

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: P918858

Luminaire Tested: DFN2DIP-HX2F0-050D050US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918858
REPORT IS A COMBINATION OF REPORTS P899187 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-050D050US935-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

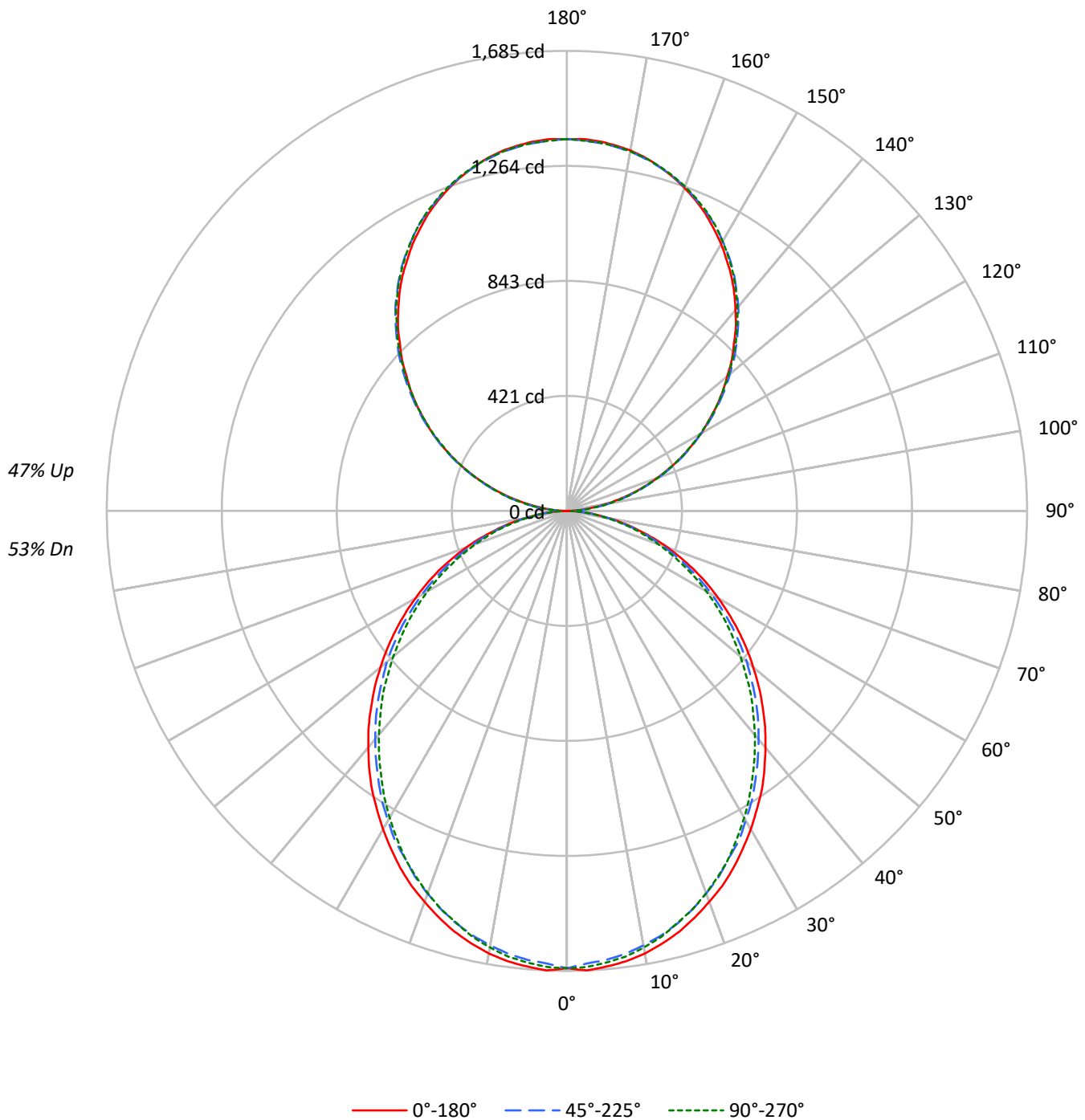
Lumens per Lamp: N/A
Luminaire Lumens: 8071.8 lumens
Efficiency: N/A
Efficacy: 93.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 86
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P918858

CATALOG NUMBER: DFN2DIP-HX2F0-050D050US935-FLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-HX2F0-050D050US935-FLLFLL

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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3947	3947	3947
5°	3947	3882	3911
10°	3909	3821	3851
15°	3845	3748	3761
20°	3761	3652	3669
25°	3677	3538	3564
30°	3574	3432	3433
35°	3475	3307	3294
40°	3355	3182	3161
45°	3235	3055	3025
50°	3104	2922	2869
55°	2965	2768	2723
60°	2809	2588	2556
65°	2637	2398	2359
70°	2418	2168	2146
75°	2118	1891	1939
80°	1754	1540	1565
85°	1191	967	968

