

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: P907927

Luminaire Tested: DFN2DIP-HX2F0-040D050US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907927
REPORT IS A COMBINATION OF REPORTS P900705 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-040D050US840-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

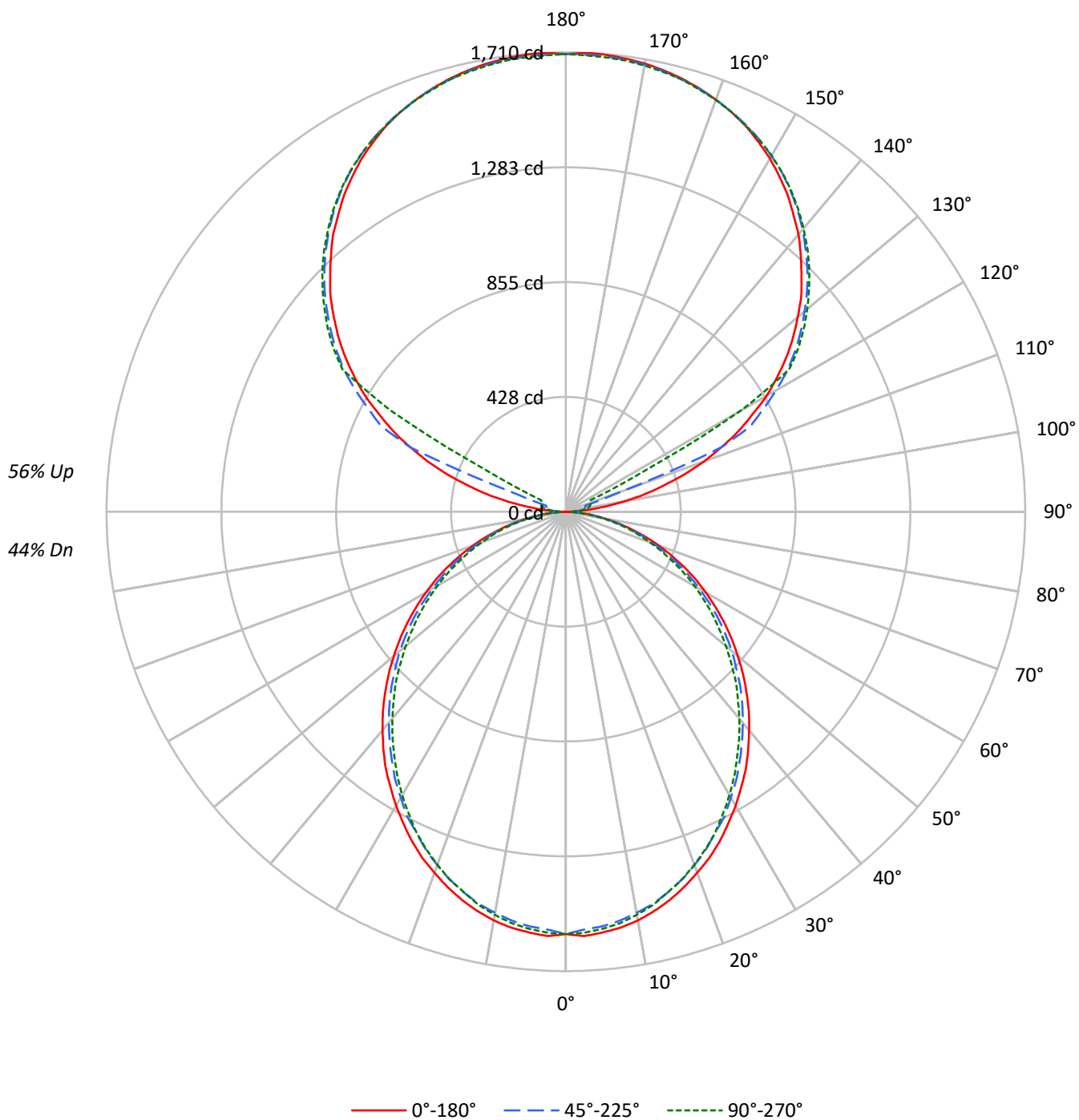
Lumens per Lamp: N/A
Luminaire Lumens: 8997.9 lumens
Efficiency: N/A
Efficacy: 120.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 74.5
Input Voltage (V): 120
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				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	36
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31
4	73	63	55	49	67	58	51	46	48	43	39	40	36	33	31	29	27
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16
9	49	37	30	25	45	35	28	23	29	24	20	25	20	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3703	3703	3703
5°	3703	3643	3669
10°	3668	3585	3613
15°	3608	3517	3529
20°	3529	3427	3443
25°	3450	3320	3344
30°	3353	3220	3221
35°	3261	3103	3091
40°	3149	2985	2966
45°	3036	2867	2839
50°	2912	2742	2692
55°	2783	2598	2555
60°	2636	2428	2398
65°	2474	2250	2214
70°	2269	2034	2013
75°	1988	1775	1819
80°	1645	1444	1469
85°	1117	907	908

