

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: P930413

Luminaire Tested: DFN2DS-HX4F0-120DS940-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P930413
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-HX4F0-120DS940-FLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

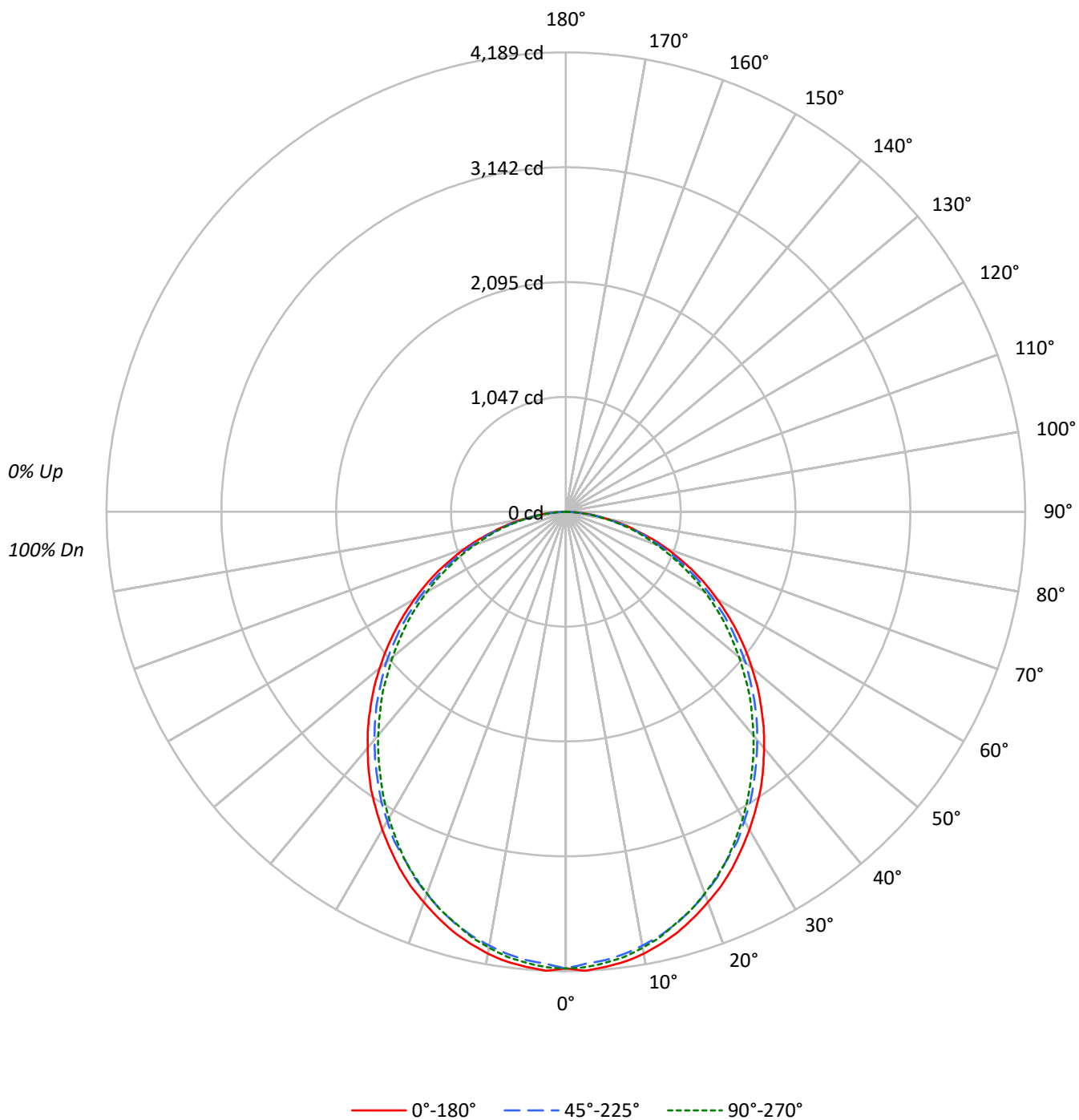
Lumens per Lamp: N/A
Luminaire Lumens: 10597.0 lumens
Efficiency: N/A
Efficacy: 80.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 4.09' x L: 3.54' x H: 0')
CIE Type: Direct

Input Watts (W): 131
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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°	3097	3097	3097
5°	3109	3064	3082
10°	3091	3033	3048
15°	3052	2994	2991
20°	2998	2935	2932
25°	2944	2862	2862
30°	2875	2796	2772
35°	2810	2716	2676
40°	2729	2636	2585
45°	2649	2556	2493
50°	2562	2474	2386
55°	2472	2378	2290
60°	2370	2263	2180
65°	2262	2149	2051
70°	2125	2011	1916
75°	1933	1852	1807
80°	1716	1663	1577
85°	1399	1334	1196

