

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: P923988

Luminaire Tested: DFN2DIP-4P2F0-040D020US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923988
REPORT IS A COMBINATION OF REPORTS P899016 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D020US950-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

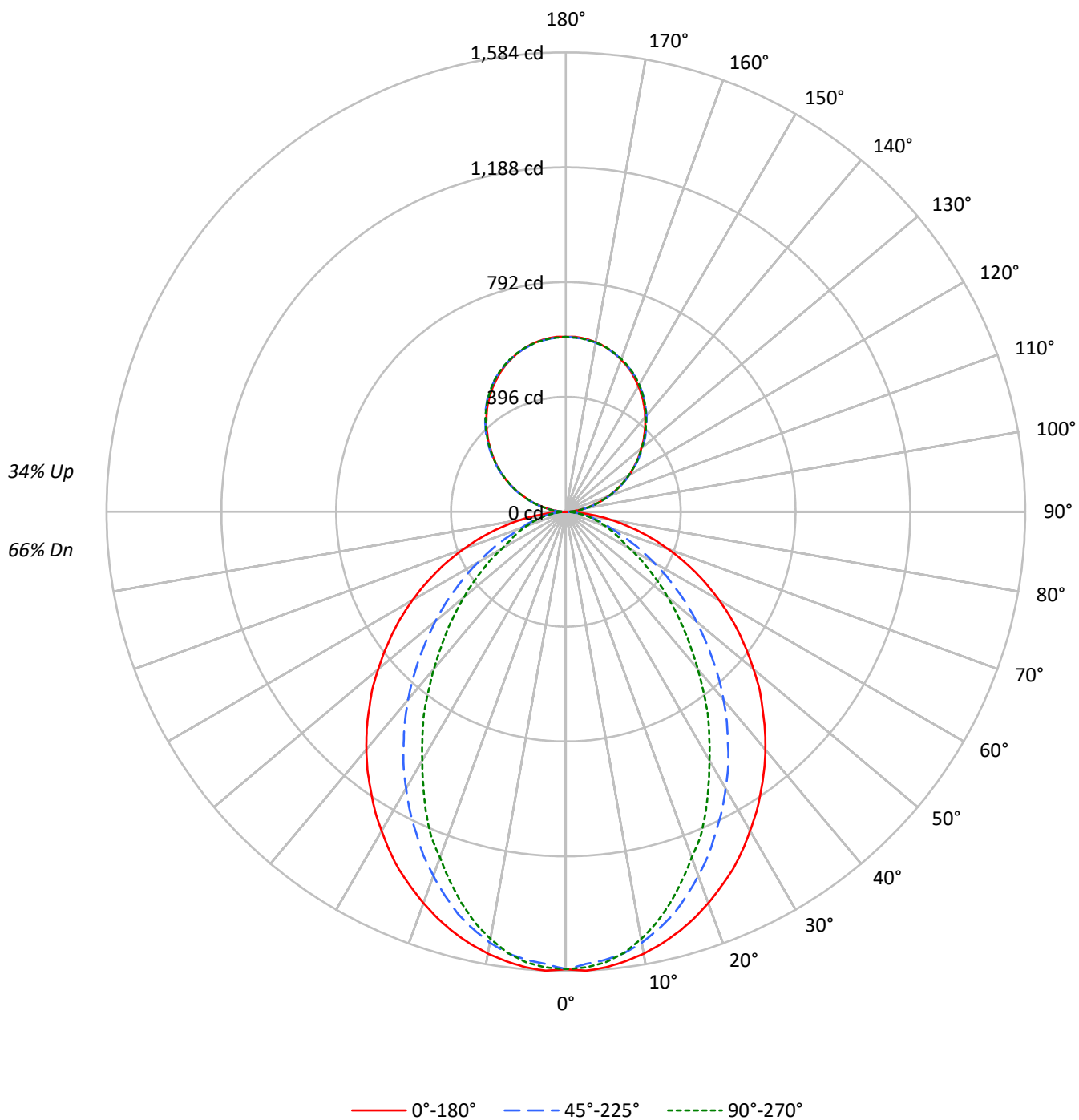
Lumens per Lamp: N/A
Luminaire Lumens: 4932.2 lumens
Efficiency: N/A
Efficacy: 87.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 56.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3949	3949	3949
5°	3948	3876	3905
10°	3901	3790	3771
15°	3839	3655	3569
20°	3760	3474	3323
25°	3679	3271	3085
30°	3573	3065	2786
35°	3469	2844	2523
40°	3363	2617	2224
45°	3240	2366	1953
50°	3113	2113	1688
55°	2979	1845	1434
60°	2823	1566	1174
65°	2645	1283	1050
70°	2427	1020	941
75°	2152	881	843
80°	1761	711	712
85°	1135	437	502

