

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: P928602

Luminaire Tested: DFN2DIP-HX4F0-070D040US930-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928602
REPORT IS A COMBINATION OF REPORTS P900826 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-070D040US930-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

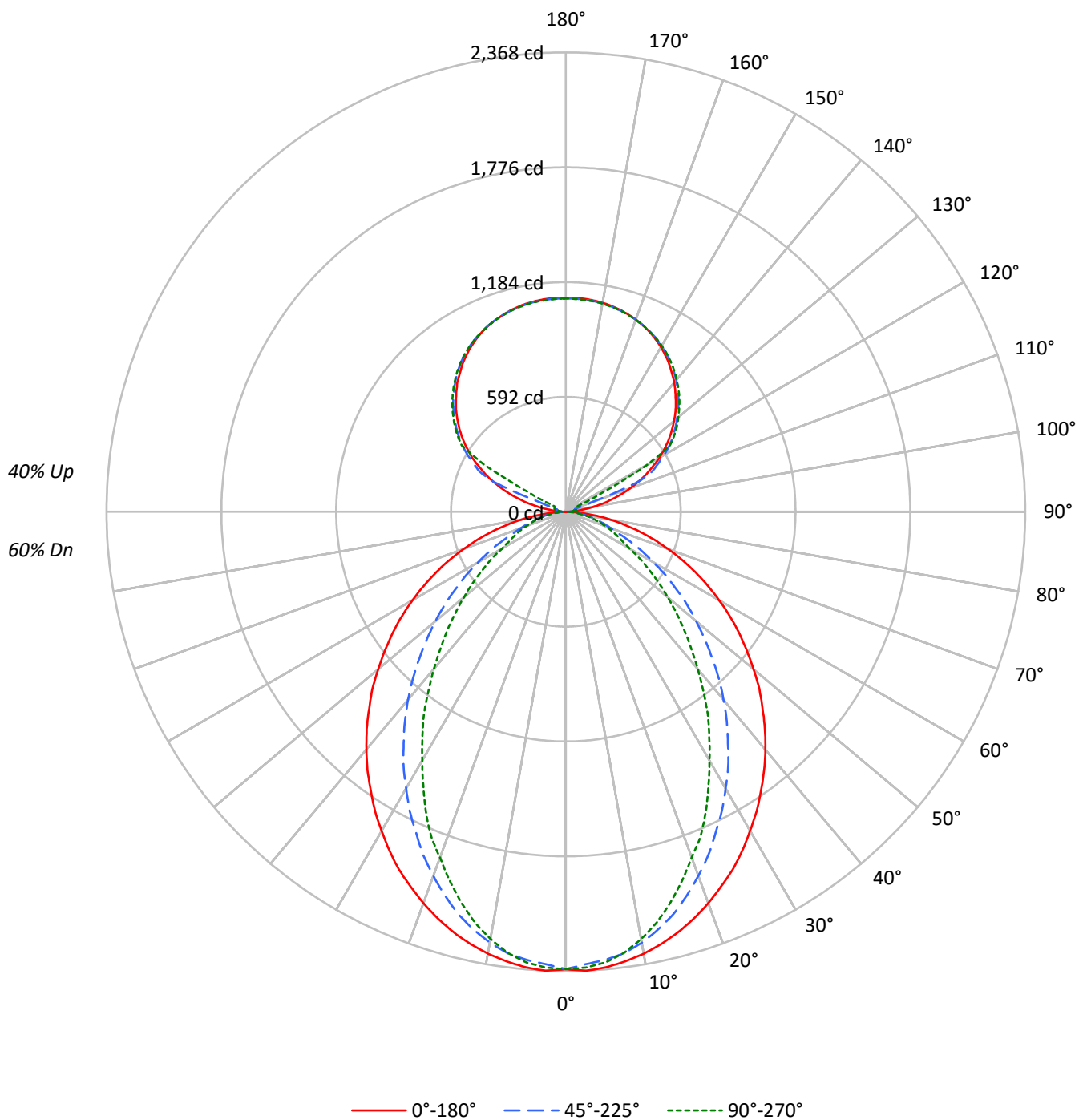
Lumens per Lamp: N/A
Luminaire Lumens: 8076.6 lumens
Efficiency: N/A
Efficacy: 83.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 96.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P928602

