

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: P930295

Luminaire Tested: DFN2DS-HX4F0-060DS840-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930295
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-HX4F0-060DS840-FLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

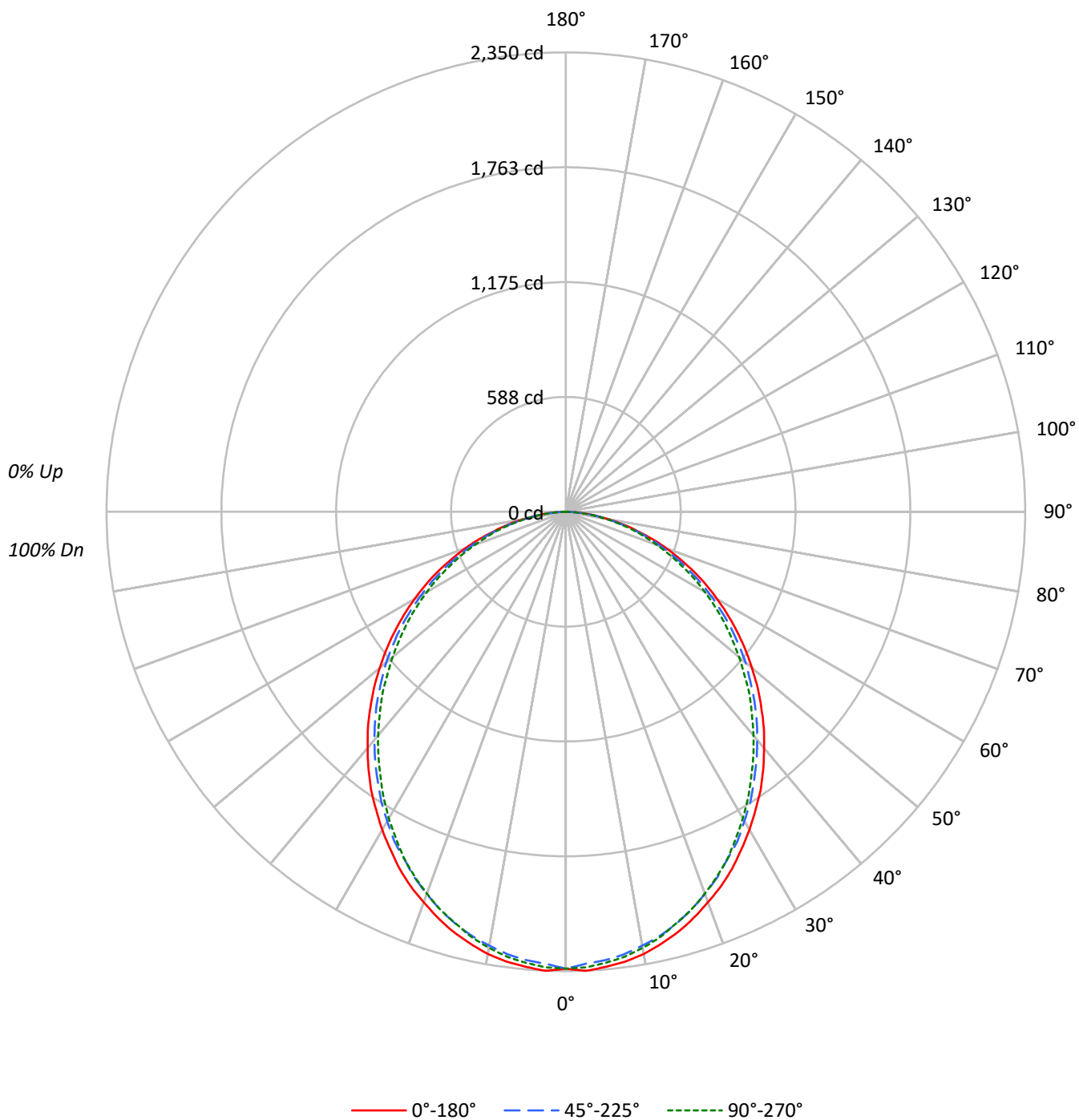
Lumens per Lamp: N/A
Luminaire Lumens: 5945.9 lumens
Efficiency: N/A
Efficacy: 100.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

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

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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
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°	1738	1738	1738
5°	1744	1719	1729
10°	1734	1702	1710
15°	1712	1680	1678
20°	1682	1647	1645
25°	1652	1606	1606
30°	1613	1569	1555
35°	1577	1524	1501
40°	1531	1479	1451
45°	1486	1434	1399
50°	1437	1388	1339
55°	1387	1334	1285
60°	1330	1270	1223
65°	1269	1206	1151
70°	1192	1128	1075
75°	1084	1039	1014
80°	963	933	885
85°	785	748	671

