

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: FAIL-SAFE

Report Number: report 1820

Luminaire Tested: **HUS/HUA/HUB**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: report 1820
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: HUS/HUA/HUB
Description: 12 X 12 direct luminaire with side mounting bracket
14000lumens
Light Source: -
Ballast/Driver: -

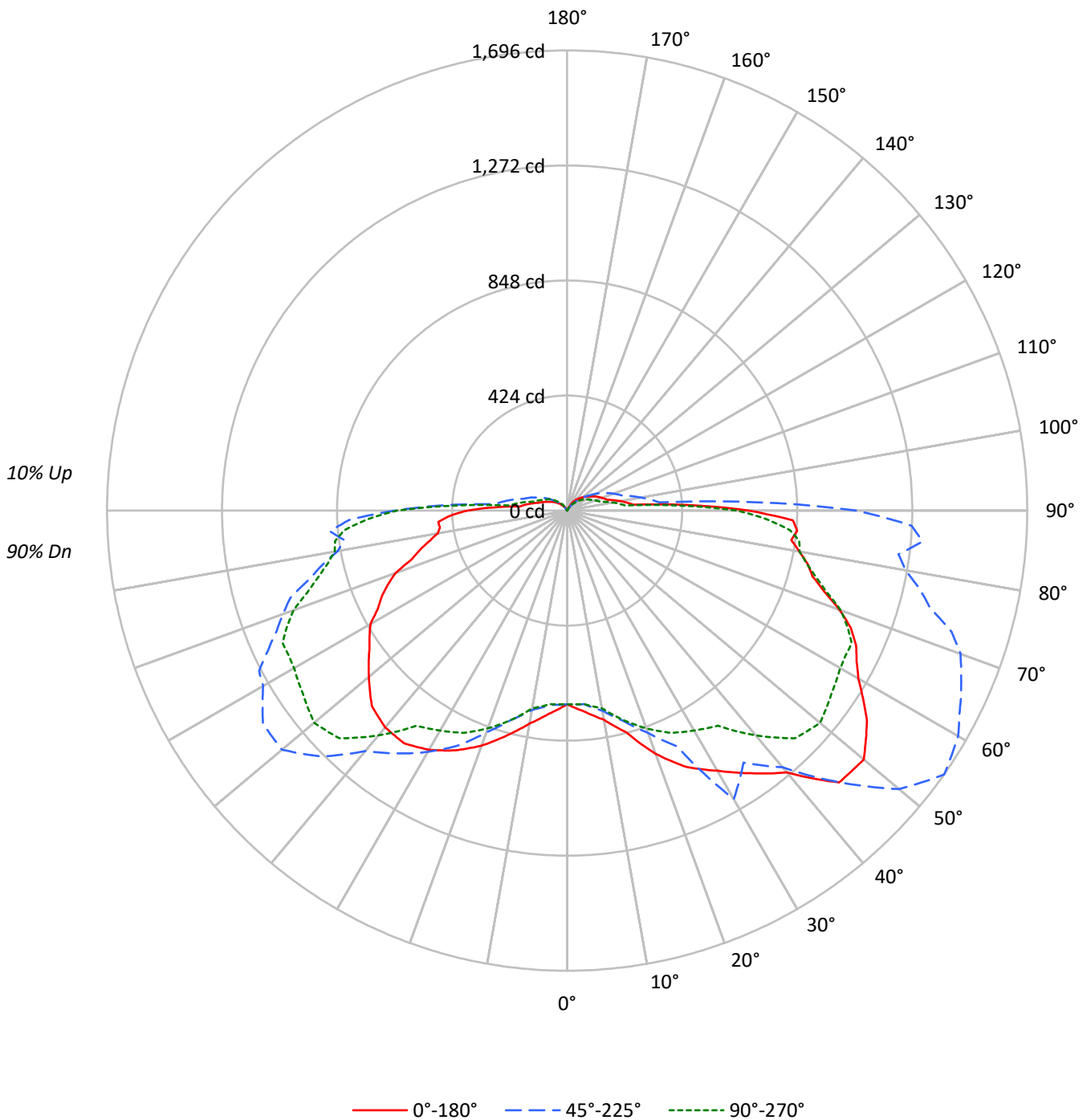
Summary

Lumens per Lamp: 14000 (1 lamp)
Luminaire Lumens: 7837.7 lumens
Efficiency: 56.0%
Efficacy: 38.6 lumens/watt
Spacing Criteria (0/90/45): 2.23 / 2.24 / 2.48
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.25')
CIE Type: Semi-Direct

