

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: P916867

Luminaire Tested: DFN2DIP-PN4F0-060D060US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916867
REPORT IS A COMBINATION OF REPORTS P901170 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-060D060US930-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

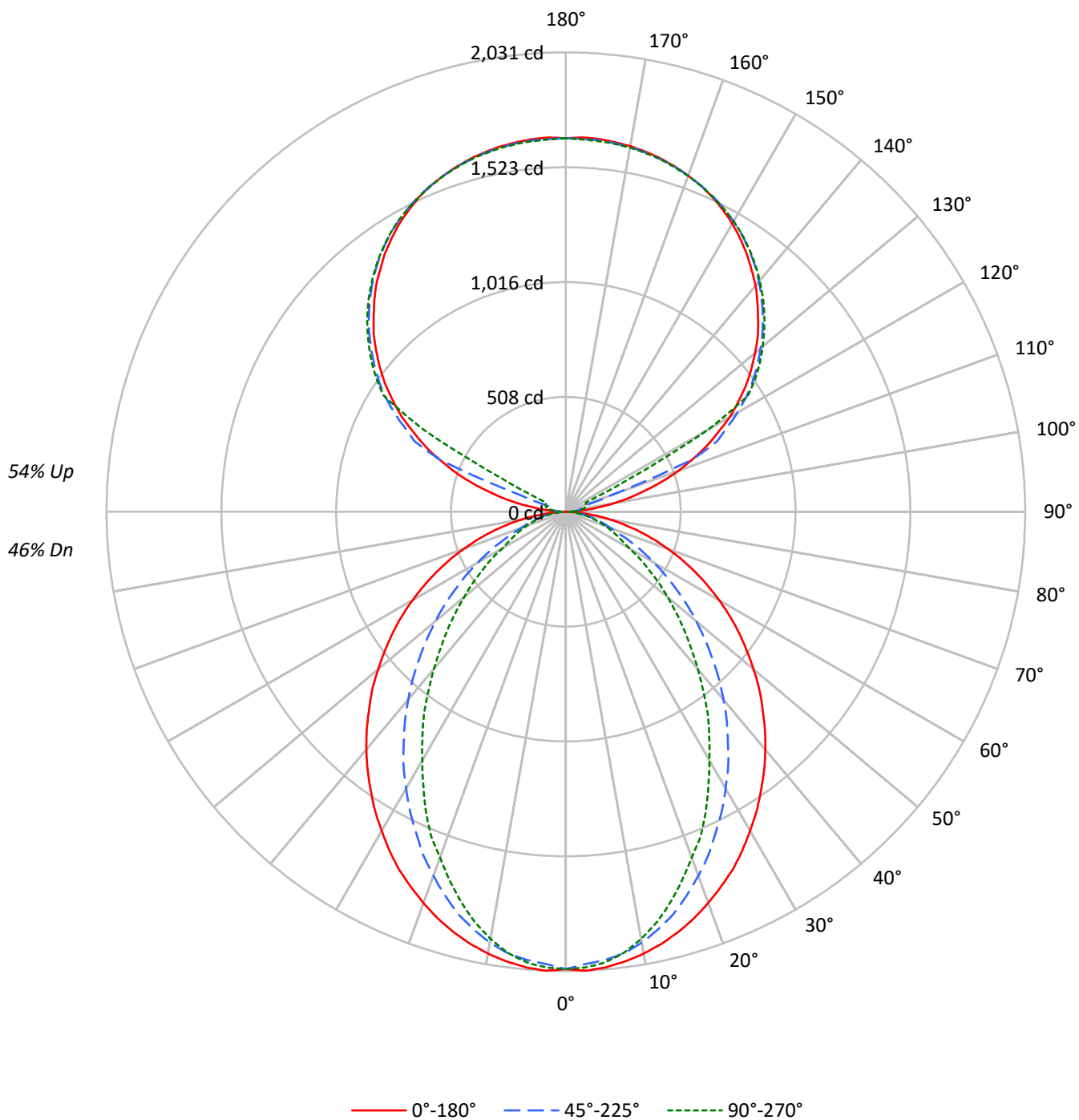
Lumens per Lamp: N/A
Luminaire Lumens: 9000.9 lumens
Efficiency: N/A
Efficacy: 90.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 99.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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					0
RW	70	50	30	10	70	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
1	97	93	90	86	89	86	83	80		72	70	68		59	58	56		47	46	45
2	89	82	76	71	82	76	70	66		63	60	57		52	50	48		42	40	39
3	81	72	65	60	75	67	61	56		56	52	48		47	43	41		38	35	34
4	75	64	57	51	68	60	53	48		50	45	41		42	38	35		34	31	29
5	69	58	50	44	63	53	46	41		45	40	36		38	34	31		31	28	26
6	63	52	44	38	58	48	41	36		41	36	32		34	30	27		28	25	23
7	59	47	39	34	54	44	37	32		37	32	28		31	27	24		26	23	21
8	55	43	35	30	50	40	33	28		34	29	25		29	25	22		24	21	19
9	51	39	32	27	47	36	30	25		31	26	22		27	23	20		22	19	17
10	48	36	29	24	44	33	27	23		29	24	20		25	21	18		20	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1476	1476	1476
5°	1478	1453	1462
10°	1464	1424	1415
15°	1443	1377	1341
20°	1417	1313	1251
25°	1389	1240	1164
30°	1353	1166	1054
35°	1317	1086	957
40°	1280	1003	846
45°	1238	911	745
50°	1194	818	646
55°	1148	719	552
60°	1095	615	454
65°	1034	510	409
70°	960	411	371
75°	867	363	338
80°	732	305	294
85°	510	205	223