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3240 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.8	3.0
10°-20°	405.8	8.2
20°-30°	569.7	11.6
30°-40°	621.0	12.6
40°-50°	570.8	11.6
50°-60°	448.2	9.1
60°-70°	291.8	5.9
70°-80°	150.2	3.0
80°-90°	40.1	0.8
90°-100°	37.3	0.8
100°-110°	118.7	2.4
110°-120°	203.0	4.1
120°-130°	267.0	5.4
130°-140°	299.7	6.1
140°-150°	293.9	6.0
150°-160°	246.5	5.0
160°-170°	163.5	3.3
170°-180°	57.1	1.2
0°-30°	1123.3	22.8
0°-40°	1744.3	35.4
0°-60°	2763.3	56.0
0°-90°	3245.3	65.8
90°-120°	359.0	7.3
90°-150°	1219.7	24.7
90°-180°	1687.0	34.2
0°-180°	4932.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1577	1577	1577	1577	1577	
5°	1577	1570	1551	1564	1560	150
15°	1500	1484	1436	1409	1395	423
25°	1362	1316	1222	1163	1142	626
35°	1173	1100	975	885	853	734
45°	959	864	714	612	578	741
55°	729	618	464	378	351	652
65°	492	377	248	200	196	488
75°	262	163	114	104	103	278
85°	61	31	27	27	27	70
90°	1	7	18	17	17	5
95°	26	32	32	32	32	30
105°	110	111	112	113	113	116
115°	204	207	206	205	204	202
125°	296	301	300	298	297	265
135°	383	389	390	390	388	296
145°	465	469	472	472	470	291
155°	532	534	535	538	536	245
165°	579	578	578	582	580	163
175°	602	601	600	603	600	57
180°	603	603	603	603	603	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1577.2	1577.2	1577.2	1577.2	1577.2
2.5°	1584.3	1577.2	1561.4	1575.8	1572.9
5°	1577.2	1570.0	1551.4	1564.3	1560.1
7.5°	1564.3	1555.8	1535.8	1541.4	1534.3
10°	1547.2	1537.2	1508.7	1504.3	1495.9
12.5°	1525.8	1512.9	1474.3	1465.8	1450.1
15°	1500.1	1484.3	1435.9	1408.8	1394.6
17.5°	1470.1	1447.2	1387.2	1355.9	1333.0
20°	1435.9	1407.2	1335.9	1300.3	1268.8
22.5°	1398.8	1365.9	1283.0	1234.6	1213.3
25°	1361.6	1315.9	1221.7	1163.3	1141.7
27.5°	1317.5	1268.8	1164.6	1097.6	1064.7
30°	1270.3	1216.0	1101.8	1029.1	990.5
32.5°	1224.6	1158.9	1042.0	956.3	920.5
35°	1173.3	1100.4	974.9	884.9	853.4
37.5°	1123.3	1044.7	912.0	813.5	777.9
40°	1070.5	984.9	846.4	745.1	708.0
42.5°	1016.2	924.9	780.8	675.1	639.5
45°	959.2	863.5	713.7	612.3	578.0
47.5°	905.0	803.6	649.5	548.1	516.7
50°	845.0	743.6	586.6	488.1	458.2
52.5°	786.4	679.3	526.7	432.4	405.4
55°	729.3	618.0	463.8	378.3	351.2
57.5°	670.9	556.7	408.2	328.3	305.5
60°	610.8	496.7	349.6	276.9	254.1
62.5°	552.5	438.3	299.7	231.2	219.9
65°	492.5	376.7	248.3	199.9	195.5
67.5°	435.4	319.7	199.9	175.5	171.2
70°	375.4	264.1	165.5	151.3	145.5
72.5°	318.3	212.6	138.4	127.1	124.2
75°	262.5	162.7	114.2	104.2	102.8
77.5°	207.0	115.5	90.0	84.2	81.3
80°	155.5	82.8	68.4	62.9	62.9
82.5°	108.5	55.7	47.1	44.2	44.2
85°	61.3	31.4	27.1	27.1	27.1
87.5°	22.9	11.4	11.4	10.0	10.0
90°	0.6	6.6	17.8	16.7	17.3
92.5°	11.3	15.3	15.8	16.4	16.4
95°	26.5	31.7	32.5	32.5	31.7
97.5°	44.2	48.9	50.9	50.9	50.9
100°	64.6	68.8	70.2	70.2	69.6
102.5°	86.1	89.1	91.1	91.7	91.1
105°	109.5	111.0	112.1	113.0	113.0
107.5°	132.8	135.0	135.0	135.4	132.8
110°	155.4	158.3	158.3	158.3	156.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	179.7	182.8	182.3	180.8	179.7
115°	203.8	206.6	205.8	205.2	203.8
117.5°	227.6	231.6	229.1	227.6	226.1
120°	251.6	255.6	251.6	251.6	249.9
122.5°	273.4	278.5	276.0	274.6	273.4
125°	296.3	300.9	299.5	297.8	297.3
127.5°	318.7	324.4	322.4	320.2	318.7
130°	339.6	346.2	345.3	344.2	342.2
132.5°	363.1	368.2	368.5	366.0	364.5
135°	383.3	388.9	390.0	389.5	388.0
137.5°	405.8	410.4	411.4	411.0	408.8
140°	425.7	430.3	432.8	432.8	430.8
142.5°	446.1	450.6	452.1	452.6	450.6
145°	465.4	469.0	471.9	472.4	470.4
147.5°	482.6	487.2	489.4	490.3	488.3
150°	500.5	503.5	505.5	507.1	505.5
152.5°	516.3	519.4	521.9	523.9	521.9
155°	532.1	533.6	535.2	537.8	536.1
157.5°	545.8	546.8	547.8	551.4	548.8
160°	558.0	559.0	559.6	562.7	560.5
162.5°	569.3	569.3	569.7	573.3	570.7
165°	578.9	578.3	578.3	581.9	579.5
167.5°	587.6	585.9	585.9	589.6	587.1
170°	594.2	592.7	592.1	595.8	592.7
172.5°	598.7	597.2	596.7	600.4	597.2
175°	602.4	600.9	599.8	603.4	600.4
177.5°	604.4	602.9	601.8	604.8	601.8
180°	603.4	603.4	603.4	603.4	603.4

