

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: P931484

Luminaire Tested: DFN2DS-TR4F0-060DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931484
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-TR4F0-060DS840-RLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

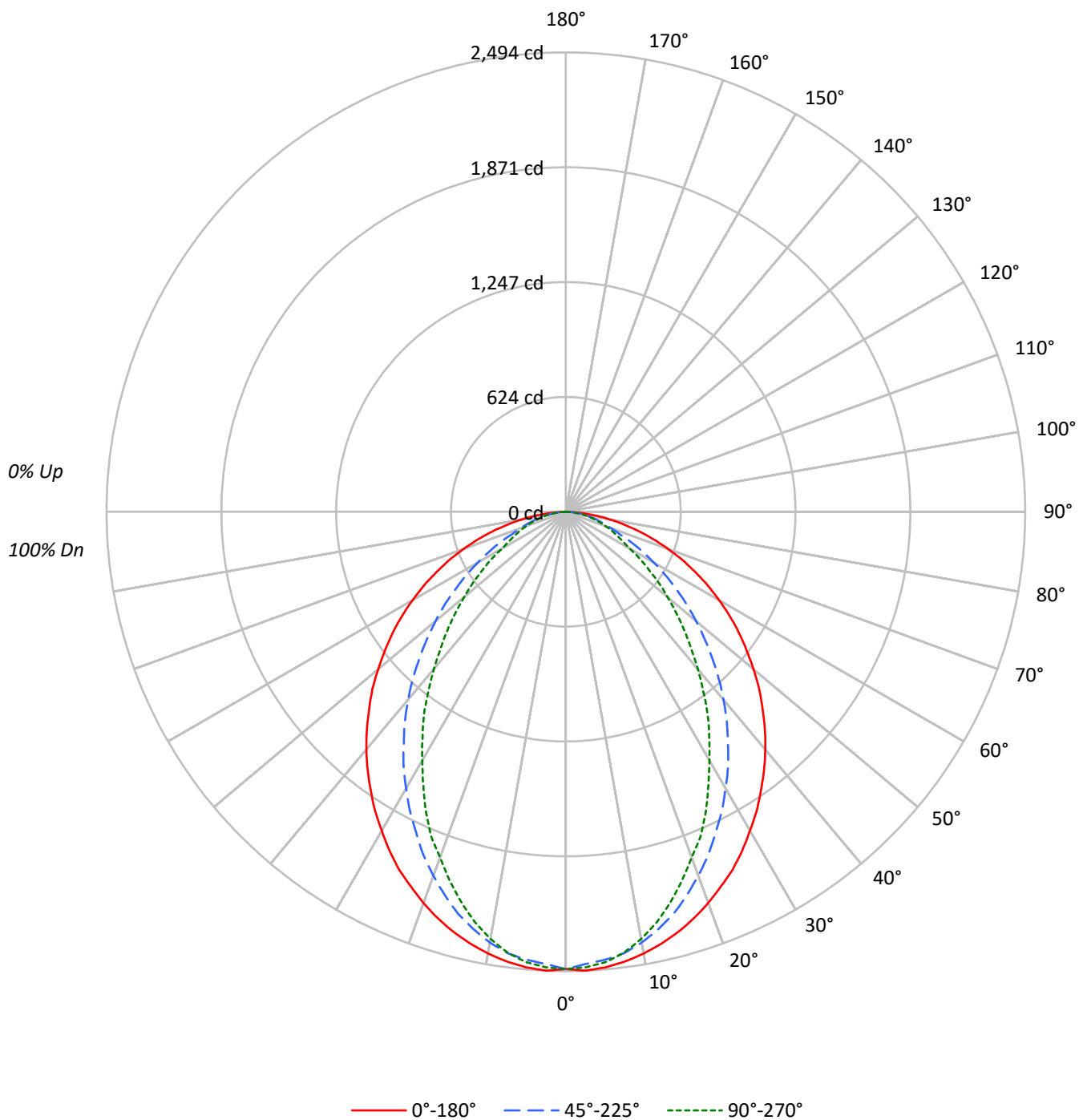
Lumens per Lamp: N/A
Luminaire Lumens: 5105.1 lumens
Efficiency: N/A
Efficacy: 85.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.96' x L: 3.43' x H: 0')
CIE Type: Direct

Input Watts (W): 59.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P931484

CATALOG NUMBER: DFN2DS-TR4F0-060DS840-RLL

Luminous Intensity Polar Plot



TEST NUMBER: P931484

CATALOG NUMBER: DFN2DS-TR4F0-060DS840-RLL

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1972	1972	1972
5°	1980	1947	1958
10°	1964	1916	1899
15°	1942	1859	1805
20°	1911	1778	1688
25°	1879	1686	1575
30°	1834	1591	1430
35°	1791	1488	1303
40°	1747	1381	1155
45°	1696	1262	1022
50°	1644	1141	891
55°	1590	1011	766
60°	1528	874	635
65°	1457	735	578
70°	1372	605	532
75°	1269	552	497
80°	1119	493	452
85°	880	388	388