Input Watts (W): 203
Input Voltage (V): NR
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

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	50	30	10	50	30	10	0														
RCR																																						
0	65	65	65	65	63	63	63	63	59	59	59	55	55	55	52	52	52	50						50														
1	56	52	48	45	54	50	46	43	46	43	41	43	41	38	40	38	36	34						34														
2	49	43	38	33	47	41	36	32	38	34	31	35	32	29	33	30	27	26						26														
3	44	36	30	26	42	35	29	25	32	28	24	30	26	23	27	24	21	20						20														
4	40	31	25	20	38	30	24	20	28	23	19	26	21	18	24	20	17	16						16														
5	36	27	21	17	34	26	21	16	24	19	16	22	18	15	21	17	14	13						13														
6	33	24	18	14	31	23	18	14	22	17	13	20	16	12	18	15	12	10						10														
7	30	22	16	12	29	21	15	12	19	15	11	18	14	11	17	13	10	9						9														
8	28	19	14	10	27	19	14	10	17	13	10	16	12	9	15	11	9	7						7														
9	26	18	12	9	25	17	12	9	16	11	8	15	11	8	14	10	8	6						6														
10	24	16	11	8	23	16	11	8	15	10	7	14	10	7	13	9	7	6						6														

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	7685	7685	7685
5°	7867	7571	7941
10°	8197	7747	8343
15°	8846	8345	8961
20°	10016	8966	9680
25°	11094	9616	10371
30°	12024	10166	11057
35°	13218	10825	11708
40°	14635	12567	12114
45°	17256	14455	12397
50°	18411	15701	12308
55°	18655	16415	12308
60°	18613	17456	12574
65°	19482	19184	12518
70°	19925	20019	12556
75°	20138	20439	12091
80°	22279	22305	12409
85°	27246	26381	15272



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	69.9	0.9	0.5	0°	714	714	714	714	714	
10°-20°	232.4	3.0	1.7	5°	744	716	716	719	751	72
20°-30°	444.0	5.7	3.2	15°	847	803	799	799	858	245
30°-40°	682.6	8.7	4.9	25°	1043	959	904	956	975	482
40°-50°	977.0	12.5	7.0	35°	1182	1134	968	1093	1047	745
50°-60°	1198.8	15.3	8.6	45°	1417	1415	1187	1282	1018	1070
60°-70°	1254.6	16.0	9.0	55°	1349	1696	1187	1369	890	1202
70°-80°	1145.6	14.6	8.2	65°	1175	1602	1157	1216	755	1156
80°-90°	1013.0	12.9	7.2	75°	936	1385	950	986	562	1006
90°-100°	416.3	5.3	3.0	85°	851	1314	824	877	477	690
100°-110°	186.4	2.4	1.3	90°	669	1066	627	635	367	360
110°-120°	113.5	1.4	0.8	95°	246	342	215	269	174	268
120°-130°	68.1	0.9	0.5	105°	153	212	126	167	110	178
130°-140°	34.4	0.4	0.2	115°	121	153	94	114	75	120
140°-150°	12.4	0.2	0.1	125°	89	96	71	69	53	81
150°-160°	2.1	0.0	0.0	135°	64	53	43	36	32	50
160°-170°	0.0	0.0	0.0	145°	39	12	23	5	14	22
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0	5
0°-30°	746.2	9.5	5.3	165°	0	0	0	0	0	0
0°-40°	1428.9	18.2	10.2	175°	0	0	0	0	0	0
0°-60°	3604.7	46.0	25.7	180°	0	0	0	0	0	
0°-90°	7017.8	89.5	50.1							
90°-120°	716.2	9.1	5.1							
90°-150°	831.0	10.6	5.9							
90°-180°	833.0	10.6	6.0							
0°-180°	7837.7	100.0	56.0							



