

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: P924383

Luminaire Tested: DFN2DIP-HX3F0-040D070US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924383
REPORT IS A COMBINATION OF REPORTS P900779 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-040D070US950-FLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

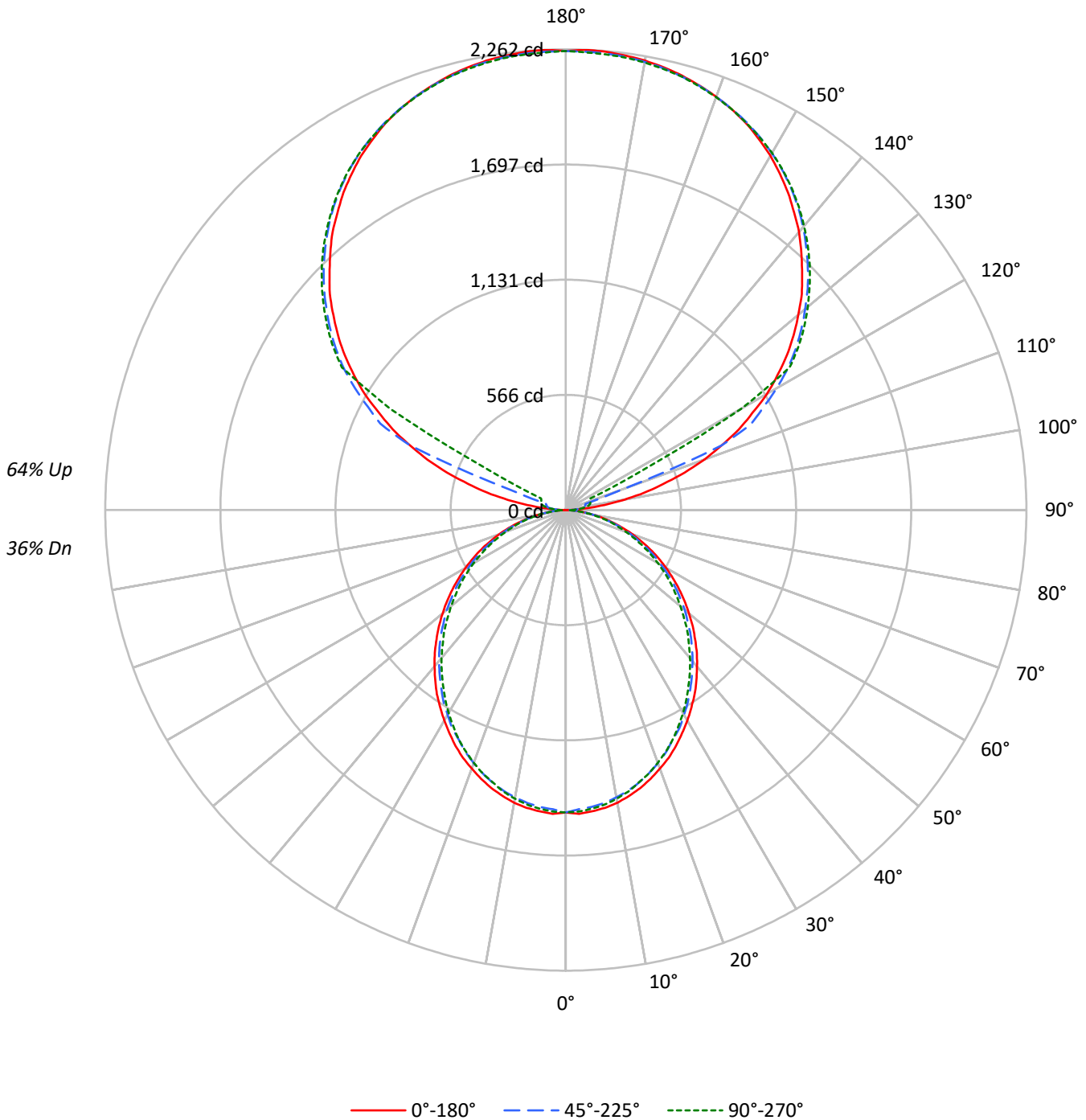
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10389.0 lumens
Efficiency: N/A
Efficacy: 118.2 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-Indirect