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3235 cd/sqm

TEST NUMBER: P918858

CATALOG NUMBER: DFN2DIP-HX2F0-050D050US935-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.7	2.0
10°-20°	443.6	5.5
20°-30°	651.9	8.1
30°-40°	757.2	9.4
40°-50°	756.2	9.4
50°-60°	659.4	8.2
60°-70°	487.4	6.0
70°-80°	275.8	3.4
80°-90°	76.7	0.9
90°-100°	84.2	1.0
100°-110°	267.7	3.3
110°-120°	458.1	5.7
120°-130°	602.5	7.5
130°-140°	676.3	8.4
140°-150°	663.1	8.2
150°-160°	556.3	6.9
160°-170°	368.9	4.6
170°-180°	128.9	1.6
0°-30°	1253.2	15.5
0°-40°	2010.3	24.9
0°-60°	3425.9	42.4
0°-90°	4265.8	52.8
90°-120°	810.0	10.0
90°-150°	2751.9	34.1
90°-180°	3806.0	47.2
0°-180°	8071.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1675	1675	1675	1675	1675	
5°	1675	1669	1651	1664	1661	159
15°	1595	1585	1564	1570	1562	449
25°	1443	1430	1403	1406	1403	664
35°	1245	1229	1203	1194	1186	778
45°	1013	1002	978	960	954	782
55°	767	757	738	718	710	686
65°	517	507	491	477	469	511
75°	270	267	259	250	253	289
85°	66	64	63	58	56	74
90°	1	15	40	38	39	8
95°	60	72	73	73	72	67
105°	247	250	253	255	255	261
115°	460	466	464	463	460	455
125°	669	679	676	672	671	598
135°	865	878	880	879	876	669
145°	1050	1058	1065	1066	1061	656
155°	1201	1204	1208	1213	1210	553
165°	1306	1305	1305	1313	1307	368
175°	1359	1356	1353	1362	1354	129
180°	1362	1362	1362	1362	1362	

TEST NUMBER: P918858

CATALOG NUMBER: DFN2DIP-HX2F0-050D050US935-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1675.1	1675.1	1675.1	1675.1	1675.1
2.5°	1684.8	1676.8	1659.1	1675.1	1672.1
5°	1675.1	1668.8	1651.0	1663.8	1660.8
7.5°	1663.8	1654.2	1636.5	1649.5	1646.2
10°	1646.2	1634.9	1615.7	1628.4	1623.7
12.5°	1621.9	1612.4	1593.1	1601.1	1597.8
15°	1594.6	1585.0	1564.0	1570.5	1562.5
17.5°	1560.7	1551.2	1530.2	1538.2	1530.2
20°	1523.7	1514.2	1491.6	1496.3	1490.0
22.5°	1486.8	1472.2	1451.2	1451.2	1447.9
25°	1443.2	1430.4	1403.0	1406.1	1403.0
27.5°	1394.8	1383.5	1362.7	1357.9	1349.9
30°	1346.6	1333.7	1309.6	1304.8	1298.3
32.5°	1295.0	1285.5	1259.6	1249.9	1243.5
35°	1245.1	1229.1	1203.2	1193.5	1185.5
37.5°	1188.7	1174.2	1148.4	1137.1	1129.1
40°	1130.8	1117.8	1092.0	1077.6	1071.2
42.5°	1074.4	1061.4	1035.8	1019.5	1010.0
45°	1013.2	1001.9	977.7	960.1	953.6
47.5°	953.6	942.3	916.5	898.7	889.2
50°	890.7	882.7	860.1	837.6	829.5
52.5°	829.5	818.2	797.4	779.6	768.4
55°	766.8	757.1	737.7	718.4	710.4
57.5°	703.9	695.9	674.9	655.6	649.0
60°	641.0	634.7	612.2	594.3	589.6
62.5°	579.9	568.6	552.5	536.4	529.9
65°	517.1	507.4	491.3	476.8	468.7
67.5°	452.7	444.5	430.2	418.9	412.3
70°	393.0	386.6	372.0	360.8	354.5
72.5°	331.9	325.4	317.4	306.1	301.3
75°	270.5	267.4	259.2	249.7	253.0
77.5°	215.9	209.3	206.1	201.3	196.6
80°	161.2	159.5	156.2	151.4	148.2
82.5°	109.5	109.5	108.0	101.5	101.5
85°	66.0	64.4	62.9	57.9	56.4
87.5°	29.0	25.8	22.6	17.7	16.1
90°	1.2	14.8	40.2	37.8	39.0
92.5°	25.5	34.4	35.7	36.9	36.9
95°	59.9	71.5	73.4	73.4	71.5
97.5°	99.7	110.4	114.9	114.9	114.9
100°	145.7	155.2	158.4	158.4	157.2
102.5°	194.2	201.1	205.6	206.9	205.6
105°	247.1	250.4	252.9	254.9	254.9
107.5°	299.6	304.5	304.5	305.4	299.6
110°	350.5	357.1	357.1	357.1	353.8



