

SSEC NO.77.01.R1

Submitted to the Boundary Layer Working Group

Boundary Layer Instrumentation Package

Testing and Calibration

A REPORT

from the space science and engineering center
the university of wisconsin-madison
madison, wisconsin

A Report

Submitted to the Boundary Layer Working Group

Boundary Layer Instrumentation Package

Testing and Calibration

In Fulfillment of the Supplemental Effort Required Under

Grant ATM75-12941-A01

by

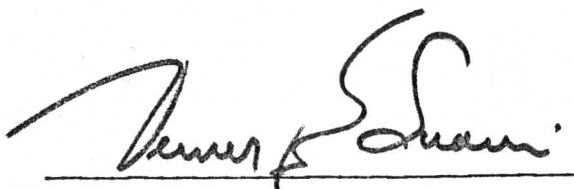
Space Science and Engineering Center

The University of Wisconsin

1225 West Dayton Street

Madison, Wisconsin 53706

January 1977

A handwritten signature in cursive script, appearing to read "James S. Hansen", written over a horizontal line.

Principal Investigator

1.0 Introduction

This report summarizes the data requested by the Boundary Layer Working Group in a memorandum dated 19 January 1976.

1.1 Applicable Documents

1. Memorandum to the Boundary Layer Working Group from Michael Garstang, Boundary Layer Coordinator dated 19 January 1976 with particular reference to Appendix A.
2. Proposal entitled "Boundary Layer Instrument Package Testing and Calibration," 15 May 1975-31 October 1976 funded under Grant ATM75-12941 A01

1.2 Report Organization

There were 17 sondes in sufficiently good condition to permit the series of three tests recommended in the above mentioned Appendix A. Variances or nonoperation sensors have been noted on the appropriate data sheets.

The tests were conducted in a manner similar to the listed procedures. Several changes were required to meet facility constraints. Each operating sonde has data sheets in the following order:

1. Battery Voltage Test

Essentially no changes from the listed procedures.

2. Pressure/Pressure Reference Test

Only selected reference pressures were recorded at "events." From graphs in Appendix A, the relationship between channels is the quantity being studied rather than each channel against an absolute pressure reference. It should be noted that after two

years and considerable handling, including some aircraft transport, it is unrealistic to assume the aneroid capsule has maintained absolute calibration.

3. Radiation Test

Rather than using a multi-channel strip chart recorder, data points corresponding to the appropriate channels were recorded. Manual plotting verified the expected results. Additionally, after applying a step radiation change to the sonde, it was feasible only to apply a single step decrease of this radiation level at approximately the same temperature. You will note that the essential dependencies are present without this 2 step temperature change.

1.3 Sondes

The following sonde data are included

Sonde Number	ID# (SSEC Ground Readout)	Pages
130	28784	4-10
220	11308	11-21
320	12336	22-29
335	7325	30-36
415	4112	37-44
* 425	22616	45-49
430	31868	50-56
* 515	5140	57-61
520	14392	62-68
525	23644	69-75
615	6168	76-83
630	1156	84-94

Sonde Number	ID# (SSEC Ground Readout)	Pages
640	19660	95-107
725	25700	108-114
730	2185	115-122
820	17476	123-129
925	20056	130-136

* Radiation test data for these sondes not available.

BATTERY VOLTAGE TEST

+V. 6.0 -V. 6.0

SONDE # 130

ID# 28784

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	466	1549	2006	8712	9203	769
9K	466	1549	1786			
10K	466	1550	1657			
12K	466	1550	1392			
15K	466	1549	1132			
20K	466	1549	874			
30K	466	549	600			
50K	466	1548	374			
90K	466	1548	214	8713	9203	775
∞	470	1558	2	8715	9203	786

BATTERY VOLTAGE TEST

+V. 5.5 -V. 5.5

SONDE # 130

ID # 28784

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	467	1550	1995	8706	9193	788
9K	468	1548	1782			
10K	468	1548	1653			
12K	467	1548	1393			
15K	468	1548	1134			
20K	468	1548	875			
30K	468	1548	602			
50K	468	1547	376			
90K	468	1547	214	8707	9193	794
∞	471	1558	0	8707	9193	804

BATTERY VOLTAGE TEST

SONDE # 130

+V. 5.0 -V. 5.0

ID# 28784

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	470	1544	1967	8686	9168	801
9K	469	1543	1766			
10K	470	1543	1645			
12K	469	1543	1392			
15K	470	1543	1135			
20K	469	1543	877			
30K	469	1544	604			
50K	469	1542	378			
90K	470	1542	215	8693	9168	805
∞	473	1553	0	8691	9168	816

BATTERY VOLTAGE TEST

SONDE # 130

+V. 4.5 -V. 4.5

ID # 28784

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	471	1523	1910	8662	9137	820
9K	472	1523	1726			
10K	471	1523	1617			
12K	472	1523	1380			
15K	472	1522	1134			
20K	472	1523	879			
30K	472	1523	609			
50K	472	1523	380			
90K	471	1523	217			
∞	476	1533	0	8666	9137	827

BATTERY VOLTAGE TEST

SONDE # 130

+V. 4.0 -V. 4.0

ID# 28784

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	474	1471	1820	8635	9101	890
9K	475	1471	1650			
10K	474	1471	1554			
12K	474	1471	1343			
15K	475	1471	1118			
20K	474	1471	876			
30K	473	1471	607			
50K	474	1470	379			
90K	474	1470	217	8636	9100	887
∞	479	1481	0	8635	9101	887

BATTERY VOLTAGE TEST

SONDE # 130

+V. 3.5 -V. 3.5

ID # 28784

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	473	1362	1646	8592	8592	826
9K	472	1363	1512			
10K	473	1362	1433			
12K	473	1362	1258			
15K	472	k362	1068			
20K	472	1362	854			
30K	472	1362	601			
50K	472	1361	379			
90K	471	1361	215	8593	8593	827
∞	477	1371	0	8593	8593	826

BATTERY VOLTAGE TEST

SONDE # 130

+V. 3.5 -V. 3.5

ID# 28784

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	465	1241	1496	8527	8527	786
9K	465	1243	1374			
10K	464	1241	1304			
12K	465	1242	1156			
15K	465	1241	985			
20K	465	1242	802			
30K	464	1242	581			
50K	464	1241	378			
90K	465	1242	218	8529	8529	788
∞	468	1251	0	8528	8528	787

BATTERY VOLTAGE TEST

SONDE # _____

+V. _____ -V. _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 130 -ID # 32767

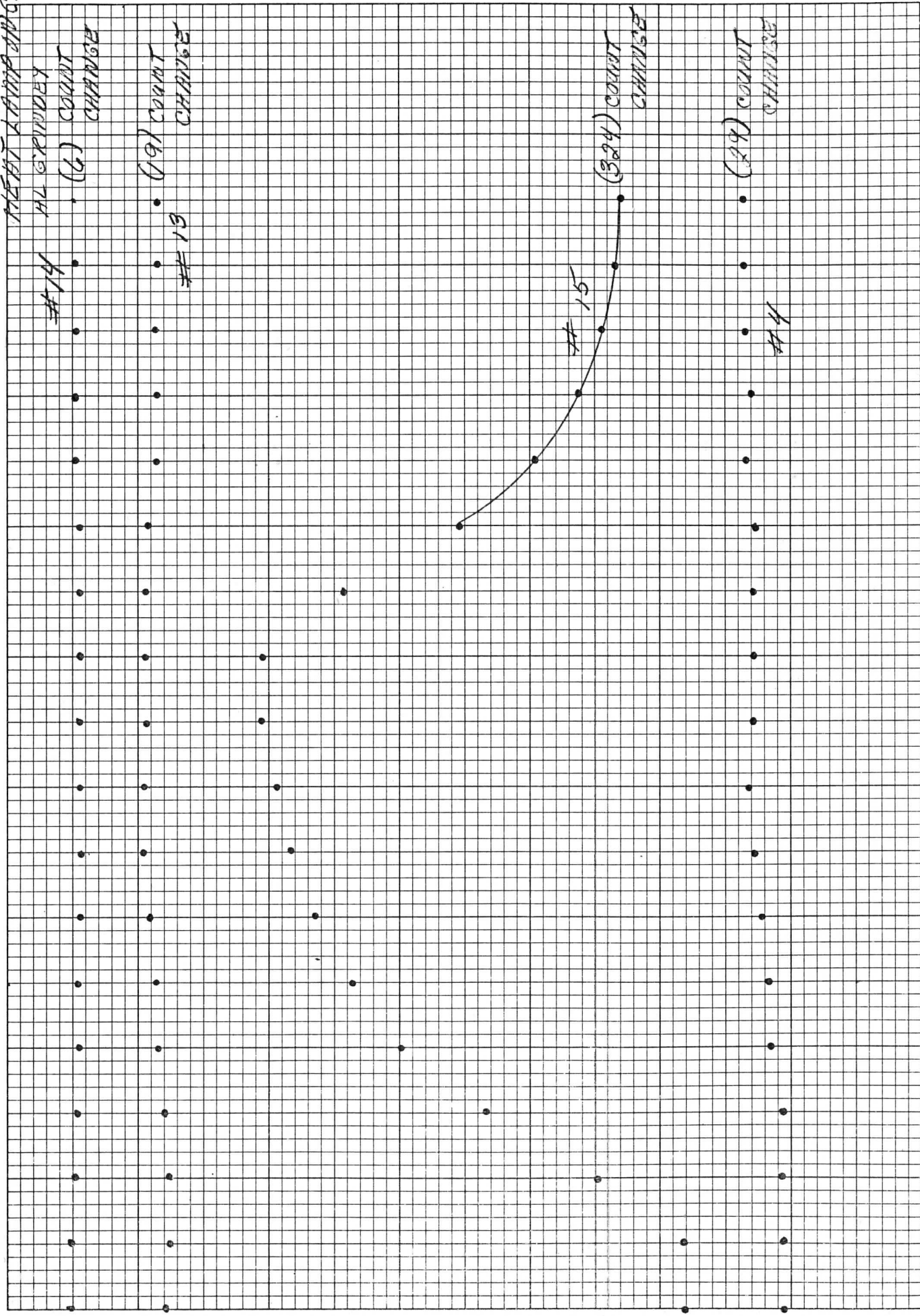
TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0		7563	9191	813	Ambient 980 mb
4	714	7364	9191	814	
8	707	7165	9190	813	
12	707	6957	9189	812	
16	707	6727	9188	812	
20	695	6495	9188	811	
24	686	6255	9187	812	
28	676	6014	9185	811	
32	668	5766	9185	811	
36	662	5506	9184	810	
40	656	5226	9182	810	
44	654	4917	9182	811	
48	649	4550	9180	810	
52	642	0000	9172	810	Plates shorted 790 mb
56	635	4302	9180	809	
60	655	4888	9182	810	
64	661	5276	9184	811	
68	670	5591	9184	810	
72	680	5856	9186	811	
76	687	6151	9186	811	
80	694	6430	9187	811	
84	706	6688	9188	811	
88	707	6953	9189	811	
92	706	7180	9190	812	
96	715	7408	9191	812	
100	721	--	--	--	
104					
108					
112					
116					
120					
124					
128					
132					
136					
140					

Sonde # 130ID # 28784

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	707	7579	9201	781	Heat lamp on center
2	707	7576	9201	782	
3	707	7575	9199	850	
4	707	7580	9197	937	
5	717	7585	9196	999	
6	719	7588	9195	1038	
7	722	7591	9194	1063	
8	727	7594	9193	1082	
9	731	7595	9194	1092	
10	728	7593	9194	1103	
11	728	7593	9193	1105	Heat lamp off
12	728	7593	9194	1041	
13	728	7591	9196	953	
14	733	7588	9198	897	
15	730	7584	9199	862	
16	733	7584	9198	846	
17	736	7586	9199	836	
18	734	7585	9199	830	
20					

I. R. TEST
SONDE #130
MEHT AMP CENTER



5 10 15 25 35 45 55 65 75
TIME (min)

BATTERY VOLTAGE TEST

SONDE # 220+V. 6.0 -V. 6.0ID# 11308

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	451	1524	1987	8781	9718	717
9K	451	1524	1758			
10K	452	1523	1633			
12K	451	1524	1376			
15K	452	1523	1115			
20K	452	1523	858			
30K	452	1524	586			
50K	451	1523	363			
90K	451	1522	205	8785	9717	719
∞	457	1541	3	8788	9717	730

BATTERY VOLTAGE TEST

SONDE # 220+V. 5.5 -V. 5.5ID # 11308

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	453	1523	1976	8776	9710	723
9K	453	1525	1753			
10K	452	1524	1631			
12K	452	1523	1377			
15K	452	1523	1116			
20K	452	1523	861			
30K	453	1523	587			
50K	452	1523	365			
90K	453	1522	205	8778	9710	726
∞	458	1541	2	8780	9710	738

BATTERY VOLTAGE TEST

+V. 5.0 -V. 5.0SONDE # 220ID# 11308

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	454	1520	1948	8751	9681	731
9K	454	1519	1740			
10K	454	1519	1622			
12K	454	1519	1376			
15K	454	1519	1117			
20K	454	1519	863			
30K	454	1519	589			
50K	454	1518	366			
90K	454	1518	206	8753	9680	733
∞	461	1537	1	8756	9681	744

BATTERY VOLTAGE TEST

+V. 4.5 -V. 4.5SONDE # 220ID # 11308

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	451	1484	1875	8724	9646	729
9K	452	1484	1685			
10K	452	1483	1579			
12K	453	1483	1348			
15K	452	1484	1103			
20K	452	1483	855			
30K	452	1483	585			
50K	452	1482	364			
90K	451	1482	205	8723	9646	730
∞	458	1500	0	8725	9646	742

BATTERY VOLTAGE TEST

SONDE # 220+V. 4.0 -V. 4.0ID# 11308

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	451	1425	1764	8684	9602	726
9K	452	1424	1600			
10K	451	1424	1509			
12K	451	1425	1305			
15K	451	1425	1080			
20K	450	1425	846			
30K	451	1424	583			
50K	451	1424	363			
90K	451	1424	205	8685	9602	726
∞	457	1442	0	8685	9602	739

BATTERY VOLTAGE TEST

SONDE # 220+V. 3.5 -V. 3.5ID # 11308

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	448	1316	1591	8634	9546	711
9K	448	1316	1459			
10K	448	1315	1382			
12K	448	1316	1215			
15K	448	1315	1026			
20K	448	1315	819			
30K	448	1315	575			
50K	448	1315	362			
90K	448	1314	205	8635	9546	711
∞	454	1330	0	8639	9546	722

BATTERY VOLTAGE TEST

SONDE # 220

+V. 3.0 -V. 3.0

ID# 11308

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	405	1072	1285	9463	9463	614
9K	405	1072	1183			
10K	405	1072	1123			
12K	405	1072	994			
15K	405	1072	851			
20K	405	1072	695			
30K	405	1072	507			
50K	405	1071	332			
90K	404	1071	194	9462	9462	613
∞	410	1083	0	9463	9463	622

