

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: P907999

Luminaire Tested: DFN2DIP-HX3F0-040D030US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907999
REPORT IS A COMBINATION OF REPORTS P900723 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-040D030US840-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

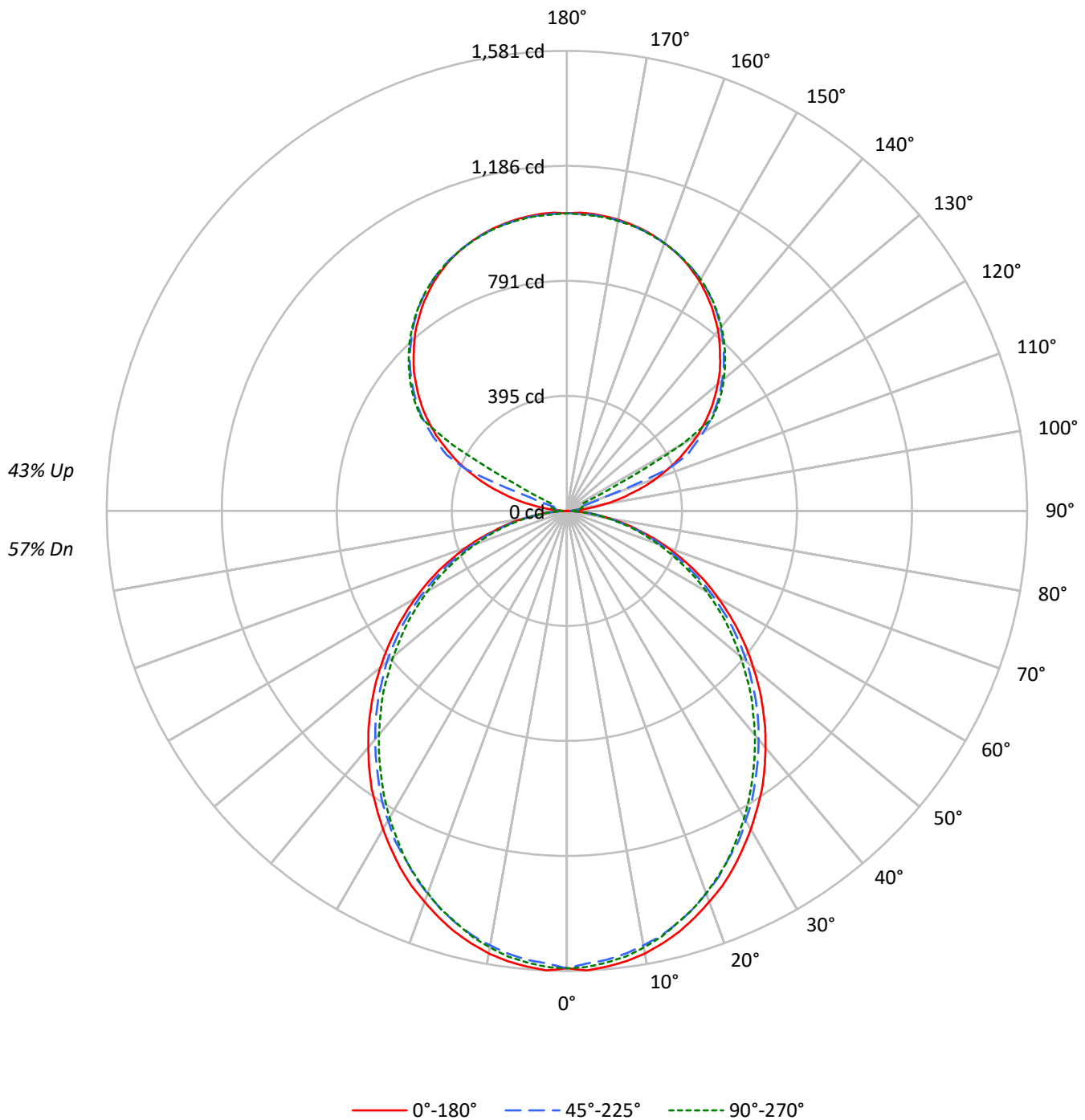
Lumens per Lamp: N/A
Luminaire Lumens: 6998.4 lumens
Efficiency: N/A
Efficacy: 121.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 57.4
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
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63
1	99	95	91	88	92	89	85	82	77	74	72	66	64	62	55	54	53
2	91	83	77	72	84	77	72	67	67	63	59	58	55	52	49	47	45
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	43	40	38
4	76	65	57	50	70	61	53	48	53	47	43	45	41	38	39	35	33
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	31	29
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25
7	59	47	39	33	55	44	37	31	39	33	28	34	29	25	29	25	22
8	55	43	35	29	51	40	33	28	35	29	25	31	26	23	27	23	20
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18
10	48	36	28	24	45	34	27	22	30	24	20	26	22	18	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1821	1821	1821
5°	1823	1794	1806
10°	1807	1769	1781
15°	1780	1738	1742
20°	1743	1697	1702
25°	1706	1647	1655
30°	1661	1601	1597
35°	1618	1546	1535
40°	1564	1491	1476
45°	1511	1436	1416
50°	1453	1378	1346
55°	1392	1311	1282
60°	1324	1232	1208
65°	1248	1149	1121
70°	1152	1048	1027
75°	1020	928	939
80°	860	773	773
85°	610	512	501

