

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: P909759

Luminaire Tested: DFN2DIP-TR2F0-040D020US840-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909759
REPORT IS A COMBINATION OF REPORTS P901746 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-040D020US840-RLLONL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

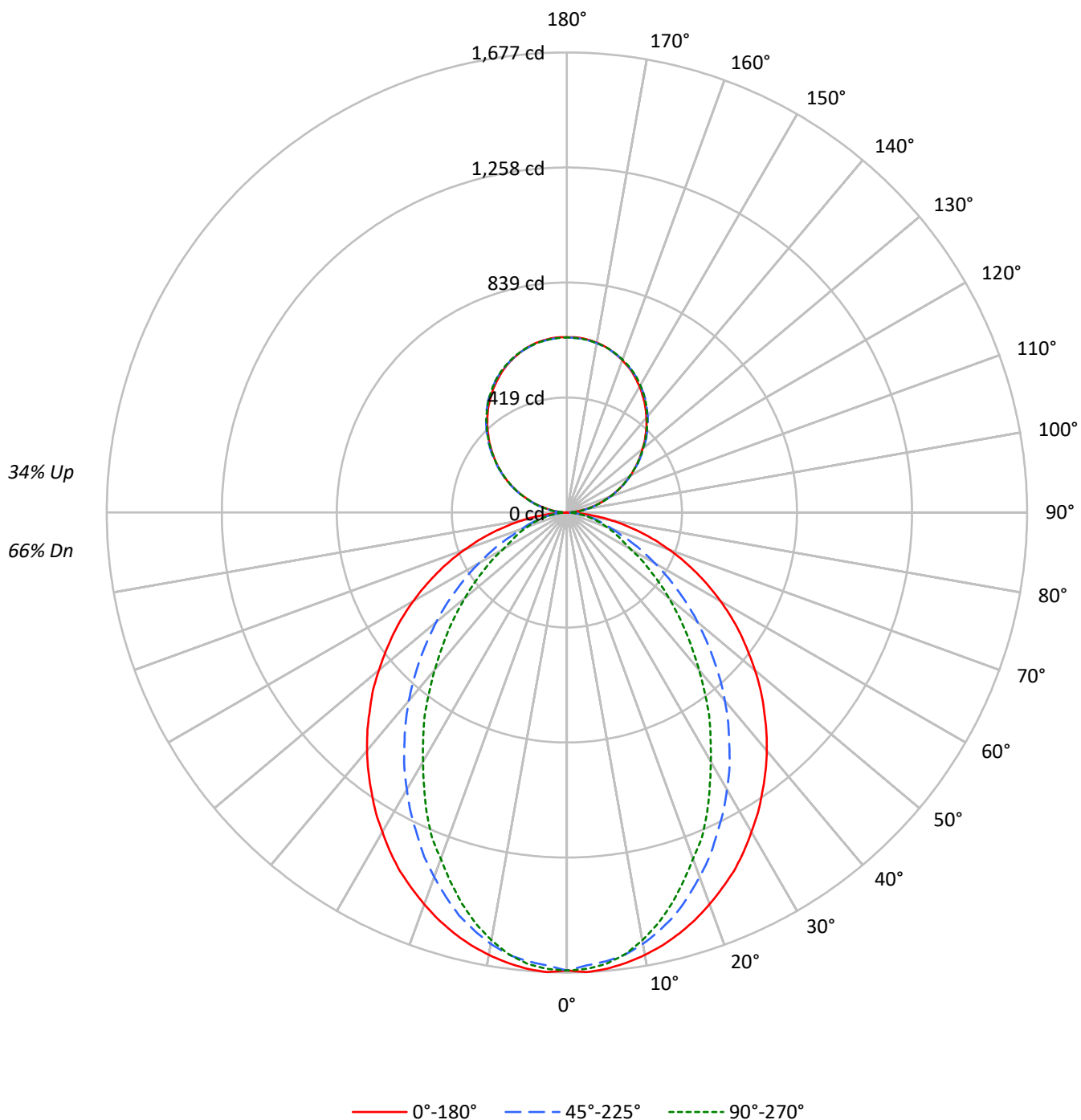
Lumens per Lamp: N/A
Luminaire Lumens: 5221.0 lumens
Efficiency: N/A
Efficacy: 101.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 51.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3724	3724	3724
5°	3724	3656	3682
10°	3682	3576	3556
15°	3625	3450	3365
20°	3553	3279	3132
25°	3479	3090	2908
30°	3381	2896	2626
35°	3284	2688	2378
40°	3186	2475	2096
45°	3072	2239	1840
50°	2954	2001	1590
55°	2831	1748	1351
60°	2687	1485	1106
65°	2522	1219	988
70°	2321	970	885
75°	2068	840	794
80°	1705	681	670
85°	1119	423	471