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1486 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	220.0	3.7
10°-20°	618.9	10.4
20°-30°	909.5	15.3
30°-40°	1056.3	17.8
40°-50°	1055.0	17.7
50°-60°	919.9	15.5
60°-70°	680.0	11.4
70°-80°	384.8	6.5
80°-90°	101.5	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°	1748.3	29.4
0°-40°	2804.6	47.2
0°-60°	4779.6	80.4
0°-90°	5945.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5945.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2337	2337	2337	2337	2337	
5°	2337	2328	2303	2321	2317	222
15°	2225	2211	2182	2191	2180	627
25°	2013	1996	1957	1962	1957	926
35°	1737	1715	1679	1665	1654	1085
45°	1414	1398	1364	1339	1330	1091
55°	1070	1056	1029	1002	991	956
65°	721	708	686	665	654	713
75°	377	373	362	348	353	403
85°	92	90	88	81	79	108
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2336.9	2336.9	2336.9	2336.9	2336.9
2.5°	2350.5	2339.3	2314.5	2336.9	2332.6
5°	2336.9	2328.1	2303.3	2321.2	2316.9
7.5°	2321.2	2307.9	2283.1	2301.2	2296.7
10°	2296.7	2281.0	2254.0	2271.9	2265.2
12.5°	2262.9	2249.4	2222.5	2233.7	2229.2
15°	2224.6	2211.3	2182.0	2191.1	2179.9
17.5°	2177.5	2164.2	2134.8	2145.9	2134.8
20°	2125.7	2112.4	2080.9	2087.6	2078.8
22.5°	2074.3	2054.0	2024.6	2024.6	2020.1
25°	2013.4	1995.6	1957.4	1961.7	1957.4
27.5°	1945.9	1930.2	1901.1	1894.5	1883.3
30°	1878.8	1860.6	1827.0	1820.3	1811.2
32.5°	1806.7	1793.4	1757.4	1743.7	1734.7
35°	1737.1	1714.7	1678.7	1665.1	1653.9
37.5°	1658.5	1638.1	1602.2	1586.4	1575.2
40°	1577.6	1559.5	1523.5	1503.5	1494.4
42.5°	1498.9	1480.8	1445.0	1422.4	1409.0
45°	1413.6	1397.8	1364.0	1339.4	1330.3
47.5°	1330.3	1314.6	1278.7	1253.9	1240.4
50°	1242.6	1231.4	1200.0	1168.5	1157.3
52.5°	1157.3	1141.5	1112.4	1087.7	1072.0
55°	1069.8	1056.2	1029.2	1002.3	991.1
57.5°	982.1	970.9	941.5	914.6	905.5
60°	894.3	885.5	854.1	829.2	822.5
62.5°	808.9	793.2	770.8	748.3	739.3
65°	721.4	707.9	685.5	665.2	654.0
67.5°	631.5	620.1	600.1	584.4	575.3
70°	548.3	539.3	519.0	503.3	494.5
72.5°	463.0	454.0	442.7	427.0	420.3
75°	377.4	373.2	361.7	348.3	352.9
77.5°	301.1	292.1	287.5	280.9	274.2
80°	224.8	222.4	217.9	211.2	206.7
82.5°	152.9	152.9	150.7	141.6	141.6
85°	92.0	89.9	87.7	80.8	78.7
87.5°	40.5	36.0	31.4	24.8	22.4
90°	0.0	0.0	0.0	0.0	0.0

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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	13.20	14.81	13.57	15.13	15.44	12.76	14.37	13.12	14.68	15.00
	3H	14.95	16.41	15.33	16.73	17.09	14.46	15.92	14.84	16.24	16.60
	4H	15.60	16.97	16.00	17.32	17.69	15.10	16.47	15.50	16.82	17.20
	6H	16.07	17.34	16.48	17.70	18.09	15.57	16.84	15.98	17.20	17.59
	8H	16.21	17.42	16.64	17.81	18.21	15.71	16.92	16.13	17.31	17.71
	12H	16.30	17.46	16.73	17.84	18.27	15.79	16.95	16.22	17.33	17.76
4H	2H	13.76	15.13	14.16	15.48	15.86	13.41	14.78	13.81	15.13	15.50
	3H	15.74	16.88	16.15	17.28	17.68	15.33	16.48	15.74	16.88	17.28
	4H	16.51	17.55	16.95	17.96	18.40	16.09	17.13	16.52	17.54	17.98
	6H	17.11	18.02	17.57	18.46	18.91	16.68	17.58	17.13	18.02	18.48
	8H	17.30	18.15	17.76	18.59	19.05	16.86	17.71	17.32	18.15	18.62
	12H	17.43	18.19	17.91	18.67	19.14	16.98	17.74	17.46	18.22	18.69
8H	4H	16.79	17.63	17.25	18.08	18.54	16.41	17.26	16.87	17.70	18.17
	6H	17.50	18.21	18.00	18.69	19.17	17.12	17.82	17.61	18.31	18.79
	8H	17.76	18.39	18.27	18.90	19.39	17.37	18.00	17.88	18.51	18.99
	12H	17.96	18.52	18.47	19.01	19.57	17.55	18.11	18.05	18.60	19.16
12H	4H	16.81	17.57	17.29	18.05	18.52	16.45	17.21	16.93	17.68	18.15
	6H	17.55	18.18	18.06	18.69	19.17	17.18	17.81	17.69	18.32	18.80
	8H	17.86	18.42	18.37	18.91	19.47	17.48	18.04	17.99	18.53	19.09