CATALOG NUMBER: DFN2DIP-HX4F0-070D040US930-RLLONL

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	110	110	110	110	102	102	102	102	89	89	89	77	77	77	65	65	65
1	101	96	93	89	94	90	87	84	79	77	74	68	67	65	59	57	56
2	92	85	79	74	86	80	74	70	70	66	62	61	58	55	52	50	48
3	84	75	68	62	79	71	64	59	62	57	53	54	51	47	47	44	42
4	78	67	59	53	72	63	56	51	56	50	46	49	45	41	42	39	37
5	71	60	52	46	67	57	49	44	50	44	40	44	40	36	38	35	32
6	66	54	46	40	62	51	44	39	45	40	35	40	35	32	35	32	29
7	61	49	41	36	57	46	39	34	41	36	31	37	32	29	32	29	26
8	57	45	37	32	53	42	35	31	38	32	28	34	29	26	30	26	23
9	53	41	34	29	50	39	32	28	35	29	25	31	27	23	28	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1753	1753	1753
5°	1756	1726	1737
10°	1739	1692	1680
15°	1715	1636	1593
20°	1684	1559	1486
25°	1651	1473	1382
30°	1608	1384	1251
35°	1565	1289	1136
40°	1522	1191	1004
45°	1472	1082	884
50°	1420	971	767
55°	1366	853	654
60°	1303	730	539
65°	1231	605	485
70°	1143	488	439
75°	1034	431	399
80°	874	362	347
85°	611	242	261

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1472 cd/sqm

TEST NUMBER: P928602

CATALOG NUMBER: DFN2DIP-HX4F0-070D040US930-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.0	2.7
10°-20°	606.6	7.5
20°-30°	851.7	10.5
30°-40°	928.4	11.5
40°-50°	853.3	10.6
50°-60°	670.1	8.3
60°-70°	436.2	5.4
70°-80°	224.5	2.8
80°-90°	59.3	0.7
90°-100°	36.3	0.4
100°-110°	135.2	1.7
110°-120°	358.7	4.4
120°-130°	594.9	7.4
130°-140°	631.9	7.8
140°-150°	587.3	7.3
150°-160°	472.2	5.8
160°-170°	304.3	3.8
170°-180°	104.7	1.3
0°-30°	1679.3	20.8
0°-40°	2607.7	32.3
0°-60°	4131.2	51.1
0°-90°	4851.2	60.1
90°-120°	530.2	6.6
90°-150°	2344.3	29.0
90°-180°	3225.0	39.9
0°-180°	8076.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2358	2358	2358	2358	2358	
5°	2358	2347	2319	2339	2332	224
15°	2243	2219	2147	2106	2085	632
25°	2036	1967	1826	1739	1707	936
35°	1754	1645	1458	1323	1276	1098
45°	1434	1291	1067	915	864	1107
55°	1090	924	693	566	525	974
65°	736	563	371	299	292	730
75°	393	243	171	156	154	415
85°	92	47	40	40	40	105
90°	1	10	16	20	21	8
95°	52	25	31	35	34	61
105°	242	266	49	57	60	259
115°	458	471	491	123	65	451
125°	647	658	673	678	681	577
135°	801	814	821	829	827	619
145°	929	928	942	947	943	581
155°	1023	1016	1025	1030	1024	471
165°	1078	1073	1076	1081	1076	305
175°	1102	1097	1099	1104	1096	105
180°	1100	1100	1100	1100	1100	

TEST NUMBER: P928602

CATALOG NUMBER: DFN2DIP-HX4F0-070D040US930-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2357.9	2357.9	2357.9	2357.9	2357.9
2.5°	2368.5	2357.9	2334.3	2355.8	2351.5
5°	2357.9	2347.2	2319.4	2338.6	2332.3
7.5°	2338.6	2325.9	2296.1	2304.4	2293.8
10°	2313.1	2298.1	2255.5	2249.0	2236.3
12.5°	2281.1	2261.9	2204.2	2191.5	2167.9
15°	2242.6	2219.1	2146.6	2106.1	2084.9
17.5°	2197.8	2163.7	2074.0	2027.1	1992.9
20°	2146.6	2103.8	1997.2	1944.0	1896.9
22.5°	2091.2	2042.1	1918.2	1845.7	1813.9
25°	2035.7	1967.3	1826.5	1739.1	1707.0
27.5°	1969.6	1896.9	1741.2	1640.9	1591.8
30°	1899.2	1817.9	1647.2	1538.6	1480.9
32.5°	1830.8	1732.6	1557.8	1429.7	1376.2
35°	1754.0	1645.2	1457.5	1323.1	1276.0
37.5°	1679.4	1561.9	1363.6	1216.1	1163.0
40°	1600.3	1472.5	1265.3	1113.9	1058.4
42.5°	1519.3	1382.8	1167.2	1009.2	956.1
45°	1434.0	1290.9	1067.0	915.3	864.1
47.5°	1352.9	1201.5	971.0	819.3	772.5
50°	1263.2	1111.8	877.0	729.7	685.1
52.5°	1175.6	1015.6	787.4	646.5	606.0
55°	1090.3	923.9	693.4	565.5	525.0
57.5°	1002.9	832.2	610.4	490.8	456.6
60°	913.3	742.5	522.7	414.1	379.9
62.5°	825.8	655.2	448.0	345.7	328.7
65°	736.2	563.2	371.3	298.9	292.3
67.5°	650.9	477.9	298.9	262.3	256.1
70°	561.2	394.8	247.4	226.2	217.5
72.5°	475.9	317.8	206.9	190.0	185.7
75°	392.6	243.1	170.7	155.7	153.7
77.5°	309.5	172.7	134.5	125.8	121.6
80°	232.5	123.8	102.4	94.0	94.0
82.5°	162.1	83.3	70.4	66.1	66.1
85°	91.7	46.9	40.5	40.5	40.5
87.5°	34.1	17.0	17.0	14.9	14.9
90°	0.7	9.5	15.9	20.0	21.4
92.5°	20.0	16.7	19.1	20.7	21.4
95°	51.7	25.4	31.0	35.0	34.2
97.5°	93.2	27.9	40.6	43.0	43.8
100°	140.9	31.9	45.4	51.7	53.3
102.5°	193.4	191.9	46.9	55.7	58.1
105°	242.0	265.9	48.6	57.3	60.5
107.5°	298.5	318.4	50.2	58.9	62.1
110°	352.7	369.4	139.4	59.7	62.8

