

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: P924391

Luminaire Tested: DFN2DIP-HX3F0-050D030US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924391
REPORT IS A COMBINATION OF REPORTS P900725 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D030US950-FLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

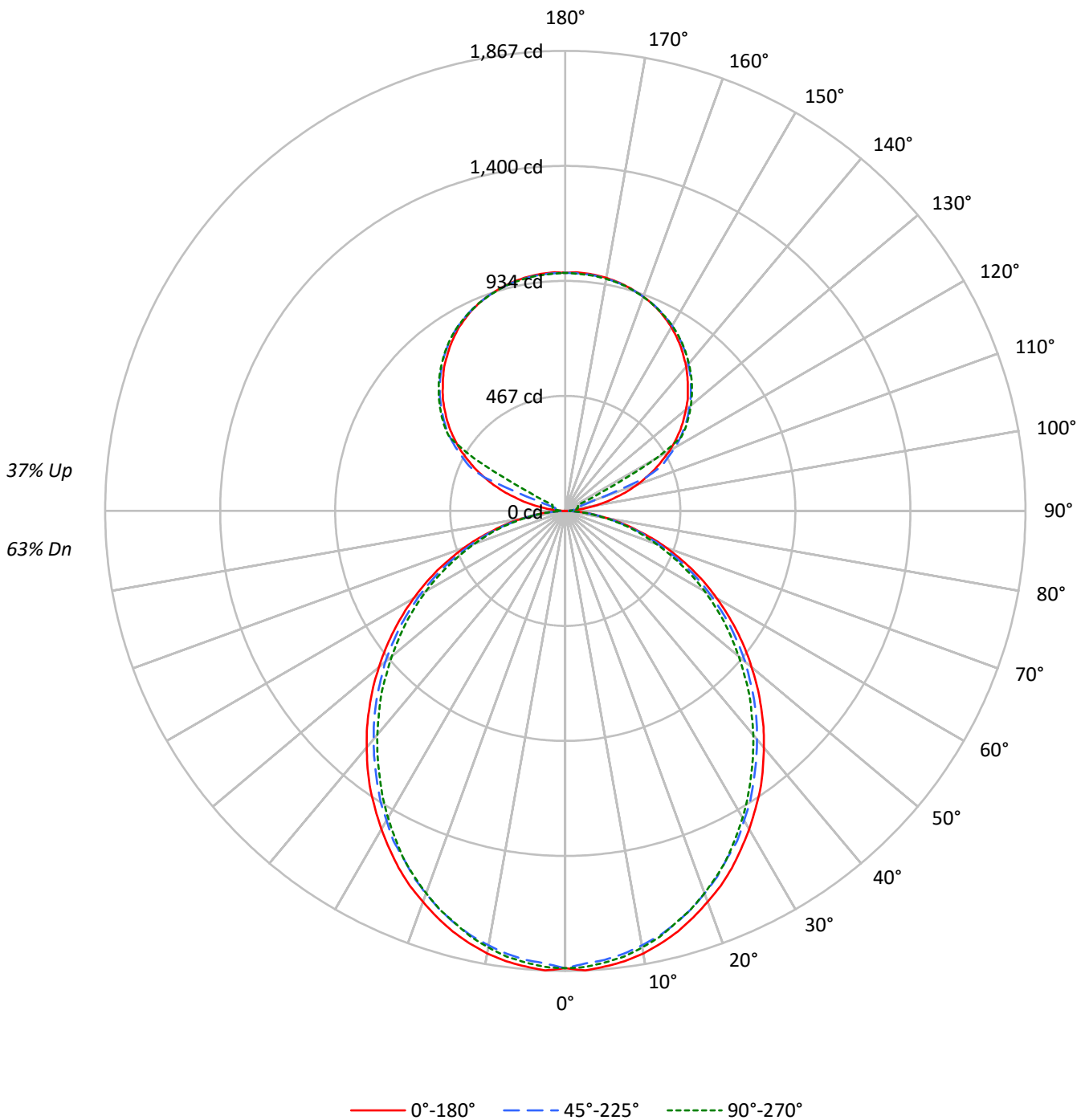
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7555.7 lumens
Efficiency: N/A
Efficacy: 111.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 67.7
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

