

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: P926876

Luminaire Tested: DFN2DIP-HX4F0-040D050US830-FLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P926876
REPORT IS A COMBINATION OF REPORTS P900837 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D050US830-FLLONL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

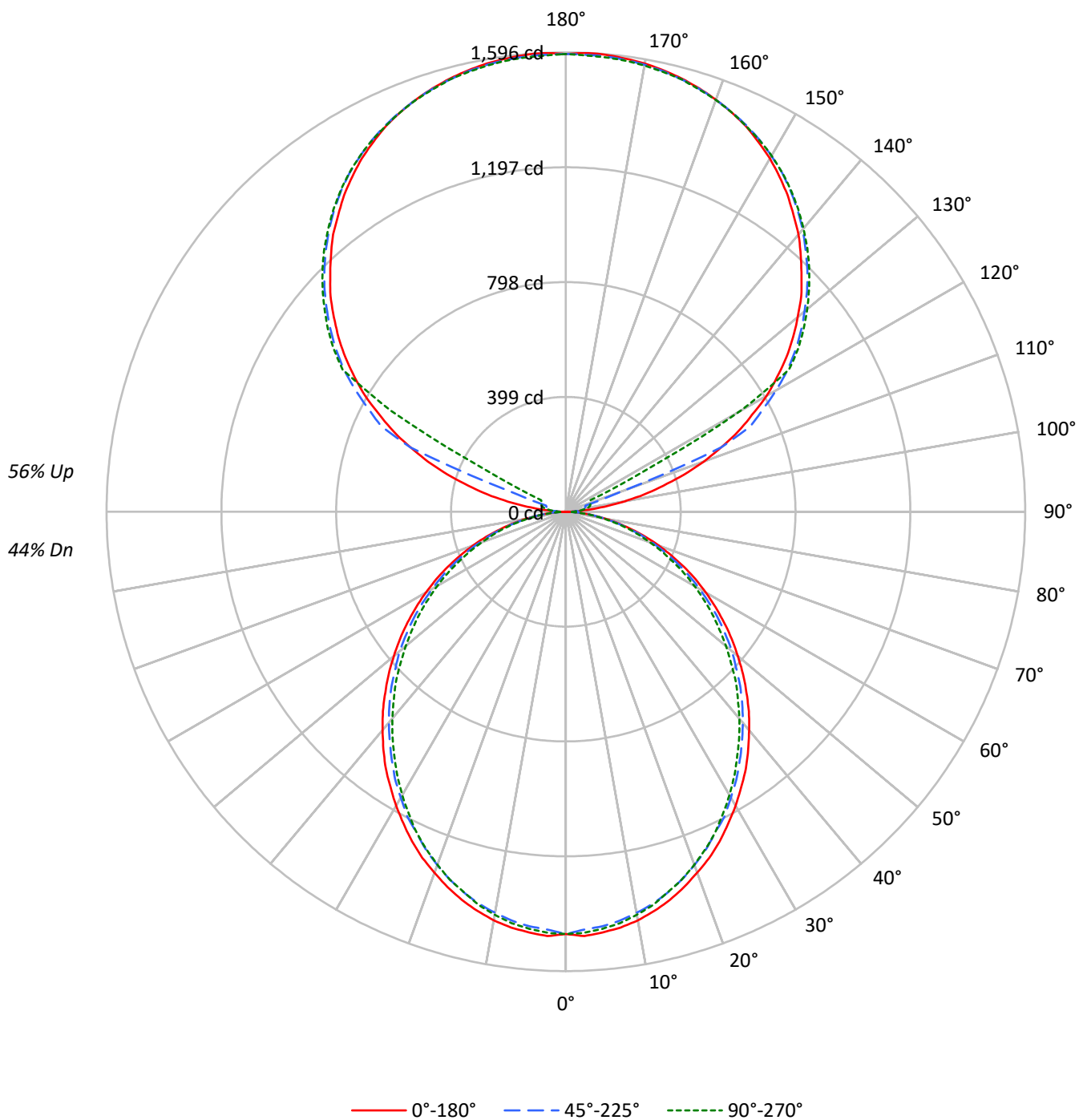
Lumens per Lamp: N/A
Luminaire Lumens: 8397.7 lumens
Efficiency: N/A
Efficacy: 118.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 70.9
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: P926876

CATALOG NUMBER: DFN2DIP-HX4F0-040D050US830-FLLONL

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°	1091	1091	1091
5°	1093	1076	1083
10°	1084	1061	1068
15°	1068	1044	1045
20°	1046	1020	1022
25°	1025	991	995
30°	998	964	960
35°	973	932	924
40°	942	900	889
45°	911	868	854
50°	877	834	813
55°	841	795	775
60°	801	749	732
65°	757	701	681
70°	701	643	626
75°	624	573	576
80°	531	484	479
85°	385	329	319