TEST NUMBER: P928602

CATALOG NUMBER: DFN2DIP-HX4F0-070D040US930-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	403.7	417.9	404.4	61.3	63.7
115°	457.7	471.2	491.2	122.6	65.4
117.5°	504.7	520.6	534.2	420.3	211.7
120°	557.3	569.2	583.5	593.2	485.7
122.5°	601.8	614.6	630.6	635.3	636.1
125°	647.2	657.6	672.7	678.3	680.7
127.5°	688.6	699.8	711.7	719.7	720.5
130°	727.6	740.4	749.1	757.9	757.1
132.5°	767.4	777.8	786.6	793.7	793.0
135°	800.9	813.7	820.8	828.8	827.2
137.5°	835.9	845.4	853.5	861.4	859.0
140°	870.1	876.5	885.3	892.4	888.4
142.5°	898.9	904.4	914.8	921.0	917.1
145°	929.1	928.3	941.7	947.4	943.4
147.5°	955.3	952.9	966.4	970.4	967.3
150°	980.8	975.2	988.0	992.8	988.8
152.5°	1002.3	995.9	1007.8	1012.6	1007.1
155°	1023.0	1015.9	1025.4	1030.2	1023.8
157.5°	1039.7	1033.3	1040.6	1046.1	1039.7
160°	1054.0	1049.2	1054.0	1058.8	1053.2
162.5°	1066.8	1062.0	1066.0	1071.6	1064.4
165°	1077.9	1073.2	1075.6	1081.1	1075.6
167.5°	1086.7	1081.8	1084.4	1089.9	1082.7
170°	1093.9	1089.1	1090.6	1096.3	1089.1
172.5°	1098.6	1093.9	1095.5	1101.1	1093.9
175°	1102.5	1097.0	1098.6	1104.2	1096.3
177.5°	1104.2	1098.6	1099.4	1105.1	1097.9
180°	1100.2	1100.2	1100.2	1100.2	1100.2

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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	9.99	10.91	10.86	11.80	12.92	5.96	6.88	6.84	7.77	8.89
	3H	11.67	12.50	12.56	13.40	14.54	7.16	7.98	8.05	8.88	10.03
	4H	12.29	13.06	13.19	13.97	15.13	7.62	8.39	8.52	9.30	10.46
	6H	12.72	13.43	13.63	14.34	15.51	7.94	8.66	8.86	9.57	10.74
	8H	12.84	13.52	13.77	14.45	15.62	8.04	8.72	8.96	9.64	10.82
	12H	12.91	13.56	13.84	14.48	15.67	8.08	8.73	9.01	9.65	10.85
4H	2H	10.02	10.80	10.93	11.70	12.86	6.57	7.35	7.48	8.25	9.41
	3H	11.86	12.50	12.77	13.44	14.61	7.93	8.57	8.85	9.51	10.68
	4H	12.55	13.14	13.48	14.07	15.27	8.48	9.07	9.41	10.00	11.20
	6H	13.08	13.58	14.02	14.54	15.74	8.91	9.41	9.85	10.37	11.57
	8H	13.25	13.72	14.20	14.67	15.89	9.04	9.51	9.98	10.46	11.67
	12H	13.35	13.78	14.31	14.74	15.96	9.11	9.54	10.07	10.50	11.72
8H	4H	12.53	13.00	13.47	13.95	15.16	8.77	9.24	9.71	10.19	11.40
	6H	13.10	13.49	14.07	14.48	15.69	9.29	9.68	10.26	10.67	11.89
	8H	13.32	13.66	14.30	14.64	15.87	9.49	9.83	10.47	10.81	12.04
	12H	13.46	13.76	14.44	14.74	16.02	9.61	9.91	10.59	10.89	12.17
12H	4H	12.48	12.91	13.45	13.88	15.09	8.78	9.20	9.74	10.17	11.39
	6H	13.08	13.42	14.05	14.40	15.63	9.34	9.69	10.32	10.67	11.90
	8H	13.30	13.60	14.28	14.58	15.86	9.56	9.86	10.54	10.84	12.12

END OF REPORT