TEST NUMBER: P924391
CATALOG NUMBER: DFN2DIP-HX3F0-050D030US950-FLLONL

Luminous Intensity Polar Plot





TEST NUMBER: P924391

CATALOG NUMBER: DFN2DIP-HX3F0-050D030US950-FLLONL

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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	68	68	68	68	68	68	63
1	101	96	92	89	94	90	87	84	79	77	74	69	67	65	60	58	57	60	58	57	53
2	92	84	78	72	86	79	73	69	69	65	62	61	58	55	53	50	48	53	50	48	44
3	84	74	66	60	78	70	63	57	61	56	52	54	50	46	47	44	41	47	44	41	37
4	77	65	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35	42	38	35	32
5	70	58	50	44	66	55	48	42	49	43	38	43	38	34	38	34	31	38	34	31	28
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27	34	30	27	25
7	60	47	39	34	56	45	38	32	40	34	30	35	31	27	31	27	24	31	27	24	22
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22	29	25	22	19
9	52	40	32	27	49	37	30	26	34	28	24	30	25	22	27	23	20	27	23	20	18
10	49	36	29	24	46	34	28	23	31	25	21	28	23	20	25	21	18	25	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2150	2150	2150
5°	2152	2118	2133
10°	2134	2089	2103
15°	2102	2053	2057
20°	2058	2003	2009
25°	2015	1945	1955
30°	1961	1890	1886
35°	1910	1826	1813
40°	1847	1761	1743
45°	1785	1696	1672
50°	1716	1627	1590
55°	1644	1548	1513
60°	1563	1454	1426
65°	1474	1357	1324
70°	1361	1238	1213
75°	1204	1095	1109
80°	1016	914	913
85°	720	604	592

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1785 cd/sqm



TEST NUMBER: P924391

CATALOG NUMBER: DFN2DIP-HX3F0-050D030US950-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.7	2.3
10°-20°	491.5	6.5
20°-30°	722.3	9.6
30°-40°	838.9	11.1
40°-50°	837.9	11.1
50°-60°	730.6	9.7
60°-70°	540.1	7.1
70°-80°	305.6	4.0
80°-90°	82.3	1.1
90°-100°	31.9	0.4
100°-110°	118.7	1.6
110°-120°	314.9	4.2
120°-130°	522.3	6.9
130°-140°	554.8	7.3
140°-150°	515.6	6.8
150°-160°	414.5	5.5
160°-170°	267.1	3.5
170°-180°	91.9	1.2
0°-30°	1388.5	18.4
0°-40°	2227.5	29.5
0°-60°	3796.0	50.2
0°-90°	4724.0	62.5
90°-120°	465.5	6.2
90°-150°	2058.1	27.2
90°-180°	2832.0	37.5
0°-180°	7555.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1856	1856	1856	1856	1856	
5°	1856	1849	1829	1844	1840	176
15°	1767	1756	1733	1740	1731	498
25°	1599	1585	1554	1558	1554	736
35°	1380	1362	1333	1322	1314	862
45°	1123	1110	1083	1064	1057	866
55°	850	839	817	796	787	760
65°	573	562	544	528	519	567
75°	300	296	287	277	280	320
85°	73	71	70	64	62	82
90°	1	8	14	18	19	7
95°	45	22	27	31	30	54
105°	212	233	43	50	53	227
115°	402	414	431	108	57	396
125°	568	577	591	596	598	507
135°	703	714	721	728	726	543
145°	816	815	827	832	828	510
155°	898	892	900	904	899	414
165°	946	942	944	949	944	267
175°	968	963	964	969	962	92
180°	966	966	966	966	966	



TEST NUMBER: P924391

CATALOG NUMBER: DFN2DIP-HX3F0-050D030US950-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1856.0	1856.0	1856.0	1856.0	1856.0
2.5°	1866.8	1857.9	1838.3	1856.0	1852.7
5°	1856.0	1849.0	1829.3	1843.5	1840.2
7.5°	1843.5	1832.9	1813.3	1827.7	1824.0
10°	1824.0	1811.6	1790.2	1804.3	1799.1
12.5°	1797.1	1786.6	1765.2	1774.1	1770.4
15°	1766.8	1756.2	1732.9	1740.2	1731.2
17.5°	1729.3	1718.7	1695.4	1704.3	1695.4
20°	1688.3	1677.7	1652.7	1658.0	1651.0
22.5°	1647.4	1631.2	1608.0	1608.0	1604.3
25°	1599.1	1584.9	1554.5	1558.0	1554.5
27.5°	1545.5	1533.0	1509.9	1504.6	1495.7
30°	1492.1	1477.7	1451.0	1445.7	1438.5
32.5°	1434.9	1424.3	1395.7	1384.9	1377.8
35°	1379.6	1361.8	1333.2	1322.4	1313.6
37.5°	1317.1	1301.1	1272.4	1259.9	1251.1
40°	1253.0	1238.6	1210.0	1194.0	1186.9
42.5°	1190.5	1176.1	1147.7	1129.6	1119.0
45°	1122.7	1110.2	1083.3	1063.8	1056.6
47.5°	1056.6	1044.1	1015.5	995.8	985.2
50°	986.9	978.0	953.0	928.1	919.1
52.5°	919.1	906.6	883.5	863.8	851.3
55°	849.6	838.9	817.4	796.0	787.1
57.5°	779.9	771.0	747.7	726.4	719.1
60°	710.3	703.3	678.3	658.5	653.3
62.5°	642.5	630.0	612.2	594.3	587.2
65°	573.0	562.2	544.4	528.3	519.4
67.5°	501.6	492.6	476.6	464.1	456.9
70°	435.5	428.3	412.2	399.7	392.8
72.5°	367.8	360.5	351.6	339.1	333.8
75°	299.7	296.3	287.2	276.7	280.3
77.5°	239.2	231.9	228.4	223.0	217.8
80°	178.6	176.7	173.1	167.8	164.2
82.5°	121.3	121.3	119.6	112.5	112.5
85°	73.1	71.4	69.6	64.2	62.5
87.5°	32.1	28.6	25.0	19.7	17.8
90°	0.7	8.4	13.9	17.6	18.8
92.5°	17.6	14.7	16.8	18.2	18.8
95°	45.4	22.3	27.2	30.8	30.1
97.5°	81.8	24.5	35.6	37.8	38.4
100°	123.7	28.0	39.9	45.4	46.8
102.5°	169.8	168.5	41.2	48.8	51.0
105°	212.5	233.4	42.6	50.3	53.1
107.5°	262.1	279.5	44.1	51.7	54.6
110°	309.7	324.3	122.3	52.5	55.2



