

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: P930301

Luminaire Tested: DFN2DS-HX4F0-060DS930-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930301
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-HX4F0-060DS930-FLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

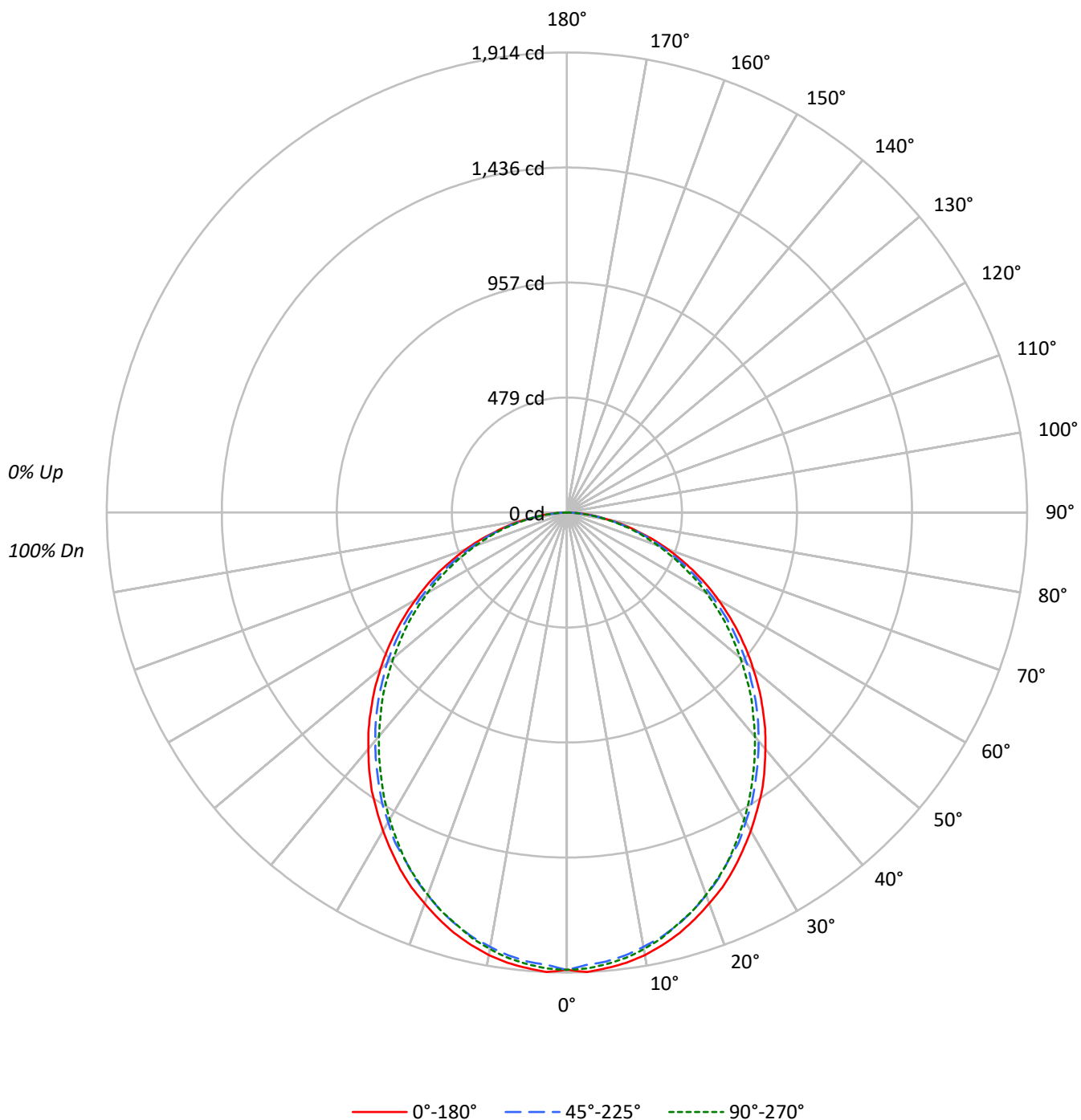
Lumens per Lamp: N/A
Luminaire Lumens: 4841.1 lumens
Efficiency: N/A
Efficacy: 82.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 59
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P930301

CATALOG NUMBER: DFN2DS-HX4F0-060DS930-FLL

Luminous Intensity Polar Plot



TEST NUMBER: P930301

CATALOG NUMBER: DFN2DS-HX4F0-060DS930-FLL

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
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	109	104	100	96	106	102	98	95	98	95	92		94	91	89		90
2	99	91	85	79	97	89	83	78	86	81	76		83	78	74		80
3	91	80	72	66	88	79	71	65	76	69	64		73	68	63		71
4	83	71	63	56	81	70	62	56	68	61	55		65	59	54		63
5	77	64	55	49	75	63	55	48	61	53	48		59	52	47		57
6	71	58	49	43	69	57	48	42	55	48	42		53	47	42		52
7	66	52	44	38	64	52	43	38	50	43	37		49	42	37		47
8	61	48	40	34	60	47	39	34	46	39	33		45	38	33		44
9	57	44	36	30	56	43	36	30	42	35	30		41	35	30		40
10	54	41	33	28	53	40	33	28	39	32	27		38	32	27		37

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1415	1415	1415
5°	1420	1400	1408
10°	1412	1386	1393
15°	1394	1368	1366
20°	1369	1341	1339
25°	1345	1308	1308
30°	1313	1277	1266
35°	1284	1241	1222
40°	1247	1204	1181
45°	1210	1168	1139
50°	1170	1130	1090
55°	1129	1086	1046
60°	1083	1034	996
65°	1033	982	937
70°	971	919	875
75°	883	846	825
80°	784	760	721
85°	639	609	547

