

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: P920649

Luminaire Tested: DFN2DIP-TR2F0-030D020US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920649
REPORT IS A COMBINATION OF REPORTS P901743 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-030D020US935-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

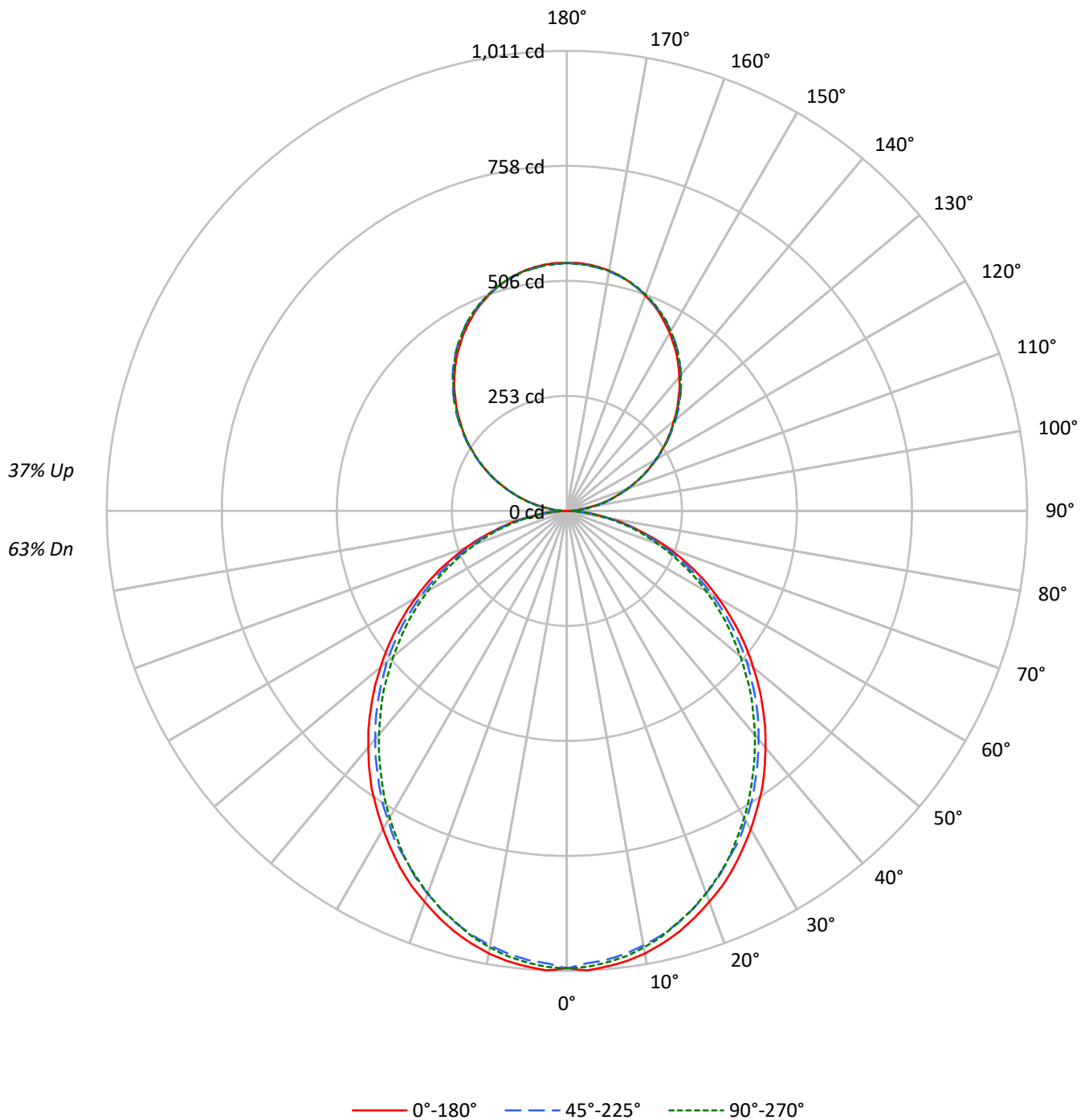
Lumens per Lamp: N/A
Luminaire Lumens: 4081.1 lumens
Efficiency: N/A
Efficacy: 100.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 40.5
Input Voltage (V): 120
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	110	110	110	110	103	103	103	103	90	90	90	79	79	79	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	66	60	59	57
2	92	84	78	72	86	79	73	69	70	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	58	61	56	52	54	50	46	47	44	41
4	77	66	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	38	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2242	2242	2242
5°	2242	2205	2221
10°	2220	2171	2188
15°	2184	2130	2137
20°	2137	2075	2085
25°	2090	2011	2025
30°	2031	1951	1951
35°	1976	1881	1873
40°	1908	1810	1798
45°	1840	1738	1720
50°	1765	1663	1632
55°	1687	1576	1549
60°	1598	1474	1455
65°	1501	1367	1344
70°	1377	1237	1223
75°	1208	1081	1106
80°	1001	881	894
85°	683	555	555