TEST NUMBER: P918858

CATALOG NUMBER: DFN2DIP-HX2F0-050D050US935-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	405.5	412.5	411.3	408.0	405.5
115°	459.7	466.3	464.3	463.0	459.7
117.5°	513.5	522.5	516.8	513.5	510.2
120°	567.7	576.7	567.7	567.7	564.0
122.5°	616.9	628.4	622.7	619.4	616.9
125°	668.7	678.9	675.6	671.9	670.7
127.5°	719.1	731.8	727.4	722.4	719.1
130°	766.4	781.1	779.0	776.6	772.1
132.5°	819.3	830.8	831.6	825.9	822.6
135°	864.9	877.5	880.0	878.8	875.5
137.5°	915.8	926.0	928.1	927.2	922.3
140°	960.4	970.8	976.5	976.5	972.0
142.5°	1006.4	1016.8	1020.0	1021.2	1016.8
145°	1050.0	1058.2	1064.7	1066.0	1061.4
147.5°	1089.0	1099.2	1104.1	1106.2	1101.6
150°	1129.2	1136.2	1140.6	1144.4	1140.6
152.5°	1164.9	1171.9	1177.6	1182.2	1177.6
155°	1200.6	1203.8	1207.5	1213.3	1209.6
157.5°	1231.4	1233.8	1235.9	1244.1	1238.4
160°	1258.9	1261.4	1262.6	1269.5	1264.6
162.5°	1284.4	1284.4	1285.6	1293.4	1287.6
165°	1306.1	1304.8	1304.8	1313.1	1307.3
167.5°	1325.8	1322.1	1322.1	1330.3	1324.6
170°	1340.6	1337.3	1336.1	1344.3	1337.3
172.5°	1350.8	1347.5	1346.3	1354.5	1347.5
175°	1359.1	1355.7	1353.3	1361.5	1354.5
177.5°	1363.6	1360.3	1357.8	1364.8	1357.8
180°	1361.5	1361.5	1361.5	1361.5	1361.5

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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	12.16	13.05	13.10	14.00	15.23	11.74	12.63	12.67	13.58	14.81
	3H	13.80	14.60	14.74	15.56	16.81	13.34	14.14	14.28	15.10	16.35
	4H	14.37	15.13	15.33	16.09	17.35	13.91	14.67	14.87	15.63	16.89
	6H	14.75	15.45	15.72	16.42	17.69	14.30	14.99	15.26	15.96	17.23
	8H	14.85	15.51	15.83	16.50	17.77	14.39	15.05	15.37	16.04	17.31
	12H	14.89	15.52	15.87	16.50	17.80	14.43	15.06	15.41	16.04	17.34
4H	2H	12.62	13.37	13.58	14.34	15.60	12.28	13.03	13.24	14.00	15.26
	3H	14.46	15.09	15.43	16.08	17.36	14.07	14.70	15.05	15.70	16.97
	4H	15.15	15.73	16.14	16.71	18.01	14.76	15.33	15.74	16.32	17.62
	6H	15.65	16.14	16.64	17.15	18.45	15.25	15.75	16.25	16.76	18.05
	8H	15.78	16.25	16.78	17.25	18.56	15.39	15.85	16.38	16.85	18.17
	12H	15.85	16.26	16.86	17.28	18.60	15.44	15.86	16.46	16.88	18.20
8H	4H	15.34	15.80	16.34	16.81	18.12	14.99	15.45	15.99	16.46	17.77
	6H	15.94	16.33	16.96	17.37	18.68	15.59	15.98	16.61	17.02	18.33
	8H	16.15	16.49	17.18	17.52	18.85	15.79	16.13	16.82	17.16	18.49
	12H	16.26	16.56	17.30	17.59	18.96	15.90	16.19	16.93	17.22	18.59
12H	4H	15.32	15.74	16.34	16.76	18.08	14.98	15.40	16.00	16.42	17.74
	6H	15.97	16.31	17.00	17.34	18.67	15.63	15.97	16.66	17.00	18.33
	8H	16.19	16.49	17.23	17.52	18.89	15.85	16.15	16.88	17.17	18.55