

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: P924512

Luminaire Tested: DFN2DIP-HX4F0-040D050US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924512
REPORT IS A COMBINATION OF REPORTS P899317 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D050US950-FLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

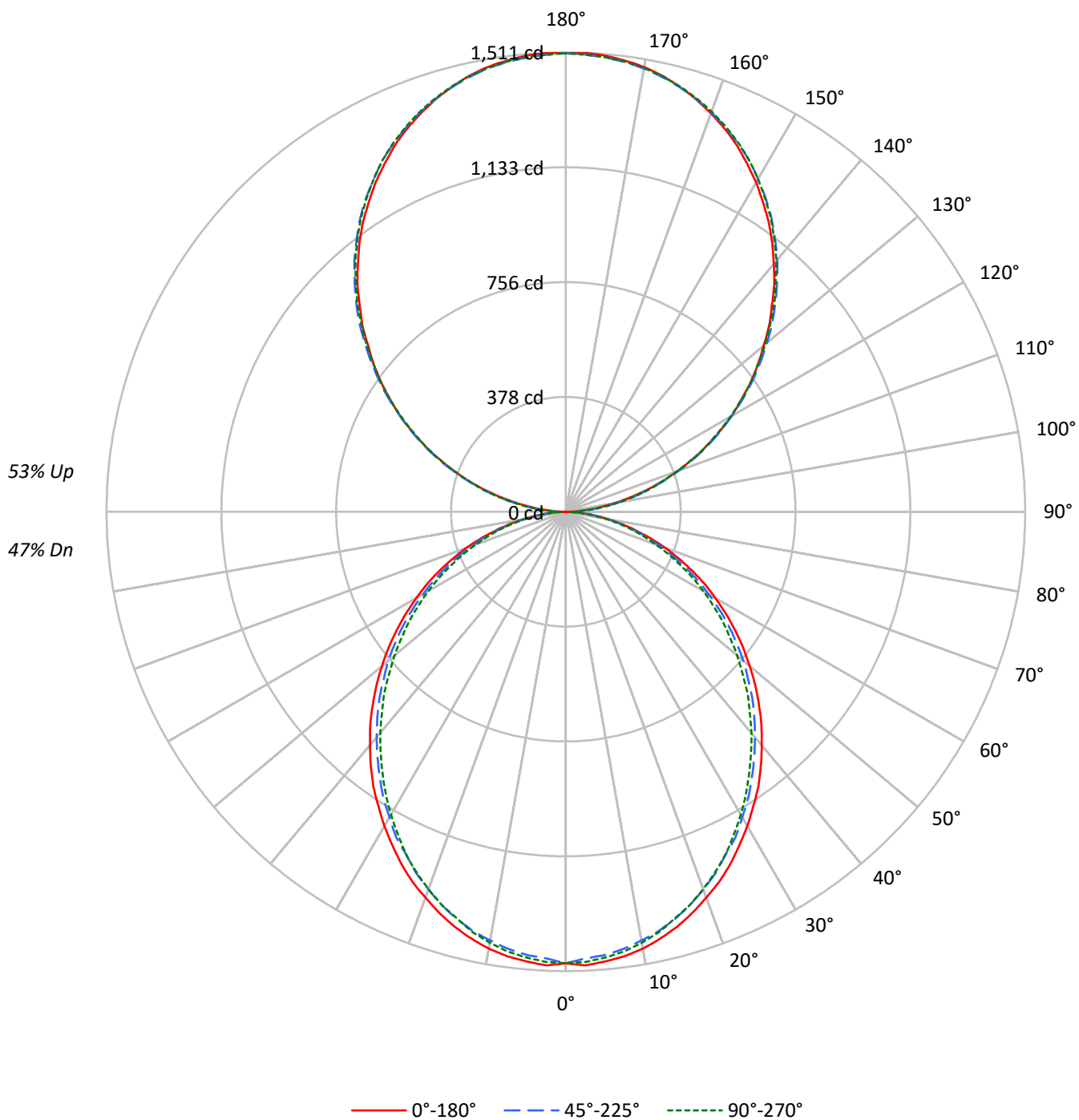
Lumens per Lamp: N/A
Luminaire Lumens: 7999.3 lumens
Efficiency: N/A
Efficacy: 129.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 61.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P924512

CATALOG NUMBER: DFN2DIP-HX4F0-040D050US950-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P924512