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3072 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.5	3.0
10°-20°	429.5	8.2
20°-30°	603.0	11.6
30°-40°	657.4	12.6
40°-50°	604.2	11.6
50°-60°	474.5	9.1
60°-70°	308.9	5.9
70°-80°	159.0	3.0
80°-90°	42.4	0.8
90°-100°	39.5	0.8
100°-110°	125.6	2.4
110°-120°	214.9	4.1
120°-130°	282.7	5.4
130°-140°	317.3	6.1
140°-150°	311.1	6.0
150°-160°	261.0	5.0
160°-170°	173.1	3.3
170°-180°	60.5	1.2
0°-30°	1189.0	22.8
0°-40°	1846.4	35.4
0°-60°	2925.1	56.0
0°-90°	3435.4	65.8
90°-120°	380.0	7.3
90°-150°	1291.1	24.7
90°-180°	1786.0	34.2
0°-180°	5221.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1670	1670	1670	1670	1670	
5°	1670	1662	1642	1656	1651	158
15°	1588	1571	1520	1491	1476	447
25°	1441	1393	1293	1231	1209	663
35°	1242	1165	1032	937	903	777
45°	1015	914	756	648	612	784
55°	772	654	491	400	372	690
65°	521	399	263	212	207	517
75°	278	172	121	110	109	294
85°	65	33	29	29	29	75
90°	1	7	19	18	18	5
95°	28	34	34	34	34	31
105°	116	117	119	120	120	122
115°	216	219	218	217	216	213
125°	314	318	317	315	315	280
135°	406	412	413	412	411	314
145°	493	496	500	500	498	308
155°	563	565	566	569	568	259
165°	613	612	612	616	613	173
175°	638	636	635	639	636	61
180°	639	639	639	639	639	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1669.5	1669.5	1669.5	1669.5	1669.5
2.5°	1677.1	1669.5	1652.8	1668.1	1665.0
5°	1669.5	1661.9	1642.2	1655.9	1651.4
7.5°	1655.9	1646.9	1625.8	1631.6	1624.2
10°	1637.8	1627.2	1597.0	1592.4	1583.5
12.5°	1615.2	1601.5	1560.6	1551.7	1535.0
15°	1587.9	1571.2	1519.9	1491.3	1476.2
17.5°	1556.2	1532.0	1468.4	1435.3	1411.1
20°	1519.9	1489.7	1414.1	1376.4	1343.1
22.5°	1480.7	1445.9	1358.2	1306.9	1284.3
25°	1441.4	1393.0	1293.2	1231.4	1208.6
27.5°	1394.6	1343.1	1232.8	1161.9	1127.0
30°	1344.7	1287.2	1166.3	1089.3	1048.5
32.5°	1296.4	1226.8	1103.0	1012.3	974.4
35°	1242.0	1164.9	1032.0	936.8	903.4
37.5°	1189.1	1105.9	965.4	861.1	823.4
40°	1133.2	1042.6	896.0	788.7	749.4
42.5°	1075.7	979.1	826.5	714.6	676.9
45°	1015.3	914.0	755.5	648.1	611.9
47.5°	958.0	850.7	687.5	580.2	546.9
50°	894.4	787.2	621.0	516.6	485.0
52.5°	832.4	719.1	557.5	457.8	429.1
55°	772.0	654.2	491.0	400.4	371.7
57.5°	710.1	589.3	432.1	347.5	323.4
60°	646.6	525.7	370.1	293.2	269.0
62.5°	584.8	463.9	317.2	244.8	232.8
65°	521.3	398.8	262.9	211.6	206.9
67.5°	460.9	338.4	211.6	185.8	181.3
70°	397.4	279.5	175.2	160.2	154.0
72.5°	337.0	225.1	146.5	134.5	131.5
75°	277.9	172.2	120.9	110.3	108.9
77.5°	219.1	122.3	95.2	89.2	86.0
80°	164.6	87.7	72.4	66.6	66.6
82.5°	114.8	59.0	49.9	46.8	46.8
85°	64.9	33.2	28.7	28.7	28.7
87.5°	24.2	12.0	12.0	10.6	10.6
90°	0.6	7.0	18.9	17.7	18.3
92.5°	11.9	16.2	16.8	17.4	17.4
95°	28.1	33.5	34.4	34.4	33.5
97.5°	46.8	51.8	53.9	53.9	53.9
100°	68.4	72.8	74.3	74.3	73.7
102.5°	91.1	94.3	96.4	97.0	96.4
105°	115.9	117.4	118.7	119.6	119.6
107.5°	140.6	142.9	142.9	143.3	140.6
110°	164.5	167.5	167.5	167.5	166.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	190.3	193.5	193.0	191.4	190.3
115°	215.7	218.7	217.8	217.2	215.7
117.5°	241.0	245.2	242.5	241.0	239.3
120°	266.3	270.5	266.3	266.3	264.6
122.5°	289.4	294.8	292.2	290.6	289.4
125°	313.7	318.5	317.0	315.3	314.7
127.5°	337.4	343.4	341.2	338.9	337.4
130°	359.5	366.5	365.5	364.4	362.2
132.5°	384.4	389.8	390.1	387.5	385.9
135°	405.8	411.7	412.8	412.3	410.7
137.5°	429.6	434.4	435.5	435.1	432.7
140°	450.6	455.4	458.2	458.2	456.1
142.5°	472.2	477.0	478.6	479.1	477.0
145°	492.6	496.4	499.6	500.1	498.0
147.5°	510.9	515.7	518.1	519.0	516.8
150°	529.8	533.0	535.1	536.8	535.1
152.5°	546.5	549.8	552.5	554.6	552.5
155°	563.3	564.8	566.5	569.3	567.5
157.5°	577.7	578.9	579.9	583.7	581.0
160°	590.7	591.8	592.4	595.6	593.3
162.5°	602.6	602.6	603.1	606.8	604.1
165°	612.8	612.2	612.2	616.0	613.4
167.5°	622.0	620.3	620.3	624.1	621.5
170°	628.9	627.4	626.8	630.7	627.4
172.5°	633.8	632.2	631.7	635.5	632.2
175°	637.6	636.1	634.9	638.7	635.5
177.5°	639.7	638.2	637.0	640.3	637.0
180°	638.7	638.7	638.7	638.7	638.7

