

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: P921240

Luminaire Tested: DFN2DIP-4P2F0-020D030US940-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921240
REPORT IS A COMBINATION OF REPORTS P899018 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-020D030US940-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

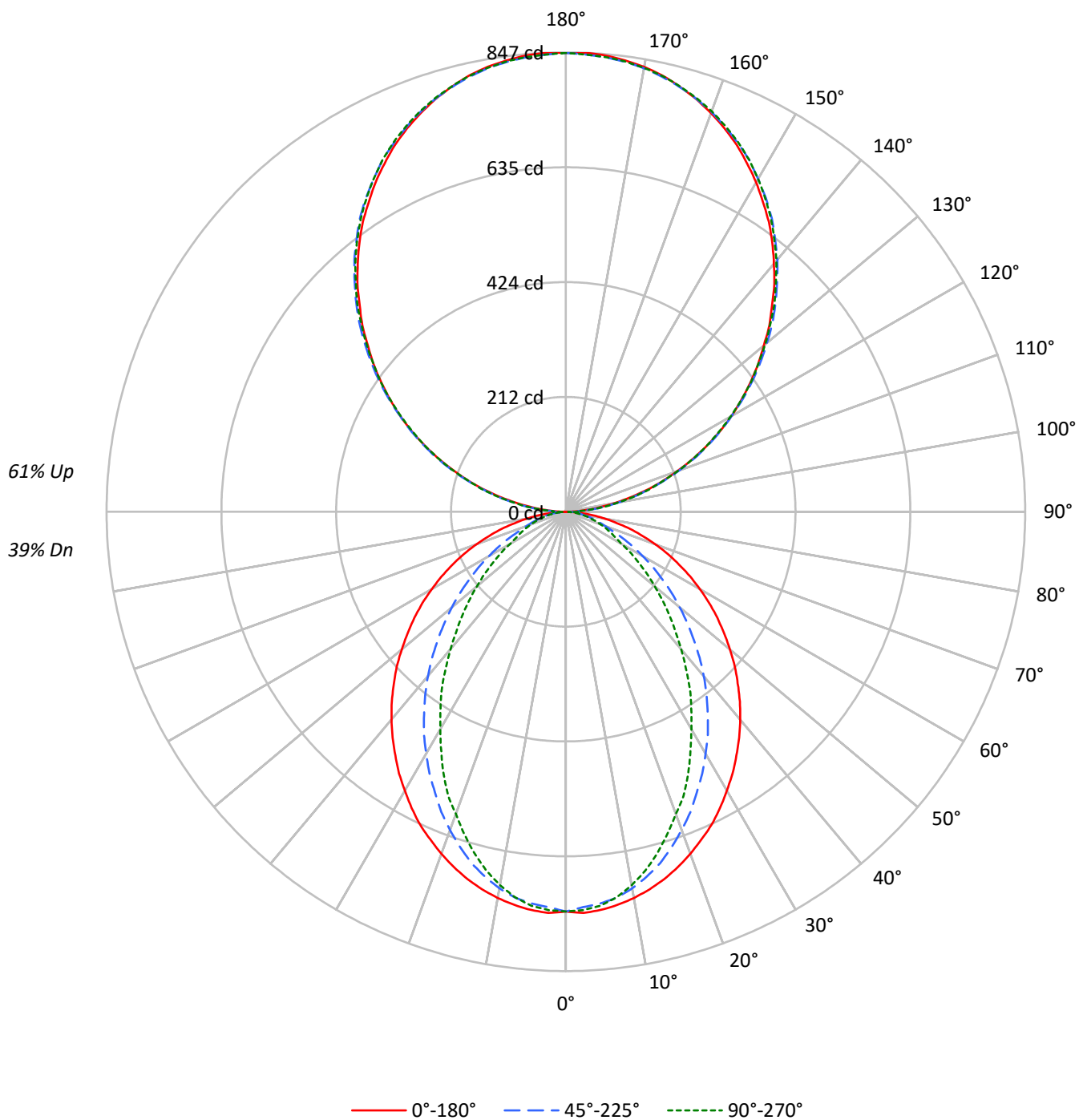
Lumens per Lamp: N/A
Luminaire Lumens: 3883.4 lumens
Efficiency: N/A
Efficacy: 97.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 40
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46
1	96	92	88	85	87	83	80	78	68	66	64	54	53	51	41	40	40
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29
4	73	63	55	50	66	58	51	46	48	43	39	38	35	32	30	27	26
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	24	22
6	62	51	43	37	56	46	40	35	39	33	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	30	35	30	26	29	25	22	22	20	18
8	53	41	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1846	1846	1846
5°	1845	1812	1825
10°	1823	1771	1763
15°	1794	1708	1668
20°	1757	1624	1553
25°	1720	1529	1442
30°	1670	1433	1302
35°	1621	1329	1180
40°	1571	1223	1039
45°	1514	1106	912
50°	1455	988	789
55°	1392	862	670
60°	1320	732	549
65°	1236	600	491
70°	1134	477	440
75°	1006	411	394
80°	823	333	332
85°	530	205	235

