

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P332813-940

Luminaire Tested: **S124DIW-S1020D770U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332813-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D770U940-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6493.1 lumens
Efficiency: N/A
Efficacy: 121.1 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: General Diffuse

Input Watts (W): 53.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332813-940

CATALOG NUMBER: S124DIW-S1020D770U940-4F0-1E-UDD-D

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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	53
1	97	93	88	84	90	86	82	79	73	70	68	61	59	58	51	49	48	43
2	88	80	74	68	81	74	69	64	63	59	55	53	50	47	44	42	39	35
3	80	70	62	56	74	65	58	53	56	50	46	47	43	39	39	36	33	29
4	73	62	54	47	67	57	50	44	49	43	39	41	37	33	34	31	28	25
5	67	55	46	40	62	51	44	38	44	38	33	37	32	29	31	27	24	21
6	62	49	41	35	57	46	38	33	39	33	29	33	29	25	28	24	21	18
7	57	44	36	30	53	41	34	29	36	30	25	30	26	22	25	22	19	16
8	53	40	32	27	49	38	30	25	32	27	22	28	23	20	23	20	17	14
9	49	37	29	24	45	34	27	22	30	24	20	25	21	18	21	18	15	13
10	46	34	26	21	43	31	25	20	27	22	18	23	19	16	20	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8888	8888	8888
5°	8916	8686	8711
10°	8861	8544	8538
15°	8782	8380	8334
20°	8662	8198	8135
25°	8527	7995	7918
30°	8381	7793	7693
35°	8216	7585	7497
40°	8083	7388	7292
45°	7887	7207	7117
50°	7721	6996	6931
55°	7549	6799	6714
60°	7282	6547	6515
65°	6989	6278	6271
70°	6633	5968	5986
75°	6136	5628	5730
80°	5588	5302	5476
85°	4893	5013	5328



TEST NUMBER: P332813-940

CATALOG NUMBER: S124DIW-S1020D770U940-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.3	1.6
10°-20°	298.7	4.6
20°-30°	451.7	7.0
30°-40°	546.5	8.4
40°-50°	577.7	8.9
50°-60°	543.7	8.4
60°-70°	451.1	6.9
70°-80°	316.9	4.9
80°-90°	181.7	2.8
90°-100°	136.6	2.1
100°-110°	271.7	4.2
110°-120°	422.0	6.5
120°-130°	498.5	7.7
130°-140°	514.3	7.9
140°-150°	471.5	7.3
150°-160°	378.1	5.8
160°-170°	243.9	3.8
170°-180°	84.1	1.3
0°-30°	854.6	13.2
0°-40°	1401.1	21.6
0°-60°	2522.6	38.9
0°-90°	3472.3	53.5
90°-120°	830.4	12.8
90°-150°	2314.7	35.6
90°-180°	3021.0	46.5
0°-180°	6493.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1101	1101	1101	1101	1101	
5°	1102	1098	1090	1099	1098	105
15°	1057	1058	1054	1065	1064	298
25°	967	974	978	991	992	445
35°	846	860	873	889	894	529
45°	705	729	752	772	779	545
55°	552	579	615	639	647	492
65°	382	422	464	493	504	379
75°	212	258	309	343	355	226
85°	65	117	173	208	222	70
90°	22	78	137	175	188	15
95°	52	72	122	158	171	59
105°	210	240	288	322	311	221
115°	379	394	431	459	468	374
125°	528	531	559	583	592	471
135°	651	651	662	682	692	502
145°	749	750	750	758	764	468
155°	820	821	819	821	820	378
165°	865	862	862	866	861	244
175°	885	881	882	887	880	84
180°	885	885	885	885	885	