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3036 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.9	1.6
10°-20°	416.2	4.6
20°-30°	611.7	6.8
30°-40°	710.5	7.9
40°-50°	709.6	7.9
50°-60°	618.7	6.9
60°-70°	457.4	5.1
70°-80°	258.8	2.9
80°-90°	71.3	0.8
90°-100°	56.2	0.6
100°-110°	209.5	2.3
110°-120°	555.6	6.2
120°-130°	921.4	10.2
130°-140°	978.8	10.9
140°-150°	909.7	10.1
150°-160°	731.3	8.1
160°-170°	471.2	5.2
170°-180°	162.2	1.8
0°-30°	1175.9	13.1
0°-40°	1886.3	21.0
0°-60°	3214.6	35.7
0°-90°	4002.0	44.5
90°-120°	821.2	9.1
90°-150°	3631.1	40.4
90°-180°	4996.0	55.5
0°-180°	8997.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1572	1572	1572	1572	1572	
5°	1572	1566	1549	1561	1558	149
15°	1496	1487	1468	1474	1466	421
25°	1354	1342	1316	1319	1316	623
35°	1168	1153	1129	1120	1112	730
45°	951	940	917	901	895	734
55°	720	710	692	674	667	643
65°	485	476	461	447	440	480
75°	254	251	243	234	237	271
85°	62	60	59	54	53	69
90°	1	15	25	31	33	8
95°	80	39	48	54	53	95
105°	375	412	75	89	94	401
115°	709	730	761	190	101	698
125°	1002	1019	1042	1051	1054	894
135°	1240	1260	1271	1284	1281	958
145°	1439	1438	1459	1467	1461	900
155°	1584	1574	1588	1596	1586	730
165°	1670	1662	1666	1674	1666	472
175°	1708	1699	1702	1710	1698	163
180°	1704	1704	1704	1704	1704	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1571.8	1571.8	1571.8	1571.8	1571.8
2.5°	1580.9	1573.4	1556.7	1571.8	1568.9
5°	1571.8	1565.8	1549.1	1561.2	1558.3
7.5°	1561.2	1552.2	1535.5	1547.7	1544.7
10°	1544.7	1534.1	1516.0	1528.0	1523.5
12.5°	1521.9	1512.9	1494.8	1502.4	1499.2
15°	1496.2	1487.2	1467.5	1473.6	1466.1
17.5°	1464.5	1455.5	1435.8	1443.3	1435.8
20°	1429.7	1420.7	1399.6	1404.0	1398.2
22.5°	1395.0	1381.4	1361.7	1361.7	1358.7
25°	1354.1	1342.1	1316.5	1319.4	1316.5
27.5°	1308.8	1298.2	1278.7	1274.1	1266.7
30°	1263.5	1251.4	1228.8	1224.3	1218.2
32.5°	1215.2	1206.2	1181.9	1172.9	1166.7
35°	1168.3	1153.3	1129.0	1119.9	1112.4
37.5°	1115.4	1101.8	1077.5	1067.0	1059.4
40°	1061.1	1048.8	1024.6	1011.2	1005.1
42.5°	1008.1	995.9	971.9	956.6	947.7
45°	950.7	940.2	917.4	900.9	894.7
47.5°	894.7	884.1	860.0	843.3	834.4
50°	835.8	828.2	807.1	785.9	778.3
52.5°	778.3	767.8	748.2	731.5	720.9
55°	719.5	710.3	692.3	674.1	666.6
57.5°	660.5	653.0	633.2	615.1	609.0
60°	601.5	595.5	574.4	557.7	553.2
62.5°	544.1	533.5	518.5	503.3	497.3
65°	485.2	476.1	461.0	447.4	439.9
67.5°	424.7	417.1	403.6	393.0	387.0
70°	368.8	362.7	349.1	338.5	332.5
72.5°	311.4	305.3	297.8	287.2	282.7
75°	253.9	251.0	243.3	234.3	237.3
77.5°	202.5	196.4	193.4	188.8	184.4
80°	151.2	149.6	146.5	142.1	139.1
82.5°	102.8	102.8	101.4	95.2	95.2
85°	61.9	60.5	59.0	54.3	52.9
87.5°	27.3	24.2	21.2	16.7	15.0
90°	1.2	14.7	24.6	30.9	33.2
92.5°	30.9	26.0	29.6	32.1	33.2
95°	80.1	39.4	48.1	54.3	53.0
97.5°	144.2	43.2	62.8	66.7	67.8
100°	218.3	49.4	70.3	80.1	82.6
102.5°	299.6	297.2	72.8	86.2	90.1
105°	374.9	411.9	75.2	88.8	93.7
107.5°	462.4	493.1	77.8	91.2	96.2
110°	546.3	572.1	215.8	92.5	97.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	625.2	647.3	626.4	94.9	98.7
115°	709.0	729.9	760.8	190.0	101.2
117.5°	781.7	806.4	827.5	651.0	328.0
120°	863.1	881.6	903.8	918.7	752.1
122.5°	932.1	951.9	976.6	984.0	985.3
125°	1002.4	1018.6	1042.0	1050.6	1054.3
127.5°	1066.5	1083.8	1102.5	1114.7	1115.9
130°	1127.0	1146.8	1160.2	1173.9	1172.8
132.5°	1188.7	1204.8	1218.2	1229.4	1228.2
135°	1240.5	1260.3	1271.2	1283.7	1281.2
137.5°	1294.6	1309.5	1321.9	1334.2	1330.6
140°	1347.7	1357.7	1371.1	1382.2	1376.1
142.5°	1392.2	1400.9	1416.8	1426.6	1420.5
145°	1439.1	1437.7	1458.6	1467.3	1461.2
147.5°	1479.7	1475.9	1496.9	1503.1	1498.2
150°	1519.1	1510.6	1530.2	1537.6	1531.5
152.5°	1552.4	1542.6	1561.1	1568.5	1559.8
155°	1584.5	1573.5	1588.2	1595.6	1585.8
157.5°	1610.3	1600.5	1611.6	1620.3	1610.3
160°	1632.6	1625.2	1632.6	1639.9	1631.3
162.5°	1652.2	1645.0	1651.0	1659.7	1648.6
165°	1669.5	1662.2	1665.9	1674.5	1665.9
167.5°	1683.1	1675.7	1679.5	1688.1	1677.0
170°	1694.3	1686.8	1689.3	1697.9	1686.8
172.5°	1701.6	1694.3	1696.8	1705.4	1694.3
175°	1707.8	1699.1	1701.6	1710.2	1697.9
177.5°	1710.2	1701.6	1702.9	1711.5	1700.4
180°	1704.0	1704.0	1704.0	1704.0	1704.0

