

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: P917579

Luminaire Tested: DFN2DIP-SQ4F0-060D060US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917579
REPORT IS A COMBINATION OF REPORTS P901580 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-060D060US930-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

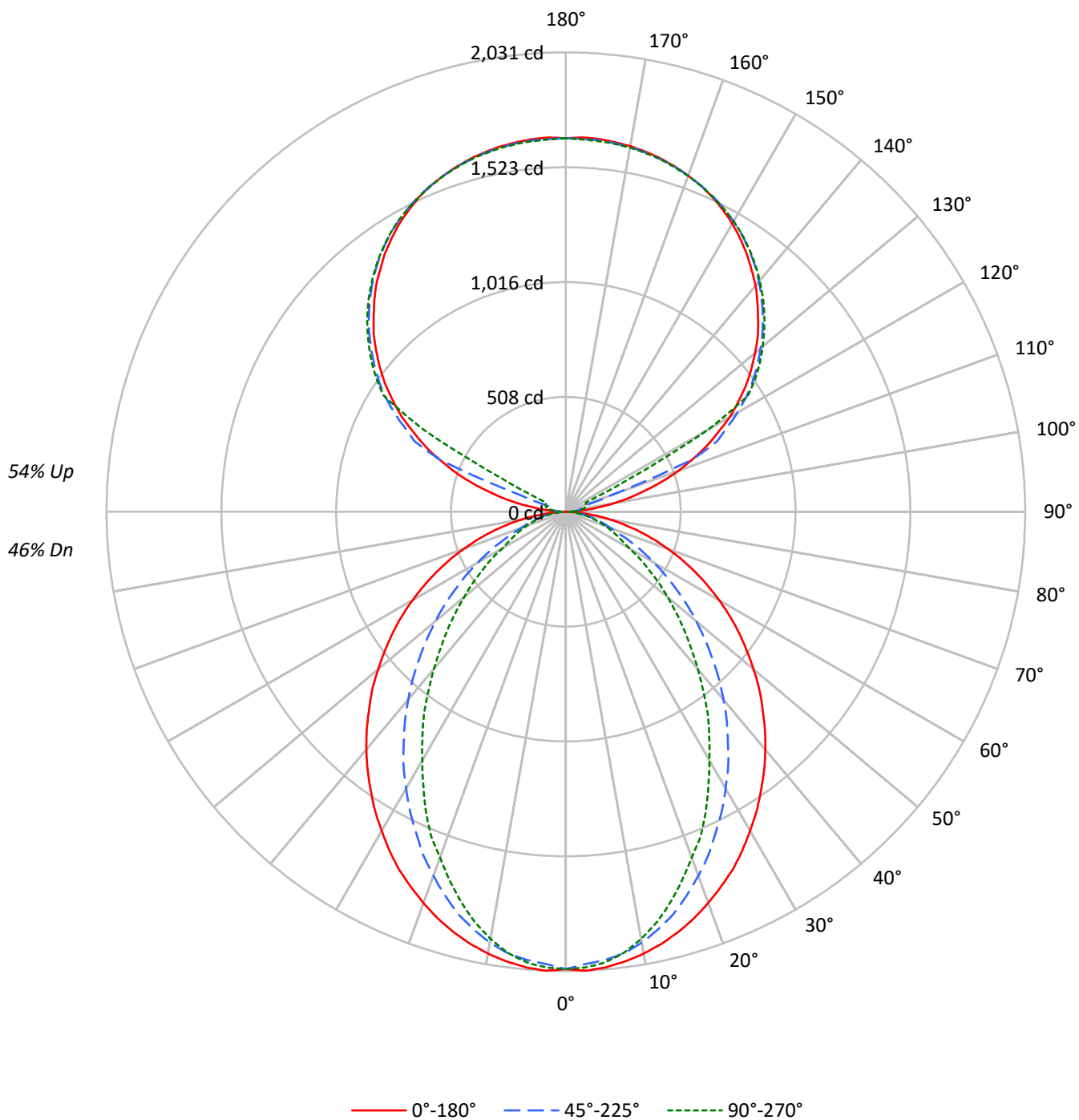
Lumens per Lamp: N/A
Luminaire Lumens: 9000.9 lumens
Efficiency: N/A
Efficacy: 94.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 95.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53			46
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45			40
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39			34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34			29
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29			26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26			23
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23			20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21			18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19			16
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17			15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1419	1419	1419
5°	1421	1396	1405
10°	1407	1369	1360
15°	1387	1324	1290
20°	1362	1262	1203
25°	1336	1192	1120
30°	1300	1121	1014
35°	1266	1044	921
40°	1231	965	814
45°	1190	876	717
50°	1148	787	622
55°	1103	692	531
60°	1052	592	438
65°	994	491	394
70°	923	396	358
75°	833	350	326
80°	703	294	284
85°	490	198	216