TEST NUMBER: P332813-940

CATALOG NUMBER: S124DIW-S1020D770U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1104.9	1104.3	1103.6	1103.0	1102.2	1101.1	1099.3	1097.6	1095.8	1094.0	1095.6
5°	1102.2	1101.4	1100.5	1099.7	1098.9	1097.5	1095.6	1093.7	1091.8	1089.8	1092.1
7.5°	1092.8	1092.3	1091.8	1091.4	1090.8	1089.8	1088.2	1086.6	1085.0	1083.4	1085.9
10°	1084.9	1084.7	1084.4	1084.1	1083.9	1083.0	1081.6	1080.3	1078.9	1077.5	1080.0
12.5°	1074.1	1074.1	1074.0	1073.9	1073.9	1073.4	1072.5	1071.5	1070.6	1069.6	1071.9
15°	1056.6	1056.9	1057.1	1057.4	1057.7	1057.4	1056.6	1055.8	1054.9	1054.1	1056.6
17.5°	1032.7	1033.5	1034.3	1035.1	1036.0	1036.3	1036.1	1036.0	1035.8	1035.6	1038.1
20°	1015.9	1016.7	1017.5	1018.3	1019.2	1019.8	1020.0	1020.3	1020.6	1020.8	1023.6
22.5°	997.1	998.2	999.3	1000.3	1001.3	1002.1	1002.6	1003.1	1003.5	1004.1	1006.8
25°	966.6	968.2	969.8	971.5	973.1	974.4	975.2	976.1	976.9	977.7	980.7
27.5°	932.6	935.0	937.4	939.8	942.2	944.1	945.3	946.6	947.8	949.0	951.9
30°	909.9	912.0	914.3	916.4	918.6	920.7	922.6	924.5	926.4	928.4	931.4
32.5°	885.2	887.9	890.5	893.1	895.7	898.1	900.3	902.4	904.6	906.7	910.1
35°	845.8	849.1	852.3	855.6	858.9	861.9	864.7	867.4	870.1	872.9	876.7
37.5°	806.0	809.9	813.6	817.4	821.2	824.7	828.1	831.5	835.0	838.4	842.2
40°	780.4	784.0	787.6	791.1	794.7	798.3	802.2	806.0	809.9	813.7	817.8
42.5°	750.8	754.8	758.8	762.9	766.8	771.1	775.5	780.1	784.5	789.1	793.6
45°	705.2	710.4	715.6	720.9	726.0	731.2	736.5	741.6	746.8	752.1	756.7
47.5°	661.6	666.9	672.3	677.7	683.1	688.8	694.7	700.8	706.9	712.8	717.6
50°	630.0	636.1	642.0	648.1	654.1	660.1	666.2	672.2	678.2	684.2	689.7
52.5°	598.4	604.5	610.5	616.5	622.6	629.0	635.9	642.8	649.7	656.7	662.1
55°	552.3	558.1	563.8	569.6	575.3	582.3	590.6	598.8	607.0	615.2	620.7
57.5°	500.8	507.9	515.1	522.2	529.3	536.9	545.1	553.3	561.4	569.6	576.1
60°	467.3	474.4	481.5	488.7	495.8	503.8	512.9	521.9	530.9	540.0	546.3
62.5°	434.7	442.5	450.3	458.1	465.8	474.2	483.3	492.3	501.4	510.4	516.7
65°	382.2	390.9	399.8	408.5	417.2	426.3	435.6	445.0	454.2	463.6	470.4
67.5°	331.6	341.0	350.3	359.6	368.9	378.5	388.5	398.5	408.5	418.5	425.4
70°	297.1	306.5	315.8	325.0	334.4	344.3	354.6	365.1	375.5	385.9	393.3
72.5°	263.6	273.1	282.7	292.2	301.8	312.0	323.1	334.1	345.3	356.3	363.5
75°	212.0	222.2	232.3	242.5	252.6	263.4	274.9	286.4	297.9	309.4	317.1
77.5°	164.0	174.7	185.5	196.2	207.0	218.3	230.4	242.5	254.5	266.5	274.3
80°	134.4	145.3	156.3	167.3	178.3	189.8	201.8	213.8	225.9	237.9	246.2
82.5°	104.8	116.2	127.6	139.0	150.3	162.1	174.2	186.2	198.3	210.4	218.7
85°	65.4	76.9	88.4	99.9	111.4	123.3	135.6	147.9	160.2	172.6	180.8
87.5°	36.9	48.4	59.9	71.4	82.9	94.8	107.0	119.2	131.4	143.7	151.9
90°	21.7	34.3	46.9	59.5	72.1	84.8	97.7	110.7	123.7	136.6	145.4
92.5°	27.1	37.0	47.0	56.9	66.9	78.4	91.3	104.2	117.2	130.2	138.8
95°	52.4	56.4	60.5	64.6	68.6	76.3	87.7	99.1	110.5	121.8	130.1
97.5°	91.8	102.7	113.7	124.6	135.5	138.2	133.0	127.7	122.3	117.1	124.4
100°	122.1	131.9	141.7	151.4	161.2	161.3	151.7	142.0	132.4	122.8	127.7
102.5°	157.0	165.2	173.4	181.6	189.8	197.8	205.6	213.5	221.2	229.1	209.3
105°	210.4	216.7	223.0	229.4	235.8	244.4	255.3	266.2	277.1	287.8	296.0
107.5°	261.8	266.8	271.7	276.6	281.6	289.4	300.0	310.5	321.1	331.7	339.1
110°	295.8	300.1	304.3	308.6	312.9	320.3	330.7	341.3	351.7	362.2	368.8



