748.6



TEST NUMBER: P910401

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US850-RLONL

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	10.83	11.78	11.67	12.64	13.71	6.79	7.74	7.63	8.60	9.67
	3H	12.51	13.36	13.36	14.23	15.33	7.98	8.83	8.83	9.70	10.80
	4H	13.12	13.92	13.99	14.80	15.91	8.43	9.23	9.30	10.11	11.22
	6H	13.54	14.28	14.43	15.17	16.29	8.75	9.49	9.63	10.37	11.50
	8H	13.67	14.37	14.56	15.27	16.40	8.84	9.54	9.73	10.44	11.57
	12H	13.74	14.40	14.63	15.30	16.45	8.89	9.56	9.78	10.45	11.60
4H	2H	10.86	11.66	11.73	12.53	13.64	7.39	8.20	8.27	9.07	10.18
	3H	12.69	13.36	13.58	14.27	15.39	8.75	9.41	9.64	10.32	11.45
	4H	13.39	13.99	14.28	14.90	16.05	9.30	9.90	10.19	10.81	11.96
	6H	13.90	14.43	14.82	15.35	16.51	9.72	10.24	10.63	11.17	12.32
	8H	14.08	14.57	14.99	15.49	16.65	9.84	10.33	10.76	11.25	12.42
	12H	14.18	14.61	15.11	15.56	16.73	9.91	10.35	10.84	11.29	12.46
8H	4H	13.36	13.85	14.28	14.77	15.94	9.58	10.07	10.50	10.99	12.16
	6H	13.93	14.33	14.87	15.29	16.46	10.10	10.50	11.04	11.46	12.63
	8H	14.14	14.50	15.09	15.45	16.63	10.28	10.64	11.23	11.59	12.78
	12H	14.28	14.59	15.23	15.54	16.78	10.40	10.72	11.36	11.66	12.90
12H	4H	13.32	13.76	14.25	14.70	15.87	9.59	10.03	10.53	10.97	12.14
	6H	13.90	14.26	14.85	15.21	16.40	10.14	10.50	11.10	11.46	12.64
	8H	14.12	14.44	15.08	15.38	16.62	10.35	10.67	11.31	11.62	12.85

END OF REPORT