

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: P907630

Luminaire Tested: DFN2DIP-4P3F0-020D020US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907630
REPORT IS A COMBINATION OF REPORTS P899029 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D020US840-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

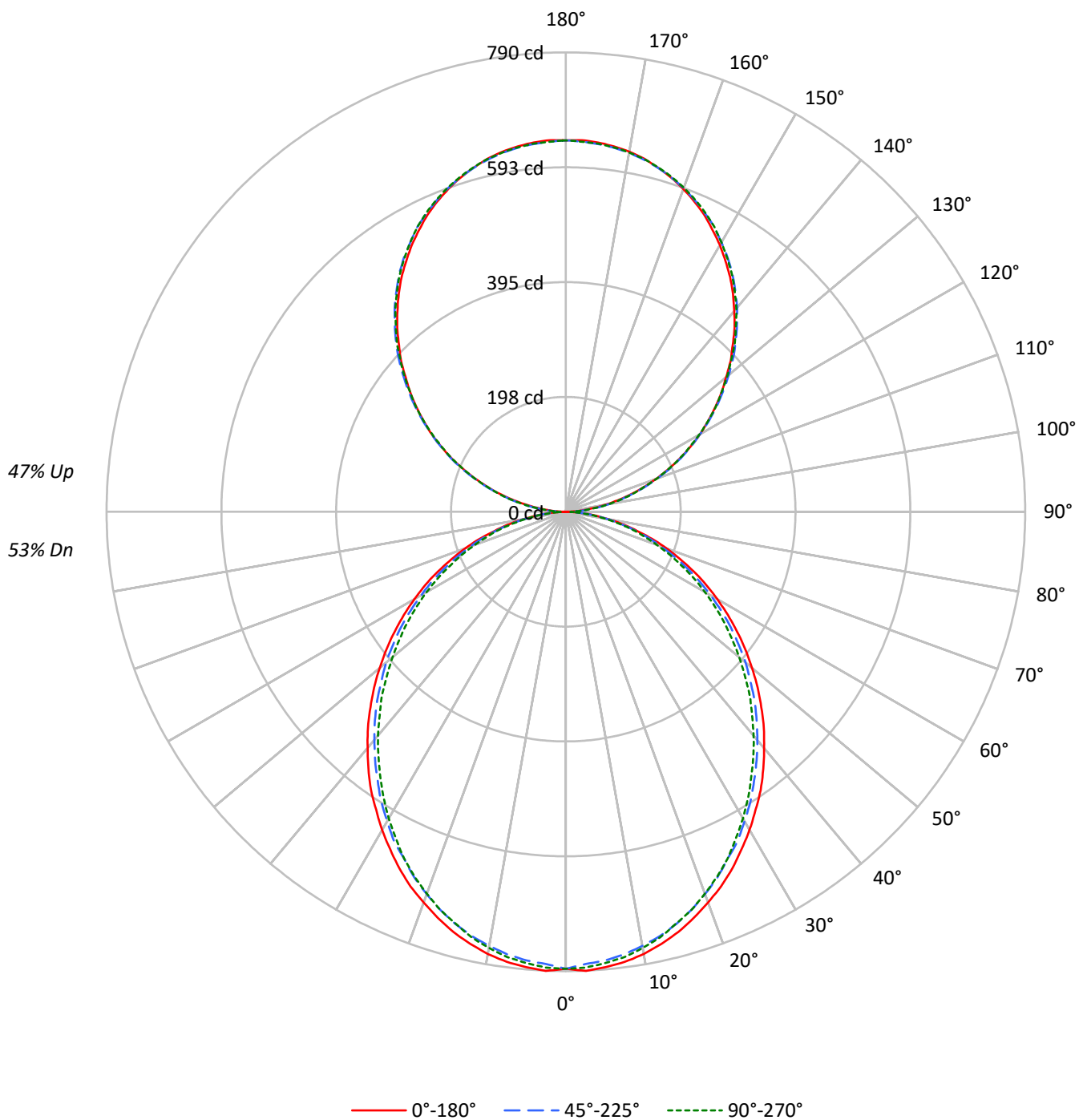
Lumens per Lamp: N/A
Luminaire Lumens: 3787.0 lumens
Efficiency: N/A
Efficacy: 122.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 31
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	108	108	108	108	100	100	100	100	85	85	85		71	71	71		59
1	98	94	90	87	91	87	84	81	74	72	70		63	61	59		52
2	90	82	76	71	83	76	71	66	65	61	58		55	52	50		46
3	82	72	65	59	75	67	61	55	58	53	49		49	45	42		41
4	75	64	56	50	69	60	52	47	51	46	41		43	39	36		36
5	69	57	49	43	63	53	46	40	46	40	36		39	35	31		33
6	63	51	43	37	58	48	40	35	41	36	31		35	31	27		30
7	59	46	38	33	54	43	36	31	37	32	28		32	28	24		27
8	54	42	34	29	50	39	32	27	34	29	24		29	25	22		25
9	51	38	31	26	47	36	29	24	31	26	22		27	23	19		23
10	47	35	28	23	44	33	26	22	29	23	20		25	21	18		21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	896	896	896
5°	896	883	889
10°	889	870	876
15°	875	855	857
20°	857	835	838
25°	839	810	815
30°	816	788	787
35°	795	761	756
40°	768	734	728
45°	742	707	698
50°	713	678	664
55°	683	645	633
60°	649	606	597
65°	612	566	554
70°	564	516	509
75°	498	457	466
80°	419	381	385
85°	295	253	253

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 742 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	7.11	8.00	8.05	8.95	10.18	6.67	7.56	7.60	8.51	9.74
	3H	8.77	9.57	9.72	10.53	11.78	8.28	9.08	9.23	10.04	11.29
	4H	9.36	10.11	10.32	11.07	12.34	8.86	9.62	9.82	10.58	11.84
	6H	9.76	10.45	10.72	11.42	12.69	9.26	9.95	10.22	10.92	12.19
	8H	9.86	10.52	10.84	11.51	12.78	9.36	10.02	10.33	11.01	12.28
	12H	9.91	10.54	10.89	11.52	12.81	9.40	10.03	10.38	11.01	12.30
4H	2H	7.57	8.33	8.54	9.29	10.55	7.22	7.97	8.18	8.94	10.20
	3H	9.44	10.07	10.41	11.06	12.34	9.03	9.66	10.00	10.65	11.93
	4H	10.15	10.72	11.13	11.71	13.01	9.73	10.30	10.71	11.29	12.59
	6H	10.66	11.16	11.66	12.17	13.47	10.23	10.72	11.22	11.73	13.03
	8H	10.81	11.27	11.81	12.28	13.59	10.37	10.84	11.37	11.84	13.15
	12H	10.88	11.30	11.90	12.32	13.64	10.43	10.85	11.45	11.87	13.19
8H	4H	10.34	10.81	11.34	11.81	13.12	9.97	10.43	10.96	11.43	12.75
	6H	10.97	11.35	11.99	12.40	13.71	10.59	10.97	11.61	12.01	13.32
	8H	11.19	11.53	12.22	12.56	13.89	10.79	11.13	11.82	12.16	13.49
	12H	11.32	11.61	12.35	12.64	14.01	10.91	11.20	11.94	12.23	13.60
12H	4H	10.33	10.75	11.34	11.77	13.09	9.96	10.38	10.98	11.40	12.72
	6H	11.00	11.34	12.03	12.37	13.70	10.63	10.96	11.65	12.00	13.33
	8H	11.24	11.54	12.27	12.56	13.94	10.86	11.15	11.89	12.18	13.55

END OF REPORT