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	90°	105°
0°	714	714	714	714	714	714	714	714	714	714	714
5°	744	724	724	723	716	716	714	716	714	716	714
10°	783	762	758	755	751	749	746	744	740	740	739
15°	847	824	817	808	801	803	801	805	801	799	797
20°	954	915	904	892	876	872	883	876	867	854	867
25°	1043	1009	999	984	975	959	956	949	927	904	927
30°	1107	1084	1077	1073	1075	1228	1041	1018	975	936	963
35°	1182	1144	1153	1157	1141	1134	1109	1070	1013	968	1006
40°	1260	1228	1242	1249	1239	1235	1214	1173	1121	1082	1120
45°	1417	1353	1381	1413	1417	1415	1383	1317	1242	1187	1233
50°	1427	1436	1511	1570	1621	1597	1531	1415	1299	1217	1260
55°	1349	1388	1502	1621	1703	1696	1604	1460	1315	1187	1241
60°	1239	1282	1442	1572	1654	1664	1586	1467	1315	1162	1223
62.5°	1203	1244	1415	1540	1623	1630	1573	1465	1335	1157	1219
65°	1175	1217	1404	1511	1600	1602	1541	1467	1349	1157	1235
67.5°	1132	1178	1381	1477	1550	1572	1534	1465	1326	1118	1193
70°	1068	1125	1333	1435	1525	1543	1509	1406	1289	1073	1144
72.5°	993	1057	1258	1371	1486	1486	1442	1349	1219	1004	1072
75°	936	1004	1221	1303	1387	1385	1342	1285	1152	950	1015
77.5°	908	972	1203	1276	1312	1330	1285	1246	1112	904	968
80°	869	927	1159	1205	1248	1266	1237	1214	1079	870	936
82.5°	833	888	1098	1169	1198	1232	1207	1201	1073	863	927
85°	851	872	1098	1205	1239	1314	1242	1205	1050	824	920
87.5°	833	888	1107	1191	1216	1271	1193	1150	977	737	849
90°	669	769	954	979	997	1066	1009	981	858	627	705
95°	246	315	349	356	358	342	317	294	262	215	231
105°	153	151	169	190	206	212	201	174	150	126	132
115°	121	119	121	135	150	153	144	123	105	94	93
125°	89	89	85	89	96	96	93	78	73	71	69
135°	64	62	59	53	52	53	44	39	43	43	44
145°	39	36	39	34	23	12	11	14	21	23	25
155°	0	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	115°	125°	135°	145°	155°	165°	175°	180°
0°	714	714	714	714	714	714	714	714
5°	716	717	719	721	726	730	735	751
10°	735	740	746	755	767	776	813	797
15°	792	790	799	813	833	845	874	858
20°	867	869	870	883	895	902	929	922
25°	927	940	956	956	959	963	977	975
30°	986	1013	1027	1036	1027	1009	1016	1018
35°	1041	1070	1093	1098	1082	1054	1029	1047
40°	1143	1159	1157	1150	1121	1063	1013	1043
45°	1271	1290	1282	1237	1160	1061	970	1018
50°	1315	1349	1371	1290	1171	1036	913	954
55°	1314	1349	1369	1273	1144	999	863	890
60°	1294	1290	1294	1207	1098	972	822	837
62.5°	1280	1273	1280	1178	1075	956	794	787
65°	1258	1228	1216	1144	1059	938	760	755
67.5°	1241	1185	1159	1109	1023	910	721	716
70°	1200	1171	1114	1086	1007	872	662	673
72.5°	1125	1111	1070	1064	958	826	619	602
75°	1057	1016	986	983	906	785	571	562
77.5°	1007	947	924	908	856	744	538	520
80°	961	901	858	854	797	685	509	484
82.5°	942	860	829	817	785	685	532	473
85°	965	901	877	879	815	698	491	477
87.5°	888	844	805	801	733	641	424	431
90°	755	696	635	603	546	443	328	367
95°	262	269	269	263	251	206	171	174
105°	151	164	167	164	148	121	101	110
115°	103	110	114	110	96	77	68	75
125°	69	73	69	68	61	46	46	53
135°	39	37	36	30	27	27	27	32
145°	21	14	5	2	5	11	9	14
155°	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0

(END OF REPORT)