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1210 cd/sqm

TEST NUMBER: P930301

CATALOG NUMBER: DFN2DS-HX4F0-060DS930-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.1	3.7
10°-20°	503.9	10.4
20°-30°	740.5	15.3
30°-40°	860.0	17.8
40°-50°	859.0	17.7
50°-60°	749.0	15.5
60°-70°	553.7	11.4
70°-80°	313.3	6.5
80°-90°	82.7	1.7
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1423.5	29.4
0°-40°	2283.5	47.2
0°-60°	3891.5	80.4
0°-90°	4841.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4841.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1903	1903	1903	1903	1903	
5°	1903	1896	1875	1890	1886	181
15°	1811	1800	1776	1784	1775	510
25°	1639	1625	1594	1597	1594	754
35°	1414	1396	1367	1356	1346	883
45°	1151	1138	1110	1091	1083	888
55°	871	860	838	816	807	779
65°	587	576	558	542	532	581
75°	307	304	294	284	287	328
85°	75	73	71	66	64	88
90°	0	0	0	0	0	

TEST NUMBER: P930301

CATALOG NUMBER: DFN2DS-HX4F0-060DS930-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1902.7	1902.7	1902.7	1902.7	1902.7
2.5°	1913.8	1904.7	1884.4	1902.7	1899.2
5°	1902.7	1895.5	1875.3	1889.9	1886.4
7.5°	1889.9	1879.1	1858.9	1873.6	1869.9
10°	1869.9	1857.1	1835.1	1849.7	1844.3
12.5°	1842.4	1831.5	1809.5	1818.7	1815.0
15°	1811.3	1800.4	1776.5	1784.0	1774.8
17.5°	1772.9	1762.0	1738.2	1747.2	1738.2
20°	1730.7	1719.9	1694.2	1699.7	1692.5
22.5°	1688.8	1672.3	1648.4	1648.4	1644.8
25°	1639.3	1624.8	1593.7	1597.2	1593.7
27.5°	1584.4	1571.6	1547.8	1542.5	1533.3
30°	1529.7	1514.8	1487.5	1482.1	1474.7
32.5°	1471.0	1460.2	1430.8	1419.7	1412.4
35°	1414.4	1396.1	1366.8	1355.7	1346.5
37.5°	1350.3	1333.7	1304.5	1291.6	1282.5
40°	1284.4	1269.7	1240.4	1224.1	1216.7
42.5°	1220.4	1205.6	1176.5	1158.1	1147.2
45°	1150.9	1138.1	1110.5	1090.6	1083.1
47.5°	1083.1	1070.3	1041.1	1020.9	1009.9
50°	1011.7	1002.6	977.0	951.3	942.2
52.5°	942.2	929.4	905.7	885.6	872.8
55°	871.0	859.9	838.0	816.1	806.9
57.5°	799.6	790.5	766.6	744.7	737.2
60°	728.1	720.9	695.4	675.1	669.7
62.5°	658.6	645.8	627.6	609.3	602.0
65°	587.4	576.4	558.1	541.6	532.4
67.5°	514.2	504.9	488.6	475.8	468.4
70°	446.5	439.1	422.6	409.8	402.6
72.5°	376.9	369.6	360.5	347.7	342.2
75°	307.3	303.8	294.5	283.6	287.3
77.5°	245.2	237.8	234.1	228.7	223.2
80°	183.0	181.1	177.4	172.0	168.3
82.5°	124.5	124.5	122.7	115.3	115.3
85°	74.9	73.2	71.4	65.8	64.1
87.5°	33.0	29.3	25.6	20.2	18.3
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P930301

CATALOG NUMBER: DFN2DS-HX4F0-060DS930-FLL

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	12.49	14.10	12.85	14.41	14.73	12.04	13.65	12.41	13.97	14.28
	3H	14.24	15.69	14.62	16.02	16.38	13.75	15.20	14.12	15.53	15.89
	4H	14.88	16.25	15.28	16.60	16.98	14.39	15.76	14.79	16.11	16.48
	6H	15.35	16.62	15.76	16.99	17.38	14.85	16.12	15.26	16.49	16.88
	8H	15.50	16.71	15.92	17.10	17.50	14.99	16.20	15.42	16.59	16.99
	12H	15.59	16.75	16.02	17.13	17.56	15.08	16.24	15.50	16.62	17.05
4H	2H	13.05	14.42	13.45	14.77	15.14	12.70	14.07	13.09	14.41	14.79
	3H	15.02	16.17	15.43	16.57	16.97	14.62	15.76	15.03	16.16	16.56
	4H	15.80	16.84	16.23	17.25	17.69	15.38	16.41	15.81	16.83	17.26
	6H	16.40	17.30	16.85	17.74	18.20	15.96	16.87	16.42	17.31	17.77
	8H	16.59	17.43	17.05	17.88	18.34	16.15	16.99	16.61	17.44	17.90
	12H	16.72	17.48	17.20	17.95	18.42	16.27	17.03	16.75	17.50	17.97
8H	4H	16.07	16.92	16.53	17.36	17.83	15.70	16.55	16.16	16.99	17.45
	6H	16.79	17.49	17.28	17.98	18.45	16.41	17.11	16.90	17.60	18.07
	8H	17.05	17.68	17.56	18.18	18.67	16.66	17.29	17.17	17.79	18.28
	12H	17.25	17.81	17.75	18.30	18.86	16.83	17.39	17.34	17.88	18.44
12H	4H	16.10	16.86	16.58	17.34	17.80	15.74	16.50	16.22	16.97	17.44
	6H	16.83	17.47	17.34	17.97	18.46	16.46	17.10	16.97	17.60	18.09
	8H	17.15	17.71	17.65	18.20	18.76	16.77	17.33	17.28	17.82	18.38