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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	11.15	11.97	12.15	12.98	14.33	10.73	11.54	11.73	12.56	13.90
	3H	12.78	13.51	13.80	14.53	15.90	12.32	13.05	13.34	14.07	15.44
	4H	13.35	14.04	14.38	15.07	16.44	12.89	13.58	13.92	14.61	15.98
	6H	13.73	14.37	14.77	15.40	16.78	13.27	13.91	14.31	14.94	16.32
	8H	13.82	14.43	14.86	15.48	16.86	13.36	13.97	14.41	15.02	16.40
	12H	13.86	14.44	14.91	15.48	16.89	13.40	13.97	14.44	15.01	16.42
4H	2H	11.60	12.29	12.63	13.31	14.69	11.26	11.95	12.29	12.97	14.35
	3H	13.43	14.01	14.47	15.06	16.45	13.05	13.62	14.09	14.68	16.07
	4H	14.12	14.65	15.17	15.70	17.11	13.73	14.26	14.78	15.30	16.71
	6H	14.61	15.06	15.67	16.13	17.54	14.22	14.67	15.27	15.74	17.15
	8H	14.75	15.17	15.81	16.23	17.66	14.35	14.77	15.41	15.84	17.26
	12H	14.81	15.19	15.88	16.27	17.69	14.40	14.79	15.48	15.86	17.29
8H	4H	14.30	14.73	15.36	15.79	17.21	13.95	14.38	15.01	15.44	16.86
	6H	14.90	15.25	15.98	16.36	17.78	14.55	14.90	15.63	16.01	17.43
	8H	15.11	15.42	16.20	16.50	17.94	14.75	15.06	15.84	16.15	17.58
	12H	15.22	15.49	16.31	16.57	18.05	14.85	15.12	15.94	16.20	17.68
12H	4H	14.28	14.67	15.36	15.74	17.17	13.94	14.32	15.02	15.40	16.83
	6H	14.93	15.24	16.02	16.32	17.76	14.59	14.90	15.68	15.98	17.42
	8H	15.15	15.42	16.24	16.50	17.98	14.80	15.07	15.90	16.16	17.64