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1190 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.5	2.1
10°-20°	520.2	5.8
20°-30°	730.3	8.1
30°-40°	796.1	8.8
40°-50°	731.7	8.1
50°-60°	574.6	6.4
60°-70°	374.0	4.2
70°-80°	192.5	2.1
80°-90°	52.0	0.6
90°-100°	54.4	0.6
100°-110°	202.9	2.3
110°-120°	538.2	6.0
120°-130°	892.7	9.9
130°-140°	948.2	10.5
140°-150°	881.3	9.8
150°-160°	708.5	7.9
160°-170°	456.5	5.1
170°-180°	157.1	1.7
0°-30°	1439.9	16.0
0°-40°	2236.0	24.8
0°-60°	3542.3	39.4
0°-90°	4160.9	46.2
90°-120°	795.6	8.8
90°-150°	3517.8	39.1
90°-180°	4840.0	53.8
0°-180°	9000.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2022	2022	2022	2022	2022	
5°	2022	2013	1989	2005	2000	192
15°	1923	1903	1841	1806	1788	542
25°	1746	1687	1566	1491	1464	803
35°	1504	1411	1250	1134	1094	941
45°	1230	1107	915	785	741	950
55°	935	792	595	485	450	835
65°	631	483	318	256	251	626
75°	337	208	146	134	132	356
85°	79	40	35	35	35	90
90°	1	14	24	30	32	8
95°	78	38	47	53	51	92
105°	363	399	73	86	91	388
115°	687	707	737	184	98	676
125°	971	987	1009	1018	1021	866
135°	1202	1221	1232	1244	1241	928
145°	1394	1393	1413	1422	1416	872
155°	1535	1524	1539	1546	1536	707
165°	1618	1610	1614	1622	1614	457
175°	1654	1646	1648	1657	1645	157
180°	1651	1651	1651	1651	1651	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2021.8	2021.8	2021.8	2021.8	2021.8
2.5°	2030.9	2021.8	2001.6	2020.0	2016.3
5°	2021.8	2012.6	1988.8	2005.3	1999.8
7.5°	2005.3	1994.4	1968.8	1976.0	1966.8
10°	1983.3	1970.5	1934.1	1928.4	1917.5
12.5°	1956.0	1939.4	1889.9	1879.1	1858.9
15°	1923.0	1902.7	1840.6	1805.9	1787.6
17.5°	1884.6	1855.2	1778.3	1738.1	1708.9
20°	1840.6	1803.9	1712.5	1666.9	1626.5
22.5°	1793.1	1750.9	1644.8	1582.7	1555.3
25°	1745.6	1686.9	1566.2	1491.3	1463.7
27.5°	1688.9	1626.5	1493.0	1407.0	1364.9
30°	1628.5	1558.8	1412.4	1319.2	1269.7
32.5°	1569.9	1485.6	1335.8	1225.9	1180.1
35°	1504.1	1410.7	1249.8	1134.4	1094.0
37.5°	1440.0	1339.2	1169.2	1042.8	997.2
40°	1372.2	1262.6	1084.9	955.0	907.5
42.5°	1302.8	1185.7	1000.9	865.4	819.8
45°	1229.6	1106.8	914.9	784.8	740.9
47.5°	1160.1	1030.2	832.6	702.5	662.3
50°	1083.2	953.3	752.0	625.7	587.4
52.5°	1008.0	870.8	675.1	554.4	519.7
55°	934.9	792.2	594.6	484.9	450.1
57.5°	860.0	713.5	523.3	420.9	391.5
60°	783.1	636.7	448.3	355.1	325.7
62.5°	708.2	561.8	384.2	296.4	281.8
65°	631.3	483.0	318.4	256.2	250.6
67.5°	558.1	409.8	256.2	225.0	219.6
70°	481.2	338.5	212.1	194.0	186.5
72.5°	408.1	272.6	177.4	162.9	159.1
75°	336.6	208.5	146.3	133.5	131.8
77.5°	265.4	148.1	115.3	107.9	104.3
80°	199.3	106.2	87.7	80.6	80.6
82.5°	139.0	71.4	60.3	56.7	56.7
85°	78.6	40.2	34.7	34.7	34.7
87.5°	29.4	14.6	14.6	12.8	12.8
90°	1.1	14.3	23.8	29.9	32.2
92.5°	29.9	25.1	28.6	31.1	32.2
95°	77.6	38.2	46.6	52.7	51.4
97.5°	139.7	41.8	60.8	64.6	65.7
100°	211.5	47.8	68.1	77.6	80.0
102.5°	290.2	288.0	70.5	83.6	87.2
105°	363.1	399.0	72.9	85.9	90.8
107.5°	448.0	477.8	75.3	88.4	93.2
110°	529.3	554.2	209.1	89.7	94.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	605.7	627.1	606.8	91.9	95.6
115°	686.9	707.2	737.1	184.0	98.0
117.5°	757.3	781.2	801.6	630.7	317.7
120°	836.3	854.1	875.7	890.0	728.7
122.5°	903.0	922.2	946.2	953.2	954.6
125°	971.2	986.8	1009.4	1017.8	1021.3
127.5°	1033.3	1050.0	1068.0	1079.9	1081.1
130°	1091.8	1111.0	1124.1	1137.3	1136.1
132.5°	1151.6	1167.2	1180.2	1191.0	1189.8
135°	1201.8	1221.0	1231.6	1243.7	1241.2
137.5°	1254.3	1268.6	1280.7	1292.6	1289.1
140°	1305.6	1315.3	1328.4	1339.1	1333.2
142.5°	1348.7	1357.1	1372.6	1382.1	1376.1
145°	1394.2	1392.9	1413.2	1421.6	1415.6
147.5°	1433.5	1429.9	1450.2	1456.1	1451.5
150°	1471.8	1463.4	1482.5	1489.6	1483.7
152.5°	1504.0	1494.4	1512.3	1519.6	1511.2
155°	1535.0	1524.4	1538.7	1545.8	1536.3
157.5°	1560.2	1550.6	1561.4	1569.8	1560.2
160°	1581.7	1574.4	1581.7	1588.8	1580.5
162.5°	1600.7	1593.6	1599.5	1607.9	1597.2
165°	1617.5	1610.4	1613.9	1622.3	1613.9
167.5°	1630.6	1623.4	1627.1	1635.5	1624.6
170°	1641.4	1634.2	1636.6	1644.9	1634.2
172.5°	1648.5	1641.4	1643.8	1652.2	1641.4
175°	1654.5	1646.1	1648.5	1656.8	1644.9
177.5°	1656.8	1648.5	1649.8	1658.2	1647.4
180°	1650.9	1650.9	1650.9	1650.9	1650.9