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1511 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.9	2.1
10°-20°	416.2	5.9
20°-30°	611.7	8.7
30°-40°	710.5	10.2
40°-50°	709.6	10.1
50°-60°	618.7	8.8
60°-70°	457.4	6.5
70°-80°	258.8	3.7
80°-90°	70.1	1.0
90°-100°	33.7	0.5
100°-110°	125.7	1.8
110°-120°	333.3	4.8
120°-130°	552.9	7.9
130°-140°	587.3	8.4
140°-150°	545.8	7.8
150°-160°	438.8	6.3
160°-170°	282.8	4.0
170°-180°	97.3	1.4
0°-30°	1175.9	16.8
0°-40°	1886.3	27.0
0°-60°	3214.6	45.9
0°-90°	4000.8	57.2
90°-120°	492.7	7.0
90°-150°	2178.7	31.1
90°-180°	2998.0	42.8
0°-180°	6998.4	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	9	15	19	20	6
95°	48	24	29	33	32	57
105°	225	247	45	53	56	240
115°	425	438	456	114	61	419
125°	602	611	625	630	633	536
135°	744	756	763	770	769	575
145°	863	863	875	880	877	540
155°	951	944	953	957	952	438
165°	1002	997	1000	1005	1000	283
175°	1025	1020	1021	1026	1019	98
180°	1022	1022	1022	1022	1022	

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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°	0.7	8.9	14.7	18.6	19.9
92.5°	18.6	15.6	17.8	19.3	19.9
95°	48.1	23.6	28.8	32.6	31.8
97.5°	86.5	26.0	37.7	40.0	40.7
100°	131.0	29.6	42.2	48.1	49.6
102.5°	179.8	178.3	43.6	51.7	54.0
105°	224.9	247.1	45.1	53.2	56.2
107.5°	277.4	295.9	46.7	54.7	57.8
110°	327.8	343.3	129.5	55.5	58.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	375.2	388.4	375.9	57.0	59.2
115°	425.4	438.0	456.5	113.9	60.7
117.5°	469.1	483.8	496.4	390.6	196.8
120°	517.9	529.0	542.3	551.2	451.3
122.5°	559.3	571.2	586.0	590.4	591.2
125°	601.5	611.1	625.2	630.4	632.6
127.5°	640.0	650.3	661.5	668.8	669.5
130°	676.2	688.1	696.2	704.3	703.7
132.5°	713.2	722.9	730.9	737.6	736.9
135°	744.3	756.2	762.8	770.2	768.7
137.5°	776.8	785.7	793.1	800.5	798.3
140°	808.6	814.6	822.6	829.3	825.7
142.5°	835.4	840.5	850.1	856.0	852.3
145°	863.4	862.6	875.3	880.4	876.7
147.5°	887.8	885.6	898.2	901.8	898.9
150°	911.5	906.4	918.2	922.5	918.9
152.5°	931.4	925.5	936.7	941.1	935.9
155°	950.7	944.1	952.9	957.4	951.5
157.5°	966.2	960.4	967.0	972.2	966.2
160°	979.6	975.1	979.6	984.0	978.8
162.5°	991.4	986.9	990.7	995.8	989.2
165°	1001.7	997.3	999.6	1004.7	999.6
167.5°	1009.9	1005.4	1007.6	1012.9	1006.2
170°	1016.5	1012.1	1013.6	1018.8	1012.1
172.5°	1021.0	1016.5	1018.0	1023.2	1016.5
175°	1024.6	1019.5	1021.0	1026.1	1018.8
177.5°	1026.1	1021.0	1021.8	1026.9	1020.3
180°	1022.5	1022.5	1022.5	1022.5	1022.5

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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	9.95	10.88	10.84	11.79	12.96	9.52	10.45	10.41	11.36	12.53
	3H	11.61	12.44	12.51	13.36	14.55	11.14	11.97	12.04	12.89	14.08
	4H	12.19	12.98	13.11	13.91	15.11	11.72	12.51	12.64	13.44	14.64
	6H	12.59	13.32	13.52	14.25	15.46	12.12	12.84	13.05	13.78	14.99
	8H	12.69	13.38	13.63	14.34	15.55	12.22	12.91	13.16	13.87	15.08
	12H	12.74	13.40	13.68	14.34	15.58	12.26	12.92	13.21	13.87	15.11
4H	2H	10.41	11.20	11.34	12.13	13.33	10.07	10.86	11.00	11.79	12.99
	3H	12.28	12.94	13.21	13.89	15.11	11.89	12.55	12.82	13.50	14.72
	4H	12.99	13.59	13.94	14.54	15.78	12.59	13.19	13.53	14.14	15.38
	6H	13.50	14.02	14.46	15.00	16.23	13.10	13.61	14.05	14.59	15.83
	8H	13.65	14.13	14.61	15.10	16.36	13.24	13.72	14.20	14.70	15.95
	12H	13.72	14.16	14.70	15.15	16.40	13.30	13.74	14.28	14.73	15.99
8H	4H	13.19	13.67	14.15	14.64	15.90	12.83	13.31	13.79	14.29	15.54
	6H	13.81	14.21	14.80	15.23	16.48	13.45	13.85	14.44	14.87	16.12
	8H	14.03	14.38	15.02	15.38	16.65	13.66	14.02	14.66	15.02	16.29
	12H	14.16	14.47	15.16	15.46	16.78	13.78	14.09	14.78	15.08	16.40
12H	4H	13.18	13.61	14.16	14.60	15.86	12.83	13.26	13.81	14.25	15.51
	6H	13.84	14.20	14.84	15.20	16.47	13.49	13.85	14.49	14.85	16.12
	8H	14.08	14.39	15.08	15.39	16.70	13.73	14.04	14.73	15.03	16.35