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1514 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.1	1.8
10°-20°	189.6	4.9
20°-30°	266.3	6.9
30°-40°	290.2	7.5
40°-50°	266.8	6.9
50°-60°	209.5	5.4
60°-70°	136.4	3.5
70°-80°	70.2	1.8
80°-90°	20.3	0.5
90°-100°	52.3	1.3
100°-110°	166.3	4.3
110°-120°	284.7	7.3
120°-130°	374.4	9.6
130°-140°	420.2	10.8
140°-150°	412.1	10.6
150°-160°	345.7	8.9
160°-170°	229.2	5.9
170°-180°	80.1	2.1
0°-30°	525.0	13.5
0°-40°	815.2	21.0
0°-60°	1291.4	33.3
0°-90°	1518.3	39.1
90°-120°	503.4	13.0
90°-150°	1710.0	44.0
90°-180°	2365.0	60.9
0°-180°	3883.4	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°	1	9	25	24	24	4
95°	37	44	46	46	44	41
105°	154	156	157	158	158	162
115°	286	290	288	288	286	283
125°	416	422	420	418	417	371
135°	537	545	547	546	544	415
145°	652	658	662	662	660	408
155°	746	748	750	754	752	343
165°	812	811	811	816	812	229
175°	844	842	841	846	842	80
180°	846	846	846	846	846	

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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°	0.8	9.2	25.0	23.5	24.3
92.5°	15.8	21.4	22.2	22.9	22.9
95°	37.3	44.4	45.7	45.7	44.4
97.5°	62.0	68.6	71.4	71.4	71.4
100°	90.5	96.4	98.4	98.4	97.7
102.5°	120.6	125.0	127.8	128.6	127.8
105°	153.6	155.6	157.1	158.4	158.4
107.5°	186.2	189.2	189.2	189.8	186.2
110°	217.8	221.9	221.9	221.9	219.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	252.0	256.4	255.6	253.5	252.0
115°	285.7	289.7	288.5	287.8	285.7
117.5°	319.1	324.7	321.1	319.1	317.0
120°	352.8	358.4	352.8	352.8	350.4
122.5°	383.3	390.5	386.9	384.9	383.3
125°	415.5	421.9	419.8	417.5	416.8
127.5°	446.8	454.8	452.0	448.9	446.8
130°	476.2	485.4	484.1	482.6	479.7
132.5°	509.1	516.2	516.7	513.2	511.1
135°	537.4	545.3	546.9	546.1	544.0
137.5°	569.0	575.4	576.7	576.2	573.1
140°	596.8	603.2	606.8	606.8	604.0
142.5°	625.4	631.8	633.8	634.6	631.8
145°	652.5	657.5	661.6	662.4	659.6
147.5°	676.7	683.1	686.1	687.4	684.6
150°	701.7	706.1	708.8	711.1	708.8
152.5°	723.9	728.2	731.7	734.6	731.7
155°	746.1	748.1	750.4	753.9	751.7
157.5°	765.2	766.7	768.0	773.1	769.5
160°	782.3	783.8	784.6	788.9	785.9
162.5°	798.1	798.1	798.9	803.7	800.1
165°	811.6	810.8	810.8	815.9	812.3
167.5°	823.9	821.5	821.5	826.6	823.0
170°	833.0	831.0	830.3	835.4	831.0
172.5°	839.4	837.4	836.6	841.7	837.4
175°	844.5	842.5	841.0	846.1	841.7
177.5°	847.3	845.3	843.7	848.1	843.7
180°	846.1	846.1	846.1	846.1	846.1

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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	8.03	8.78	9.08	9.83	11.25	3.99	4.74	5.04	5.79	7.21
	3H	9.68	10.35	10.74	11.41	12.85	5.15	5.82	6.21	6.88	8.32
	4H	10.27	10.90	11.34	11.96	13.41	5.59	6.22	6.66	7.28	8.73
	6H	10.66	11.25	11.75	12.31	13.77	5.88	6.47	6.96	7.53	8.99
	8H	10.78	11.33	11.86	12.42	13.87	5.96	6.52	7.05	7.60	9.05
	12H	10.83	11.35	11.92	12.43	13.91	5.99	6.52	7.08	7.59	9.07
4H	2H	8.03	8.66	9.11	9.73	11.17	4.57	5.20	5.64	6.26	7.71
	3H	9.83	10.35	10.91	11.44	12.90	5.88	6.41	6.97	7.50	8.96
	4H	10.50	10.98	11.59	12.06	13.54	6.41	6.89	7.50	7.97	9.45
	6H	10.99	11.40	12.09	12.50	13.98	6.80	7.21	7.90	8.32	9.79
	8H	11.15	11.53	12.25	12.63	14.12	6.92	7.30	8.01	8.40	9.89
	12H	11.22	11.57	12.34	12.68	14.18	6.97	7.32	8.08	8.42	9.92
8H	4H	10.45	10.84	11.55	11.94	13.43	6.67	7.06	7.77	8.15	9.64
	6H	10.99	11.31	12.11	12.45	13.94	7.15	7.47	8.28	8.61	10.10
	8H	11.19	11.47	12.32	12.59	14.10	7.33	7.61	8.46	8.73	10.24
	12H	11.31	11.56	12.44	12.67	14.22	7.43	7.67	8.56	8.79	10.33
12H	4H	10.40	10.75	11.52	11.86	13.35	6.67	7.02	7.78	8.12	9.62
	6H	10.96	11.24	12.09	12.36	13.87	7.20	7.48	8.33	8.60	10.10
	8H	11.16	11.41	12.30	12.53	14.07	7.39	7.63	8.52	8.75	10.29

END OF REPORT

FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE

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