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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	8.01	8.81	9.01	9.81	11.14	3.97	4.77	4.97	5.78	7.10
	3H	9.69	10.41	10.70	11.42	12.77	5.16	5.88	6.17	6.89	8.23
	4H	10.30	10.98	11.32	11.99	13.35	5.61	6.29	6.63	7.30	8.66
	6H	10.72	11.35	11.75	12.37	13.73	5.93	6.55	6.96	7.57	8.94
	8H	10.85	11.44	11.89	12.48	13.84	6.02	6.61	7.05	7.65	9.01
	12H	10.92	11.48	11.95	12.51	13.89	6.06	6.62	7.10	7.65	9.04
4H	2H	8.03	8.70	9.05	9.72	11.07	4.57	5.24	5.59	6.26	7.61
	3H	9.86	10.42	10.89	11.46	12.83	5.92	6.48	6.95	7.52	8.89
	4H	10.55	11.07	11.59	12.10	13.49	6.46	6.98	7.50	8.01	9.40
	6H	11.07	11.51	12.12	12.57	13.96	6.88	7.32	7.93	8.38	9.77
	8H	11.25	11.66	12.30	12.71	14.11	7.01	7.42	8.06	8.47	9.88
	12H	11.34	11.71	12.41	12.78	14.19	7.07	7.45	8.14	8.51	9.92
8H	4H	10.52	10.93	11.57	11.98	13.38	6.74	7.16	7.79	8.21	9.61
	6H	11.09	11.43	12.16	12.52	13.92	7.26	7.60	8.34	8.69	10.09
	8H	11.31	11.61	12.39	12.68	14.10	7.45	7.75	8.54	8.83	10.25
	12H	11.45	11.71	12.53	12.78	14.24	7.57	7.83	8.66	8.91	10.37
12H	4H	10.47	10.84	11.54	11.91	13.31	6.75	7.12	7.82	8.18	9.59
	6H	11.06	11.36	12.14	12.44	13.86	7.31	7.61	8.39	8.69	10.11
	8H	11.28	11.55	12.37	12.62	14.08	7.52	7.79	8.61	8.86	10.32

END OF REPORT