BATTERY VOLTAGE TEST

SONDE # _____

+V. _____ -V. _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 220 -

ID # 11308

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0	699	8809	9723	682	Ambient 980 mb
4	697	8674	9722	683	
8	695	8532	9721	682	
12	690	8374	9720	683	
16	683	8202	9720	683	
20	675	8031	9719	683	
24	668	7843	9718	683	
28	660	7621	9717	683	
32	647	7377	9715	682	
36	643	7102	9713	682	
40	636	6779	9712	681	
44	630	6389	9710	682	
48	620	5907	9708	682	
52	611	5210	9705	682	
56	602	0	9687	682	Plates shorted 775 mb
60	595	0	9686	682	
64	592	5020	9704	681	
68	597	6036	9709	682	
72	607	6602	9712	682	
76	620	7011	9713	682	
80	634	7328	9715	683	
84	648	7619	9716	682	
88	661	7926	9718	682	
92	672	8178	9720	683	
96	680	8394	9720	682	
100	690	8583	9722	683	
104	695	8787	9722	683	
108					
112					
116					
120					
124					
128					
132					
136					
140					

Sonde # 220ID # 11308

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	729	8959	9738	717	Heat lamp on L.H. side
2	730	8957	9737	717	
3	734	8952	9736	771	
4	735	8952	9734	867	
5	739	8954	9732	935	
6	736	8956	9731	976	
7	734	8957	9730	998	
8	732	8956	9729	1012	
9	734	8957	9730	1018	
10	732	8957	9729	1023	
11	735	8956	9729	1025	
12	735	8955	9720	1028	Heat lamp off
13	734	8958	9730	945	
14	732	8959	9732	847	
15	731	8959	9734	790	
16	733	8956	9736	760	
17	735	8956	9736	745	
18	732	8956	9737	735	
20					

Sonde # 220
 ID # 11308

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	786	8836	9726	748	HEAT LAMP ON CENTER
2	773	8836	9725	749	
3	774	8830	9723	846	
4	769	8830	9720	933	
5	772	8831	9718	991	
6	772	8832	9716	1033	
7	770	8832	9715	1059	
8	772	8832	9715	1072	
9	770	8832	9715	1080	
10	771	8833	9714	1084	
11	772	8832	9715	1088	HEAT LAMP OFF
12	772	8838	9716	998	
13	769	8840	9719	899	
14	773	8840	9720	838	
15	773	8838	9722	806	
16	771	8838	9723	789	
17	770	8838	9723	777	
18	772	8838	97]3	770	
20					

Sonde # 220ID # 11308

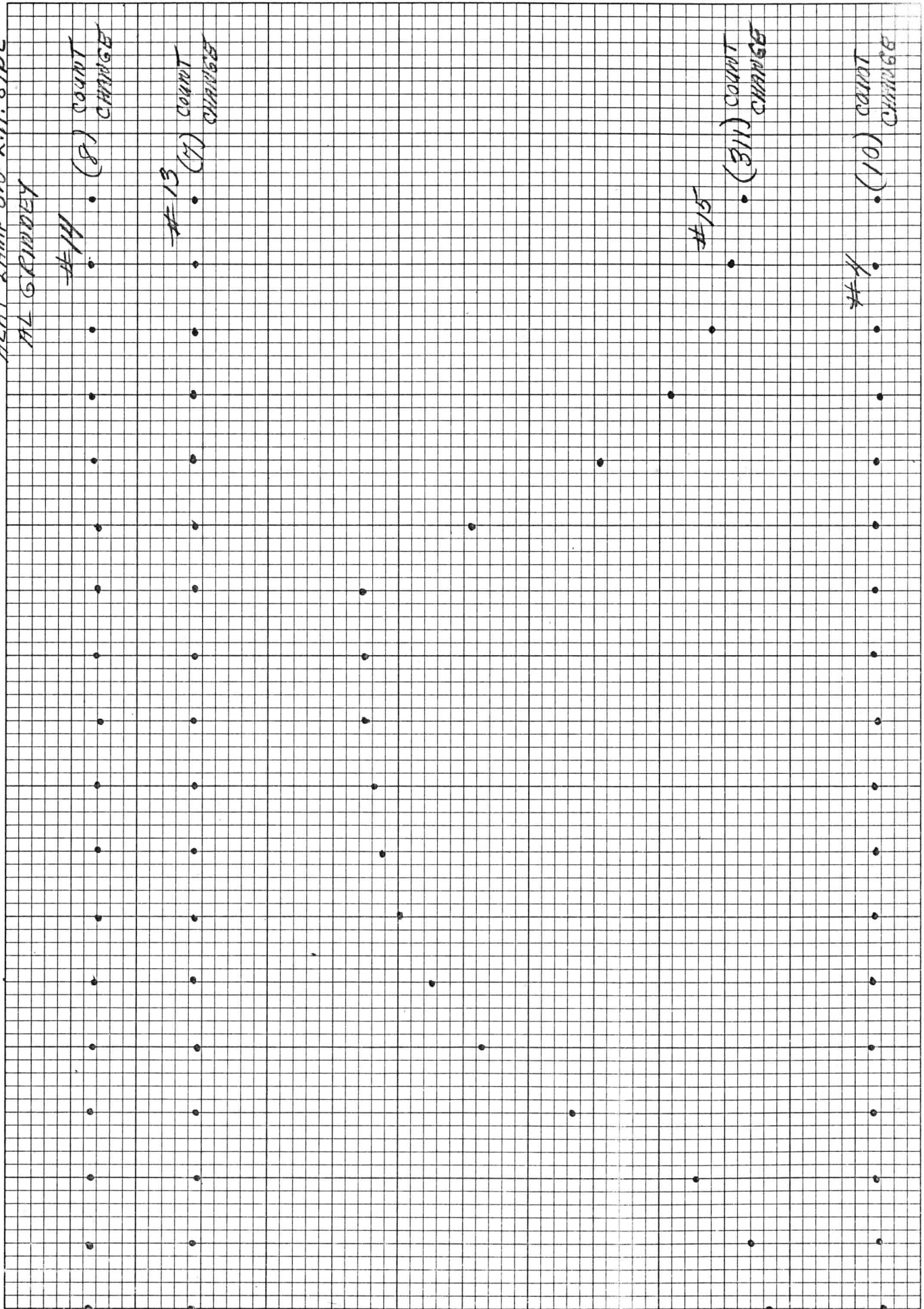
RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	703	8949	9741	684	HEAT LAMP ON R.H. SIDE
2	703	8948	9740	690	
3	703	8942	9737	735	
4	707	8942	9734	804	
5	710	8943	9732	846	
6	712	8944	9731	880	
7	711	8946	9730	900	
8	6144	8945	9729	914	
9	716	8947	9729	920	
10	715	8949	9728	929	
11	718	8949	9729	931	HEAT LAMP OFF
12	717	8956	9730	876	
13	718	8958	9733	817	
14	718	8957	9735	769	
15	720	8958	9737	746	
16	719	8957	9737	730	
17	722	8957	9737	721	
18	728	8958	9738	717	
20					

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NO. 340-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH

J.R. TEST
SONDE # 220
HEAT LAMP ON L.H. SIDE
AL GRINDY



5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

I. R. TEST
SONDE #220
HEAT LAMP AND CENTER

AL GRINDLEY

#14 (9) COUNT CHANGE

(6) COUNT CHANGE

#13

#15

(350) COUNT CHANGE

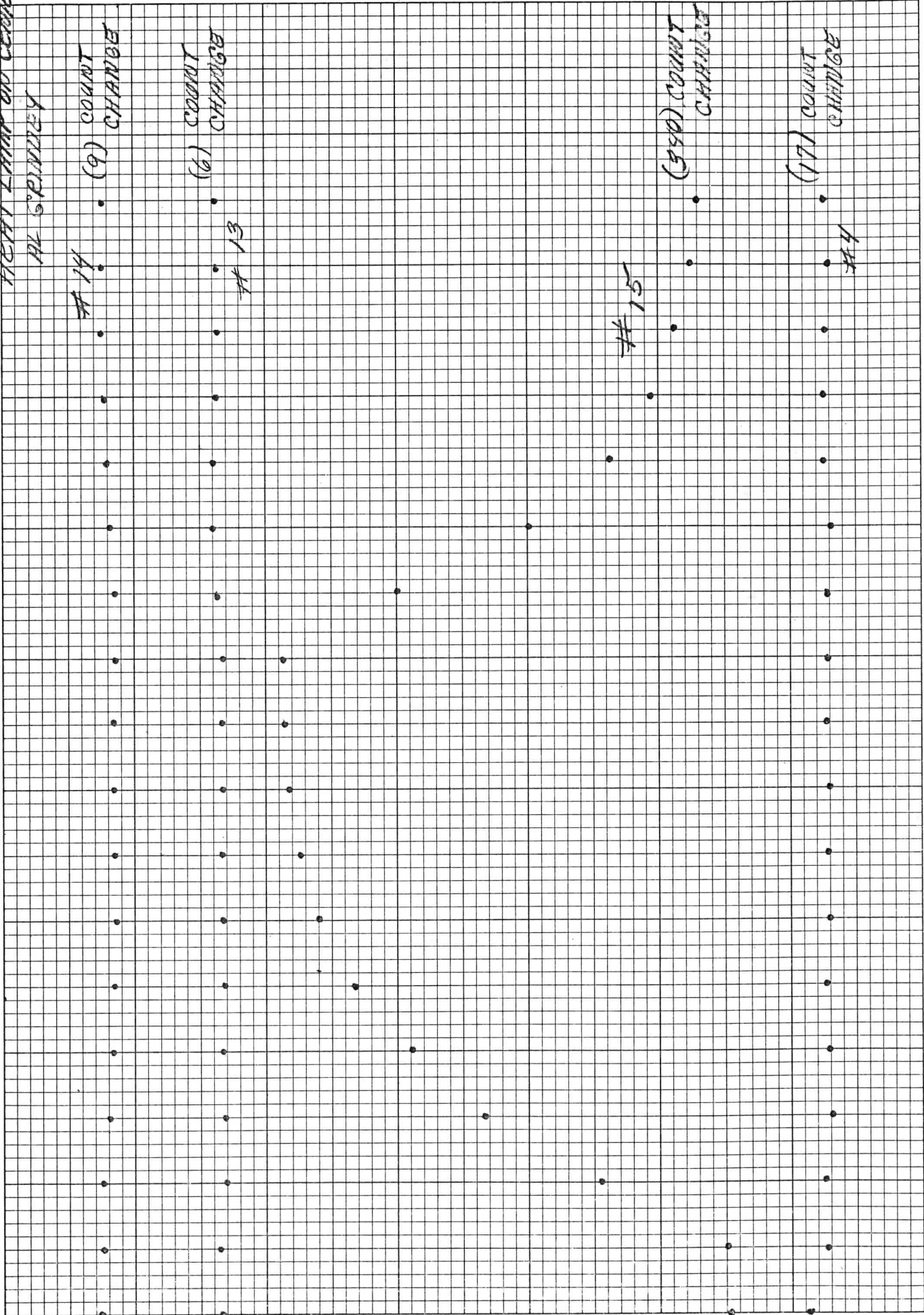
(17) COUNT CHANGE

#4

5 10 15 25 35 45 55 65 75
TIME IN MIN.

DIETZGEN CORPORATION
MADE IN U.S.A.

NO. 340-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH



DIETZGEN CORPORATION
MADE IN U.S.A.

NO. 340-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH

I.R. TEST
SONDE #220
HEAT LAMP ON R.H. SIDE

AL GRINDREY

14

(16) COUNT
CHANGE

(16) COUNT
CHANGE

#13

#15

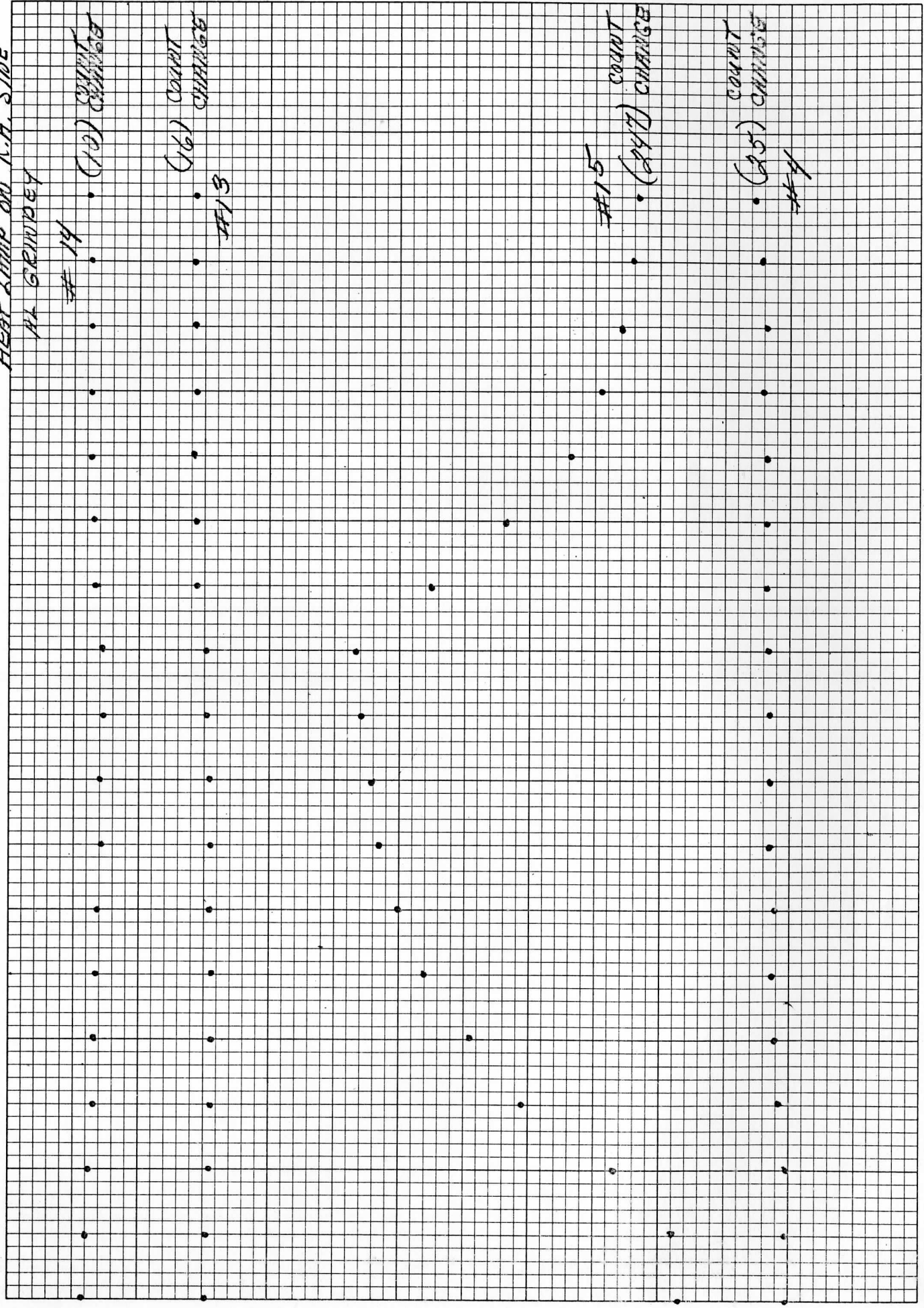
(247) COUNT
CHANGE

(205) COUNT
CHANGE

#4

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

Time in min.



