

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: P913032

Luminaire Tested: DFN2DIP-TR4F0-120D080US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913032
REPORT IS A COMBINATION OF REPORTS P900458 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-120D080US850-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

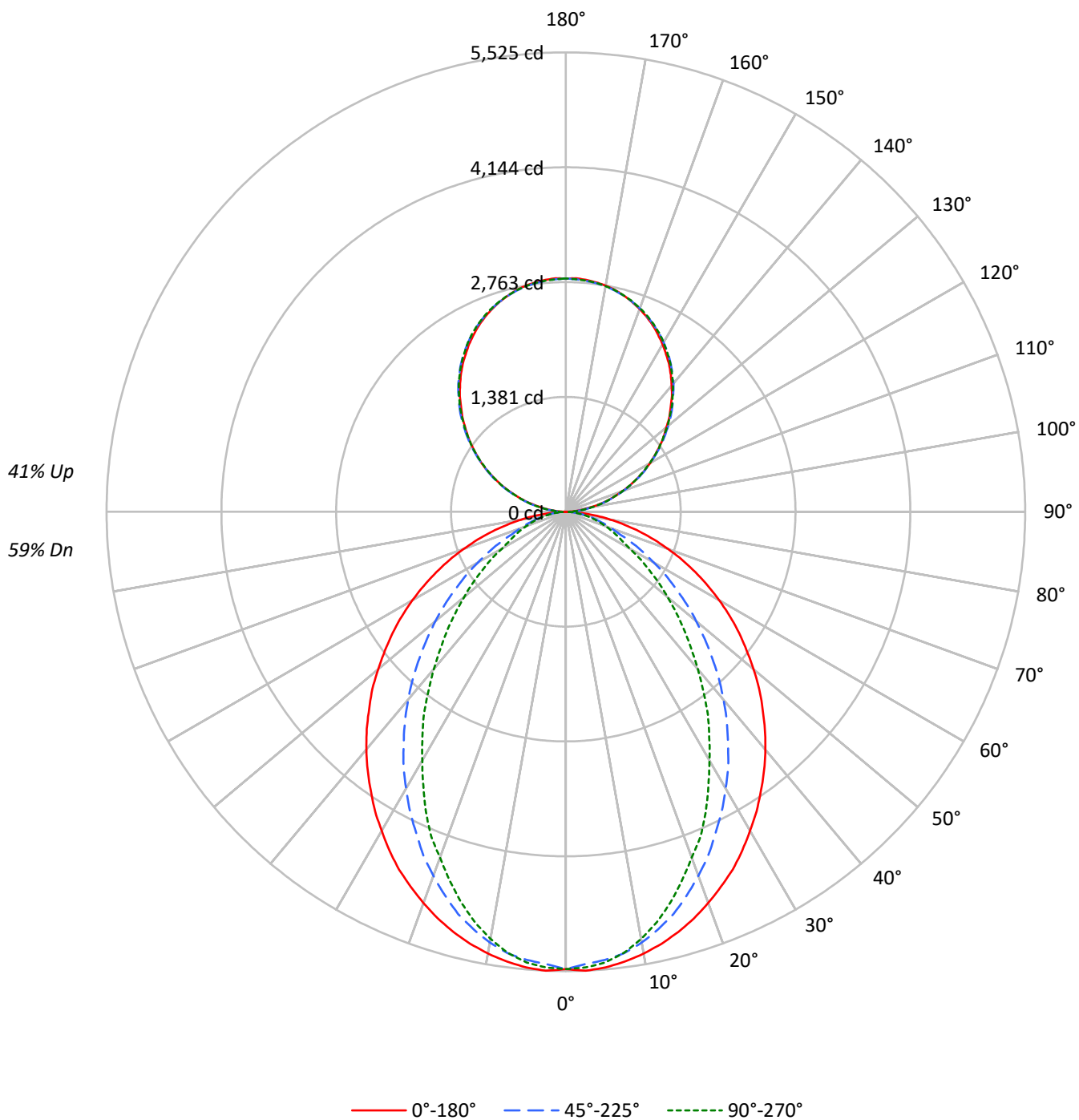
Lumens per Lamp: N/A
Luminaire Lumens: 19163.5 lumens
Efficiency: N/A
Efficacy: 103.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 184.8
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

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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	30	10
RCR																	
0	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4370	4370	4370
5°	4377	4300	4328
10°	4333	4216	4187
15°	4274	4076	3969
20°	4195	3884	3702
25°	4114	3669	3444
30°	4005	3448	3116
35°	3899	3211	2829
40°	3791	2965	2499
45°	3665	2693	2200
50°	3535	2418	1909
55°	3400	2124	1628
60°	3243	1816	1340
65°	3062	1504	1206
70°	2843	1212	1091
75°	2568	1069	992
80°	2170	896	860
85°	1513	598	646