TEST NUMBER: P924391

CATALOG NUMBER: DFN2DIP-HX3F0-050D030US950-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	354.4	366.9	355.1	53.8	55.9
115°	401.8	413.7	431.2	107.6	57.3
117.5°	443.1	457.1	469.0	369.0	185.9
120°	489.2	499.7	512.3	520.7	426.3
122.5°	528.3	539.6	553.6	557.7	558.5
125°	568.2	577.3	590.6	595.5	597.6
127.5°	604.5	614.3	624.9	631.8	632.5
130°	638.8	650.1	657.7	665.3	664.7
132.5°	673.7	682.9	690.5	696.8	696.1
135°	703.1	714.4	720.6	727.6	726.2
137.5°	733.8	742.2	749.3	756.2	754.1
140°	763.9	769.5	777.1	783.4	780.0
142.5°	789.1	794.0	803.1	808.6	805.2
145°	815.7	814.9	826.8	831.7	828.2
147.5°	838.7	836.6	848.5	851.9	849.2
150°	861.1	856.2	867.4	871.5	868.0
152.5°	879.9	874.3	884.8	889.0	884.2
155°	898.1	891.9	900.2	904.4	898.9
157.5°	912.8	907.3	913.6	918.4	912.8
160°	925.4	921.2	925.4	929.6	924.6
162.5°	936.5	932.3	935.9	940.7	934.4
165°	946.3	942.2	944.3	949.1	944.3
167.5°	954.0	949.8	951.9	956.9	950.6
170°	960.3	956.1	957.5	962.4	956.1
172.5°	964.5	960.3	961.7	966.6	960.3
175°	967.9	963.1	964.5	969.4	962.4
177.5°	969.4	964.5	965.3	970.1	963.8
180°	965.9	965.9	965.9	965.9	965.9



TEST NUMBER: P924391
 CATALOG NUMBER: DFN2DIP-HX3F0-050D030US950-FLLONL

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	10.97	11.96	11.81	12.82	13.90	10.54	11.53	11.38	12.39	13.47
	3H	12.63	13.52	13.49	14.39	15.50	12.16	13.05	13.02	13.92	15.03
	4H	13.22	14.06	14.09	14.94	16.05	12.75	13.59	13.62	14.47	15.59
	6H	13.62	14.39	14.50	15.28	16.41	13.15	13.92	14.03	14.81	15.94
	8H	13.72	14.46	14.62	15.36	16.50	13.26	13.99	14.15	14.90	16.03
	12H	13.77	14.47	14.67	15.37	16.53	13.30	14.00	14.20	14.90	16.06
4H	2H	11.44	12.28	12.32	13.16	14.28	11.10	11.94	11.98	12.82	13.93
	3H	13.31	14.01	14.20	14.92	16.05	12.92	13.62	13.81	14.53	15.67
	4H	14.02	14.66	14.92	15.57	16.73	13.62	14.26	14.52	15.17	16.33
	6H	14.54	15.09	15.45	16.02	17.18	14.13	14.69	15.05	15.62	16.78
	8H	14.69	15.20	15.60	16.13	17.30	14.28	14.80	15.20	15.72	16.90
	12H	14.76	15.23	15.70	16.17	17.35	14.35	14.81	15.28	15.76	16.94
8H	4H	14.23	14.74	15.14	15.67	16.84	13.87	14.39	14.79	15.31	16.49
	6H	14.86	15.28	15.80	16.25	17.42	14.50	14.92	15.44	15.89	17.06
	8H	15.07	15.45	16.02	16.41	17.60	14.71	15.08	15.66	16.04	17.23
	12H	15.20	15.54	16.16	16.49	17.73	14.83	15.16	15.78	16.11	17.35
12H	4H	14.22	14.68	15.15	15.63	16.81	13.87	14.33	14.80	15.28	16.46
	6H	14.88	15.26	15.84	16.22	17.41	14.54	14.91	15.49	15.87	17.06
	8H	15.13	15.46	16.08	16.41	17.65	14.77	15.11	15.73	16.06	17.30