BATTERY VOLTAGE TEST

SONDE # 320

+V. 6.0 -V. 6.0

ID# 12336

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	457	1534	1990	8655	9265	829
9K	457	1535	1764			
10K	457	1535	1639			
12K	457	1535	1384			
15K	457	1534	1124			
20K	457	1534	868			
30K	457	1534	594			
50K	457	1533	371			
90K	457	1532	211	8657	9265	834
∞	463	1552	0	8656	9265	849

BATTERY VOLTAGE TEST

SONDE # 320

+V. 5.5 -V. 5.5

ID # 12336

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	458	1533	1977	8751	9368	840
9K	458	1533	1757			
10K	458	1534	1639			
12K	458	1533	1383			
15K	458	1533	1124			
20K	457	1533	868			
30K	458	1532	595			
50K	457	1532	372			
90K	458	1531	211	8752	9368	844
∞	464	1550	0	8753	9370	860

BATTERY VOLTAGE TEST

+V. 5.0 -V. 5.0SONDE # 320ID# 12336

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	459	1528	1952	8983	9625	849
9K	459	1528	1741			
10K	459	1528	1627			
12K	459	1528	1380			
15K	459	1528	1125			
20K	459	1528	870			
30K	459	1527	595			
50K	459	1527	371			
90K	459	1526	211	8982	9625	852
∞	464	1547	0	8983	9625	867

BATTERY VOLTAGE TEST

+V. 4.5 -V. 4.5SONDE # 320ID # 12336

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	455	1489	1870	8956	9604	845
9K	455	1489	1686			
10K	455	1489	1580			
12K	456	1489	1352			
15K	455	1489	1109			
20K	455	1488	862			
30K	454	1488	591			
50K	455	1488	369			
90K	455	1487	209	8956	9604	846
∞	461	1508	0	8956	9604	860

BATTERY VOLTAGE TEST

SONDE # 320+V. 4.0 -V. 4.0ID# 12336

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	452	1423	1750	8894	9532	836
9K	453	1423	1593			
10K	453	1423	1503			
12K	453	1423	1303			
15K	453	1423	1083			
20K	453	1423	850			
30K	453	1423	587			
50K	452	1422	367			
90K	452	1422	208	8894	9532	836
∞	460	1440	0	8894	9531	849

BATTERY VOLTAGE TEST

SONDE # 32+V. 3.5 -V. 3.5ID # 12336

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	448	1296	1556	8810	9435	804
9K	447	1297	1434			
10K	448	1296	1360			
12K	447	1297	1199			
15K	446	1296	1016			
20K	447	1296	815			
30K	447	1296	574			
50K	448	1296	364			
90K	448	1296	206	8810	9434	802
∞	454	1312	0	8811	9434	815

BATTERY VOLTAGE TEST

SONDE # 320

+V. 3.0 -V. 3.0

ID# 12336

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	399	1047	1252	9294	9294	674
9K	398	1047	1152			
10K	399	1048	1095			
12K	398	1048	972			
15K	397	1047	833			
20K	397	1047	683			
30K	398	1047	499			
50K	398	1047	329			
90K	398	1047	192	9294	9294	673
∞	404	1058	0	9294	9294	682

BATTERY VOLTAGE TEST

SONDE # _____

+V. _____ -V. _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
.9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 320 -ID # 12336

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0	686	8711	9351	788	Ambient 980 mb
4	683	8523	9350	788	
8	678	8395	9351	787	
12	671	8273	9350	787	
16	663	8153	9350	787	
20	658	8035	9350	787	
24	651	7915	9349	786	
28	643	7782	9349	786	
32	638	7644	9348	9786	
36	630	7503	9348	785	
40	623	7351	9346	785	
44	617	7184	9347	785	
48	613	7009	9345	785	
52	608	6830	9345	785	
56	601	6633	9344	785	
60	596	6423	9344	785	
64	590	6190	9343	785	
68	583	5948	9343	785	
72	579	5688	9341	785	
76	577	5410	9341	785	
80	570	5117	9340	785	
84	566	4801	9339	785	
88	560	4562	9338	785	Plates did not short down
92	561	4658	9338	785	to 700 mb
96	562	5183	9340	785	
100	571	5612	9341	784	
104	582	5962	9341	785	
108	594	6264	9343	785	
112	608	6526	9344	785	
116	621	6781	9345	785	
120	631	7015	9346	785	
124	640	7229	9345	785	
128	647	7428	9347	785	
132	653	7613	9348	785	
136	661	7791	9350	785	
140	672	8192	9351	785	

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 320 -

ID # 12336

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
144	672	8192	9351	785	
148	680	8347	9350	786	
152	683	8484	9351	786	
154	689	8697	9351	786	
158	694	694			
32					
36					
40					
44					
48					
52					
56					
60					
64					
68					
72					
76					
80					
84					
88					
92					
96					
100					
104					
108					
112					
116					
120					
124					
128					
132					
136					
140					

Sonde # 320ID # 12336

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	714	8780	9362	795	HEAT LAMP ON CENTER OF SONDE
2	714	8780	9363	797	
3	720	8793	9383	890	
4	724	8799	9392	1023	
5	727	8803	9393	1095	
6	731	8805	9394	1147	
7	735	8807	9394	1171	
8	736	8809	9395	1195	
9	736	8809	9395	1206	
10	738	8811	9395	1214	
11	740	8811	9395	1219	
12	741	8812	9395	1222	HEAT LAMP OFF
13	737	8803	9378	1112	
14	740	8800	9372	998	
15	740	8798	9371	938	
16	743	8797	9369	901	
17	742	8798	9368	882	
18	774	8798	9369	869	
20					

DIETZGEN CORPORATION
MADE IN U.S.A.

NO. 340-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH

I.R. TEST.
SONDE # 320

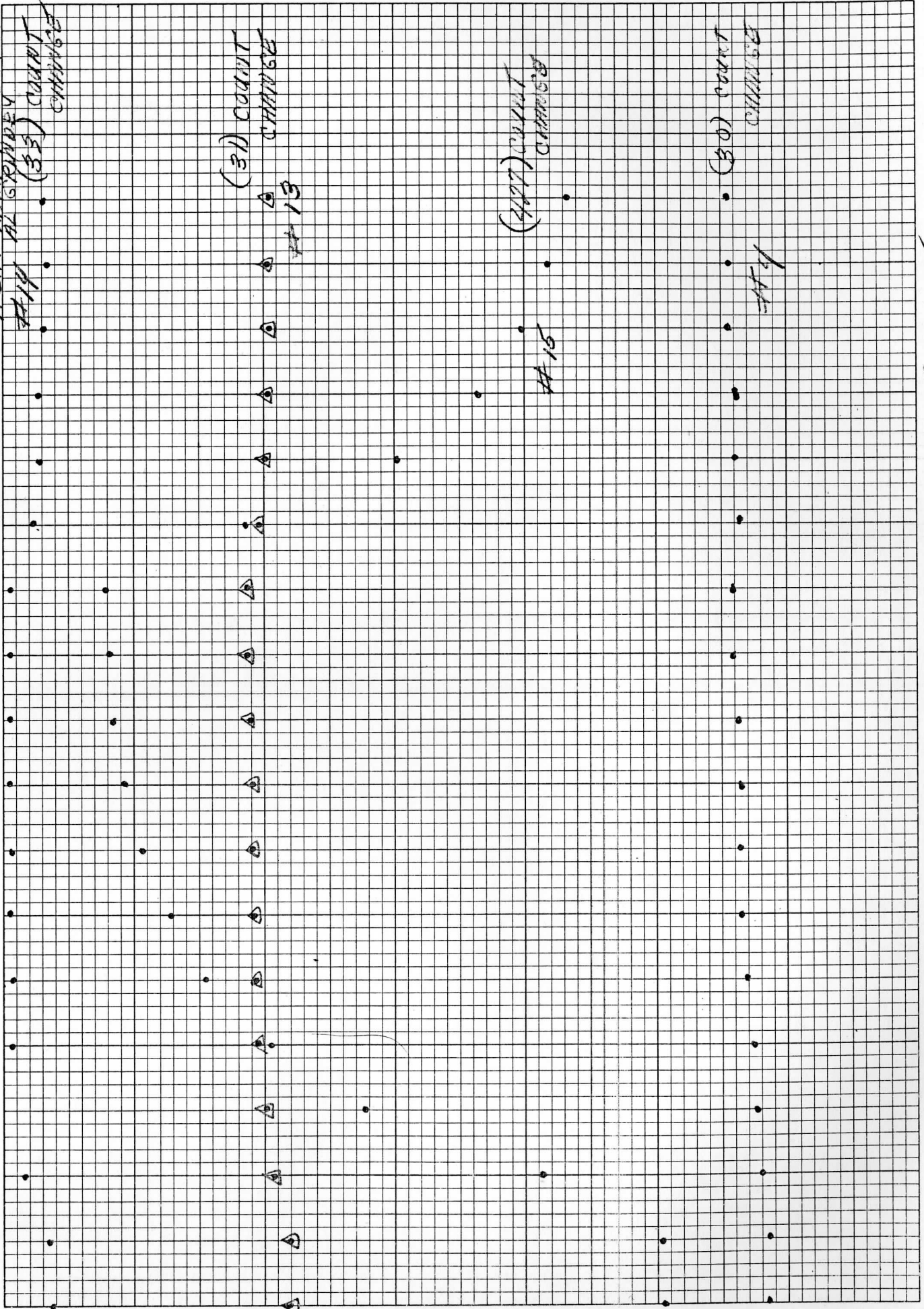
HEAT LAMP IN CENTER

#14
(35) COUNT CHANGE

(30) COUNT CHANGE
#13

(477) COUNT CHANGE
#15

(30) COUNT CHANGE
#14



5 10 15 20 25 30 35 40 45 50 55 60 65 70 75
Time in MIN.

BATTERY VOLTAGE TEST

SONDE # 335

+V. 6.0 -V. 6.0

ID# 7325

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	481	1603	2084	8078	9470	769
9K	480	1603	1843			
10K	482	1602	1714			
12K	481	1604	1443			
15K	482	1603	1170			
20K	482	1602	903			
30K	482	1601	618			
50K	482	1601	388			
90K	481	1602	224	8082	9465	773
∞	486	1620	1	8082	9466	784

BATTERY VOLTAGE TEST

SONDE # 335

+V. 5.5 -V. 5.5

ID # 7325

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	481	1600	2069	8092	9471	779
9K	481	1600	1836			
10K	482	1600	1708			
12K	481	1600	1442			
15K	481	1599	1170			
20K	481	1600	903			
30K	480	1600	618			
50K	481	1600	387			
90K	481	1599	224	8094	9471	784
∞	486	1616	2	8099	9470	797

BATTERY VOLTAGE TEST

SONDE # 335+V. 5.0 -V. 5.0ID# 7325

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	480	1592	2037	8263	9663	787
9K	480	1592	1817			
10K	480	1592	1695			
12K	480	1591	1436			
15K	480	1591	1169			
20K	480	1591	903			
30K	481	1591	617			
50K	480	1591	386			
90K	480	1590	222	8267	9660	788
∞	484	1608	1	8268	9664	800

BATTERY VOLTAGE TEST

SONDE # 335+V. 4.5 -V. 4.5ID # 7325

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	475	1549	1948	8324	9730	781
9K	474	1548	1753			
10K	475	1549	1644			
12K	474	1549	1406			
15K	475	1549	1151			
20K	474	1549	892			
30K	475	1548	610			
50K	475	1548	381			
90K	474	1548	218	8327	9730	782
∞	479	1564	0	8330	9730	793

BATTERY VOLTAGE TEST

SONDE # 335

+V. 4.0 -V. 4.0

ID# 7325

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	472	1475	1815	8246	9631	775
9K	472	1474	1651			
10K	471	1474	1557			
12K	471	1474	1350			
15K	471	1474	1120			
20K	472	1474	879			
30K	472	1473	605			
50K	471	1473	379			
90K	472	1472	215	8244	9630	774
∞	476	1488	0	2248	9629	785

BATTERY VOLTAGE TEST

SONDE # 335

+V. 3.5 -V. 3.5

ID # 7325

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1340	1615	8144	9507	748
9K	465	1340	1483			
10K	465	1340	1408			
12K	464	1339	1239			
15K	465	1339	1049			
20K	464	1339	840			
30K	464	1339	592			
50K	464	1339	373			
90K	464	1339	212	8145	9508	747
∞	470	1552	0	8147	9508	757

BATTERY VOLTAGE TEST

+V. 3.0 -V. 3.0

SONDE # 335

ID# 7325

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	430	1134	1366	9340	9340	658
9K	430	1134	1254			
10K	430	1134	1190			
12K	430	1132	1050			
15K	430	1132	896			
20K	430	1134	734			
30K	430	1134	534			
50K	430	1132	348			
90K	430	1134	206	9340	9340	658
∞	430	1144	0	9340	9340	666

BATTERY VOLTAGE TEST

+V. _____ -V. _____

SONDE # _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

34
PRESSURE/PRESSURE REFERENCE TEST

Sonde # 335 -

ID # 7325

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0		8327	9476	730	Ambient 995 mb
4	1652	8175	9469	730	
8	1652	7906	9476	729	
12	1652	7634	9471	729	
16	1652	7344	9472	729	
20	1652	7043	9472	729	
24	1652	6728	9470	729	
28	1652	6401	9467	729	
32	1652	6041	9468	729	
36	1652	5643	9467	728	
40	1652	5167	9462	728	
44	1652	4584	9462	728	
48	1652	3826	9460	729	
52	1652	3456	9459	729	
56	1652	3051	9458	729	
60	1652	2598	9456	728	
64	1652	0769	9452	728	
68	1652	0	9453	728	Plates shorted at 745 mb
72	1652	0	9453	728	
76	1652	2305	9456	728	
80	1652	3093	9452	729	
84	1652	3997	9458	729	
88	1652	4797	9469	728	
92	1652	5484	9463	728	
96	1652	6051	9468	729	
100	1652	6558	9469	729	
104	1652	6967	9470	729	
108	1652	7322	9470	729	
112	1652	7646	9476	729	
116	1652	7919	9474	729	
120	1652				
124					
128					
132					
136					
140					

Sonde # 335ID # 7325

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	1655	7993	9483	801	Heat lamp on center
2	1655	7994	9484	801	
3	1653	7987	9483	868	
4	1653	7988	9482	962	
5	1651	7984	9480	1024	
6	1651	7981	9483	1062	
7	1650	7980	9481	1087	
8	1650	7979	9479	1101	
9	1649	7978	9482	1108	
10	1650	7977	9480	1113	
11	1651	7976	9480	1116	Heat lamp off
12	1650	7978	9483	1055	
13	1652	7977	9478	957	
14	1652	7974	9484	890	
15	1653	7969	9483	857	
16	1654	7966	9482	839	
17	1654	7963	9480	827	
18	1654	7964	9482	820	

