

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: P916219

Luminaire Tested: DFN2DIP-HX3F0-050D060US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916219
REPORT IS A COMBINATION OF REPORTS P900767 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D060US930-FLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

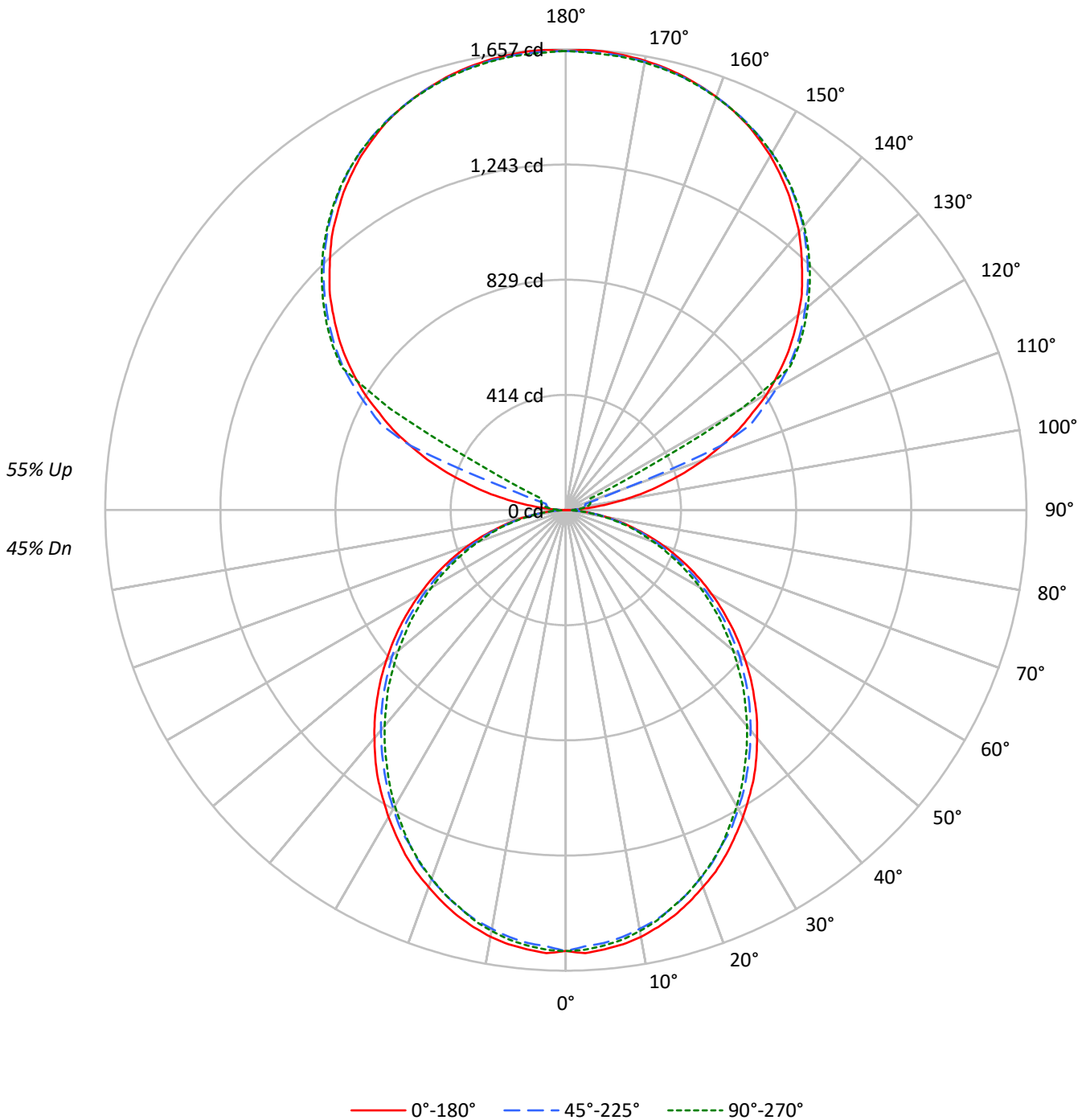
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8878.6 lumens
Efficiency: N/A
Efficacy: 98.5 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: General Diffuse

Input Watts (W): 90.1
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

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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			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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45	45	45	45
1	97	92	89	85	89	85	82	79	71	68	66	58	56	55	46	45	44	38	38	38	38
2	88	81	75	70	81	74	69	65	62	58	55	51	48	46	40	39	37	32	32	32	32
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	33	31	27	27	27	27
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27	23	23	23	23
5	67	56	48	42	62	52	45	39	43	38	34	36	32	29	29	26	24	20	20	20	20
6	62	50	42	36	57	46	39	34	39	34	30	32	28	25	26	23	21	18	18	18	18
7	57	45	37	32	53	42	35	30	35	30	26	30	25	22	24	21	18	16	16	16	16
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17	14	14	14	14
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15	13	13	13	13
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14	12	12	12	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1837	1837	1837
5°	1839	1810	1823
10°	1824	1785	1797
15°	1796	1754	1758
20°	1759	1712	1717
25°	1722	1662	1670
30°	1676	1615	1612
35°	1632	1560	1549
40°	1579	1505	1490
45°	1525	1449	1429
50°	1467	1391	1358
55°	1405	1323	1293
60°	1336	1243	1219
65°	1260	1159	1131
70°	1163	1058	1037
75°	1029	936	947
80°	868	781	780
85°	616	516	506