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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	13.15	14.12	13.96	14.96	15.99	9.11	10.08	9.92	10.92	11.95
	3H	14.81	15.69	15.64	16.53	17.59	10.28	11.16	11.11	12.00	13.06
	4H	15.41	16.24	16.26	17.09	18.15	10.73	11.55	11.57	12.40	13.47
	6H	15.82	16.58	16.68	17.44	18.52	11.04	11.80	11.89	12.65	13.74
	8H	15.94	16.67	16.81	17.54	18.62	11.12	11.84	11.99	12.72	13.80
	12H	16.00	16.69	16.87	17.56	18.66	11.16	11.85	12.03	12.72	13.83
4H	2H	13.18	14.00	14.03	14.85	15.92	9.71	10.53	10.56	11.38	12.45
	3H	14.99	15.68	15.85	16.56	17.64	11.05	11.73	11.91	12.61	13.70
	4H	15.67	16.30	16.55	17.18	18.29	11.58	12.20	12.46	13.08	14.20
	6H	16.17	16.71	17.06	17.61	18.73	11.99	12.52	12.88	13.43	14.54
	8H	16.34	16.84	17.23	17.74	18.87	12.11	12.61	13.00	13.51	14.63
	12H	16.43	16.88	17.34	17.80	18.93	12.17	12.62	13.08	13.54	14.67
8H	4H	15.65	16.15	16.54	17.05	18.17	11.86	12.36	12.75	13.26	14.39
	6H	16.19	16.61	17.11	17.55	18.67	12.35	12.77	13.27	13.71	14.84
	8H	16.39	16.76	17.32	17.69	18.84	12.53	12.90	13.46	13.83	14.97
	12H	16.52	16.85	17.45	17.77	18.97	12.64	12.96	13.57	13.89	15.08
12H	4H	15.60	16.05	16.51	16.97	18.10	11.87	12.32	12.78	13.24	14.37
	6H	16.17	16.53	17.09	17.47	18.61	12.40	12.77	13.33	13.70	14.84
	8H	16.38	16.70	17.31	17.62	18.82	12.60	12.92	13.53	13.85	15.04

END OF REPORT