I.R TEST
SONDE # 335

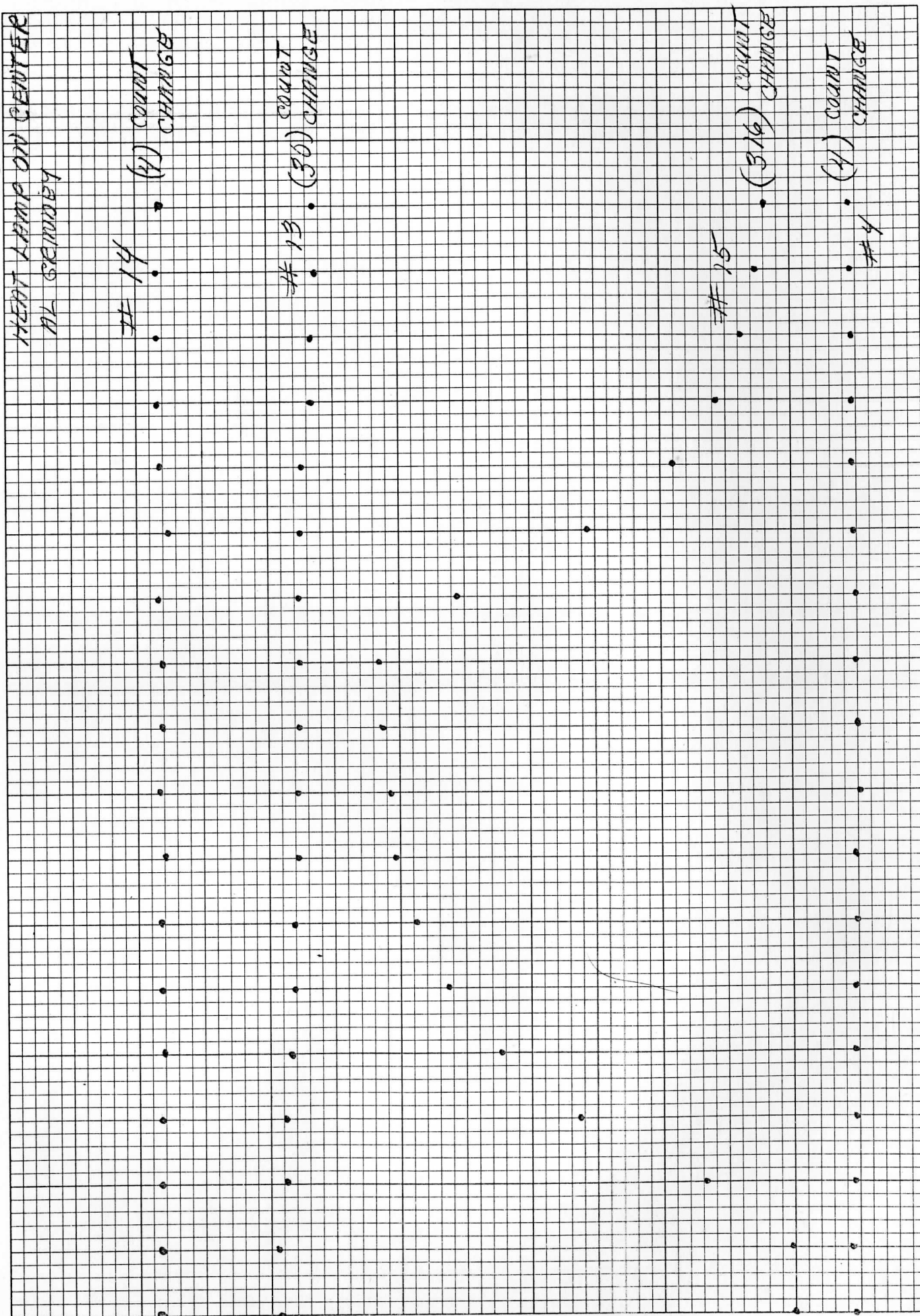
HEAT LAMP ON CENTER
AT GRID 04

14 (4) COUNT CHANGE

13 (30) COUNT CHANGE

15 (316) COUNT CHANGE

4 (4) COUNT CHANGE



5 10 15 25 35 45 55 65 75
TIME IN MIN.

BATTERY VOLTAGE TEST

+V. 6.0 -V. 6.0SONDE # 415ID# 4112

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	468	1543	2010	8088	9587	759
9K	568	1542	1780			
10K	459	1540	1655			
12K	467	1540	1394			
15K	467	1540	1132			
20K	468	1539	872			
30K	467	1540	599			
50K	468	1539	377			
90K	467	1538	217	8089	9587	760
∞	471	1555	4	8091	9586	781

BATTERY VOLTAGE TEST

+V. 5.5 -V. 5.5SONDE # 415ID # 4112

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	468	1541	2000	8090	9585	775
9K	469	1541	1775			
10K	468	1541	1652			
12K	468	1540	1393			
15K	469	1540	1134			
20K	469	1540	872			
30K	469	1539	601			
50K	469	1540	377			
90K	468	1538	217	8090	9585	778
∞	473	1556	4	8090	9584	796

BATTERY VOLTAGE TEST

+V. 5.0 -V. 5.0SONDE # 415ID# 4112

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	468	1537	1977	8070	9558	788
9K	468	1536	1763			
10K	468	1537	1646			
12K	468	1537	1392			
15K	468	1536	1134			
20K	468	1535	877			
30K	468	1535	602			
50K	468	1536	377			
90K	469	1535	216	8070	9558	789
∞	474	1553	2	8073	9557	814

BATTERY VOLTAGE TEST

+V. 4.5 -V. 4.5SONDE # 415ID # 4112

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1504	1906	8049	9530	796
9K	464	1504	1713			
10K	464	1504	1605			
12K	464	1505	1361			
15K	464	1504	1121			
20K	464	1504	866			
30K	464	1504	597			
50K	464	1504	373			
90K	464	1503	213	8049	9530	799
∞	469	1520	1	8050	9530	811

BATTERY VOLTAGE TEST

+V. 4.0 -V. 4.0SONDE # 415ID# 4112

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	462	1449	1802	8019	9495	794
9K	462	1448	1634			
10K	462	1448	1539			
12K	462	1448	1333			
15K	462	1448	1102			
20K	462	1448	863			
30K	462	1448	594			
50K	462	1448	372			
90K	462	1448	212	8019	9495	796
∞	468	1464	1	8021	9495	807

BATTERY VOLTAGE TEST

+V. 3.5 -V. 3.5SONDE # 415ID # 4112

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	456	1334	1610	7982	9449	770
9K	456	1334	1478			
10K	456	1334	1401			
12K	456	1334	1232			
15K	456	1334	1050			
20K	456	1334	832			
30K	456	1333	584			
50K	456	1332	368			
90K	456	1331	210	7982	9449	776
∞	461	1350	1	7983	9449	782

BATTERY VOLTAGE TEST

SONDE # 415

+V. 3.0 -V. 3.0

ID# 4112

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	418	1091	1310	7930	7930	666
9K	418	1090	1203			
10K	418	1090	1138			
12K	418	1090	1015			
15K	418	1089	875			
20K	418	1090	714			
30K	417	1090	521			
50K	417	1091	342			
90K	417	1089	199	7930	7930	671
∞	422	1101	0	7932	7932	676

BATTERY VOLTAGE TEST

SONDE # _____

+V. _____ -V. _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

Sonde # 415

ID # 04112

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0				753	Ambient 980 mb
4	648	8198	9588	753	
8	647	7931	9587	753	
12	640	7663	9587	752	
16	639	7401	9586	753	
20	639	7142	9585	753	
24	628	6875	9585	752	
28	624	6570	9584	752	
32	616	6232	9583	752	
36	607	5875	9583	752	
40	599	5493	9582	752	
44	593	5066	9582	752	
48	588	4530	9581	751	
52	583	4009	9579	751	
56	576	-637	9579	752	
60	571	3439	9578	751	
64	566	3374	9578	751	
68	564	345	9578	751	
72	563	3317	9578	751	
76	560	3289	9578	751	
80	554	3262	9579	750	Plates did not short
84	547	269	9579	751	down to 700 mb
88	563	3280	9579	751	
92	564	3307	9578	751	
96	574	3332	9578	751	
100	584	3355	9579	751	
104	594	3377	9578	752	
108	599	508	9579	751	
112	608	3707	9579	752	
116	618	4096	9579	752	
120	625	4895	9582	752	
124	634	5572	9583	752	
128	639	5071	9584	753	
132	640	6472	9584	752	
136	645	6804	9586	752	
140	652	7099	9586	753	

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 415

ID # 04112

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
144	655	7513	9587	753	
148	661	7934	9588	753	
152	667	8253	9589	753	
20					
24					
28					
32					
36					
40					
44					
48					
52					
56					
60					
64					
68					
72					
76					
80					
84					
88					
92					
96					
100					
104					
108					
112					
116					
120					
124					
128					
132					
136					
140					

Sonde # 415ID # 4112

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	676	8176	9595	765	Lamp on center
2	674	8177	9596	770	
3	676	8165	9594	840	
4	678	8162	9592	955	
5	677	8162	9590	1029	
6	677	8163	9588	1071	
7	677	8162	9588	1103	
8	680	8160	9587	1118	
9	680	8158	9587	1128	
10	682	8156	9587	1134	
11	679	8154	9586	1139	Heat lamp off
12	680	8160	9587	1066	
13	680	8163	9590	952	
14	680	8158	9592	880	
15	679	8156	9593	845	
16	684	8154	9594	823	
17	682	8153	9595	811	
18	684	8147	9595	806	

I.R. TEST
SONDE #415
NIGHT LABORATORY CENTER
AT GLENVIEW

#14 • (7) COUNT CHANGE

#13 • (30) COUNT CHANGE

#15 • (374) COUNT CHANGE

#4 • (10) COUNT CHANGE

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

TIME IN MIN.

BATTERY VOLTAGE TEST

+V. 6.0 -V. 6.0SONDE # 425ID# 22616

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1534	2010	7450	10223	3
9K	464	1533	1778			
10K	463	1534	1653			
12K	463	1533	1393			
15K	463	1534	1129			
20K	463	1534	871			
30K	463	1534	596			
50K	463	1533	372			
90K	463	1534	211			
∞	467	1549	3	7452	10226	3

BATTERY VOLTAGE TEST

+V. 5.5 -V. 5.5SONDE # 425ID # 22616

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1534	1998	7531	10333	2
9K	465	1533	1774			
10K	464	1534	1650			
12K	464	1534	1394			
15K	464	1533	1131			
20K	464	1533	873			
30K	464	1532	596			
50K	463	1532	371			
90K	464	1533	211			
∞	469	1549	0	7529	10331	2

BATTERY VOLTAGE TEST

SONDE # 425

+V. 5.0 -V. 5.0

ID# 22616

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1529	1972	7749	10604	2
9K	464	1529	1759			
10K	464	1529	1641			
12K	464	1529	1391			
15K	464	1529	1132			
20K	465	1529	875			
30K	465	1528	598			
50K	465	1528	373			
90K	465	1528	211	7753	10604	2
∞	470	1544	0	7748	10603	2

BATTERY VOLTAGE TEST

SONDE # 425

+V. 4.5 -V. 4.5

ID # 22616

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	463	1502	1903	7695	10513	2
9K	463	1502	1712			
10K	463	1501	1604			
12K	463	1501	1372			
15K	463	1501	1123			
20K	463	1502	870			
30K	463	1501	595			
50K	463	1502	371			
90K	463	1501	210	7693	10514	3
∞	468	1515	0	7691	10513	2

BATTERY VOLTAGE TEST

SONDE # 425

+V. 4.0 -V. 4.0

ID# 22616

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	462	1439	1785	7583	10372	0
9K	461	1439	1623			
10K	461	1439	1530			
12K	462	1439	1325			
15K	461	1439	1099			
20K	462	1439	862			
30K	462	1439	593			
50K	462	1439	370			
90K	462	1439	209	7586	10375	1
∞	466	1453	1	7586	10373	1

BATTERY VOLTAGE TEST

SONDE # 425

+V. 3.5 -V. 3.5

ID # 22616

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	458	1318	1593	7461	10206	0
9K	458	1318	1465			
10K	458	1318	1391			
12K	458	1318	1224			
15K	458	1317	1036			
20K	458	1318	829			
30K	458	1317	583			
50K	458	1317	368			
90K	458	1317	209	7458	10208	0
∞	463	1329	0	7456	10207	0

BATTERY VOLTAGE TEST

SONDE # 425

+V. 3.0 -V. 3.0

ID# 22616

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	410	1080	1303	7299	7300	0
9K	409	1077	1192			
10K	409	1071	1128			
12K	409	1070	998			
15K	409	1069	853			
20K	408	1069	696			
30K	408	1069	508			
50K	408	1068	334			
90K	408	1068	195	7296	7296	0
∞	413	1080	0	7295	7295	0

BATTERY VOLTAGE TEST

SONDE # _____

+V. _____ -V. _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 425 -ID # 22616

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0		7519	10285		Ambient 980 mb
4	728	7223	10282		
8	723	6878	10282		
12	714	6499	10280		
16	706	6132	10276		
20	693	5840	10275		
24	679	5525	10273		
28	663	5178	10271		
32	651	4774	10272		
36	645	4246	10267		
40	638	3930	10267		
44	631		10271		Plates shorted at 830 mb
48	630		10271		
52	631		10255		
56	656	4052	10274		
60	661	4622	10280		
64	668	5036	10280		
68	678	5329	10282		
72	685	5566	10282		
76	692	5770	10]83		
80	696	5974	10284		
84	701	6184	10286		
88	706	6363	10286		
92	709	6604	11288		
96	714	7057	10289		
100	723	7367	10291		
104					
108					
112					
116					
120					
124					
128					
132					
136					
140					

BATTERY VOLTAGE TEST

SONDE # 430+V. 6.0 -V. 6.0ID# 31868

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	462	1553	2046	8567	9193	613
9K	462	1552	1814			
10K	462	1552	1683			
12K	462	1552	1415			
15K	462	1551	1148			
20K	462	1552	884			
30K	462	1551	606			
50K	461	1550	378			
90K	461	1549	215	8567	9193	614
∞	467	1568	4	8566	9194	625

BATTERY VOLTAGE TEST

SONDE # 430+V. 5.5 -V. 5.5ID # 31868

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1551	2033	8557	9184	617
9K	463	1551	1806			
10K	463	1550	1678			
12K	463	1550	1414			
15K	463	1550	1148			
20K	463	1550	886			
30K	463	1550	607			
50K	462	1549	378			
90K	462	1549	215	8557	9184	621
∞	468	1567	5	8558	9184	631

BATTERY VOLTAGE TEST

+V. 5.0 -V. 5.0SONDE # 430ID# 31868

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	465	1546	2003	8533	9158	625
9K	465	1546	1788			
10K	465	1546	1666			
12K	464	1546	1411			
15K	464	1546	1148			
20K	464	1546	887			
30K	464	1545	611			
50K	464	1544	378			
90K	464	1544	215	8533	9158	627
∞	470	1563	4	8535	9158	635

BATTERY VOLTAGE TEST

+V. 4.5 -V. 4.5SONDE # 430ID # 31868

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	461	1513	1928	8507	9129	622
9K	461	1513	1736			
10K	461	1513	1625			
12K	460	1512	1386			
15K	461	1512	1137			
20K	461	1512	879			
30K	461	1512	604			
50K	461	1511	376			
90K	460	1510	213	8507	9129	624
∞	466	1528	4	8508	9129	632

