

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: P923358

Luminaire Tested: DFN2DIP-TR2F0-020D020US940-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923358
REPORT IS A COMBINATION OF REPORTS P900222 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-020D020US940-RLLFLL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

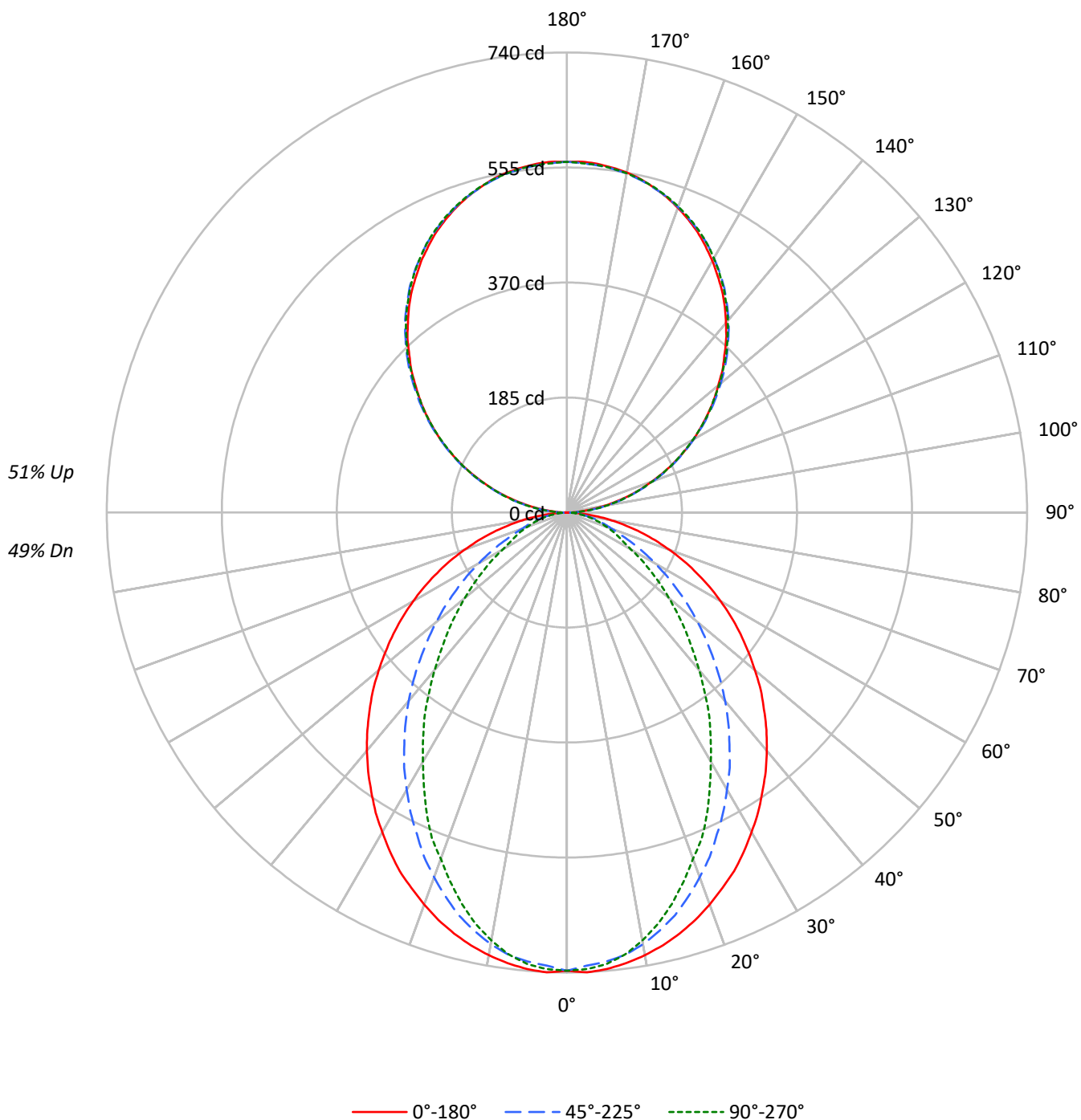
Lumens per Lamp: N/A
Luminaire Lumens: 3094.2 lumens
Efficiency: N/A
Efficacy: 101.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 30.5
Input Voltage (V):
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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1644	1644	1644
5°	1644	1614	1625
10°	1626	1579	1570
15°	1601	1523	1486
20°	1568	1448	1383
25°	1536	1364	1284
30°	1493	1279	1159
35°	1450	1187	1050
40°	1406	1093	925
45°	1357	988	812
50°	1304	883	702
55°	1250	772	596
60°	1187	656	489
65°	1114	538	437
70°	1025	428	391
75°	913	370	351
80°	753	301	295
85°	493	187	208