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1840 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.6	2.3
10°-20°	266.2	6.5
20°-30°	391.1	9.6
30°-40°	454.3	11.1
40°-50°	453.7	11.1
50°-60°	395.6	9.7
60°-70°	292.5	7.2
70°-80°	165.5	4.1
80°-90°	45.2	1.1
90°-100°	33.7	0.8
100°-110°	107.1	2.6
110°-120°	183.2	4.5
120°-130°	241.0	5.9
130°-140°	270.5	6.6
140°-150°	265.3	6.5
150°-160°	222.5	5.5
160°-170°	147.6	3.6
170°-180°	51.6	1.3
0°-30°	751.9	18.4
0°-40°	1206.2	29.6
0°-60°	2055.6	50.4
0°-90°	2558.7	62.7
90°-120°	324.0	7.9
90°-150°	1100.8	27.0
90°-180°	1522.0	37.3
0°-180°	4081.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1005	1005	1005	1005	1005	
5°	1005	1001	991	998	996	95
15°	957	951	938	942	938	269
25°	866	858	842	844	842	398
35°	747	737	722	716	711	467
45°	608	601	587	576	572	469
55°	460	454	443	431	426	411
65°	310	304	295	286	281	307
75°	162	160	156	150	152	173
85°	40	39	38	35	34	44
90°	0	6	16	15	16	4
95°	24	29	29	29	29	27
105°	99	100	101	102	102	104
115°	184	186	186	185	184	182
125°	267	272	270	269	268	239
135°	346	351	352	352	350	267
145°	420	423	426	426	425	262
155°	480	482	483	485	484	221
165°	522	522	522	525	523	147
175°	544	542	541	545	542	52
180°	545	545	545	545	545	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1005.0	1005.0	1005.0	1005.0	1005.0
2.5°	1010.9	1006.1	995.4	1005.0	1003.2
5°	1005.0	1001.3	990.6	998.3	996.4
7.5°	998.3	992.6	981.9	989.7	987.7
10°	987.7	980.9	969.4	977.1	974.2
12.5°	973.2	967.4	955.9	960.6	958.7
15°	956.7	951.1	938.4	942.3	937.5
17.5°	936.4	930.7	918.1	922.9	918.1
20°	914.2	908.4	894.9	897.8	894.0
22.5°	892.1	883.4	870.7	870.7	868.7
25°	865.9	858.2	841.8	843.7	841.8
27.5°	836.9	830.1	817.6	814.8	809.9
30°	808.0	800.2	785.7	782.8	778.9
32.5°	777.1	771.3	755.8	749.9	746.1
35°	747.1	737.4	721.9	716.1	711.3
37.5°	713.3	704.6	689.1	682.3	677.4
40°	678.5	670.7	655.2	646.6	642.7
42.5°	644.6	636.9	621.5	611.7	606.0
45°	608.0	601.1	586.6	576.0	572.1
47.5°	572.1	565.4	549.9	539.2	533.5
50°	534.4	529.6	516.1	502.6	497.7
52.5°	497.7	490.9	478.5	467.8	461.0
55°	460.1	454.3	442.6	431.1	426.3
57.5°	422.3	417.5	404.9	393.3	389.4
60°	384.6	380.8	367.3	356.6	353.8
62.5°	347.9	341.1	331.5	321.8	318.0
65°	310.3	304.4	294.8	286.1	281.3
67.5°	271.6	266.7	258.0	251.3	247.5
70°	235.8	232.0	223.3	216.5	212.7
72.5°	199.1	195.2	190.4	183.7	180.8
75°	162.3	160.5	155.6	149.8	151.8
77.5°	129.5	125.6	123.6	120.8	118.0
80°	96.7	95.7	93.7	90.8	88.9
82.5°	65.7	65.7	64.8	60.9	60.9
85°	39.6	38.7	37.7	34.8	33.8
87.5°	17.4	15.5	13.5	10.7	9.6
90°	0.5	5.9	16.1	15.1	15.6
92.5°	10.2	13.8	14.3	14.8	14.8
95°	23.9	28.6	29.4	29.4	28.6
97.5°	39.9	44.2	46.0	46.0	46.0
100°	58.3	62.1	63.4	63.4	62.9
102.5°	77.7	80.4	82.2	82.7	82.2
105°	98.8	100.1	101.2	101.9	101.9
107.5°	119.9	121.8	121.8	122.2	119.9
110°	140.3	142.8	142.8	142.8	141.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	162.2	165.0	164.5	163.2	162.2
115°	183.9	186.5	185.7	185.2	183.9
117.5°	205.4	209.1	206.7	205.4	204.1
120°	227.0	230.7	227.0	227.0	225.6
122.5°	246.8	251.3	249.1	247.8	246.8
125°	267.4	271.6	270.3	268.8	268.3
127.5°	287.7	292.7	290.9	289.0	287.7
130°	306.5	312.5	311.6	310.6	308.8
132.5°	327.7	332.3	332.6	330.4	329.0
135°	345.9	351.0	352.0	351.5	350.2
137.5°	366.3	370.4	371.3	370.9	368.9
140°	384.2	388.3	390.6	390.6	388.8
142.5°	402.6	406.6	408.0	408.5	406.6
145°	420.0	423.3	425.9	426.4	424.6
147.5°	435.6	439.7	441.7	442.5	440.7
150°	451.7	454.4	456.2	457.7	456.2
152.5°	466.0	468.7	471.1	472.9	471.1
155°	480.3	481.6	483.0	485.3	483.9
157.5°	492.6	493.5	494.4	497.7	495.3
160°	503.6	504.5	505.1	507.8	505.8
162.5°	513.8	513.8	514.2	517.4	515.0
165°	522.5	521.9	521.9	525.2	523.0
167.5°	530.3	528.8	528.8	532.1	529.9
170°	536.2	534.9	534.4	537.7	534.9
172.5°	540.4	539.0	538.6	541.8	539.0
175°	543.6	542.3	541.3	544.6	541.8
177.5°	545.4	544.2	543.1	545.9	543.1
180°	544.6	544.6	544.6	544.6	544.6