BATTERY VOLTAGE TEST

+V. 4.0 -V. 4.0SONDE # 430ID# 31868

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	458	1447	1818	8474	9092	619
9K	459	1448	1640			
10K	458	1447	1549			
12K	458	1447	1336			
15K	458	1447	1109			
20K	458	1447	868			
30K	459	1447	600			
50K	458	1446	374			
90K	458	1445	211	8473	9092	621
∞	463	1463	3	8473	9092	627

BATTERY VOLTAGE TEST

+V. 3.5 -V. 3.5SONDE # 430ID # 31868

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	453	1320	1628	8429	9044	603
9K	452	1319	1491			
10K	453	1318	1412			
12K	453	1318	1245			
15K	452	1318	1046			
20K	452	1317	833			
30K	452	1318	588			
50K	452	1317	372			
90K	452	1318	210	8429	9044	609
∞	458	1335	2	8430	9044	614

BATTERY VOLTAGE TEST

SONDE # 430

+V. 3.0 -V. 3.0

ID# 31868

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	410	1083	1313	8980	8980	531
9K	410	1081	1206			
10K	409	1081	1145			
12K	409	1081	1012			
15K	410	1081	868			
20K	409	1081	709			
30K	410	1081	518			
50K	409	1080	339			
90K	409	1079	197	8980	8980	534
∞	413	1091	0	8980	8980	538

BATTERY VOLTAGE TEST

SONDE # _____

+V. _____ -V. _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 430 -

ID # 31868

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0		8618	9189	575	Ambient 980 mb
4	670	8302	9188	574	
8	664	7907	9187	575	
12	656	7547	9186	574	
16	647	7240	9186	574	
20	636	6928	9184	574	
24	623	6577	9185	574	
28	612	6185	9185	575	
32	612	5769	9183	574	
36	601	5311	9182	574	
40	593	4737	9181	574	
44	588	4304	9181	574	
48	582	3850	9180	574	
52	577	3335	9181	574	
56	574	0	9178	574	Plate shorted at 740 mb
60	571	0	9179	574	
64	573	3566	9181	574	
68	578	4308	9182	574	
72	593	4983	9181	574	
76	607	5663	9184	574	
80	612	6179	9185	575	
84	634	6620	9187	574	
88	645	7043	9186	574	
92	652	7389	9187	574	
96	656	7675	9187	575	
100	664	7921	9188	574	
104	666	8181	9188	575	
108	667	8390	9188	575	
112	673	8634	9190	575	
116	676				
120					
124					
128					
132					
136					
140					

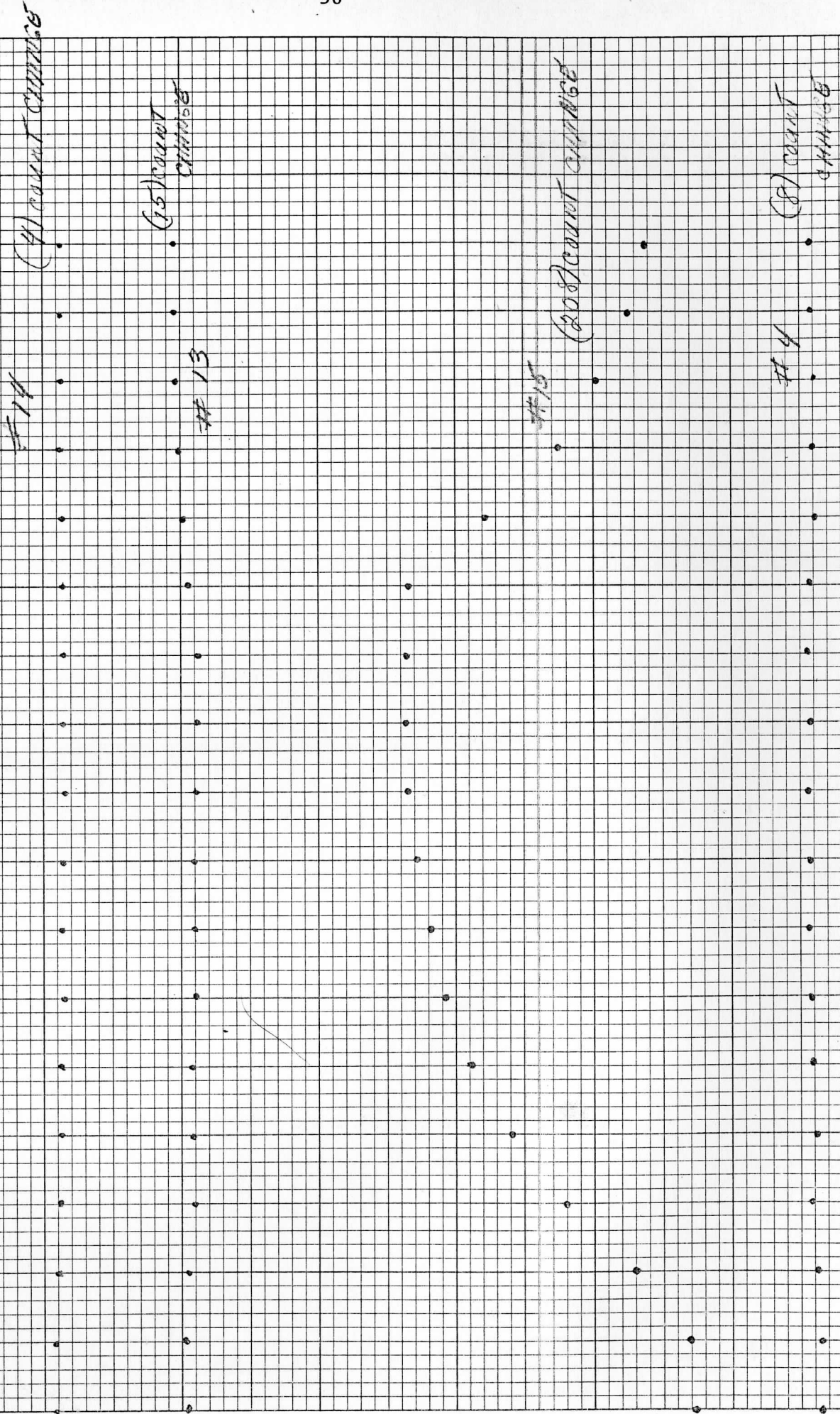
Sonde # 430ID # 31868

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	735	8598	9190	628	Heat lamp on center of
2	737	8599	9191	631	sonde
3	739	8593	9189	669	
4	741	859	9188	720	
5	739	8591	9187	760	
6	740	8591	9187	789	
7	742	8589	9186	806	
8	743	8590	9186	818	
9	742	8590	9186	828	
10	745	8589	9185	835	
11	742	8588	9185	836	
12	743	8589	9184	835	Heat lamp off
13	741	8593	9185	833	
14	739	8599	9188	778	
15	741	8601	9187	725	
16	740	8602	9188	698	
17	741	8602	9189	675	
18	742	8603	9188	662	

I.R. TEST
SAMPLE # 430
HEAT LAMP IN CENTER
OF SAMPLE

AL STANDARD



5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

BATTERY VOLTAGE TEST

SONDE # 515+V. 6.0 -V. 6.0ID# 5140

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	470	1578	2026	10799	10230	830
9K	469	1577	1792			
10K	469	1576	1668			
12K	470	1577	1411			
15K	469	1576	1138			
20K	470	1575	888			
30K	469	1575	606			
50K	469	1575	381			
90K	470	1574	217	10802	10230	837
∞	475	1593	0	10802	10230	852

BATTERY VOLTAGE TEST

SONDE # 515+V. 5.5 -V. 5.5ID # 5140

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	469	1570	2001	10801	10229	840
9K	469	1570	1779			
10K	469	1570	1658			
12K	468	1570	1406			
15K	469	1570	1136			
20K	459	1569	886			
30K	469	1569	605			
50K	469	1569	380			
90K	459	1568	217	10802	10228	843
∞	475	1586	0	10804	10229	857

BATTERY VOLTAGE TEST

+V. 5.0 -V. 5.0SONDE # 515ID# 5140

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	468	1558	1964	10793	10221	846
9K	469	1558	1757			
10K	468	1557	1642			
12K	468	1557	1398			
15K	468	1557	1135			
20K	468	1558	884			
30K	468	1557	604			
50K	468	1557	378			
90K	468	1556	218	10793	10221	848
∞	474	1574	0	10792	10221	860

BATTERY VOLTAGE TEST

+V. 4.5 -V. 4.5SONDE # 515ID # 514

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1522	1890	10760	10188	841
9K	464	1522	1703			
10K	464	1522	1599			
12K	464	1521	1372			
15K	464	1522	1132			
20K	464	1522	876			
30K	464	1522	599			
50K	464	1521	377			
90K	464	1520	214	10760	10187	841
∞	470	1538	0	10760	10188	854

BATTERY VOLTAGE TEST

+V. 4.0 -V. 4.0SONDE # 515ID# 5140

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	462	1450	1774	10720	10147	833
9K	462	1450	1616			
10K	462	1450	1524			
12K	462	1450	1325			
15K	462	1450	1103			
20K	462	1450	866			
30K	462	1450	579			
50K	462	1450	375			
90K	461	1449	212	10721	10148	833
∞	467	1470	0	10720	10147	846

BATTERY VOLTAGE TEST

+V. 3.5 -V. 3.5SONDE # 515ID # 5140

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	459	1337	1594	10666	10095	808
9K	459	1336	1469			
10K	459	-1337	1399			
12K	459	1336	1231			
15K	459	1336	1044			
20K	458	1336	836			
30K	458	1337	589			
50K	459	1336	372			
90K	459	1335	210	10667	10095	808
∞	463	1351	0	10665	10094	824

BATTERY VOLTAGE TEST

+V. 3.0 -V. 3.0SONDE # 515ID# 5140

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	416	1102	1315	10584	10019	695
9K	415	1102	1210			
10K	416	1102	1149			
12K	415	1100	1019			
15K	415	1101	873			
20K	416	1100	714			
30K	415	1101	521			
50K	415	1101	342			
90K	416	1101	200	10585	10019	695
∞	419	1112	0	10584	10019	705

BATTERY VOLTAGE TEST

+V. _____ -V. _____

SONDE # _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 515 -

ID # 32768

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0	658	9558	10222	847	
4	655	9183	10222	847	
8	648	8882	10222	847	
12	639	8570	10220	847	
16	631	8248	10219	847	
20	619	7921	10219	846	
24	611	7587	10217	846	
28	601	7059	10216	846	
32	593	6448	10215	846	
36	581	5737	10212	846	
40	574	0	10204	846	Plates shorted at 780 mb
44	568	0	10204	846	
48	588	5242	10213	845	
52	593	5883	10212	845	
56	601	6359	10214	845	
60	605	6751	10216	845	
64	613	7104	10216	846	
68	621	7461	10218	846	
72	628	7807	10218	846	
76	636	8122	10219	846	
80	639	8462	10221	846	
84	652	8785	10221	846	
88	652	9052	10222	846	
92	656	9417	10223	846	
96	661	9754			
100					
104					
108					
112					
116					
120					
124					
128					
132					
136					
140					

BATTERY VOLTAGE TEST

+V. 6.0 -V. 6.0SONDE # 520ID# 14392

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	467	1558	2033	7429	9350	725
9K	467	1558	1806			
10K	467	1558	1679			
12K	467	1558	1409			
15K	467	1558	1144			
20K	467	1559	881			
30K	469	1558	602			
50K	467	1558	375			
90K	467	1559	213	7428	9349	729
∞	470	1576	5	7432	9350	741

BATTERY VOLTAGE TEST

+V. 5.5 -V. 5.5SONDE # 520ID # 14392

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	469	1558	2024	7422	9342	733
9K	467	1558	1802			
10K	467	1558	1673			
12K	467	1557	1412			
15K	467	1558	1145			
20K	467	1557	882			
30K	467	1557	602			
50K	467	1557	374			
90K	467	1557	213	7428	9349	729
∞	470	1576	5	7432	9350	741

BATTERY VOLTAGE TEST

SONDE # 520+V. 5.0 -V. 5.0ID# 14392

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	466	1553	1990	7398	9317	740
9K	466	1553	1778			
10K	466	1553	1657			
12K	466	1553	1401			
15K	466	1553	1141			
20K	466	1553	881			
30K	466	1552	602			
50K	466	1551	375			
90K	466	1549	212	7399	9318	739
∞	471	1566	4	7399	9318	751

BATTERY VOLTAGE TEST

SONDE # 520+V. 4.5 -V. 4.5ID # 14392

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1508	1890	7370	9288	733
9K	464	1508	1716			
10K	464	1508	1606			
12K	464	1508	1371			
15K	464	1507	1123			
20K	464	1508	869			
30K	464	1508	596			
50K	463	1507	371			
90K	463	1506	210	7377	9288	732
∞	464	1524	0	7379	9288	743

BATTERY VOLTAGE TEST

SONDE # 520

+V. 4.0 -V. 4.0

ID# 14392

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	461	1439	1785	7344	9251	726
9K	461	1438	1621			
10K	460	1439	1528			
12K	460	1439	1322			
15K	460	1438	1096			
20K	461	1439	857			
30K	460	1437	593			
50K	460	1438	370			
90K	459	1437	210	7343	9251	726
∞	463	1455	0	7350	9251	739

BATTERY VOLTAGE TEST

SONDE # 520

+V. 3.5 -V. 3.5

ID # 14392

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	453	1315	1588	7308	9203	707
9K	453	1315	1457			
10K	452	1314	1380			
12K	453	1315	1219			
15K	453	1315	1022			
20K	453	1315	827			
30K	453	1315	581			
50K	452	1315	368			
90K	452	1315	209	7306	9203	708
∞	459	1315	0	7305	9203	708

BATTERY VOLTAGE TEST

SONDE # 520

+V. 3.0 -V. 3.0

ID# 14392

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	404	1066	1286	9136	9136	597
9K	404	1066	1179			
10K	404	1066	1122			
12K	404	1066	993			
15K	404	1065	848			
20K	404	1065	694			
30K	404	1065	505			
50K	405	1064	332			
90K	404	1065	194	9136	9136	597
∞	408	1076	0	9135	9135	608

BATTERY VOLTAGE TEST

SONDE # _____

+V. _____ -V. _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 520 -ID # 14392

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0		7490	9349	699	Ambient 980 mb
4	682	7410	9348	698	
8	681	7148	9348	698	
12	677	6861	9346	698	
16	669	6577	9346	698	
20	668	6290	9345	698	
24	656	5965	9344	698	
28	644	5590	9342	698	
32	633	5162	9341	698	
36	623	4691	9340	697	
40	623	4139	9338	698	
44	612	3460	9336	698	
48	602	2990	9336	697	
52	595	0	9330	697	Plates shorted at 795 mb
56	598	0	9329	698	
60	588	3265	9337	698	
64	595	4115	9339	698	
68	606	4725	9341	698	
72	623	5201	9343	698	
76	623	5201	9344	699	
80	640	6018	9345	699	
84	649	6381	9346	699	
88	660	6690	9347	700	
92	668	6959	9348	700	
96	674	7207	9349	700	
100	680	7471	9349	700	
104					
108					
112					
116					
120					
124					
128					
132					
136					
140					

