

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: P921273

Luminaire Tested: DFN2DIP-4P3F0-020D020US940-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921273
REPORT IS A COMBINATION OF REPORTS P900550 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D020US940-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

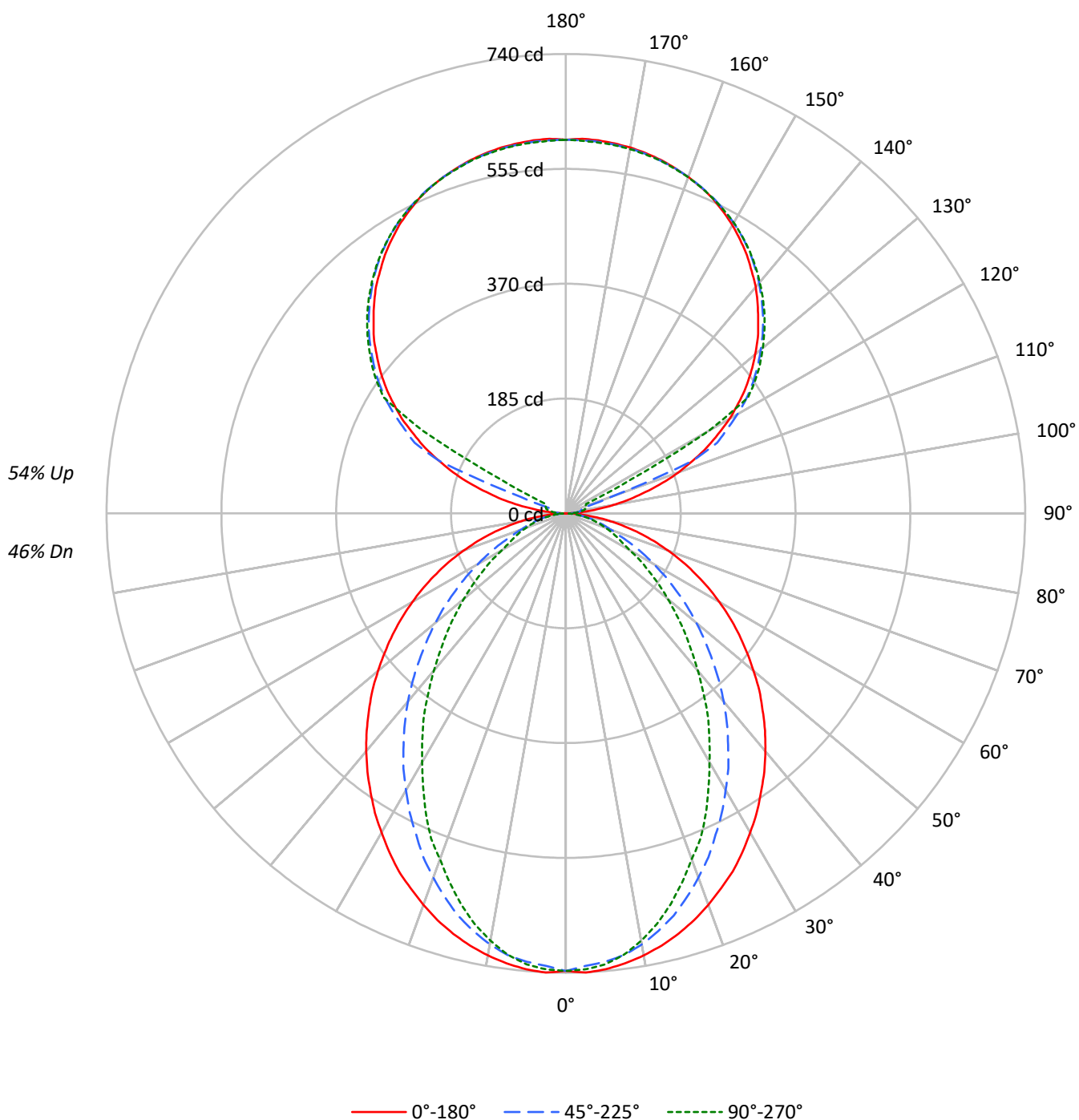
Lumens per Lamp: N/A
Luminaire Lumens: 3281.5 lumens
Efficiency: N/A
Efficacy: 105.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