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1525 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.3	1.7
10°-20°	420.0	4.7
20°-30°	617.3	7.0
30°-40°	717.0	8.1
40°-50°	716.1	8.1
50°-60°	624.4	7.0
60°-70°	461.6	5.2
70°-80°	261.1	2.9
80°-90°	71.8	0.8
90°-100°	54.4	0.6
100°-110°	202.9	2.3
110°-120°	538.2	6.1
120°-130°	892.7	10.1
130°-140°	948.2	10.7
140°-150°	881.3	9.9
150°-160°	708.5	8.0
160°-170°	456.5	5.1
170°-180°	157.1	1.8
0°-30°	1186.6	13.4
0°-40°	1903.6	21.4
0°-60°	3244.1	36.5
0°-90°	4038.6	45.5
90°-120°	795.6	9.0
90°-150°	3517.8	39.6
90°-180°	4840.0	54.5
0°-180°	8878.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1586	1586	1586	1586	1586	
5°	1586	1580	1563	1576	1573	151
15°	1510	1501	1481	1487	1480	425
25°	1367	1354	1328	1332	1328	629
35°	1179	1164	1139	1130	1123	736
45°	959	949	926	909	903	740
55°	726	717	698	680	673	649
65°	490	480	465	452	444	484
75°	256	253	246	236	240	273
85°	62	61	60	55	53	70
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°	1586.2	1586.2	1586.2	1586.2	1586.2
2.5°	1595.4	1587.8	1571.0	1586.2	1583.3
5°	1586.2	1580.2	1563.3	1575.5	1572.6
7.5°	1575.5	1566.4	1549.6	1561.9	1558.9
10°	1558.9	1548.2	1529.9	1542.0	1537.5
12.5°	1535.9	1526.8	1508.5	1516.1	1513.0
15°	1509.9	1500.9	1481.0	1487.2	1479.5
17.5°	1477.9	1468.8	1448.9	1456.5	1448.9
20°	1442.8	1433.8	1412.4	1416.9	1411.0
22.5°	1407.9	1394.1	1374.2	1374.2	1371.1
25°	1366.6	1354.5	1328.5	1331.5	1328.5
27.5°	1320.8	1310.1	1290.4	1285.8	1278.2
30°	1275.1	1262.9	1240.1	1235.5	1229.4
32.5°	1226.3	1217.2	1192.8	1183.6	1177.5
35°	1179.0	1163.8	1139.4	1130.2	1122.6
37.5°	1125.6	1111.9	1087.4	1076.8	1069.2
40°	1070.8	1058.5	1034.0	1020.4	1014.3
42.5°	1017.4	1005.1	980.8	965.4	956.3
45°	959.4	948.8	925.8	909.1	902.9
47.5°	902.9	892.3	867.9	851.0	842.0
50°	843.4	835.8	814.5	793.1	785.5
52.5°	785.5	774.8	755.0	738.3	727.6
55°	726.1	716.9	698.5	680.3	672.7
57.5°	666.5	658.9	639.0	620.8	614.6
60°	607.0	601.0	579.7	562.8	558.3
62.5°	549.1	538.4	523.2	507.9	501.8
65°	489.7	480.5	465.2	451.5	443.8
67.5°	428.7	420.9	407.3	396.6	390.4
70°	372.2	366.1	352.3	341.6	335.7
72.5°	314.3	308.1	300.5	289.8	285.3
75°	256.2	253.2	245.5	236.4	239.5
77.5°	204.4	198.2	195.2	190.6	186.1
80°	152.6	151.0	147.9	143.4	140.3
82.5°	103.7	103.7	102.2	96.1	96.1
85°	62.5	61.0	59.5	54.9	53.4
87.5°	27.5	24.5	21.4	16.8	15.2
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	8.91	9.73	9.90	10.74	12.07	8.48	9.30	9.48	10.31	11.64
	3H	10.56	11.30	11.56	12.31	13.67	10.09	10.83	11.10	11.84	13.20
	4H	11.14	11.84	12.16	12.86	14.22	10.67	11.37	11.69	12.39	13.75
	6H	11.53	12.18	12.56	13.20	14.57	11.06	11.70	12.09	12.73	14.10
	8H	11.63	12.24	12.67	13.28	14.66	11.16	11.78	12.20	12.81	14.19
	12H	11.68	12.26	12.72	13.29	14.69	11.20	11.78	12.24	12.82	14.21
4H	2H	9.36	10.06	10.39	11.08	12.44	9.02	9.72	10.05	10.74	12.10
	3H	11.22	11.80	12.25	12.85	14.22	10.83	11.41	11.86	12.46	13.83
	4H	11.92	12.46	12.96	13.50	14.89	11.52	12.06	12.56	13.09	14.49
	6H	12.43	12.89	13.48	13.95	15.34	12.02	12.48	13.07	13.55	14.94
	8H	12.57	13.00	13.63	14.06	15.47	12.17	12.60	13.22	13.65	15.06
	12H	12.64	13.03	13.71	14.10	15.51	12.23	12.61	13.29	13.68	15.10
8H	4H	12.11	12.54	13.17	13.60	15.01	11.76	12.19	12.81	13.24	14.65
	6H	12.73	13.09	13.81	14.19	15.59	12.38	12.73	13.45	13.83	15.23
	8H	12.95	13.26	14.03	14.34	15.77	12.58	12.90	13.67	13.98	15.40
	12H	13.07	13.35	14.16	14.42	15.89	12.69	12.97	13.78	14.04	15.51
12H	4H	12.10	12.48	13.17	13.55	14.97	11.75	12.14	12.82	13.20	14.62
	6H	12.76	13.07	13.84	14.15	15.58	12.41	12.73	13.50	13.81	15.23
	8H	13.00	13.27	14.08	14.35	15.81	12.64	12.92	13.73	13.99	15.46