Sonde # 520ID # 14392

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	691	7293	9353	707	Heat lamp on center
2	691	7293	9353	707	
3	703	7294	9351	787	
4	711	7300	9348	916	
5	705	7306	9346	1038	
6	716	7303	9345	1088	
7	719	7302	9345	1078	
8	719	7305	9346	1070	
9	719	7306	9345	1067	
10	719	7307	9346	1062	Heat lamp off
11	719	7309	9347	997	
12	719	7312	9349	889	
13	719	7312	9350	813	
14	719	7313	9350	786	
15	721	7313	9351	769	
16	720	7312	9351	757	
17	719	7310	9352	751	
18	719	7315	9352	748	
19					

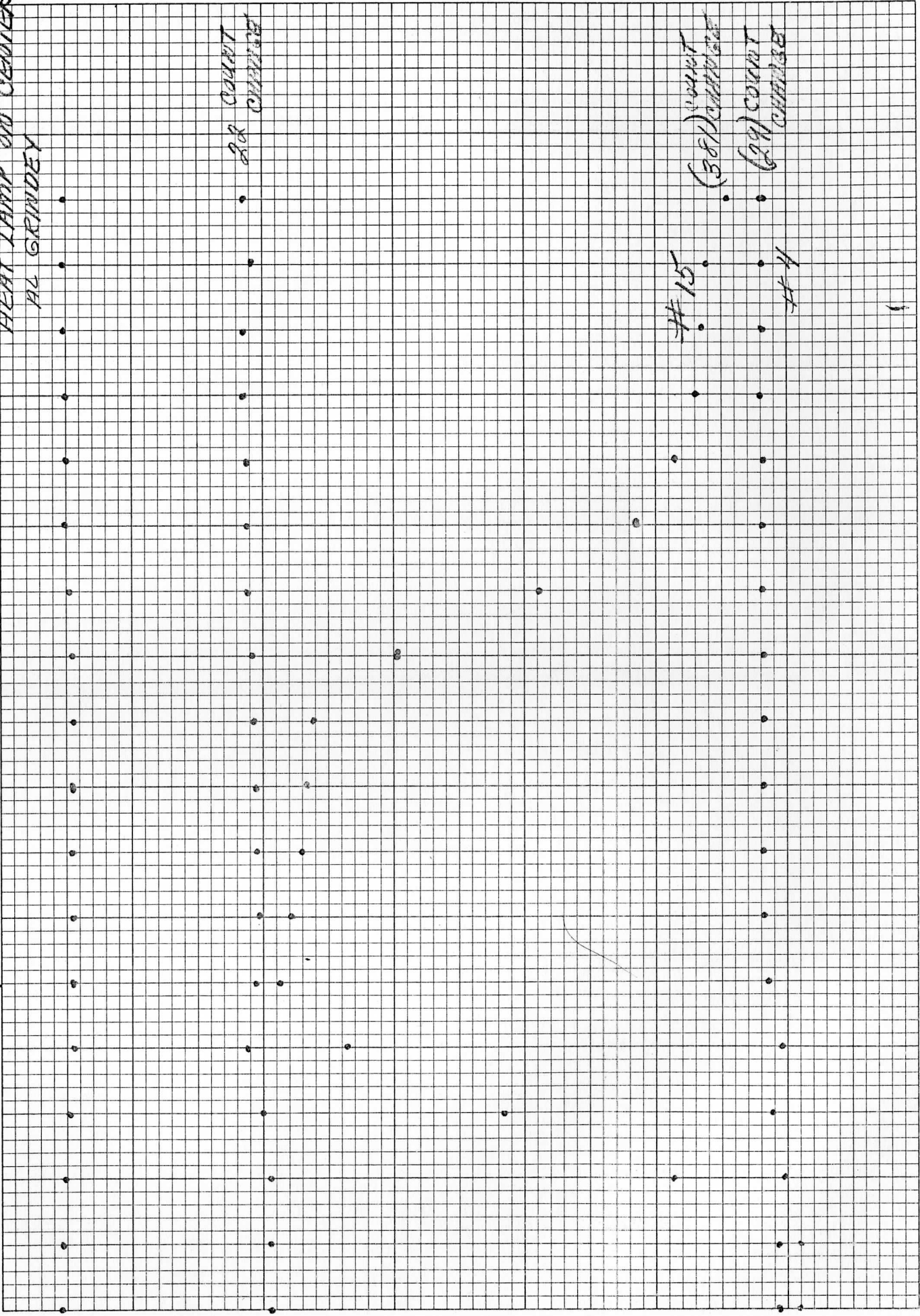
I.R. TEST
SONDE #520

HEAT LAMP ON CENTER
AL GRINDEY

20 COUNT
20 COUNT

#15
(38) COUNT

#4
(29) COUNT



5 10 15 25 35 45 55 65 75

BATTERY VOLTAGE TEST

SONDE # 525

+V. 6.0 -V. 6.0

ID# 23644

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	460	1529	1995	12387	9159	807
9K	460	1529	1766			
10K	460	1530	1640			
12K	460	1530	1386			
15K	460	1529	1125			
20K	460	1529	868			
30K	460	1529	594			
50K	460	1529	371			
90K	460	1527	211	12388	9159	814
∞	465	1543	1	12391	9159	828

BATTERY VOLTAGE TEST

SONDE # 525

+V. 5.5 -V. 5.5

ID # 23644

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	462	1533	1985	12422	9177	821
9K	462	1533	1764			
10K	462	1532	1641			
12K	462	1533	1389			
15K	462	1533	1128			
20K	462	1532	872			
30K	462	1532	597			
50K	462	1532	373			
90K	462	1531	212	12422	9178	827
∞	466	1547	1	12426	9177	843

BATTERY VOLTAGE TEST

SONDE # 525+V. 5.0 -V. 5.0ID# 23644

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1532	1965	12667	9392	836
9K	465	1531	1752			
10K	465	1532	1638			
12K	465	1531	1389			
15K	465	1531	1132			
20K	465	1530	875			
30K	465	1530	601			
50K	464	1530	375			
90K	464	1529	213	12669	9393	838
∞	469	1545	0	12671	9393	852

BATTERY VOLTAGE TEST

SONDE # 525+V. 4.5 -V. 4.5ID # 23644

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	467	1517	1914	12617	9449	843
9K	468	1517	1725			
10K	467	1517	1617			
12K	467	1517	1383			
15K	467	1517	1134			
20K	467	1517	880			
30K	466	1516	603			
50K	467	1517	378			
90K	467	1516	215	12617	9448	844
∞	472	1531	0	12620	9448	860

BATTERY VOLTAGE TEST

SONDE # 525+V. 4.0 -V. 4.0ID# 23644

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	470	1469	1815	12548	9376	846
9K	470	1469	1649			
10K	470	1471	1554			
12K	470	1469	1348			
15K	470	1469	1120			
20K	470	1469	878			
30K	469	1468	607			
50K	470	1468	380			
90K	470	1468	217	12548	9376	846
∞	475	1482	0	12550	9376	862

BATTERY VOLTAGE TEST

SONDE # 525+V. 3.5 -V. 3.5ID # 23644

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	468	1358	1653	12457	9282	835
9K	469	1358	1517			
10K	469	1358	1438			
12K	468	1358	1265			
15K	469	1357	1069			
20K	469	1357	856			
30K	469	1357	602			
50K	469	1357	380			
90K	468	1357	217	12457	9282	837
∞	474	1369	0	12460	9281	849

BATTERY VOLTAGE TEST

SONDE # 525+V. 3.0 -V. 3.0ID# 23644

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	433	1154	1404	12320	12320	740
9K	433	1154	1288			
10K	433	1154	1220			
12K	432	1154	1082			
15K	433	1153	922			
20K	433	1153	752			
30K	433	1153	546			
50K	433	1154	358			
90K	433	1153	208	12321	12321	743
∞	437	1164	0	12323	12323	753

BATTERY VOLTAGE TEST

SONDE # _____

+V. _____ -V. _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 525 -

ID # 23644

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0		12468	9173	775	Ambient 980 mb
4	562	12324	9172	775	
8	561	12177	9171	775	
12	557	12034	9170	775	
16	554	11846	9170	775	
20	547	1-641	9170	775	
24	540	11443	9169	775	
28	532	11225	9168	775	
32	523	13003	9167	775	
36	518	10758	9167	775	
40	511	10467	9166	775	
44	509	10112	9165	775	
48	509	7498	9163	774	
52	504	9739	9164	775	
56	500	9366	9160	775	
60	497	9238	9160	775	
64	491	8504	9160	775	
68	485	8504	9160	775	
72	483	9014	9162	775	
76	480	8920	9161	775	
80	478	8555	9160	775	
84	474	8885	9161	774	
88	474	8665	9162	774	
92	481	8503	9160	774	
96	490	8503	9160	775	Plates did not short down
100	499	8503	9160	774	to 700 mb
104	507	8502	9160	775	
108	518	8820	9160	775	
112	525	10040	9165	775	
116	530	10559	9166	775	
120	536	10941	9168	775	
124	544	11261	9169	775	
128	551	11606	9170	776	
132	557	11888	9171	776	
136	563	12114	9171	776	
140	568	12335	9173	77	

Sonde # 525

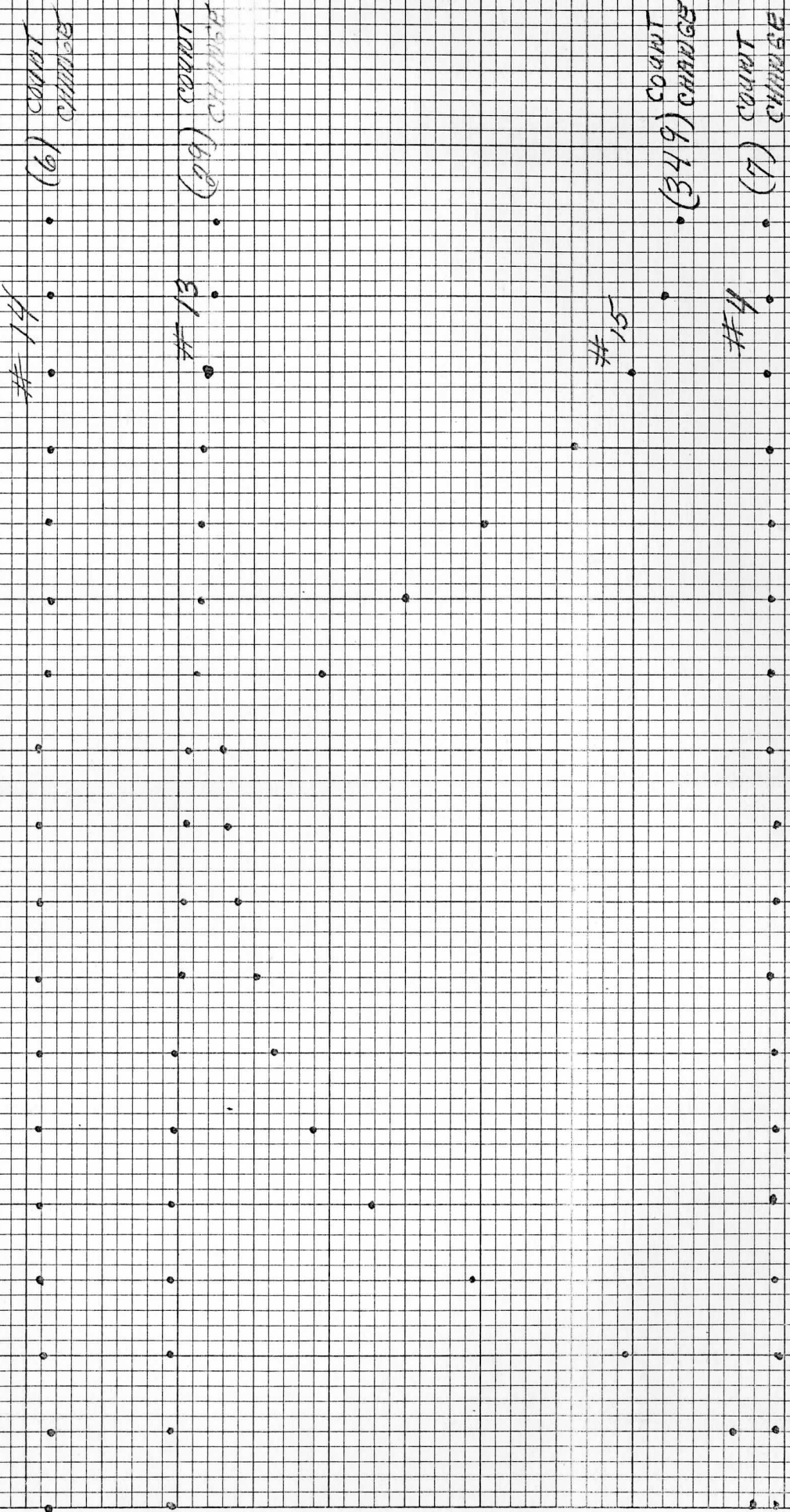
ID # 23644

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	606	12404	9185	821	Heat lamp on Center
2	608	12403	9185	833	
3	605	12404	9189	904	
4	607	12404	9191	1005	
5	608	2403	9191	1071	
6	606	12403	9191	1111	
7	608	12402	9191	1139	
8	610	12398	9191	1149	
9	608	12397	9191	1162	
10	608	12394	9191	1168	
11	609	12393	9191	1170	
12	610	12387	9186	1102	
13	609	12385	9185	1050	Point noisy. Do not use.
14	609	12383	9184	998	
15	610	12383	9184	937	
16	611	12380	9184	901	
17	610	12378	9184	880	
18	612	12376	9185	868	
20					

I.R. TEST
SONDE # 525

HEAT LOSS AND CENTER
PL GRINDERY



5 10 15 20 25 30 35 40 45 50 55 60 65 70 75
TIME IN MIN.