Input Watts (W): 87.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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				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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44	36				36
1	95	90	87	83	86	82	79	76	66	64	62	52	50	49	39	38	37	31				31
2	86	79	73	68	78	72	67	62	58	54	51	46	43	41	34	32	31	26				26
3	79	69	62	57	71	63	57	52	51	47	43	40	37	35	30	28	26	22				22
4	72	61	54	48	65	56	49	44	45	41	37	36	32	30	27	25	23	19				19
5	66	55	47	41	59	50	43	38	41	35	32	32	28	26	24	22	20	16				16
6	61	49	41	35	55	45	38	33	37	31	27	29	25	22	22	19	17	14				14
7	56	44	36	31	51	40	33	29	33	28	24	26	23	20	20	17	15	13				13
8	52	40	32	27	47	37	30	25	30	25	21	24	20	18	18	16	14	11				11
9	48	36	29	24	44	33	27	22	28	23	19	22	18	16	17	14	12	10				10
10	45	33	26	21	41	31	24	20	25	20	17	20	17	14	16	13	11	9				9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1720	1720	1720
5°	1722	1695	1706
10°	1707	1671	1682
15°	1681	1642	1645
20°	1647	1603	1608
25°	1612	1556	1564
30°	1569	1512	1509
35°	1528	1461	1450
40°	1478	1409	1395
45°	1428	1357	1337
50°	1373	1302	1271
55°	1315	1238	1211
60°	1250	1163	1141
65°	1179	1085	1059
70°	1089	990	970
75°	963	876	887
80°	812	731	730
85°	576	483	474

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1446 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.8	1.3
10°-20°	393.2	3.8
20°-30°	577.9	5.6
30°-40°	671.2	6.5
40°-50°	670.3	6.5
50°-60°	584.5	5.6
60°-70°	432.1	4.2
70°-80°	244.5	2.4
80°-90°	68.5	0.7
90°-100°	74.3	0.7
100°-110°	277.0	2.7
110°-120°	734.8	7.1
120°-130°	1218.6	11.7
130°-140°	1294.5	12.5
140°-150°	1203.1	11.6
150°-160°	967.2	9.3
160°-170°	623.3	6.0
170°-180°	214.5	2.1
0°-30°	1110.8	10.7
0°-40°	1782.0	17.2
0°-60°	3036.8	29.2
0°-90°	3781.8	36.4
90°-120°	1086.1	10.5
90°-150°	4802.2	46.2
90°-180°	6607.0	63.6
0°-180°	10389.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1485	1485	1485	1485	1485	
5°	1485	1479	1463	1475	1472	141
15°	1413	1405	1386	1392	1385	398
25°	1279	1268	1244	1246	1244	589
35°	1104	1090	1067	1058	1051	689
45°	898	888	867	851	845	693
55°	680	671	654	637	630	608
65°	458	450	436	423	416	453
75°	240	237	230	221	224	256
85°	58	57	56	51	50	65
90°	2	20	32	41	44	10
95°	106	52	64	72	70	125
105°	496	545	100	117	124	530
115°	938	965	1006	251	134	923
125°	1326	1347	1378	1390	1394	1182
135°	1641	1667	1681	1698	1694	1267
145°	1903	1902	1929	1941	1932	1190
155°	2096	2081	2100	2110	2097	966
165°	2208	2198	2203	2215	2203	624
175°	2259	2247	2250	2262	2246	215
180°	2254	2254	2254	2254	2254	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1484.8	1484.8	1484.8	1484.8	1484.8
2.5°	1493.5	1486.3	1470.6	1484.8	1482.1
5°	1484.8	1479.2	1463.4	1474.8	1472.1
7.5°	1474.8	1466.3	1450.6	1462.1	1459.2
10°	1459.2	1449.2	1432.1	1443.5	1439.2
12.5°	1437.7	1429.2	1412.1	1419.3	1416.3
15°	1413.4	1405.0	1386.4	1392.1	1385.0
17.5°	1383.5	1375.0	1356.4	1363.5	1356.4
20°	1350.6	1342.1	1322.1	1326.3	1320.8
22.5°	1317.9	1305.0	1286.4	1286.4	1283.5
25°	1279.2	1267.9	1243.6	1246.4	1243.6
27.5°	1236.4	1226.4	1208.0	1203.7	1196.6
30°	1193.6	1182.2	1160.8	1156.5	1150.8
32.5°	1147.9	1139.5	1116.6	1108.0	1102.2
35°	1103.7	1089.5	1066.6	1058.0	1050.8
37.5°	1053.7	1040.8	1017.9	1008.0	1000.8
40°	1002.4	990.8	967.9	955.2	949.5
42.5°	952.4	940.8	918.1	903.7	895.2
45°	898.1	888.2	866.6	851.1	845.2
47.5°	845.2	835.2	812.4	796.7	788.2
50°	789.5	782.4	762.4	742.4	735.2
52.5°	735.2	725.3	706.8	691.1	681.1
55°	679.7	671.0	654.0	636.8	629.7
57.5°	623.9	616.9	598.2	581.1	575.4
60°	568.2	562.6	542.6	526.9	522.6
62.5°	514.0	504.0	489.8	475.5	469.7
65°	458.4	449.7	435.5	422.6	415.6
67.5°	401.3	394.0	381.3	371.3	365.6
70°	348.4	342.7	329.8	319.8	314.2
72.5°	294.2	288.4	281.3	271.3	267.0
75°	239.8	237.1	229.8	221.3	224.2
77.5°	191.3	185.6	182.7	178.4	174.2
80°	142.8	141.3	138.4	134.2	131.4
82.5°	97.1	97.1	95.8	90.0	90.0
85°	58.5	57.1	55.7	51.3	50.0
87.5°	25.8	22.9	20.0	15.7	14.2
90°	1.5	19.6	32.5	40.8	44.0
92.5°	40.8	34.2	39.1	42.5	44.0
95°	105.9	52.1	63.5	71.8	70.1
97.5°	190.7	57.1	83.1	88.1	89.7
100°	288.8	65.3	92.9	105.9	109.2
102.5°	396.2	393.1	96.3	114.1	119.1
105°	495.8	544.7	99.5	117.3	123.9
107.5°	611.5	652.2	102.8	120.7	127.3
110°	722.6	756.6	285.4	122.4	128.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	826.9	856.1	828.5	125.5	130.5
115°	937.7	965.4	1006.2	251.2	133.8
117.5°	1033.9	1066.5	1094.3	861.0	433.8
120°	1141.6	1166.0	1195.5	1215.0	994.8
122.5°	1232.8	1258.9	1291.7	1301.4	1303.1
125°	1325.8	1347.0	1378.1	1389.5	1394.3
127.5°	1410.6	1433.4	1458.0	1474.3	1475.8
130°	1490.5	1516.7	1534.5	1552.5	1551.0
132.5°	1572.1	1593.4	1611.2	1625.9	1624.4
135°	1640.6	1666.7	1681.3	1697.7	1694.5
137.5°	1712.2	1731.9	1748.3	1764.6	1759.7
140°	1782.4	1795.5	1813.4	1828.1	1819.9
142.5°	1841.2	1852.7	1873.8	1886.7	1878.6
145°	1903.2	1901.5	1929.2	1940.6	1932.5
147.5°	1956.8	1952.1	1979.7	1987.8	1981.5
150°	2009.1	1997.8	2023.9	2033.5	2025.4
152.5°	2053.1	2040.1	2064.6	2074.4	2063.0
155°	2095.6	2081.0	2100.5	2110.2	2097.3
157.5°	2129.8	2116.8	2131.5	2143.0	2129.8
160°	2159.3	2149.4	2159.3	2168.9	2157.5
162.5°	2185.2	2175.5	2183.6	2195.1	2180.4
165°	2208.0	2198.4	2203.2	2214.6	2203.2
167.5°	2226.1	2216.1	2221.2	2232.6	2218.0
170°	2240.8	2230.9	2234.2	2245.6	2230.9
172.5°	2250.5	2240.8	2244.1	2255.4	2240.8
175°	2258.6	2247.1	2250.5	2261.8	2245.6
177.5°	2261.8	2250.5	2252.2	2263.7	2248.9
180°	2253.7	2253.7	2253.7	2253.7	2253.7