CATALOG NUMBER: DFN2DIP-HX4F0-040D050US950-FLLFL

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	98	98	98	98	82	82	82	67	67	67	54	54	54
1	97	93	89	85	89	85	82	79	72	69	67	59	57	56	47	46	45
2	88	81	75	70	81	75	69	65	63	59	56	52	49	47	42	40	38
3	81	71	64	58	74	66	59	54	55	51	47	46	42	39	37	35	32
4	74	63	55	49	68	58	51	46	49	44	40	41	37	34	33	30	28
5	68	56	48	42	62	52	45	39	44	39	34	37	33	29	30	27	24
6	62	50	42	37	57	47	40	34	40	34	30	33	29	26	27	24	21
7	58	45	38	32	53	42	35	30	36	30	26	30	26	23	25	21	19
8	54	41	34	28	49	38	31	27	33	27	23	28	23	20	23	19	17
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15
10	47	35	27	23	43	32	26	21	28	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1104	1104	1104
5°	1106	1089	1096
10°	1097	1074	1081
15°	1081	1057	1058
20°	1059	1032	1034
25°	1038	1003	1007
30°	1011	976	972
35°	985	944	935
40°	953	911	900
45°	922	879	864
50°	887	844	823
55°	851	805	785
60°	811	758	741
65°	766	710	689
70°	710	650	634
75°	631	580	583
80°	537	489	485
85°	390	333	322

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1137 cd/sqm

TEST NUMBER: P924512

CATALOG NUMBER: DFN2DIP-HX4F0-040D050US950-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.8	1.7
10°-20°	393.2	4.9
20°-30°	577.9	7.2
30°-40°	671.2	8.4
40°-50°	670.3	8.4
50°-60°	584.5	7.3
60°-70°	432.1	5.4
70°-80°	244.5	3.1
80°-90°	68.8	0.9
90°-100°	93.4	1.2
100°-110°	296.6	3.7
110°-120°	507.6	6.3
120°-130°	667.5	8.3
130°-140°	749.3	9.4
140°-150°	734.8	9.2
150°-160°	616.4	7.7
160°-170°	408.8	5.1
170°-180°	142.9	1.8
0°-30°	1110.8	13.9
0°-40°	1782.0	22.3
0°-60°	3036.8	38.0
0°-90°	3782.1	47.3
90°-120°	897.5	11.2
90°-150°	3049.2	38.1
90°-180°	4217.0	52.7
0°-180°	7999.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1485	1485	1485	1485	1485	
5°	1485	1479	1463	1475	1472	141
15°	1413	1405	1386	1392	1385	398
25°	1279	1268	1244	1246	1244	589
35°	1104	1090	1067	1058	1051	689
45°	898	888	867	851	845	693
55°	680	671	654	637	630	608
65°	458	450	436	423	416	453
75°	240	237	230	221	224	256
85°	58	57	56	51	50	65
90°	1	16	45	42	43	8
95°	66	79	81	81	79	74
105°	274	277	280	282	282	289
115°	509	517	514	513	509	504
125°	741	752	749	744	743	662
135°	958	972	975	974	970	741
145°	1163	1172	1180	1181	1176	727
155°	1330	1334	1338	1344	1340	612
165°	1447	1446	1446	1455	1449	408
175°	1506	1502	1500	1509	1501	143
180°	1509	1509	1509	1509	1509	

TEST NUMBER: P924512

CATALOG NUMBER: DFN2DIP-HX4F0-040D050US950-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1484.8	1484.8	1484.8	1484.8	1484.8
2.5°	1493.5	1486.3	1470.6	1484.8	1482.1
5°	1484.8	1479.2	1463.4	1474.8	1472.1
7.5°	1474.8	1466.3	1450.6	1462.1	1459.2
10°	1459.2	1449.2	1432.1	1443.5	1439.2
12.5°	1437.7	1429.2	1412.1	1419.3	1416.3
15°	1413.4	1405.0	1386.4	1392.1	1385.0
17.5°	1383.5	1375.0	1356.4	1363.5	1356.4
20°	1350.6	1342.1	1322.1	1326.3	1320.8
22.5°	1317.9	1305.0	1286.4	1286.4	1283.5
25°	1279.2	1267.9	1243.6	1246.4	1243.6
27.5°	1236.4	1226.4	1208.0	1203.7	1196.6
30°	1193.6	1182.2	1160.8	1156.5	1150.8
32.5°	1147.9	1139.5	1116.6	1108.0	1102.2
35°	1103.7	1089.5	1066.6	1058.0	1050.8
37.5°	1053.7	1040.8	1017.9	1008.0	1000.8
40°	1002.4	990.8	967.9	955.2	949.5
42.5°	952.4	940.8	918.1	903.7	895.2
45°	898.1	888.2	866.6	851.1	845.2
47.5°	845.2	835.2	812.4	796.7	788.2
50°	789.5	782.4	762.4	742.4	735.2
52.5°	735.2	725.3	706.8	691.1	681.1
55°	679.7	671.0	654.0	636.8	629.7
57.5°	623.9	616.9	598.2	581.1	575.4
60°	568.2	562.6	542.6	526.9	522.6
62.5°	514.0	504.0	489.8	475.5	469.7
65°	458.4	449.7	435.5	422.6	415.6
67.5°	401.3	394.0	381.3	371.3	365.6
70°	348.4	342.7	329.8	319.8	314.2
72.5°	294.2	288.4	281.3	271.3	267.0
75°	239.8	237.1	229.8	221.3	224.2
77.5°	191.3	185.6	182.7	178.4	174.2
80°	142.8	141.3	138.4	134.2	131.4
82.5°	97.1	97.1	95.8	90.0	90.0
85°	58.5	57.1	55.7	51.3	50.0
87.5°	25.8	22.9	20.0	15.7	14.2
90°	1.3	16.4	44.6	41.9	43.2
92.5°	28.2	38.2	39.6	40.9	40.9
95°	66.4	79.2	81.4	81.4	79.2
97.5°	110.5	122.3	127.4	127.4	127.4
100°	161.4	171.9	175.5	175.5	174.2
102.5°	215.1	222.9	227.8	229.2	227.8
105°	273.8	277.4	280.2	282.4	282.4
107.5°	332.0	337.4	337.4	338.4	332.0
110°	388.4	395.7	395.7	395.7	392.0