BATTERY VOLTAGE TEST

+V. 6.0 -V. 6.0SONDE # 615ID# 6168

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	467	1523	1987	9173	9685	751
9K	467	1521	1765			
10K	467	1520	1641			
12K	468	1522	1383			
15K	467	1521	1128			
20K	466	1522	881			
30K	466	1520	604			
50K	467	1519	378			
90K	466	1518	218	9175	9685	753
∞	472	1537	0	9173	9686	765

BATTERY VOLTAGE TEST

+V. 5.5 -V. 5.5SONDE # 615ID # 6168

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	467	1514	1955	9164	9681	756
9K	466	1514	1752			
10K	466	1515	1631			
12K	466	1514	1383			
15K	466	1514	1126			
20K	465	1514	880			
30K	466	1514	603			
50K	466	1513	377			
90K	465	1513	217	9166	9682	758
∞	471	1531	0	9170	9682	771

BATTERY VOLTAGE TEST

+V. 5.0 -V. 5.0SONDE # 615ID# 6168

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	466	1509	1932	9145	9658	762
9K	466	1510	1741			
10K	466	1509	1623			
12K	466	1509	1380			
15K	466	1510	1125			
20K	466	1509	878			
30K	466	1509	603			
50K	466	1509	377			
90K	466	1509	217	9144	9658	763
∞	471	1527	0	9147	9659	773

BATTERY VOLTAGE TEST

+V. 4.5 -V. 4.5SONDE # 615ID # 6168

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	463	1485	1888	9109	9619	760
9K	463	1484	1696			
10K	463	1484	1593			
12K	463	1484	1358			
15K	462	1484	1116			
20K	462	1484	875			
30K	462	1483	600			
50K	462	1483	372			
90K	462	1482	214	9110	9620	762
∞	468	1500	0	9113	9620	771

BATTERY VOLTAGE TEST

SONDE # 615+V. 4.0 -V. 4.0ID# 6168

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K	459	1425	1772	9092	9573	763
10K	459	1424	1611			
12K	459	1425	1520			
15K	459	1425	1319			
20K	459	1425	1093			
30K	459	1424	861			
50K	459	1424	595			
90K	459	1424	371			
∞	459	1424	212	9089	9573	763
	466	1441	0	9093	9574	773

BATTERY VOLTAGE TEST

SONDE # 615+V. 3.5 -V. 3.5ID # 6168

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	454	1315	1588	9032	9513	741
9K	453	1314	1464			
10K	453	1314	1387			
12K	453	1314	1224			
15K	453	1314	1037			
20K	454	1313	828			
30K	454	1313	583			
50K	453	1313	366			
90K	453	1313	210	9027	9513	739
∞	460	1328	0	9026	9513	752

BATTERY VOLTAGE TEST

+V. 3.0 -V. 3.0SONDE # 615ID# 6168

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	424	1102	1332	9431	9431	662
9K	424	1102	1224			
10K	424	1102	1165			
12K	424	1102	1035			
15K	424	1102	888			
20K	424	1102	726			
30K	424	1101	532			
50K	424	1102	348			
90K	424	1102	202	9430	9430	662
∞	429	1113	0	9431	9431	673

BATTERY VOLTAGE TEST

+V. _____ -V. _____

SONDE # _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 615 -

ID # 6168

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0		9241	9689	721	Ambient 980 mb
4	701	9146	9688	721	
8	699	8966	9687	721	
12	692	8782	9687	721	
16	692	8596	9686	721	
20	684	8411	9685	722	
24	673	8216	9684	722	
28	665	8009	9683	721	
32	652	7792	9683	721	
36	645	7560	9680	721	
40	645	7313	680	721	
44	636	7050	9678	721	
48	624	6747	9677	721	
52	618	6423	9676	721	
56	611	6048	9674	721	
60	604	5622	9673	721	
64	603	5134	9671	721	
68	596	4516	9667	721	
72	591	3881	9665	721	
76	586	3537	3664	721	
80	582	3463	9665	721	Plates did not short down
84	581	3766	9666	721	to 700 mb
88	590	4599	9668	721	
92	604	5288	9672	722	
96	615	5794	9673	721	
100	632	6227	9675	721	
104	645	6607	9677	722	
108	663	6989	9679	722	
112	680	7380	9681	722	
116	692	7706	9681	722	
120	708	7977	9682	723	
124	717	8219	9684	723	
128	726	8449	9686	723	
132	730	8661	9687	723	
136	730	8840	9687	723	
140	741	9000	9687	723	

81
PRESSURE/PRESSURE REFERENCE TEST

Sonde # 615 -
ID # 6168

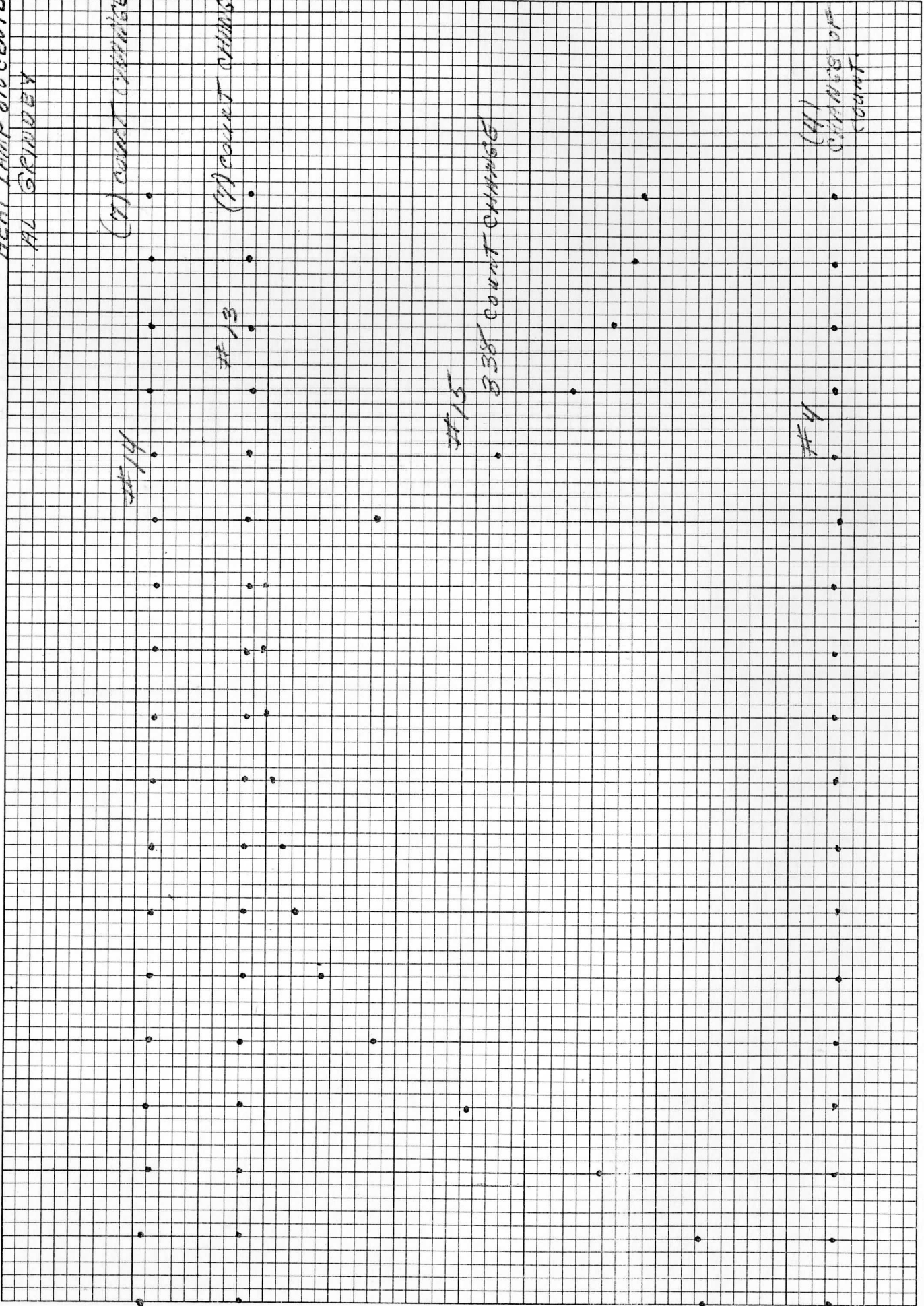
TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
144	738	9160	9690	724	
150	741				
16					
20					
24					
28					
32					
36					
40					
44					
48					
52					
56					
60					
64					
68					
72					
76					
80					
84					
88					
92					
96					
100					
104					
108					
112					
116					
120					
124					
128					
132					
136					
140					

Sonde # 615ID # 6168

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	768	9219	9693	764	With heat lamp on center of sonde
2	763	9219	9693	769	
3	761	9219	9689	844	
4	762	9218	9690	946	
5	761	9219	9688	1016	
6	761	9218	9688	1057	
7	762	9217	9687	1078	
8	762	9216	9687	1087	
9	764	9216	9686	1095	
10	763	9214	9686	1100	
11	764	9214	9687	1103	
12	764	9212	9686	1102	Heat lamp off
13	760	9213	9688	1016	
14	763	9212	9689	922	
15	763	9211	9690	866	
16	765	9213	9690	836	
17	764	9213	9690	820	
18	765	9212	9692	810	
19					
20					

I.R. TEST
615 SONDE
HEAT LAMP CENTER
AL GRINNEY



5 10 15 20 25 30 35 40 45 50 55 60 65 70 75
TIME IN MIN.

BATTERY VOLTAGE TEST

SONDE # 630+V. 6.0 -V. 6.0ID# 1156

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1552	2033	7335	9572	774
9K	465	1552	1797			
10K	465	1551	1670			
12K	466	1550	1407			
15K	465	1551	1141			
20K	464	1551	881			
30K	465	1550	601			
50K	465	1551	374			
90K	464	1550	213	7337	9573	783
∞	469	1568	4	7337	9573	796

BATTERY VOLTAGE TEST

SONDE # 630+V. 5.5 -V. 5.5ID # 1156

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	466	1556	2025	7437	9701	791
9K	466	1555	1796			
10K	467	1555	1671			
12K	466	1554	1411			
15K	466	1555	1148			
20K	466	1554	883			
30K	465	1554	604			
50K	466	1554	377			
90K	465	1553	213	7437	9702	798
∞	470	1570	4	7437	9702	811

BATTERY VOLTAGE TEST

SONDE # 630+V. 4.0 -V. 4.0ID# 1156

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	473	1495	1855	7604	9878	820
9K	473	1495	1687			
10K	473	1495	1589			
12K	473	1496	1373			
15K	473	1495	1136			
20K	473	1495	889			
30K	472	1495	612			
50K	472	1495	382			
90K	473	1494	217	7606	9878	820
∞	478	1509	5	7607	9878	831

BATTERY VOLTAGE TEST

SONDE # 630+V. 3.5 -V. 3.5ID # 1156

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	471	1384	1680	7495	9743	805
9K	471	1384	1543			
10K	471	1383	1463			
12K	472	1383	1284			
15K	471	1383	1084			
20K	471	1383	864			
30K	470	1383	606			
50K	471	1383	381			
90K	471	1383	217	7495	9744	804
∞	476	1397	4	7496	9744	815

BATTERY VOLTAGE TEST
 +V. 3.0 -V. 3.0

SONDE # 630
 ID# 1156

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	439	1184	1433	7361	7361	718
9K	439	1185	1315			
10K	438	1184	1248			
12K	438	1184	1100			
15K	439	1185	939			
20K	439	1184	764			
30K	439	1185	553			
50K	439	1185	359			
90K	438	1183	208	7360	7360	718
∞	443	1194	0	7367	7367	727

BATTERY VOLTAGE TEST
 +V. _____ -V. _____

SONDE # _____
 ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

 Sonde # 630 -
 ID # 1157

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0	644	7438	9676	747	Ambient 980 mb
4	644	7222	9676	747	
8	640	6914	9675	746	
12	635	6604	9675	747	
16	627	6266	9674	746	
20	616	5907	9673	747	
24	607	5521	9672	746	
28	595	5095	9671	746	
32	586	4610	9671	746	
36	57 9	4036	9669	746	
40	572	0	9665	746	Plates shorted at 800 mb
44	566	0	9664	746	
48	561	4177	9670	746	
52	567	4813	9672	747	
56	576	5288	9673	746	
60	588	5708	9673	746	
64	600	6084	9673	747	
68	612	6438	9675	747	
72	624	6737	9676	747	
76	637	6982	9676	747	
80	645	7188	9677	747	
84	650	7382	9677	74 7	
88	655	7519	9677	747	
92					
96					
100					
104					
108					
112					
116					
120					
124					
128					
132					
136					
140					

Sonde # 630ID # 1156

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	690	7474	9715	811	Heat lamp on left side
2	689	7475	9714	811	
3	690	7482	9729	908	
4	689	7488	9736	1033	
5	690	7497	9739	1123	
6	689	7499	9741	1170	
7	688	7502	9742	1207	
8	687	7504	9742	1219	
9	690	7504	9742	1227	
10	688	7575	9742	1232	
11	688	7505	9742	1237	Heat lamp off
12	686	7503	9728	1107	
13	685	7495	9721	974	
14	686	7493	9718	902	
15	687	7489	9716	858	
16	686	7489	9715	839	
17	688	7488	9715	826	
18	687	7490	9715	817	
19					
20					

Sonde # 630ID # 01156

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	704	7533	9700	794	HEAT LAMP ON CENTER
2	703	7537	9702	798	
3	706	7543	9723	962	
4	705	7552	9730	1089	
5	705	7557	9734	1177	
6	707	7561	9735	1229	
7	704	7563	9736	1263	
8	704	7562	9736	1282	
9	703	7563	9736	1294	
10	705	7562	9736	1304	
11	706	7562	9736	1303	HEAT LAMP OFF
12	704	7556	9718	1163	
13	704	7552	9710	1003	
14	706	7548	9707	934	
15	704	7544	9705	889	
16	704	7541	9704	863	
17	705	7540	9704	848	
18	704	7537	9703	839	
20					

Sonde # 630

ID # 1157

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	672	7448	9705	755	Heat lamp on right side
2	675	7454	9709	762	
3	687	7468	9729	878	
4	686	7468	9729	881	
5	683	7476	9734	973	
6	687	7483	9737	1024	
7	684	7487	9738	1063	
8	686	7492	9738	1092	
9	688	7496	9739	1108	
10	690	7497	9739	1119	
11	689	7495	9740	1125	
12	692	7495	9739	1129	Heat lamp off
13	688	7493	9727	1043	
14	688	7487	9721	953	
15	690	7482	9718	896	
16	688	7478	9716	857	
17	689	7478	9715	837	
18	689	7476	9715	825	
19	689	7475	9715	818	
20					

DIETZGEN CORPORATION
MADE IN U.S.A.