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 911 cd/sqm

TEST NUMBER: P926876

CATALOG NUMBER: DFN2DIP-HX4F0-040D050US830-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.1	1.6
10°-20°	388.5	4.6
20°-30°	570.9	6.8
30°-40°	663.1	7.9
40°-50°	662.2	7.9
50°-60°	577.4	6.9
60°-70°	426.9	5.1
70°-80°	241.5	2.9
80°-90°	66.5	0.8
90°-100°	52.5	0.6
100°-110°	195.5	2.3
110°-120°	518.5	6.2
120°-130°	860.0	10.2
130°-140°	913.5	10.9
140°-150°	849.0	10.1
150°-160°	682.6	8.1
160°-170°	439.8	5.2
170°-180°	151.4	1.8
0°-30°	1097.4	13.1
0°-40°	1760.5	21.0
0°-60°	3000.2	35.7
0°-90°	3735.1	44.5
90°-120°	766.4	9.1
90°-150°	3388.8	40.4
90°-180°	4663.0	55.5
0°-180°	8397.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1467	1467	1467	1467	1467	
5°	1467	1461	1446	1457	1454	139
15°	1396	1388	1370	1375	1368	393
25°	1264	1253	1229	1231	1229	582
35°	1090	1076	1054	1045	1038	681
45°	887	878	856	841	835	685
55°	672	663	646	629	622	600
65°	453	444	430	418	411	448
75°	237	234	227	219	222	253
85°	58	56	55	51	49	64
90°	1	14	23	29	31	8
95°	75	37	45	51	50	89
105°	350	384	70	83	88	374
115°	662	681	710	177	94	651
125°	936	951	972	980	984	834
135°	1158	1176	1186	1198	1196	894
145°	1343	1342	1361	1370	1364	840
155°	1479	1468	1482	1489	1480	681
165°	1558	1551	1555	1563	1555	440
175°	1594	1586	1588	1596	1585	152
180°	1590	1590	1590	1590	1590	

TEST NUMBER: P926876

CATALOG NUMBER: DFN2DIP-HX4F0-040D050US830-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1466.9	1466.9	1466.9	1466.9	1466.9
2.5°	1475.5	1468.4	1452.9	1466.9	1464.3
5°	1466.9	1461.3	1445.8	1457.0	1454.4
7.5°	1457.0	1448.6	1433.1	1444.5	1441.6
10°	1441.6	1431.8	1414.9	1426.1	1421.9
12.5°	1420.3	1412.0	1395.1	1402.2	1399.2
15°	1396.4	1388.0	1369.6	1375.3	1368.3
17.5°	1366.8	1358.4	1340.0	1347.0	1340.0
20°	1334.3	1325.9	1306.2	1310.4	1304.9
22.5°	1302.0	1289.2	1270.9	1270.9	1268.0
25°	1263.8	1252.6	1228.6	1231.4	1228.6
27.5°	1221.5	1211.6	1193.4	1189.2	1182.2
30°	1179.3	1167.9	1146.8	1142.6	1136.9
32.5°	1134.1	1125.7	1103.1	1094.6	1088.9
35°	1090.4	1076.3	1053.7	1045.2	1038.2
37.5°	1041.0	1028.3	1005.6	995.8	988.8
40°	990.3	978.9	956.3	943.7	938.1
42.5°	940.9	929.5	907.1	892.8	884.4
45°	887.3	877.5	856.2	840.8	835.1
47.5°	835.1	825.2	802.6	787.1	778.7
50°	780.0	772.9	753.2	733.5	726.4
52.5°	726.4	716.6	698.3	682.7	672.9
55°	671.5	663.0	646.1	629.1	622.1
57.5°	616.4	609.4	590.9	574.1	568.4
60°	561.4	555.8	536.1	520.5	516.3
62.5°	507.8	497.9	483.9	469.7	464.1
65°	452.9	444.3	430.3	417.5	410.6
67.5°	396.4	389.3	376.7	366.8	361.2
70°	344.2	338.5	325.8	315.9	310.4
72.5°	290.7	284.9	277.9	268.0	263.8
75°	236.9	234.2	227.0	218.7	221.5
77.5°	189.0	183.3	180.5	176.2	172.1
80°	141.1	139.6	136.8	132.6	129.8
82.5°	95.9	95.9	94.6	88.9	88.9
85°	57.8	56.5	55.0	50.7	49.4
87.5°	25.4	22.6	19.8	15.6	14.0
90°	1.1	13.8	23.0	28.8	31.0
92.5°	28.8	24.2	27.6	30.0	31.0
95°	74.7	36.8	44.9	50.7	49.5
97.5°	134.6	40.3	58.6	62.2	63.2
100°	203.8	46.1	65.6	74.7	77.1
102.5°	279.6	277.4	68.0	80.5	84.1
105°	349.9	384.4	70.2	82.8	87.5
107.5°	431.6	460.2	72.6	85.1	89.8
110°	509.9	533.9	201.4	86.3	90.9

