

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: P930360

Luminaire Tested: DFN2DS-HX4F0-090DS940-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930360
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-HX4F0-090DS940-RLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

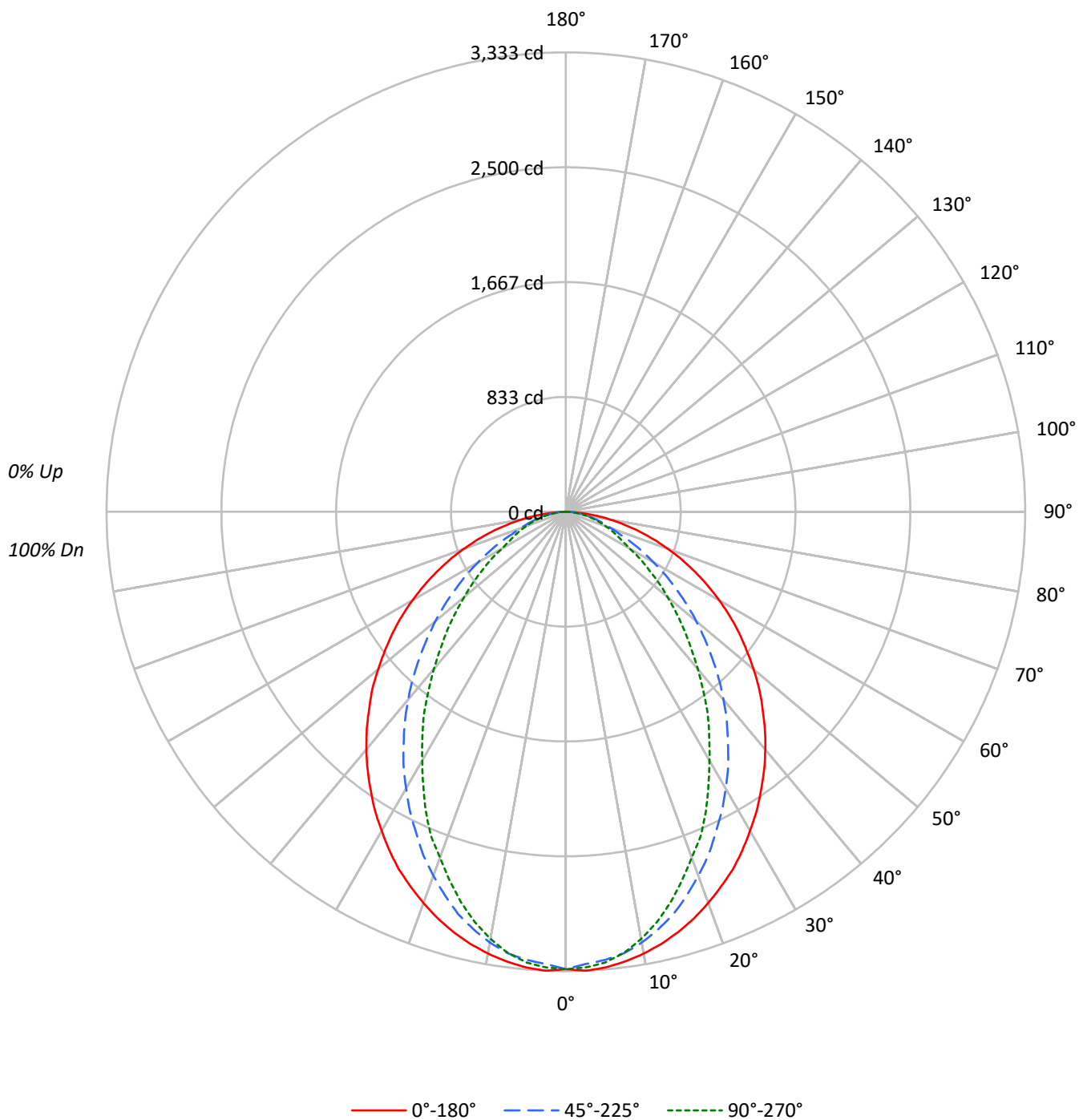
Lumens per Lamp: N/A
Luminaire Lumens: 6823.8 lumens
Efficiency: N/A
Efficacy: 73.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 93.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P930360

CATALOG NUMBER: DFN2DS-HX4F0-090DS940-RLL

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	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86		
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74		
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	64		
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	55		
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49		
6	74	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	43		
7	68	56	47	42	67	55	47	42	53	46	41	52	46	41	51	45	41	39		
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35		
9	60	47	39	34	59	47	39	34	46	39	34	44	38	34	44	38	34	32		
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2467	2467	2467
5°	2477	2436	2450
10°	2458	2396	2376
15°	2429	2325	2258
20°	2390	2224	2112
25°	2350	2109	1971
30°	2295	1990	1789
35°	2241	1862	1630
40°	2186	1728	1446
45°	2122	1579	1279
50°	2056	1428	1115
55°	1989	1265	958
60°	1911	1094	795
65°	1823	919	724
70°	1717	757	665
75°	1587	690	621
80°	1401	617	566
85°	1101	486	486