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1357 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.1	2.2
10°-20°	189.6	6.1
20°-30°	266.3	8.6
30°-40°	290.2	9.4
40°-50°	266.8	8.6
50°-60°	209.5	6.8
60°-70°	136.4	4.4
70°-80°	70.2	2.3
80°-90°	19.5	0.6
90°-100°	34.9	1.1
100°-110°	110.9	3.6
110°-120°	189.8	6.1
120°-130°	249.6	8.1
130°-140°	280.2	9.1
140°-150°	274.7	8.9
150°-160°	230.4	7.4
160°-170°	152.8	4.9
170°-180°	53.4	1.7
0°-30°	525.0	17.0
0°-40°	815.2	26.3
0°-60°	1291.4	41.7
0°-90°	1517.5	49.0
90°-120°	335.6	10.8
90°-150°	1140.0	36.8
90°-180°	1577.0	51.0
0°-180°	3094.2	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	6	17	16	16	3
95°	25	30	30	30	30	28
105°	102	104	105	106	106	108
115°	190	193	192	192	190	188
125°	277	281	280	278	278	248
135°	358	364	364	364	363	277
145°	435	438	441	442	440	272
155°	497	499	500	503	501	229
165°	541	541	541	544	542	153
175°	563	562	561	564	561	53
180°	564	564	564	564	564	

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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°	0.5	6.2	16.7	15.6	16.1
92.5°	10.5	14.3	14.8	15.3	15.3
95°	24.8	29.6	30.4	30.4	29.6
97.5°	41.3	45.7	47.6	47.6	47.6
100°	60.4	64.3	65.6	65.6	65.1
102.5°	80.4	83.3	85.2	85.7	85.2
105°	102.4	103.7	104.8	105.6	105.6
107.5°	124.1	126.2	126.2	126.5	124.1
110°	145.3	147.9	147.9	147.9	146.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	168.0	170.9	170.4	169.0	168.0
115°	190.5	193.1	192.3	191.8	190.5
117.5°	212.8	216.5	214.1	212.8	211.3
120°	235.1	238.9	235.1	235.1	233.6
122.5°	255.6	260.3	258.0	256.6	255.6
125°	277.0	281.2	279.9	278.4	277.9
127.5°	297.9	303.2	301.3	299.3	297.9
130°	317.4	323.6	322.7	321.7	319.9
132.5°	339.4	344.2	344.5	342.1	340.7
135°	358.3	363.6	364.5	364.1	362.7
137.5°	379.3	383.6	384.5	384.1	382.1
140°	397.9	402.2	404.6	404.6	402.7
142.5°	417.0	421.2	422.6	423.0	421.2
145°	435.0	438.4	441.1	441.6	439.7
147.5°	451.1	455.4	457.4	458.2	456.4
150°	467.8	470.6	472.5	474.0	472.5
152.5°	482.6	485.4	487.9	489.7	487.9
155°	497.4	498.7	500.2	502.7	501.1
157.5°	510.1	511.1	512.0	515.4	513.0
160°	521.6	522.5	523.1	525.9	523.9
162.5°	532.1	532.1	532.5	535.8	533.4
165°	541.1	540.6	540.6	543.9	541.6
167.5°	549.2	547.7	547.7	551.1	548.8
170°	555.4	554.0	553.5	556.9	554.0
172.5°	559.6	558.2	557.8	561.2	558.2
175°	563.0	561.7	560.6	564.0	561.2
177.5°	564.9	563.6	562.5	565.3	562.5
180°	564.0	564.0	564.0	564.0	564.0

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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	8.65	9.48	9.62	10.46	11.74	4.64	5.46	5.61	6.44	7.73
	3H	10.31	11.04	11.29	12.03	13.34	5.81	6.55	6.79	7.54	8.85
	4H	10.90	11.59	11.89	12.59	13.91	6.25	6.95	7.25	7.94	9.26
	6H	11.30	11.94	12.31	12.94	14.27	6.56	7.20	7.56	8.19	9.52
	8H	11.42	12.02	12.43	13.04	14.37	6.64	7.25	7.65	8.26	9.59
	12H	11.47	12.05	12.49	13.06	14.41	6.68	7.25	7.69	8.26	9.61
4H	2H	8.67	9.36	9.67	10.36	11.67	5.22	5.92	6.22	6.91	8.23
	3H	10.47	11.05	11.48	12.07	13.40	6.55	7.13	7.56	8.15	9.48
	4H	11.14	11.67	12.16	12.69	14.04	7.08	7.61	8.10	8.63	9.98
	6H	11.63	12.09	12.66	13.13	14.48	7.48	7.94	8.51	8.98	10.33
	8H	11.80	12.22	12.83	13.25	14.62	7.60	8.03	8.63	9.06	10.43
	12H	11.88	12.26	12.93	13.31	14.68	7.66	8.04	8.71	9.09	10.46
8H	4H	11.10	11.53	12.14	12.56	13.93	7.35	7.77	8.38	8.80	10.17
	6H	11.65	12.00	12.70	13.07	14.43	7.84	8.19	8.90	9.27	10.63
	8H	11.85	12.15	12.91	13.21	14.60	8.02	8.33	9.08	9.39	10.77
	12H	11.97	12.24	13.03	13.29	14.72	8.13	8.40	9.19	9.45	10.88
12H	4H	11.06	11.44	12.10	12.48	13.86	7.35	7.73	8.40	8.78	10.15
	6H	11.62	11.93	12.68	12.99	14.37	7.89	8.19	8.95	9.25	10.64
	8H	11.82	12.09	12.89	13.15	14.57	8.08	8.35	9.15	9.41	10.83