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3665 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	515.5	2.7
10°-20°	1415.1	7.4
20°-30°	1986.8	10.4
30°-40°	2165.7	11.3
40°-50°	1990.5	10.4
50°-60°	1563.2	8.2
60°-70°	1017.5	5.3
70°-80°	523.8	2.7
80°-90°	141.7	0.7
90°-100°	173.6	0.9
100°-110°	551.7	2.9
110°-120°	944.1	4.9
120°-130°	1241.6	6.5
130°-140°	1393.7	7.3
140°-150°	1366.6	7.1
150°-160°	1146.4	6.0
160°-170°	760.3	4.0
170°-180°	265.7	1.4
0°-30°	3917.3	20.4
0°-40°	6083.0	31.7
0°-60°	9636.8	50.3
0°-90°	11319.8	59.1
90°-120°	1669.4	8.7
90°-150°	5671.3	29.6
90°-180°	7844.0	40.9
0°-180°	19163.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5500	5500	5500	5500	5500	
5°	5500	5475	5410	5455	5440	522
15°	5231	5176	5008	4913	4863	1474
25°	4749	4589	4261	4057	3982	2184
35°	4092	3838	3400	3086	2976	2561
45°	3345	3011	2489	2135	2016	2583
55°	2543	2155	1618	1319	1225	2273
65°	1717	1314	866	697	682	1703
75°	916	567	398	363	358	969
85°	214	109	94	94	94	246
90°	3	30	83	78	80	19
95°	124	147	151	151	147	137
105°	509	516	521	525	525	537
115°	947	961	957	954	947	937
125°	1378	1399	1392	1385	1382	1231
135°	1782	1809	1814	1811	1804	1378
145°	2164	2181	2194	2197	2188	1352
155°	2474	2481	2489	2500	2493	1139
165°	2692	2689	2689	2706	2694	759
175°	2801	2794	2789	2806	2792	266
180°	2806	2806	2806	2806	2806	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5500.2	5500.2	5500.2	5500.2	5500.2
2.5°	5525.0	5500.2	5445.3	5495.4	5485.3
5°	5500.2	5475.4	5410.4	5455.3	5440.5
7.5°	5455.3	5425.7	5356.0	5375.5	5350.7
10°	5395.6	5360.8	5261.4	5246.1	5216.6
12.5°	5321.1	5276.3	5141.5	5112.0	5057.2
15°	5231.4	5176.5	5007.5	4912.9	4863.3
17.5°	5126.8	5047.1	4837.9	4728.7	4648.9
20°	5007.5	4907.7	4658.9	4534.8	4424.9
22.5°	4878.0	4763.5	4474.6	4305.6	4231.2
25°	4748.7	4589.2	4260.7	4056.8	3981.9
27.5°	4594.5	4424.9	4061.6	3827.7	3713.0
30°	4430.2	4240.7	3842.5	3588.9	3454.3
32.5°	4270.8	4041.5	3633.9	3335.0	3210.3
35°	4091.8	3837.7	3399.9	3086.2	2976.3
37.5°	3917.4	3643.4	3180.7	2836.9	2712.8
40°	3733.1	3434.8	2951.6	2598.3	2468.9
42.5°	3544.0	3225.6	2722.9	2354.3	2230.2
45°	3345.0	3011.3	2488.9	2135.2	2015.7
47.5°	3155.9	2802.7	2265.0	1911.3	1801.9
50°	2946.8	2593.5	2045.9	1702.1	1598.1
52.5°	2742.4	2369.0	1836.7	1508.2	1413.8
55°	2543.4	2155.2	1617.6	1319.2	1224.7
57.5°	2339.4	1941.3	1423.7	1144.9	1065.2
60°	2130.4	1732.1	1219.3	965.9	886.2
62.5°	1926.6	1528.3	1045.1	806.5	766.8
65°	1717.4	1313.9	866.1	697.1	681.8
67.5°	1518.3	1114.8	697.1	612.1	597.3
70°	1309.2	921.0	577.2	527.6	507.5
72.5°	1110.1	741.5	482.6	443.0	433.1
75°	915.7	567.1	398.2	363.3	358.5
77.5°	722.0	402.9	313.7	293.7	283.6
80°	542.4	288.9	238.7	219.1	219.1
82.5°	378.2	194.3	164.2	154.2	154.2
85°	213.9	109.3	94.5	94.5	94.5
87.5°	79.7	39.6	39.6	34.8	34.8
90°	2.6	30.5	83.0	77.9	80.4
92.5°	52.5	71.1	73.6	76.1	76.1
95°	123.5	147.2	151.4	151.4	147.2
97.5°	205.6	227.6	236.9	236.9	236.9
100°	300.3	319.7	326.5	326.5	323.9
102.5°	400.1	414.5	423.7	426.3	423.7
105°	509.3	516.0	521.1	525.3	525.3
107.5°	617.5	627.7	627.7	629.4	617.5
110°	722.4	735.9	735.9	735.9	729.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	835.7	850.2	847.6	840.8	835.7
115°	947.4	960.9	956.7	954.2	947.4
117.5°	1058.2	1076.8	1065.0	1058.2	1051.4
120°	1169.9	1188.5	1169.9	1169.9	1162.2
122.5°	1271.4	1295.1	1283.2	1276.5	1271.4
125°	1377.9	1399.1	1392.3	1384.7	1382.3
127.5°	1482.1	1508.2	1498.9	1488.8	1482.1
130°	1579.3	1609.7	1605.5	1600.5	1591.2
132.5°	1688.5	1712.1	1713.8	1702.0	1695.2
135°	1782.3	1808.6	1813.7	1811.1	1804.3
137.5°	1887.2	1908.4	1912.6	1910.9	1900.7
140°	1979.5	2000.5	2012.4	2012.4	2003.1
142.5°	2074.2	2095.3	2102.1	2104.7	2095.3
145°	2163.9	2180.7	2194.3	2196.8	2187.5
147.5°	2244.2	2265.4	2275.4	2279.8	2270.5
150°	2327.1	2341.4	2350.7	2358.4	2350.7
152.5°	2400.7	2415.1	2426.9	2436.3	2426.9
155°	2474.3	2481.1	2488.7	2500.5	2492.9
157.5°	2537.7	2542.8	2547.0	2563.9	2552.1
160°	2594.4	2599.5	2602.0	2616.4	2606.3
162.5°	2646.9	2646.9	2649.4	2665.5	2653.6
165°	2691.7	2689.1	2689.1	2706.1	2694.2
167.5°	2732.2	2724.7	2724.7	2741.6	2729.7
170°	2762.7	2756.0	2753.4	2770.4	2756.0
172.5°	2783.9	2777.2	2774.6	2791.5	2777.2
175°	2800.8	2794.0	2788.9	2805.9	2791.5
177.5°	2810.1	2803.3	2798.2	2812.6	2798.2
180°	2805.9	2805.9	2805.9	2805.9	2805.9