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2122 cd/sqm

TEST NUMBER: P930360

CATALOG NUMBER: DFN2DS-HX4F0-090DS940-RLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	311.0	4.6
10°-20°	853.7	12.5
20°-30°	1198.5	17.6
30°-40°	1306.5	19.1
40°-50°	1200.8	17.6
50°-60°	943.0	13.8
60°-70°	613.8	9.0
70°-80°	316.0	4.6
80°-90°	80.7	1.2
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°	2363.1	34.6
0°-40°	3669.6	53.8
0°-60°	5813.4	85.2
0°-90°	6823.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6823.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3318	3318	3318	3318	3318	
5°	3318	3303	3264	3291	3282	315
15°	3156	3123	3021	2964	2934	889
25°	2865	2768	2570	2447	2402	1317
35°	2468	2315	2051	1862	1796	1545
45°	2018	1817	1501	1288	1216	1558
55°	1534	1300	976	796	739	1371
65°	1036	793	522	420	411	1027
75°	552	342	240	219	216	584
85°	129	66	57	57	57	155
90°	0	0	0	0	0	

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CATALOG NUMBER: DFN2DS-HX4F0-090DS940-RLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3318.0	3318.0	3318.0	3318.0	3318.0
2.5°	3333.0	3318.0	3284.8	3315.1	3309.1
5°	3318.0	3303.0	3263.8	3290.9	3281.9
7.5°	3290.9	3273.0	3231.0	3242.8	3227.8
10°	3254.9	3233.9	3174.0	3164.7	3146.9
12.5°	3210.0	3182.9	3101.7	3083.8	3050.6
15°	3155.8	3122.7	3020.8	2963.7	2933.8
17.5°	3092.7	3044.7	2918.4	2852.5	2804.4
20°	3020.8	2960.5	2810.4	2735.6	2669.3
22.5°	2942.7	2873.6	2699.3	2597.3	2552.5
25°	2864.7	2768.4	2570.3	2447.3	2402.1
27.5°	2771.6	2669.3	2450.1	2309.0	2239.9
30°	2672.5	2558.2	2318.0	2165.1	2083.8
32.5°	2576.3	2438.0	2192.1	2011.8	1936.6
35°	2468.3	2315.1	2051.0	1861.8	1795.5
37.5°	2363.2	2197.9	1918.8	1711.4	1636.6
40°	2252.0	2072.0	1780.5	1567.4	1489.4
42.5°	2137.9	1945.9	1642.5	1420.2	1345.3
45°	2017.9	1816.6	1501.4	1288.0	1216.0
47.5°	1903.8	1690.7	1366.4	1152.9	1087.0
50°	1777.7	1564.5	1234.2	1026.8	964.0
52.5°	1654.4	1429.2	1108.0	909.8	852.8
55°	1534.2	1300.1	975.8	795.8	738.8
57.5°	1411.3	1171.1	858.9	690.7	642.6
60°	1285.1	1044.9	735.6	582.7	534.6
62.5°	1162.2	922.0	630.5	486.5	462.6
65°	1036.0	792.6	522.4	420.5	411.3
67.5°	915.9	672.5	420.5	369.2	360.3
70°	789.8	555.6	348.2	318.3	306.1
72.5°	669.6	447.2	291.1	267.2	261.3
75°	552.4	342.2	240.2	219.2	216.3
77.5°	435.5	243.1	189.2	177.2	171.1
80°	327.2	174.3	144.0	132.2	132.2
82.5°	228.1	117.2	99.1	93.0	93.0
85°	129.0	65.9	57.0	57.0	57.0
87.5°	48.1	23.9	23.9	21.1	21.1
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	14.37	15.89	14.74	16.21	16.52	10.33	11.85	10.70	12.17	12.48
	3H	16.14	17.50	16.52	17.83	18.19	11.60	12.96	11.98	13.29	13.65
	4H	16.80	18.08	17.20	18.43	18.81	12.10	13.38	12.50	13.73	14.11
	6H	17.29	18.48	17.71	18.84	19.23	12.48	13.66	12.89	14.03	14.42
	8H	17.46	18.58	17.88	18.97	19.38	12.61	13.73	13.03	14.12	14.52
	12H	17.56	18.64	17.99	19.02	19.45	12.69	13.76	13.12	14.15	14.58
4H	2H	14.48	15.76	14.88	16.11	16.48	11.03	12.31	11.43	12.66	13.04
	3H	16.41	17.47	16.82	17.87	18.27	12.47	13.53	12.88	13.93	14.34
	4H	17.16	18.12	17.59	18.53	18.97	13.07	14.03	13.50	14.44	14.88
	6H	17.75	18.58	18.21	19.03	19.49	13.56	14.39	14.02	14.83	15.29
	8H	17.97	18.74	18.43	19.19	19.65	13.72	14.50	14.18	14.94	15.41
	12H	18.12	18.81	18.60	19.29	19.76	13.84	14.53	14.32	15.01	15.48
8H	4H	17.18	17.96	17.65	18.40	18.87	13.42	14.20	13.89	14.65	15.11
	6H	17.82	18.46	18.32	18.95	19.43	14.01	14.65	14.51	15.15	15.62
	8H	18.07	18.65	18.58	19.16	19.65	14.23	14.81	14.75	15.32	15.81
	12H	18.28	18.78	18.78	19.28	19.84	14.41	14.92	14.92	15.41	15.98
12H	4H	17.17	17.86	17.65	18.34	18.81	13.47	14.16	13.95	14.64	15.11
	6H	17.80	18.38	18.32	18.89	19.38	14.07	14.65	14.59	15.16	15.65
	8H	18.09	18.60	18.60	19.09	19.65	14.35	14.86	14.86	15.35	15.91