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2649 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	392.0	3.7
10°-20°	1103.0	10.4
20°-30°	1620.9	15.3
30°-40°	1882.6	17.8
40°-50°	1880.3	17.7
50°-60°	1639.5	15.5
60°-70°	1212.0	11.4
70°-80°	685.7	6.5
80°-90°	181.0	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°	3115.9	29.4
0°-40°	4998.5	47.2
0°-60°	8518.3	80.4
0°-90°	10597.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10597.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4165	4165	4165	4165	4165	
5°	4165	4149	4105	4137	4129	395
15°	3965	3941	3889	3905	3885	1117
25°	3588	3556	3488	3496	3488	1651
35°	3096	3056	2992	2968	2948	1933
45°	2519	2491	2431	2387	2371	1944
55°	1907	1882	1834	1786	1766	1705
65°	1286	1262	1222	1186	1166	1271
75°	673	665	645	621	629	718
85°	164	160	156	144	140	193
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4165.0	4165.0	4165.0	4165.0	4165.0
2.5°	4189.2	4169.2	4125.1	4165.0	4157.3
5°	4165.0	4149.2	4105.1	4136.9	4129.2
7.5°	4136.9	4113.1	4068.9	4101.2	4093.2
10°	4093.2	4065.1	4017.1	4049.0	4037.1
12.5°	4032.8	4009.0	3961.0	3981.0	3972.9
15°	3964.9	3941.0	3888.8	3904.9	3884.9
17.5°	3880.7	3856.9	3804.6	3824.6	3804.6
20°	3788.5	3764.7	3708.7	3720.5	3704.8
22.5°	3696.7	3660.6	3608.3	3608.3	3600.3
25°	3588.3	3556.5	3488.5	3496.2	3488.5
27.5°	3468.1	3440.1	3388.3	3376.3	3356.4
30°	3348.3	3316.0	3256.1	3244.2	3228.1
32.5°	3219.9	3196.2	3132.0	3107.8	3091.7
35°	3095.9	3056.0	2991.8	2967.6	2947.6
37.5°	2955.6	2919.6	2855.4	2827.4	2807.4
40°	2811.7	2779.4	2715.2	2679.5	2663.3
42.5°	2671.5	2639.2	2575.4	2535.1	2511.2
45°	2519.3	2491.3	2430.9	2387.2	2371.0
47.5°	2371.0	2342.9	2278.8	2234.6	2210.8
50°	2214.7	2194.7	2138.6	2082.5	2062.5
52.5°	2062.5	2034.5	1982.6	1938.4	1910.4
55°	1906.6	1882.4	1834.3	1786.3	1766.3
57.5°	1750.2	1730.2	1677.9	1630.0	1613.8
60°	1593.8	1578.1	1522.0	1477.9	1465.9
62.5°	1441.7	1413.6	1373.8	1333.8	1317.7
65°	1285.8	1261.6	1221.6	1185.5	1165.6
67.5°	1125.6	1105.2	1069.5	1041.5	1025.4
70°	977.3	961.1	925.0	897.0	881.3
72.5°	825.2	809.0	789.1	761.1	749.1
75°	672.7	665.0	644.6	620.8	628.9
77.5°	536.6	520.5	512.5	500.5	488.6
80°	400.7	396.4	388.4	376.5	368.4
82.5°	272.3	272.3	268.6	252.4	252.4
85°	164.0	160.2	156.4	144.1	140.2
87.5°	72.3	64.1	56.1	44.2	40.0
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	15.21	16.82	15.57	17.13	17.45	14.77	16.38	15.13	16.69	17.00
	3H	16.96	18.41	17.34	18.74	19.10	16.47	17.92	16.85	18.25	18.61
	4H	17.61	18.98	18.00	19.32	19.70	17.11	18.48	17.51	18.83	19.20
	6H	18.08	19.34	18.49	19.71	20.10	17.57	18.84	17.99	19.21	19.60
	8H	18.22	19.43	18.64	19.82	20.22	17.72	18.93	18.14	19.32	19.71
	12H	18.31	19.47	18.74	19.85	20.28	17.80	18.96	18.23	19.34	19.77
4H	2H	15.77	17.14	16.17	17.49	17.86	15.42	16.79	15.82	17.13	17.51
	3H	17.75	18.89	18.16	19.29	19.69	17.34	18.49	17.75	18.88	19.28
	4H	18.52	19.56	18.95	19.97	20.41	18.10	19.13	18.53	19.55	19.98
	6H	19.12	20.02	19.57	20.46	20.92	18.69	19.59	19.14	20.03	20.49
	8H	19.31	20.15	19.77	20.60	21.06	18.87	19.72	19.33	20.16	20.62
	12H	19.44	20.20	19.92	20.68	21.14	18.99	19.75	19.47	20.22	20.69
8H	4H	18.80	19.64	19.26	20.08	20.55	18.42	19.27	18.88	19.71	20.18
	6H	19.51	20.21	20.00	20.70	21.18	19.13	19.83	19.62	20.32	20.80
	8H	19.77	20.40	20.28	20.91	21.39	19.38	20.01	19.89	20.51	21.00
	12H	19.97	20.53	20.48	21.02	21.58	19.56	20.11	20.06	20.60	21.17
12H	4H	18.82	19.58	19.30	20.06	20.53	18.46	19.22	18.94	19.69	20.16
	6H	19.55	20.19	20.06	20.69	21.18	19.19	19.82	19.70	20.33	20.81
	8H	19.87	20.43	20.38	20.92	21.48	19.49	20.05	20.00	20.54	21.10