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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	13.07	13.98	13.95	14.88	16.02	9.04	9.96	9.93	10.85	11.99
	3H	14.75	15.57	15.65	16.48	17.64	10.24	11.05	11.14	11.96	13.13
	4H	15.37	16.14	16.28	17.05	18.22	10.70	11.46	11.61	12.38	13.55
	6H	15.79	16.50	16.71	17.42	18.61	11.02	11.73	11.94	12.65	13.83
	8H	15.92	16.59	16.85	17.53	18.72	11.11	11.79	12.04	12.72	13.91
	12H	15.99	16.63	16.92	17.56	18.77	11.16	11.80	12.10	12.73	13.94
4H	2H	13.10	13.87	14.01	14.78	15.96	9.65	10.42	10.57	11.33	12.51
	3H	14.94	15.57	15.86	16.52	17.71	11.01	11.65	11.93	12.59	13.78
	4H	15.63	16.21	16.57	17.15	18.37	11.56	12.14	12.50	13.08	14.29
	6H	16.15	16.65	17.10	17.61	18.83	11.98	12.49	12.93	13.45	14.66
	8H	16.33	16.79	17.28	17.75	18.98	12.12	12.58	13.07	13.54	14.77
	12H	16.43	16.85	17.40	17.82	19.05	12.18	12.61	13.16	13.58	14.81
8H	4H	15.60	16.07	16.56	17.03	18.26	11.85	12.31	12.80	13.27	14.50
	6H	16.17	16.56	17.15	17.56	18.78	12.37	12.75	13.35	13.75	14.98
	8H	16.39	16.73	17.38	17.72	18.96	12.56	12.90	13.55	13.89	15.13
	12H	16.53	16.83	17.52	17.81	19.11	12.68	12.98	13.67	13.96	15.26
12H	4H	15.56	15.98	16.53	16.96	18.19	11.85	12.28	12.82	13.25	14.48
	6H	16.15	16.49	17.14	17.48	18.72	12.42	12.76	13.40	13.75	14.99
	8H	16.37	16.67	17.36	17.65	18.95	12.63	12.93	13.62	13.91	15.21