TEST NUMBER: P332813-940

CATALOG NUMBER: S124DIW-S1020D770U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	328.7	332.9	337.1	341.3	345.4	352.3	361.9	371.5	381.0	390.6	396.6
115°	379.4	382.3	385.2	388.1	391.0	396.8	405.4	414.0	422.7	431.2	437.6
117.5°	426.1	428.2	430.3	432.3	434.4	439.7	448.2	456.6	465.1	473.7	479.3
120°	456.9	458.3	459.8	461.2	462.5	467.2	474.9	482.8	490.5	498.4	504.2
122.5°	486.6	487.1	487.6	488.1	488.7	492.8	500.4	508.2	515.9	523.6	529.2
125°	527.8	528.2	528.4	528.8	529.1	532.5	539.1	545.6	552.2	558.7	564.4
127.5°	567.8	567.7	567.6	567.5	567.3	570.2	576.1	582.1	588.1	594.0	598.8
130°	592.8	592.6	592.5	592.5	592.3	594.6	599.5	604.3	609.1	613.9	619.0
132.5°	616.6	616.6	616.6	616.6	616.6	618.6	622.7	626.8	630.8	634.9	639.7
135°	651.1	650.9	650.9	650.7	650.5	651.8	654.2	656.7	659.2	661.7	666.5
137.5°	682.8	682.5	682.3	682.2	681.9	682.6	684.2	685.7	687.3	688.9	693.2
140°	703.4	703.5	703.5	703.5	703.5	703.8	704.4	704.9	705.5	706.1	710.1
142.5°	720.9	721.5	721.9	722.4	722.9	723.1	723.1	723.2	723.2	723.2	726.6
145°	749.2	749.4	749.5	749.7	749.8	749.9	749.9	749.9	749.9	749.9	751.7
147.5°	771.9	772.4	772.9	773.5	774.0	774.2	774.1	773.9	773.7	773.6	774.0
150°	788.3	788.5	788.9	789.2	789.5	789.6	789.4	789.3	789.2	789.0	789.0
152.5°	801.0	801.5	801.8	802.3	802.7	802.7	802.5	802.3	802.0	801.7	801.9
155°	820.1	820.3	820.4	820.6	820.7	820.6	820.1	819.7	819.2	818.8	819.4
157.5°	836.4	836.3	836.2	836.2	836.1	835.7	835.3	834.7	834.2	833.7	834.5
160°	845.9	845.4	845.1	844.6	844.2	843.8	843.7	843.6	843.4	843.3	844.2
162.5°	854.3	853.8	853.3	852.7	852.1	851.8	851.7	851.5	851.3	851.2	852.1
165°	865.1	864.3	863.6	862.9	862.2	861.8	861.8	861.8	861.8	861.8	863.0
167.5°	873.6	872.8	872.1	871.3	870.5	870.1	870.0	870.0	869.9	869.8	871.0
170°	878.3	877.4	876.6	875.7	874.9	874.4	874.6	874.8	874.9	875.0	876.2
172.5°	881.5	880.7	879.8	878.9	878.0	877.6	877.8	877.9	878.1	878.2	879.4
175°	884.9	884.0	883.2	882.3	881.5	881.1	881.2	881.4	881.5	881.6	883.0
177.5°	886.5	885.7	884.9	884.0	883.2	883.0	883.2	883.4	883.7	883.9	884.8
180°	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9