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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	11.04	12.03	11.88	12.89	13.97	10.62	11.61	11.46	12.47	13.55
	3H	12.69	13.58	13.54	14.45	15.55	12.23	13.11	13.08	13.99	15.09
	4H	13.27	14.10	14.13	14.98	16.10	12.81	13.65	13.68	14.52	15.64
	6H	13.65	14.43	14.54	15.31	16.44	13.19	13.97	14.08	14.85	15.98
	8H	13.75	14.49	14.64	15.39	16.52	13.30	14.03	14.18	14.94	16.06
	12H	13.80	14.50	14.69	15.40	16.55	13.33	14.04	14.23	14.93	16.09
4H	2H	11.51	12.35	12.38	13.23	14.34	11.17	12.01	12.04	12.89	14.00
	3H	13.36	14.06	14.24	14.97	16.10	12.98	13.68	13.86	14.59	15.72
	4H	14.06	14.70	14.96	15.61	16.76	13.67	14.31	14.56	15.21	16.37
	6H	14.56	15.11	15.47	16.04	17.20	14.17	14.72	15.08	15.65	16.81
	8H	14.70	15.22	15.62	16.14	17.31	14.31	14.82	15.22	15.75	16.92
	12H	14.77	15.24	15.70	16.18	17.36	14.37	14.83	15.30	15.77	16.95
8H	4H	14.26	14.77	15.17	15.70	16.87	13.91	14.42	14.82	15.35	16.52
	6H	14.87	15.29	15.81	16.26	17.43	14.51	14.94	15.46	15.91	17.08
	8H	15.07	15.45	16.02	16.41	17.60	14.72	15.09	15.67	16.05	17.24
	12H	15.19	15.53	16.15	16.48	17.72	14.83	15.16	15.78	16.11	17.35
12H	4H	14.25	14.71	15.18	15.65	16.83	13.90	14.37	14.84	15.31	16.49
	6H	14.89	15.27	15.84	16.23	17.42	14.55	14.93	15.50	15.89	17.08
	8H	15.12	15.46	16.08	16.41	17.64	14.78	15.11	15.73	16.06	17.30