TEST NUMBER: P926876

CATALOG NUMBER: DFN2DIP-HX4F0-040D050US830-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	583.5	604.1	584.6	88.6	92.1
115°	661.7	681.2	710.1	177.3	94.4
117.5°	729.6	752.6	772.3	607.5	306.1
120°	805.6	822.8	843.5	857.4	702.0
122.5°	869.9	888.4	911.5	918.4	919.6
125°	935.5	950.6	972.5	980.5	984.0
127.5°	995.4	1011.5	1028.9	1040.3	1041.5
130°	1051.8	1070.3	1082.8	1095.6	1094.5
132.5°	1109.4	1124.4	1136.9	1147.4	1146.3
135°	1157.8	1176.2	1186.4	1198.1	1195.7
137.5°	1208.3	1222.1	1233.7	1245.2	1241.8
140°	1257.8	1267.1	1279.6	1290.0	1284.3
142.5°	1299.3	1307.4	1322.3	1331.5	1325.7
145°	1343.1	1341.8	1361.3	1369.5	1363.7
147.5°	1381.0	1377.5	1397.1	1402.8	1398.3
150°	1417.8	1409.8	1428.2	1435.1	1429.3
152.5°	1448.8	1439.7	1456.9	1463.9	1455.8
155°	1478.8	1468.5	1482.3	1489.2	1480.0
157.5°	1502.9	1493.8	1504.1	1512.2	1502.9
160°	1523.7	1516.8	1523.7	1530.5	1522.5
162.5°	1542.0	1535.2	1540.9	1549.0	1538.6
165°	1558.1	1551.4	1554.7	1562.8	1554.7
167.5°	1570.9	1563.9	1567.5	1575.5	1565.1
170°	1581.2	1574.3	1576.6	1584.6	1574.3
172.5°	1588.1	1581.2	1583.6	1591.6	1581.2
175°	1593.9	1585.8	1588.1	1596.1	1584.6
177.5°	1596.1	1588.1	1589.3	1597.3	1587.0
180°	1590.4	1590.4	1590.4	1590.4	1590.4

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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	7.04	7.86	8.04	8.87	10.22	6.61	7.42	7.61	8.44	9.79
	3H	8.70	9.43	9.71	10.45	11.82	8.23	8.96	9.24	9.98	11.35
	4H	9.29	9.98	10.31	11.00	12.38	8.81	9.50	9.84	10.53	11.90
	6H	9.68	10.32	10.72	11.35	12.74	9.21	9.84	10.24	10.87	12.26
	8H	9.79	10.39	10.83	11.44	12.82	9.31	9.92	10.35	10.96	12.35
	12H	9.83	10.41	10.88	11.45	12.86	9.35	9.93	10.40	10.97	12.38
4H	2H	7.50	8.19	8.53	9.21	10.59	7.15	7.84	8.19	8.87	10.25
	3H	9.36	9.94	10.40	10.99	12.38	8.97	9.54	10.01	10.60	11.99
	4H	10.07	10.60	11.12	11.65	13.06	9.67	10.20	10.72	11.24	12.65
	6H	10.59	11.04	11.64	12.11	13.52	10.18	10.63	11.24	11.70	13.11
	8H	10.74	11.16	11.79	12.22	13.64	10.32	10.75	11.38	11.81	13.23
	12H	10.81	11.19	11.88	12.27	13.69	10.39	10.77	11.46	11.84	13.27
8H	4H	10.27	10.69	11.33	11.75	13.18	9.91	10.33	10.97	11.39	12.82
	6H	10.90	11.25	11.98	12.35	13.77	10.54	10.89	11.62	11.99	13.41
	8H	11.12	11.43	12.21	12.51	13.95	10.75	11.06	11.84	12.14	13.58
	12H	11.25	11.52	12.34	12.60	14.08	10.86	11.14	11.96	12.22	13.70
12H	4H	10.25	10.63	11.33	11.71	13.14	9.90	10.28	10.98	11.36	12.79
	6H	10.93	11.24	12.02	12.32	13.76	10.58	10.88	11.66	11.97	13.41
	8H	11.17	11.44	12.26	12.52	14.00	10.81	11.08	11.90	12.16	13.64