TEST NUMBER: P332813-940

CATALOG NUMBER: S124DIW-S1020D770U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1097.2	1098.7	1100.2	1100.8	1100.6	1100.4	1100.2	1100.0
5°	1094.2	1096.4	1098.7	1099.6	1099.3	1099.0	1098.8	1098.5
7.5°	1088.4	1090.8	1093.3	1094.4	1094.1	1093.9	1093.6	1093.3
10°	1082.4	1084.9	1087.4	1088.5	1088.2	1088.0	1087.7	1087.4
12.5°	1074.2	1076.4	1078.6	1079.8	1079.7	1079.6	1079.6	1079.5
15°	1059.1	1061.5	1064.0	1065.1	1064.8	1064.5	1064.3	1064.0
17.5°	1040.6	1043.2	1045.7	1046.9	1046.6	1046.4	1046.2	1046.0
20°	1026.3	1029.0	1031.8	1033.1	1033.1	1033.1	1033.1	1033.1
22.5°	1009.5	1012.3	1015.0	1016.6	1017.1	1017.4	1017.9	1018.3
25°	983.7	986.7	989.7	991.4	991.7	991.9	992.2	992.5
27.5°	954.7	957.4	960.3	961.8	962.2	962.5	962.8	963.1
30°	934.4	937.4	940.4	942.2	942.7	943.3	943.9	944.4
32.5°	913.6	917.0	920.5	922.5	923.0	923.5	924.1	924.7
35°	880.6	884.4	888.2	890.6	891.4	892.2	893.0	893.9
37.5°	846.1	850.1	853.9	856.3	857.2	858.1	858.9	859.8
40°	821.9	826.0	830.2	832.8	833.8	834.9	836.1	837.1
42.5°	798.2	802.7	807.3	809.9	810.8	811.7	812.6	813.4
45°	761.3	766.1	770.7	773.7	775.1	776.4	777.8	779.2
47.5°	722.5	727.3	732.2	735.4	737.0	738.7	740.3	742.0
50°	695.2	700.7	706.1	709.7	711.4	713.0	714.6	716.3
52.5°	667.6	673.1	678.6	682.1	683.8	685.4	687.1	688.7
55°	626.2	631.7	637.1	640.7	642.3	644.0	645.6	647.3
57.5°	582.6	589.2	595.7	599.7	601.2	602.8	604.3	605.8
60°	552.6	558.9	565.2	569.4	571.7	573.8	576.0	578.2
62.5°	523.0	529.3	535.7	539.8	542.1	544.2	546.4	548.7
65°	477.2	484.1	491.0	495.5	497.7	499.9	502.0	504.3
67.5°	432.4	439.3	446.3	450.8	453.0	455.1	457.3	459.4
70°	400.6	408.0	415.4	420.2	422.0	424.0	425.9	427.8
72.5°	370.7	377.8	385.0	389.7	391.8	394.0	396.1	398.2
75°	324.8	332.4	340.1	345.2	347.7	350.2	352.6	355.1
77.5°	282.1	289.9	297.7	302.9	305.5	308.2	310.8	313.4
80°	254.4	262.6	270.8	276.0	278.2	280.4	282.6	284.8
82.5°	227.2	235.7	244.1	249.5	251.9	254.3	256.7	259.1
85°	189.0	197.2	205.5	211.0	213.7	216.4	219.2	221.9
87.5°	160.0	168.1	176.2	181.5	184.0	186.5	188.9	191.4
90°	154.3	163.1	171.9	177.6	180.0	182.5	185.0	187.5
92.5°	147.4	156.0	164.6	170.0	172.3	174.5	176.8	179.1
95°	138.4	146.7	155.0	160.4	163.0	165.6	168.3	170.9
97.5°	131.6	138.9	146.2	151.1	153.6	156.0	158.5	161.0
100°	132.6	137.5	142.4	145.9	147.9	150.0	152.1	154.2
102.5°	189.5	169.7	149.9	141.1	143.2	145.4	147.6	149.7
105°	304.3	312.4	320.6	323.2	320.0	316.9	313.8	310.7
107.5°	346.5	353.8	361.2	366.2	368.7	371.3	373.8	376.3
110°	375.3	381.9	388.5	393.2	395.8	398.4	401.1	403.7