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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	7.71	8.46	8.77	9.53	10.98	7.28	8.03	8.34	9.10	10.55
	3H	9.35	10.02	10.43	11.10	12.57	8.88	9.55	9.96	10.63	12.10
	4H	9.93	10.57	11.01	11.64	13.12	9.46	10.10	10.55	11.18	12.65
	6H	10.32	10.90	11.41	11.98	13.47	9.85	10.43	10.94	11.51	13.00
	8H	10.41	10.97	11.51	12.07	13.55	9.94	10.50	11.04	11.60	13.09
	12H	10.46	10.99	11.56	12.08	13.59	9.98	10.51	11.09	11.60	13.11
4H	2H	8.15	8.79	9.24	9.87	11.35	7.81	8.45	8.90	9.53	11.00
	3H	10.00	10.53	11.10	11.64	13.13	9.61	10.14	10.71	11.25	12.74
	4H	10.70	11.19	11.81	12.29	13.80	10.30	10.79	11.40	11.88	13.40
	6H	11.20	11.62	12.32	12.74	14.25	10.80	11.22	11.91	12.34	13.84
	8H	11.35	11.74	12.46	12.85	14.37	10.94	11.33	12.05	12.44	13.96
	12H	11.41	11.77	12.54	12.89	14.41	10.99	11.35	12.12	12.47	14.00
8H	4H	10.89	11.28	12.00	12.39	13.91	10.53	10.92	11.64	12.03	13.55
	6H	11.50	11.83	12.64	12.98	14.50	11.14	11.47	12.28	12.62	14.14
	8H	11.72	12.00	12.86	13.13	14.67	11.35	11.64	12.49	12.77	14.31
	12H	11.84	12.09	12.98	13.22	14.79	11.46	11.71	12.60	12.84	14.41
12H	4H	10.87	11.22	12.00	12.34	13.87	10.52	10.87	11.65	11.99	13.52
	6H	11.53	11.81	12.67	12.95	14.48	11.18	11.47	12.32	12.60	14.14
	8H	11.76	12.01	12.91	13.14	14.71	11.41	11.66	12.55	12.79	14.36