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1696 cd/sqm

TEST NUMBER: P931484

CATALOG NUMBER: DFN2DS-TR4F0-060DS840-RLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.6	4.6
10°-20°	638.6	12.5
20°-30°	896.6	17.6
30°-40°	977.4	19.1
40°-50°	898.3	17.6
50°-60°	705.5	13.8
60°-70°	459.2	9.0
70°-80°	236.4	4.6
80°-90°	60.3	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°	1767.9	34.6
0°-40°	2745.3	53.8
0°-60°	4349.1	85.2
0°-90°	5105.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5105.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2482	2482	2482	2482	2482	
5°	2482	2471	2442	2462	2455	235
15°	2361	2336	2260	2217	2195	665
25°	2143	2071	1923	1831	1797	986
35°	1847	1732	1534	1393	1343	1156
45°	1510	1359	1123	964	910	1166
55°	1148	973	730	595	553	1026
65°	775	593	391	315	308	768
75°	413	256	180	164	162	437
85°	96	49	43	43	43	116
90°	0	0	0	0	0	

TEST NUMBER: P931484

CATALOG NUMBER: DFN2DS-TR4F0-060DS840-RLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2482.3	2482.3	2482.3	2482.3	2482.3
2.5°	2493.5	2482.3	2457.5	2480.1	2475.6
5°	2482.3	2471.1	2441.7	2462.1	2455.4
7.5°	2462.1	2448.6	2417.2	2426.0	2414.8
10°	2435.0	2419.3	2374.6	2367.7	2354.3
12.5°	2401.5	2381.2	2320.4	2307.1	2282.3
15°	2361.0	2336.1	2259.9	2217.2	2194.8
17.5°	2313.8	2277.8	2183.4	2134.0	2098.1
20°	2259.9	2214.8	2102.6	2046.5	1997.0
22.5°	2201.5	2149.7	2019.4	1943.1	1909.5
25°	2143.1	2071.2	1922.9	1830.9	1797.1
27.5°	2073.6	1997.0	1833.0	1727.4	1675.8
30°	1999.4	1913.8	1734.1	1619.7	1559.0
32.5°	1927.4	1824.0	1640.0	1505.1	1448.8
35°	1846.6	1732.0	1534.4	1392.8	1343.2
37.5°	1768.0	1644.2	1435.5	1280.4	1224.3
40°	1684.8	1550.1	1332.0	1172.6	1114.2
42.5°	1599.5	1455.8	1228.8	1062.5	1006.5
45°	1509.6	1359.0	1123.3	963.6	909.7
47.5°	1424.3	1264.9	1022.2	862.6	813.2
50°	1329.9	1170.5	923.3	768.2	721.2
52.5°	1237.6	1069.2	828.9	680.7	638.0
55°	1147.8	972.7	730.0	595.4	552.7
57.5°	1055.9	876.1	642.5	516.7	480.7
60°	961.5	781.8	550.3	435.9	399.9
62.5°	869.5	689.8	471.7	364.0	346.0
65°	775.1	593.0	390.9	314.6	307.7
67.5°	685.2	503.1	314.6	276.3	269.6
70°	590.8	415.6	260.5	238.1	229.0
72.5°	501.0	334.6	217.8	200.0	195.4
75°	413.3	256.0	179.7	164.0	161.9
77.5°	325.8	181.9	141.5	132.5	128.0
80°	244.7	130.3	107.7	98.9	98.9
82.5°	170.7	87.7	74.1	69.6	69.6
85°	96.5	49.3	42.6	42.6	42.6
87.5°	36.0	17.9	17.9	15.7	15.7
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P931484

CATALOG NUMBER: DFN2DS-TR4F0-060DS840-RLL

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	13.59	15.12	13.96	15.43	15.74	9.55	11.08	9.92	11.39	11.70
	3H	15.36	16.72	15.74	17.05	17.41	10.82	12.19	11.20	12.51	12.87
	4H	16.03	17.31	16.43	17.65	18.03	11.32	12.60	11.72	12.95	13.33
	6H	16.51	17.70	16.93	18.06	18.46	11.70	12.89	12.11	13.25	13.64
	8H	16.68	17.81	17.11	18.20	18.60	11.83	12.95	12.25	13.34	13.74
	12H	16.78	17.86	17.21	18.24	18.67	11.91	12.99	12.34	13.37	13.80
4H	2H	13.70	14.98	14.10	15.33	15.71	10.25	11.53	10.65	11.88	12.26
	3H	15.63	16.69	16.04	17.09	17.49	11.69	12.76	12.10	13.16	13.56
	4H	16.38	17.34	16.81	17.75	18.19	12.29	13.25	12.73	13.66	14.10
	6H	16.97	17.80	17.43	18.25	18.71	12.78	13.61	13.24	14.06	14.52
	8H	17.19	17.96	17.65	18.41	18.88	12.94	13.72	13.41	14.16	14.63
	12H	17.34	18.03	17.82	18.51	18.98	13.06	13.75	13.54	14.23	14.70
8H	4H	16.40	17.18	16.87	17.63	18.09	12.65	13.42	13.11	13.87	14.34
	6H	17.04	17.68	17.54	18.18	18.65	13.23	13.88	13.73	14.37	14.84
	8H	17.29	17.87	17.81	18.38	18.87	13.45	14.03	13.97	14.54	15.03
	12H	17.50	18.01	18.01	18.50	19.06	13.63	14.14	14.14	14.63	15.20
12H	4H	16.39	17.08	16.87	17.56	18.03	12.69	13.38	13.17	13.86	14.33
	6H	17.02	17.60	17.54	18.11	18.60	13.30	13.87	13.81	14.38	14.87
	8H	17.31	17.82	17.82	18.31	18.87	13.57	14.08	14.08	14.57	15.14