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	30	10
RCR																				
0	106	106	106	106	98	98	98	98		81	81	81		66	66	66		53	53	53
1	97	93	90	86	89	86	83	80		72	70	68		59	58	56		47	46	45
2	89	82	76	71	82	76	70	66		63	60	57		52	50	48		42	40	39
3	81	72	65	60	75	67	61	56		56	52	48		47	43	41		38	35	34
4	75	64	57	51	68	60	53	48		50	45	41		42	38	35		34	31	29
5	69	58	50	44	63	53	46	41		45	40	36		38	34	31		31	28	26
6	63	52	44	38	58	48	41	36		41	36	32		34	30	27		28	25	23
7	59	47	39	34	54	44	37	32		37	32	28		31	27	24		26	23	21
8	55	43	35	30	50	40	33	28		34	29	25		29	25	22		24	21	19
9	51	39	32	27	47	36	30	25		31	26	22		27	23	20		22	19	17
10	48	36	29	24	44	33	27	23		29	24	20		25	21	18		20	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	840	840	840
5°	841	826	832
10°	832	809	804
15°	820	782	762
20°	804	745	711
25°	788	703	661
30°	767	660	598
35°	746	614	543
40°	724	567	479
45°	700	514	422
50°	674	461	366
55°	647	404	312
60°	616	345	256
65°	580	285	230
70°	536	229	208
75°	482	200	189
80°	403	167	162
85°	273	109	121

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 700 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.1	2.1
10°-20°	189.6	5.8
20°-30°	266.3	8.1
30°-40°	290.2	8.8
40°-50°	266.8	8.1
50°-60°	209.5	6.4
60°-70°	136.4	4.2
70°-80°	70.2	2.1
80°-90°	19.0	0.6
90°-100°	19.8	0.6
100°-110°	74.0	2.3
110°-120°	196.2	6.0
120°-130°	325.4	9.9
130°-140°	345.7	10.5
140°-150°	321.3	9.8
150°-160°	258.3	7.9
160°-170°	166.4	5.1
170°-180°	57.3	1.7
0°-30°	525.0	16.0
0°-40°	815.2	24.8
0°-60°	1291.4	39.4
0°-90°	1517.0	46.2
90°-120°	290.0	8.8
90°-150°	1282.5	39.1
90°-180°	1765.0	53.8
0°-180°	3281.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	737	737	737	737	737	
5°	737	734	725	731	729	70
15°	701	694	671	658	652	198
25°	636	615	571	544	534	293
35°	548	514	456	414	399	343
45°	448	404	334	286	270	346
55°	341	289	217	177	164	305
65°	230	176	116	94	91	228
75°	123	76	53	49	48	130
85°	29	15	13	13	13	33
90°	0	5	9	11	12	3
95°	28	14	17	19	19	33
105°	132	145	27	31	33	141
115°	250	258	269	67	36	247
125°	354	360	368	371	372	316
135°	438	445	449	453	452	338
145°	508	508	515	518	516	318
155°	560	556	561	564	560	258
165°	590	587	588	592	588	167
175°	603	600	601	604	600	57
180°	602	602	602	602	602	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	737.1	737.1	737.1	737.1	737.1
2.5°	740.4	737.1	729.7	736.5	735.1
5°	737.1	733.8	725.0	731.1	729.1
7.5°	731.1	727.1	717.7	720.4	717.0
10°	723.1	718.4	705.1	703.0	699.1
12.5°	713.1	707.0	689.0	685.1	677.7
15°	701.1	693.7	671.0	658.3	651.8
17.5°	687.1	676.4	648.4	633.6	623.0
20°	671.0	657.6	624.4	607.7	593.0
22.5°	653.7	638.4	599.7	577.0	567.0
25°	636.4	615.0	571.0	543.7	533.6
27.5°	615.7	593.0	544.3	512.9	497.6
30°	593.7	568.3	515.0	481.0	462.9
32.5°	572.3	541.6	487.0	446.9	430.3
35°	548.3	514.3	455.7	413.6	398.9
37.5°	524.9	488.2	426.2	380.2	363.6
40°	500.2	460.3	395.6	348.2	330.8
42.5°	474.9	432.3	364.9	315.5	298.9
45°	448.3	403.5	333.6	286.1	270.1
47.5°	422.9	375.6	303.5	256.1	241.5
50°	394.9	347.6	274.2	228.1	214.2
52.5°	367.5	317.4	246.1	202.2	189.5
55°	340.8	288.8	216.8	176.8	164.1
57.5°	313.5	260.1	190.8	153.5	142.8
60°	285.5	232.1	163.5	129.5	118.8
62.5°	258.2	204.8	140.1	108.1	102.7
65°	230.2	176.1	116.1	93.5	91.4
67.5°	203.5	149.4	93.5	82.0	80.1
70°	175.4	123.4	77.3	70.7	68.0
72.5°	148.7	99.3	64.6	59.4	58.1
75°	122.7	76.0	53.3	48.7	48.1
77.5°	96.8	54.0	42.0	39.3	38.0
80°	72.7	38.7	32.0	29.3	29.3
82.5°	50.6	26.0	22.0	20.7	20.7
85°	28.6	14.6	12.7	12.7	12.7
87.5°	10.7	5.4	5.4	4.6	4.6
90°	0.4	5.3	8.6	10.9	11.8
92.5°	10.9	9.2	10.4	11.3	11.8
95°	28.3	13.9	16.9	19.2	18.7
97.5°	50.9	15.2	22.2	23.5	24.0
100°	77.1	17.4	24.8	28.3	29.2
102.5°	105.8	105.0	25.7	30.5	31.8
105°	132.4	145.4	26.6	31.3	33.1
107.5°	163.4	174.2	27.5	32.2	34.0
110°	193.0	202.1	76.2	32.7	34.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	220.8	228.6	221.2	33.5	34.9
115°	250.4	257.8	268.8	67.1	35.8
117.5°	276.1	284.8	292.2	230.0	115.8
120°	304.9	311.4	319.2	324.5	265.6
122.5°	329.2	336.2	344.9	347.5	348.0
125°	354.1	359.7	368.0	371.0	372.4
127.5°	376.7	382.8	389.4	393.7	394.1
130°	398.1	405.0	409.8	414.6	414.2
132.5°	419.8	425.5	430.3	434.2	433.8
135°	438.2	445.1	449.0	453.4	452.5
137.5°	457.3	462.5	466.9	471.3	469.9
140°	476.0	479.6	484.3	488.2	486.1
142.5°	491.7	494.8	500.4	503.9	501.7
145°	508.3	507.8	515.2	518.3	516.1
147.5°	522.6	521.3	528.7	530.8	529.1
150°	536.5	533.5	540.5	543.1	540.9
152.5°	548.3	544.8	551.3	554.0	550.9
155°	559.6	555.7	561.0	563.6	560.1
157.5°	568.8	565.3	569.3	572.3	568.8
160°	576.7	574.0	576.7	579.3	576.2
162.5°	583.5	580.9	583.2	586.2	582.3
165°	589.7	587.1	588.4	591.5	588.4
167.5°	594.5	591.8	593.2	596.3	592.3
170°	598.4	595.8	596.6	599.7	595.8
172.5°	601.0	598.4	599.3	602.4	598.4
175°	603.2	600.1	601.0	604.0	599.7
177.5°	604.0	601.0	601.5	604.5	600.6
180°	601.9	601.9	601.9	601.9	601.9

