

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: P909717

Luminaire Tested: DFN2DIP-TR2F0-020D020US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909717
REPORT IS A COMBINATION OF REPORTS P901741 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-020D020US840-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

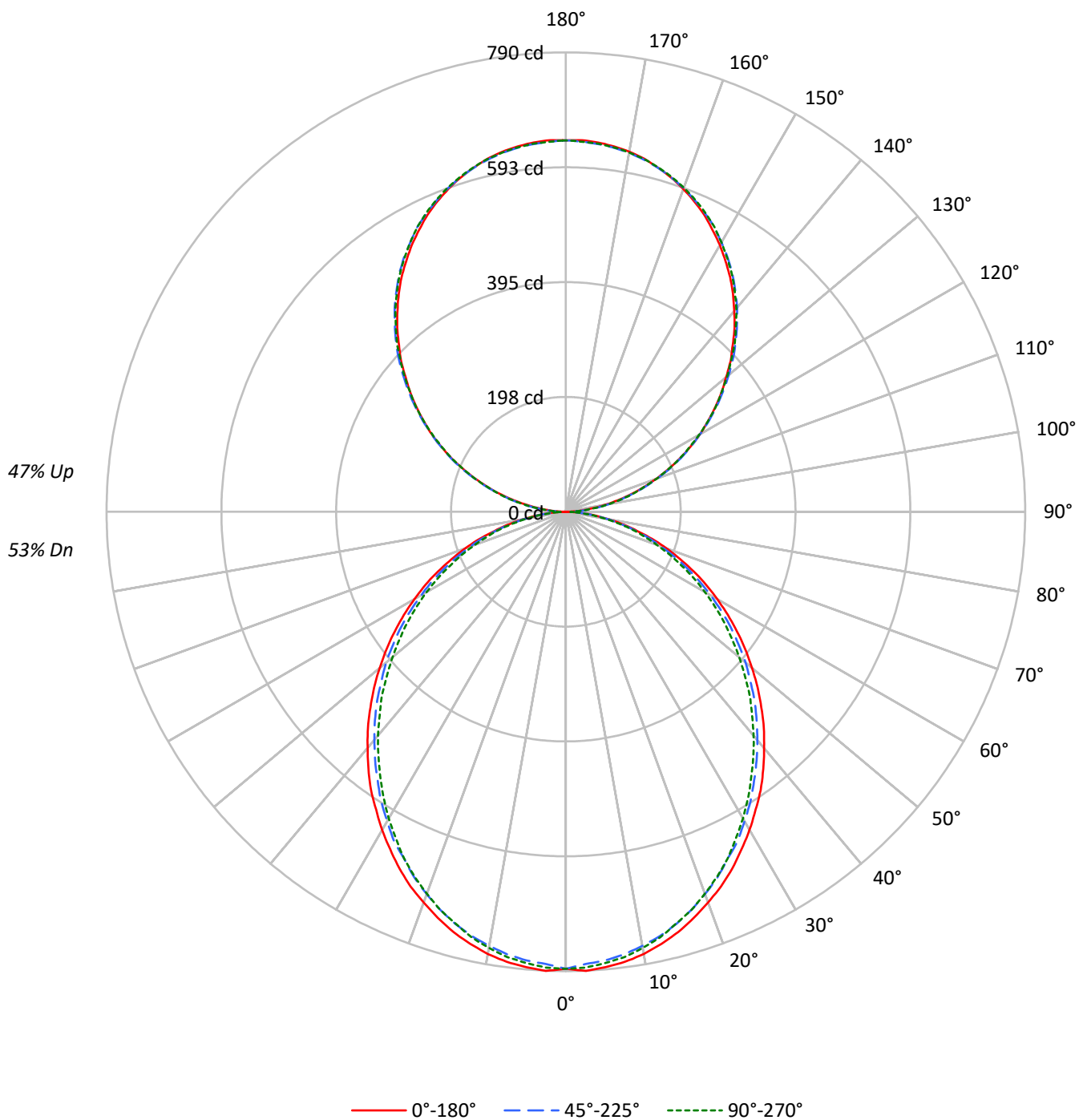
Lumens per Lamp: N/A
Luminaire Lumens: 3787.0 lumens
Efficiency: N/A
Efficacy: 124.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 30.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1753	1753	1753
5°	1753	1725	1737
10°	1736	1697	1710
15°	1708	1666	1671
20°	1671	1623	1630
25°	1634	1573	1584
30°	1588	1526	1525
35°	1545	1471	1464
40°	1492	1415	1405
45°	1438	1359	1345
50°	1380	1300	1276
55°	1319	1232	1211
60°	1250	1152	1137
65°	1174	1069	1050
70°	1077	967	956
75°	944	844	865
80°	783	689	699
85°	533	434	435