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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	12.95	13.93	13.76	14.76	15.79	8.93	9.91	9.74	10.74	11.77
	3H	14.61	15.49	15.44	16.33	17.39	10.11	10.99	10.94	11.83	12.89
	4H	15.21	16.04	16.06	16.89	17.96	10.56	11.38	11.41	12.23	13.30
	6H	15.62	16.38	16.48	17.24	18.32	10.87	11.63	11.73	12.49	13.57
	8H	15.74	16.46	16.61	17.34	18.42	10.96	11.68	11.83	12.56	13.64
	12H	15.80	16.49	16.67	17.36	18.46	11.00	11.69	11.87	12.56	13.67
4H	2H	12.98	13.80	13.83	14.65	15.72	9.53	10.35	10.38	11.20	12.27
	3H	14.79	15.48	15.66	16.36	17.45	10.87	11.56	11.74	12.44	13.53
	4H	15.47	16.10	16.35	16.98	18.09	11.41	12.04	12.29	12.92	14.03
	6H	15.97	16.51	16.86	17.42	18.53	11.82	12.36	12.71	13.27	14.38
	8H	16.14	16.64	17.03	17.54	18.67	11.95	12.45	12.84	13.35	14.47
	12H	16.23	16.68	17.14	17.60	18.73	12.01	12.46	12.92	13.38	14.51
8H	4H	15.45	15.95	16.34	16.85	17.98	11.69	12.19	12.58	13.09	14.22
	6H	15.99	16.41	16.91	17.35	18.48	12.19	12.61	13.11	13.55	14.67
	8H	16.20	16.56	17.13	17.50	18.64	12.37	12.74	13.30	13.67	14.82
	12H	16.33	16.65	17.26	17.57	18.77	12.48	12.81	13.42	13.73	14.93
12H	4H	15.41	15.86	16.32	16.78	17.91	11.70	12.15	12.61	13.07	14.20
	6H	15.97	16.34	16.90	17.27	18.41	12.24	12.60	13.17	13.54	14.68
	8H	16.18	16.50	17.11	17.43	18.62	12.44	12.76	13.37	13.69	14.88