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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	6.14	6.94	7.14	7.95	9.27	2.11	2.91	3.10	3.91	5.24
	3H	7.81	8.53	8.82	9.54	10.89	3.29	4.00	4.29	5.01	6.36
	4H	8.42	9.10	9.44	10.11	11.47	3.73	4.41	4.75	5.42	6.78
	6H	8.84	9.46	9.86	10.48	11.85	4.05	4.67	5.07	5.69	7.05
	8H	8.96	9.55	9.99	10.59	11.95	4.13	4.72	5.17	5.76	7.12
	12H	9.02	9.58	10.06	10.61	12.00	4.17	4.73	5.21	5.76	7.15
4H	2H	6.16	6.83	7.18	7.85	9.20	2.70	3.37	3.72	4.39	5.74
	3H	7.98	8.54	9.01	9.58	10.95	4.04	4.60	5.07	5.64	7.01
	4H	8.67	9.18	9.71	10.21	11.61	4.58	5.09	5.62	6.13	7.52
	6H	9.17	9.62	10.23	10.67	12.06	4.99	5.43	6.04	6.49	7.88
	8H	9.35	9.76	10.40	10.81	12.21	5.11	5.52	6.16	6.58	7.98
	12H	9.44	9.81	10.51	10.87	12.28	5.17	5.55	6.24	6.61	8.02
8H	4H	8.63	9.04	9.68	10.09	11.49	4.85	5.27	5.90	6.32	7.72
	6H	9.19	9.53	10.26	10.62	12.02	5.36	5.70	6.43	6.79	8.19
	8H	9.40	9.70	10.48	10.78	12.20	5.55	5.85	6.63	6.92	8.34
	12H	9.54	9.80	10.62	10.87	12.33	5.66	5.92	6.74	6.99	8.45
12H	4H	8.58	8.95	9.65	10.02	11.42	4.86	5.23	5.92	6.29	7.70
	6H	9.16	9.46	10.25	10.54	11.96	5.41	5.71	6.49	6.78	8.20
	8H	9.38	9.64	10.46	10.71	12.17	5.61	5.87	6.70	6.95	8.41

END OF REPORT