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1438 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.0	2.0
10°-20°	208.1	5.5
20°-30°	305.8	8.1
30°-40°	355.2	9.4
40°-50°	354.8	9.4
50°-60°	309.4	8.2
60°-70°	228.7	6.0
70°-80°	129.4	3.4
80°-90°	36.0	1.0
90°-100°	39.5	1.0
100°-110°	125.6	3.3
110°-120°	214.9	5.7
120°-130°	282.7	7.5
130°-140°	317.3	8.4
140°-150°	311.1	8.2
150°-160°	261.0	6.9
160°-170°	173.1	4.6
170°-180°	60.5	1.6
0°-30°	587.9	15.5
0°-40°	943.2	24.9
0°-60°	1607.3	42.4
0°-90°	2001.4	52.8
90°-120°	380.0	10.0
90°-150°	1291.1	34.1
90°-180°	1786.0	47.2
0°-180°	3787.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	786	786	786	786	786	
5°	786	783	775	781	779	75
15°	748	744	734	737	733	211
25°	677	671	658	660	658	312
35°	584	577	564	560	556	365
45°	475	470	459	450	447	367
55°	360	355	346	337	333	322
65°	243	238	231	224	220	240
75°	127	126	122	117	119	135
85°	31	30	30	27	26	35
90°	1	7	19	18	18	4
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°	785.9	785.9	785.9	785.9	785.9
2.5°	790.4	786.7	778.3	785.9	784.5
5°	785.9	782.9	774.6	780.6	779.1
7.5°	780.6	776.1	767.8	773.9	772.3
10°	772.3	767.1	758.0	764.0	761.7
12.5°	760.9	756.5	747.4	751.1	749.6
15°	748.1	743.7	733.8	736.8	733.1
17.5°	732.3	727.8	717.9	721.6	717.9
20°	714.9	710.3	699.7	702.1	699.0
22.5°	697.5	690.7	680.9	680.9	679.3
25°	677.1	671.1	658.2	659.6	658.2
27.5°	654.4	649.1	639.3	637.1	633.3
30°	631.8	625.7	614.4	612.2	609.0
32.5°	607.5	603.1	591.0	586.4	583.4
35°	584.2	576.6	564.5	560.0	556.1
37.5°	557.7	550.9	538.8	533.5	529.7
40°	530.5	524.4	512.3	505.6	502.5
42.5°	504.0	498.0	485.9	478.4	473.8
45°	475.3	470.1	458.7	450.4	447.4
47.5°	447.4	442.1	430.0	421.6	417.2
50°	417.9	414.1	403.5	392.9	389.2
52.5°	389.2	383.8	374.1	365.8	360.5
55°	359.7	355.2	346.1	337.1	333.3
57.5°	330.2	326.5	316.6	307.6	304.5
60°	300.7	297.8	287.2	278.8	276.6
62.5°	272.1	266.7	259.2	251.7	248.6
65°	242.6	238.0	230.6	223.7	219.9
67.5°	212.4	208.5	201.8	196.5	193.5
70°	184.4	181.4	174.5	169.3	166.3
72.5°	155.7	152.7	148.9	143.6	141.4
75°	126.9	125.5	121.6	117.1	118.7
77.5°	101.3	98.3	96.6	94.4	92.2
80°	75.6	74.8	73.3	71.0	69.5
82.5°	51.4	51.4	50.7	47.7	47.7
85°	30.9	30.2	29.5	27.2	26.5
87.5°	13.6	12.1	10.6	8.4	7.6
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	9.35	10.24	10.28	11.19	12.42	8.93	9.82	9.86	10.77	12.00
	3H	10.99	11.79	11.93	12.75	14.00	10.53	11.33	11.47	12.28	13.54
	4H	11.56	12.32	12.52	13.28	14.54	11.10	11.86	12.06	12.82	14.08
	6H	11.95	12.64	12.92	13.61	14.89	11.49	12.18	12.46	13.15	14.43
	8H	12.04	12.70	13.02	13.69	14.96	11.58	12.25	12.56	13.23	14.50
	12H	12.08	12.71	13.07	13.69	14.99	11.62	12.25	12.60	13.23	14.53
4H	2H	9.81	10.56	10.77	11.52	12.79	9.47	10.22	10.43	11.19	12.45
	3H	11.65	12.28	12.62	13.27	14.55	11.26	11.89	12.24	12.89	14.16
	4H	12.35	12.92	13.33	13.91	15.21	11.95	12.53	12.93	13.51	14.81
	6H	12.84	13.34	13.83	14.35	15.64	12.44	12.94	13.44	13.95	15.25
	8H	12.98	13.44	13.98	14.45	15.76	12.58	13.04	13.58	14.05	15.36
	12H	13.04	13.46	14.06	14.48	15.80	12.64	13.05	13.65	14.07	15.39
8H	4H	12.53	13.00	13.53	14.00	15.31	12.18	12.64	13.18	13.65	14.96
	6H	13.14	13.52	14.16	14.57	15.88	12.79	13.17	13.81	14.21	15.53
	8H	13.34	13.68	14.37	14.71	16.04	12.99	13.32	14.02	14.36	15.69
	12H	13.46	13.76	14.49	14.78	16.16	13.09	13.39	14.13	14.42	15.79
12H	4H	12.52	12.94	13.53	13.96	15.27	12.17	12.59	13.19	13.61	14.93
	6H	13.16	13.50	14.19	14.53	15.86	12.82	13.16	13.85	14.19	15.52
	8H	13.39	13.69	14.42	14.71	16.09	13.04	13.34	14.08	14.37	15.74