TEST NUMBER: P924512

CATALOG NUMBER: DFN2DIP-HX4F0-040D050US950-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	449.3	457.1	455.7	452.1	449.3
115°	509.3	516.7	514.4	513.1	509.3
117.5°	569.0	579.0	572.6	569.0	565.3
120°	629.0	639.0	629.0	629.0	624.9
122.5°	683.5	696.3	689.9	686.3	683.5
125°	740.9	752.2	748.6	744.5	743.2
127.5°	796.8	810.9	805.9	800.4	796.8
130°	849.2	865.5	863.2	860.5	855.5
132.5°	907.8	920.5	921.5	915.1	911.5
135°	958.3	972.3	975.1	973.7	970.1
137.5°	1014.7	1026.0	1028.3	1027.4	1021.9
140°	1064.2	1075.6	1081.9	1081.9	1077.0
142.5°	1115.1	1126.6	1130.2	1131.5	1126.6
145°	1163.4	1172.5	1179.7	1181.1	1176.1
147.5°	1206.6	1218.0	1223.4	1225.7	1220.6
150°	1251.2	1258.9	1263.9	1268.0	1263.9
152.5°	1290.8	1298.5	1304.8	1309.8	1304.8
155°	1330.3	1333.9	1338.0	1344.4	1340.3
157.5°	1364.4	1367.1	1369.4	1378.5	1372.1
160°	1394.8	1397.6	1398.9	1406.7	1401.2
162.5°	1423.1	1423.1	1424.4	1433.1	1426.7
165°	1447.2	1445.8	1445.8	1454.9	1448.6
167.5°	1469.0	1464.9	1464.9	1474.0	1467.6
170°	1485.4	1481.8	1480.4	1489.5	1481.8
172.5°	1496.7	1493.1	1491.8	1500.8	1493.1
175°	1505.9	1502.2	1499.5	1508.6	1500.8
177.5°	1510.8	1507.2	1504.5	1512.2	1504.5
180°	1508.6	1508.6	1508.6	1508.6	1508.6

TEST NUMBER: P924512

CATALOG NUMBER: DFN2DIP-HX4F0-040D050US950-FLLFLL

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	7.36	8.20	8.34	9.19	10.50	6.93	7.76	7.91	8.76	10.07
	3H	9.02	9.77	10.01	10.77	12.10	8.54	9.30	9.54	10.30	11.63
	4H	9.60	10.32	10.61	11.32	12.66	9.13	9.84	10.14	10.85	12.19
	6H	10.00	10.66	11.02	11.67	13.02	9.53	10.18	10.54	11.19	12.55
	8H	10.11	10.73	11.13	11.76	13.11	9.63	10.26	10.65	11.28	12.63
	12H	10.16	10.75	11.18	11.77	13.14	9.68	10.27	10.70	11.29	12.66
4H	2H	7.82	8.53	8.83	9.53	10.87	7.47	8.18	8.48	9.19	10.53
	3H	9.68	10.28	10.70	11.31	12.66	9.29	9.88	10.31	10.92	12.27
	4H	10.40	10.94	11.42	11.97	13.34	9.99	10.53	11.02	11.56	12.94
	6H	10.91	11.38	11.95	12.43	13.80	10.50	10.97	11.54	12.02	13.39
	8H	11.06	11.50	12.10	12.54	13.93	10.65	11.09	11.69	12.13	13.51
	12H	11.13	11.53	12.19	12.59	13.98	10.71	11.11	11.77	12.16	13.56
8H	4H	10.59	11.03	11.63	12.07	13.46	10.23	10.67	11.27	11.71	13.10
	6H	11.22	11.58	12.29	12.67	14.05	10.86	11.22	11.92	12.31	13.69
	8H	11.44	11.76	12.51	12.83	14.23	11.08	11.39	12.15	12.46	13.87
	12H	11.58	11.86	12.65	12.92	14.36	11.19	11.47	12.26	12.53	13.98
12H	4H	10.58	10.97	11.63	12.03	13.42	10.22	10.62	11.28	11.68	13.07
	6H	11.25	11.57	12.32	12.64	14.04	10.90	11.22	11.97	12.29	13.69
	8H	11.50	11.77	12.57	12.84	14.28	11.14	11.42	12.21	12.48	13.93