TEST NUMBER: P332813-940

CATALOG NUMBER: S124DIW-S1020D770U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	402.6	408.7	414.7	419.1	421.9	424.5	427.3	430.1
115°	443.9	450.2	456.6	460.7	462.6	464.5	466.5	468.3
117.5°	484.9	490.5	496.2	500.1	502.2	504.4	506.5	508.6
120°	509.9	515.7	521.5	525.3	527.2	529.1	531.0	532.9
122.5°	534.9	540.6	546.3	549.9	551.6	553.2	554.9	556.6
125°	570.1	575.7	581.3	585.1	586.8	588.6	590.4	592.2
127.5°	603.7	608.5	613.3	616.6	618.4	620.1	621.9	623.7
130°	624.1	629.2	634.3	637.6	639.3	640.9	642.6	644.2
132.5°	644.6	649.4	654.3	657.5	659.1	660.6	662.1	663.6
135°	671.1	675.7	680.5	683.8	685.7	687.7	689.6	691.5
137.5°	697.6	701.9	706.2	709.0	710.2	711.6	712.8	714.2
140°	714.1	718.1	722.1	724.9	726.4	727.9	729.4	730.9
142.5°	730.0	733.5	736.9	739.2	740.5	741.6	742.8	744.0
145°	753.5	755.3	757.1	758.7	760.1	761.4	762.9	764.3
147.5°	774.3	774.6	775.0	775.7	776.7	777.8	778.7	779.8
150°	789.0	789.0	789.0	789.1	789.3	789.3	789.5	789.6
152.5°	802.2	802.4	802.6	802.7	802.6	802.5	802.5	802.4
155°	819.9	820.6	821.1	821.2	820.7	820.3	819.8	819.5
157.5°	835.3	836.1	836.8	836.8	836.1	835.3	834.5	833.7
160°	845.1	845.9	846.8	846.8	845.9	845.1	844.2	843.3
162.5°	853.0	853.8	854.7	854.7	853.7	852.7	851.7	850.7
165°	864.2	865.3	866.5	866.5	865.1	863.8	862.5	861.1
167.5°	872.4	873.6	874.9	874.9	873.3	871.9	870.4	869.0
170°	877.4	878.6	879.8	879.6	878.2	876.6	875.2	873.7
172.5°	880.6	881.7	882.9	882.7	881.1	879.6	878.0	876.4
175°	884.3	885.6	887.0	886.7	884.9	883.2	881.5	879.7
177.5°	885.8	886.7	887.7	887.4	886.0	884.6	883.2	881.8
180°	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9

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