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1238 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	8.14	8.94	9.14	9.95	11.27	4.11	4.91	5.10	5.91	7.24
	3H	9.82	10.54	10.83	11.55	12.90	5.30	6.01	6.30	7.02	8.37
	4H	10.43	11.11	11.45	12.12	13.48	5.75	6.42	6.76	7.44	8.79
	6H	10.85	11.48	11.88	12.49	13.86	6.07	6.69	7.09	7.71	9.08
	8H	10.98	11.57	12.01	12.61	13.97	6.16	6.75	7.19	7.78	9.15
	12H	11.04	11.60	12.08	12.63	14.02	6.20	6.76	7.24	7.79	9.18
4H	2H	8.16	8.83	9.18	9.85	11.20	4.70	5.38	5.73	6.39	7.75
	3H	9.99	10.55	11.02	11.59	12.96	6.05	6.61	7.08	7.66	9.03
	4H	10.68	11.20	11.72	12.23	13.62	6.60	7.11	7.64	8.15	9.54
	6H	11.20	11.64	12.25	12.70	14.08	7.02	7.46	8.07	8.52	9.90
	8H	11.37	11.79	12.42	12.84	14.24	7.15	7.56	8.20	8.61	10.01
	12H	11.47	11.84	12.54	12.91	14.31	7.21	7.58	8.28	8.65	10.05
8H	4H	10.65	11.06	11.70	12.11	13.51	6.88	7.29	7.93	8.34	9.74
	6H	11.21	11.55	12.29	12.65	14.05	7.40	7.74	8.47	8.83	10.23
	8H	11.43	11.73	12.51	12.81	14.23	7.59	7.89	8.67	8.96	10.38
	12H	11.57	11.84	12.66	12.91	14.37	7.71	7.97	8.79	9.04	10.50
12H	4H	10.60	10.97	11.67	12.03	13.44	6.88	7.25	7.95	8.32	9.73
	6H	11.19	11.49	12.27	12.57	13.98	7.45	7.74	8.53	8.82	10.24
	8H	11.41	11.67	12.50	12.75	14.21	7.66	7.92	8.74	8.99	10.45

END OF REPORT