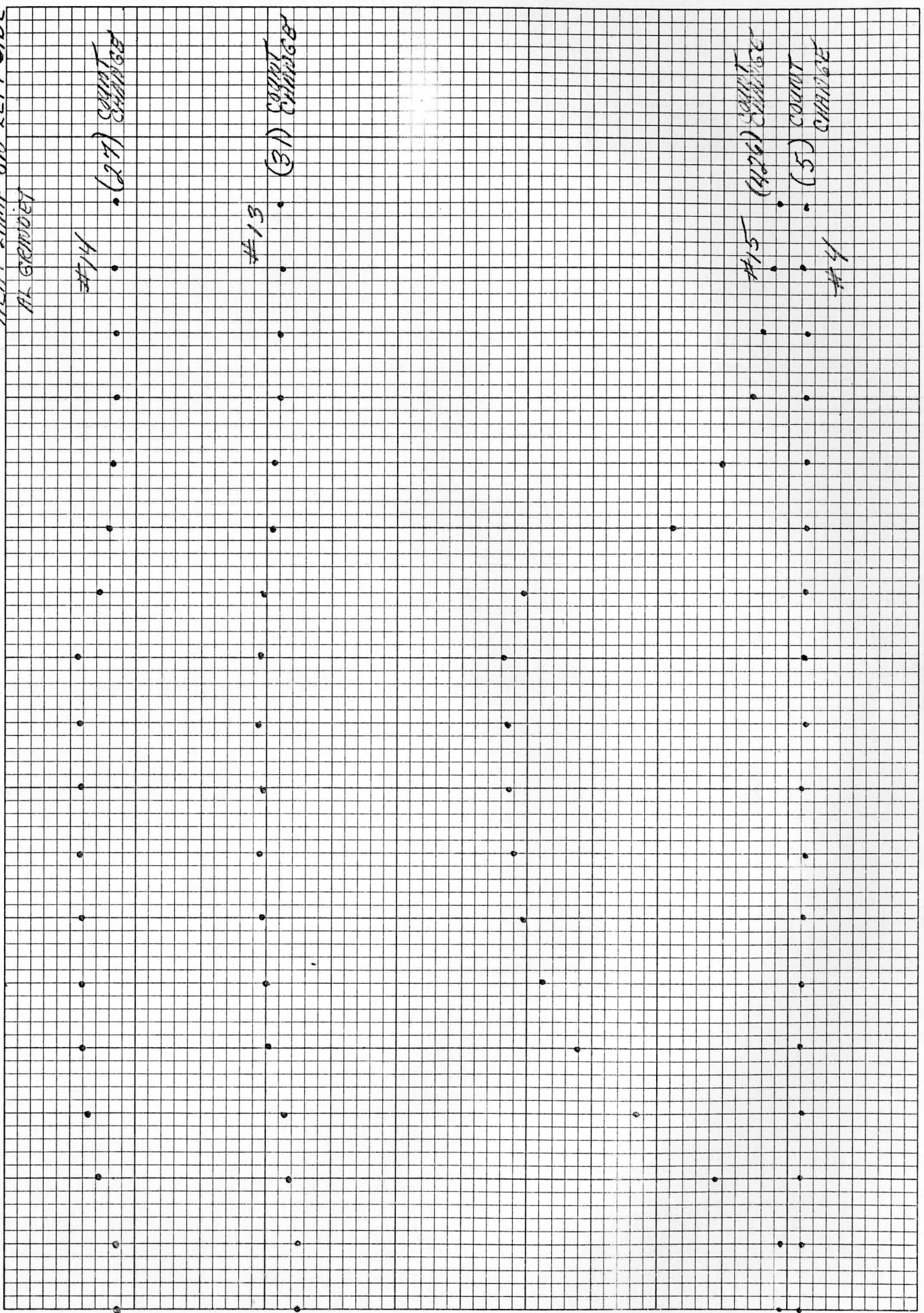
NO. 340-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH

I. R. TEST
SONDE # 630
HEAT LAMP ON LEFT SIDE
AL GRIDDET

#14 (27) COUNT CHANGE

#13 (31) COUNT CHANGE

#15 (426) COUNT CHANGE
#4 (5) COUNT CHANGE



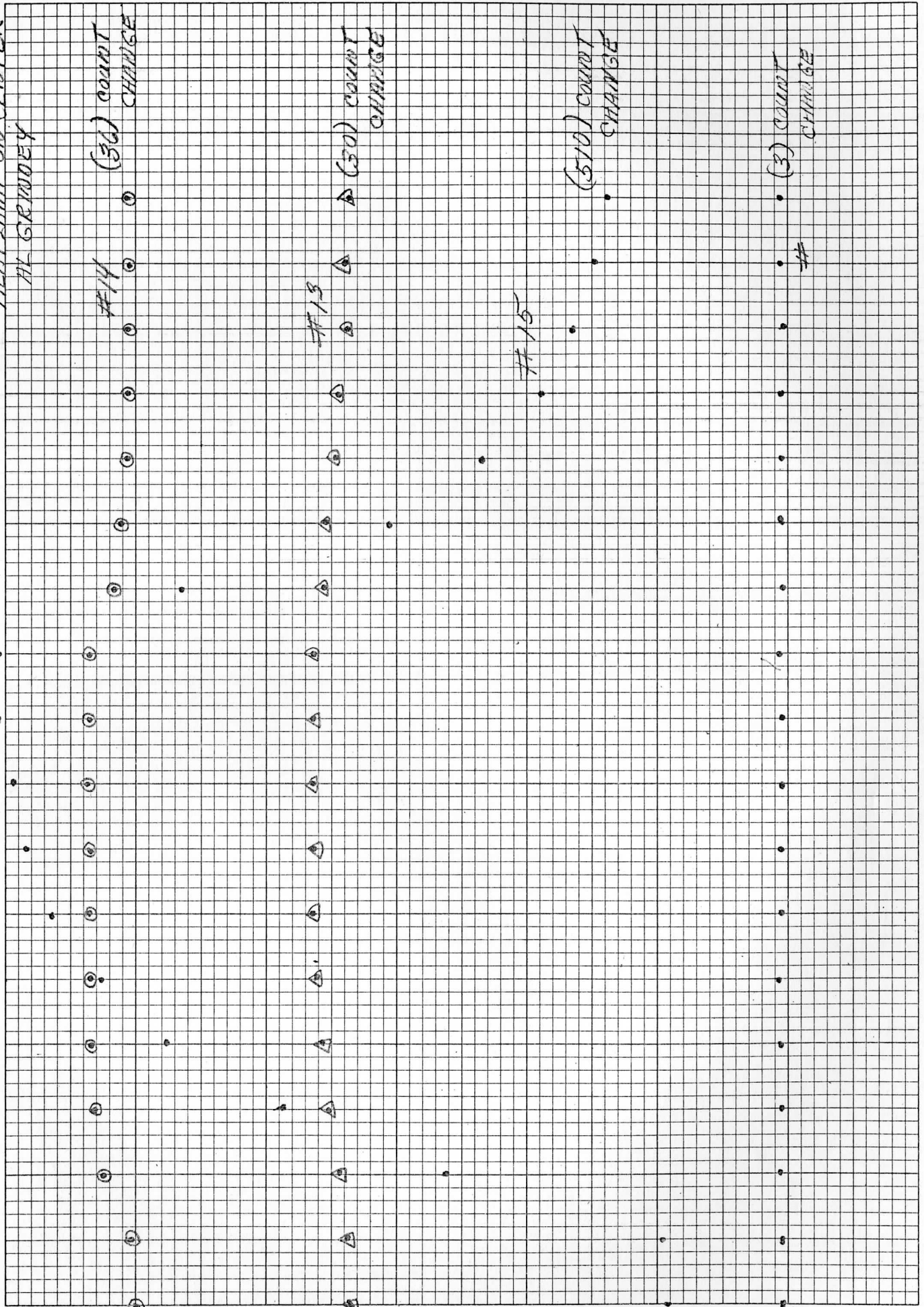
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

DIETZGEN CORPORATION
MADE IN U.S.A.

NO. 340-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH

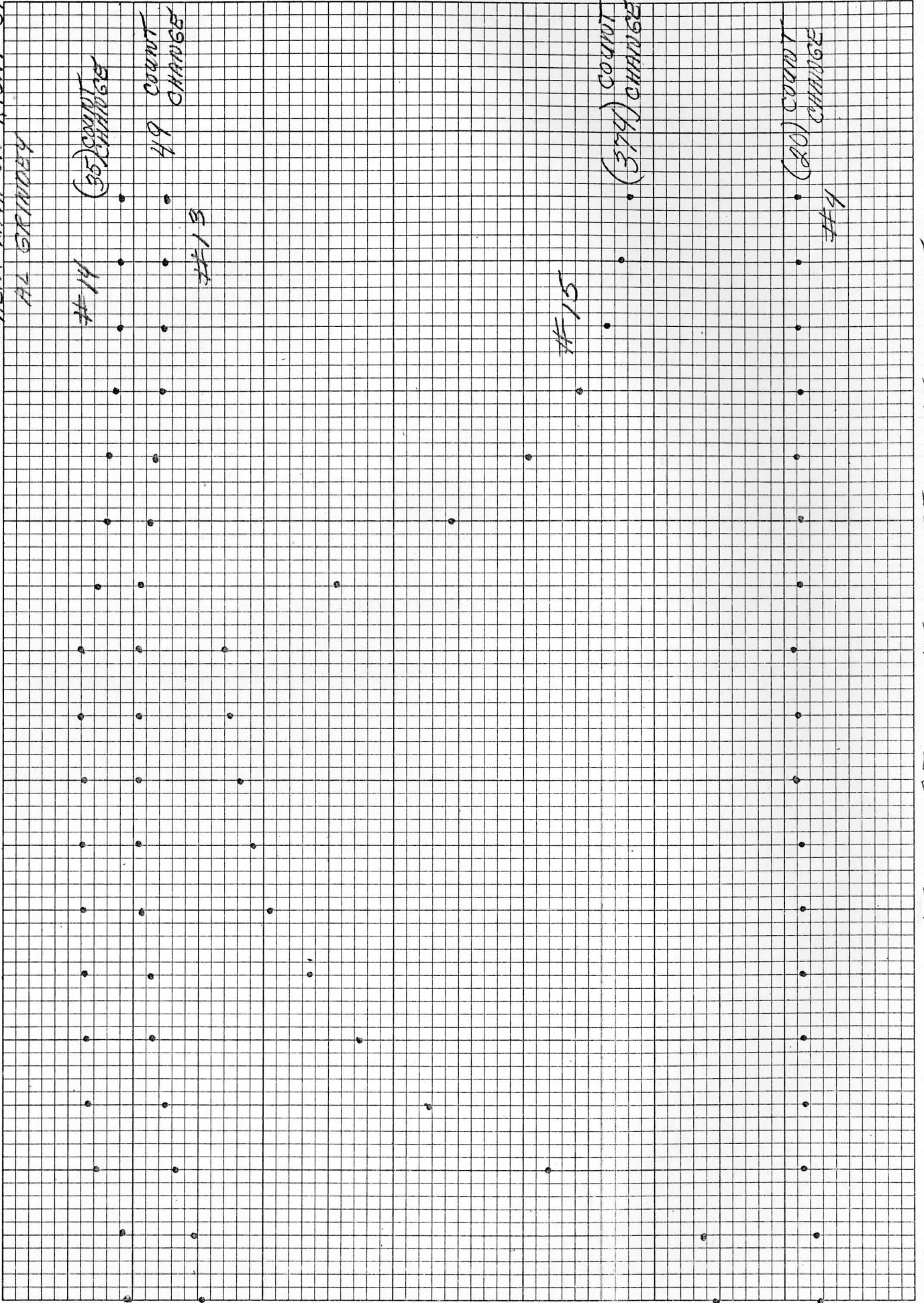
I. R. TEST
SONDE # 630
HEAT LAMP ON CENTER
AL GRINDEY

1304



5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

I.R. TEST
SODD #630
HEAT LAMP ON RIGHT SIDE
A4 GRINDER



(35) COUNT CHANGE

49 COUNT CHANGE

#13

#15

(374) COUNT CHANGE

(20) COUNT CHANGE

#4

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

BATTERY VOLTAGE TEST

+V. 6.0 -V. 6.0SONDE # 640ID# 19660

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	461	1538	2028	8155	9520	691
9K	461	1538	1792			
10K	461	1539	1667			
12K	461	1537	1402			
15K	462	1537	1138			
20K	461	1537	875			
30K	461	1537	597			
50K	461	1536	371			
90K	461	1535	210	8157	9521	692
∞	466	1550	0	8159	9521	701

BATTERY VOLTAGE TEST

+V. 5.5 -V. 5.5SONDE # 640ID # 19660

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	462	1537	2013	8224	9599	696
9K	463	1537	1791			
10K	462	1538	1663			
12K	462	1537	1402			
15K	462	1536	1140			
20K	462	1536	878			
30K	462	1536	598			
50K	461	1535	372			
90K	461	1535	210	8228	9601	699
∞	466	1550	0	8229	9601	709

BATTERY VOLTAGE TEST

+V. 5.0 -V. 5.0SONDE # 640ID# 19660

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1533	1982	8458	9861	704
9K	463	1533	1773			
10K	463	1533	1653			
12K	463	1532	1399			
15K	463	1532	1141			
20K	463	1532	880			
30K	463	1531	601			
50K	462	1531	372			
90K	462	1531	210	8460	9862	707
∞	467	1547	0	8462	9862	716

BATTERY VOLTAGE TEST

+V. 4.5 -V. 4.5SONDE # 640ID # 19660

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	465	1515	1933	8453	9848	709
9K	464	1516	1737			
10K	465	1516	1529			
12K	465	1515	1390			
15K	465	1515	1137			
20K	465	1514	881			
30K	465	1514	602			
50K	465	1514	374			
90K	465	1514	211	8454	9848	710
∞	470	1530	0	8455	9849	721

BATTERY VOLTAGE TEST

+V. 4.0 -V. 4.0SONDE # 640ID# 19660

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	466	1469	1837	8368	9748	712
9K	465	1467	1665			
10K	466	1469	1569			
12K	465	1470	1358			
15K	465	1469	1124			
20K	465	1469	877			
30K	465	1468	603			
50K	465	1468	376			
90K	465	1467	212	8370	9749	713
∞	471	1479	0	8369	9746	722

BATTERY VOLTAGE TEST

+V. 3.5 -V. 3.5SONDE # 640ID # 19660

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	466	1368	1687	9624	9624	705
9K	465	1368	1550			
10K	465	1367	1470			
12K	465	1367	1284			
15K	465	1367	1082			
20K	466	1367	861			
30K	466	1367	602			
50K	466	1366	378			
90K	465	1366	213	9623	9623	704
∞	470	1380	0	9624	9624	714

BATTERY VOLTAGE TEST

SONDE # 640

+V. 3.0 -V. 3.0

ID# 19660

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	430	1143	1430	9453	9453	628
9K	431	1143	1306			
10K	431	1144	1246			
12K	430	1147	1102			
15K	430	1143	940			
20K	430	1142	764			
30K	431	1142	553			
50K	431	1142	359			
90K	431	1145	206	9452	9452	629
∞	435	1153	0	9453	9453	637

BATTERY VOLTAGE TEST

SONDE # _____

+V. _____ -V. _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 640ID # 19660

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0		8414	9578	672	Ambient 995 mb
4	715	8389	9578	672	
8	715	8200	9577	672	
12	712	7916	9576	672	
16	707	7633	9575	672	
20	700	7284	9574	672	
24	689	6906	9573	671	
28	677	6518	9571	671	
32	663	6093	9570	671	
36	651	5626	9569	671	
40	638	5110	9567	671	
44	630	4481	9565	671	
48	623	3559	9561	670	
52	616	0	9558	670	Plates shorted at 795 mb
56	608	0	9558	670	
60	603	0	9559	670	
64	603	3422	9562	671	
68	610	4302	9565	671	
72	622	5094	9568	671	
76	635	5777	9570	671	
80	652	6363	9572	672	
84	667	6868	9574	671	
88	680	7271	9575	672	
92	689	7622	9576	672	
96	701	7962	9577	672	
100	709	8259	9578	672	
104	715				
108					
112					
116					
120					
124					
128					
132					
136					
140					

Sonde # 640 Run #2ID # 19661

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	735	8351	9597	686	
2	735	8352	9597	686	
3	747	8364	9616	771	
4	749	8366	9618	816	
5	752	8370	9620	857	
6	754	8372	9620	884	
7	755	8372	9621	899	
8	757	8373	9621	914	
9	758	8373	9622	918	
10	759	8375	9621	922	
11	761	8375	9622	924	Shut heat lamp off
12	758	8368	9610	891	
13	763	8364	9604	821	
14	761	8362	9602	775	
15	762	8360	9602	750	
16	760	8359	9602	736	
17	762	8360	9602	726	
18	764	8359	9602	721	
20					

Sonde # 640 Run #3ID # 19661

RADIATION TEST

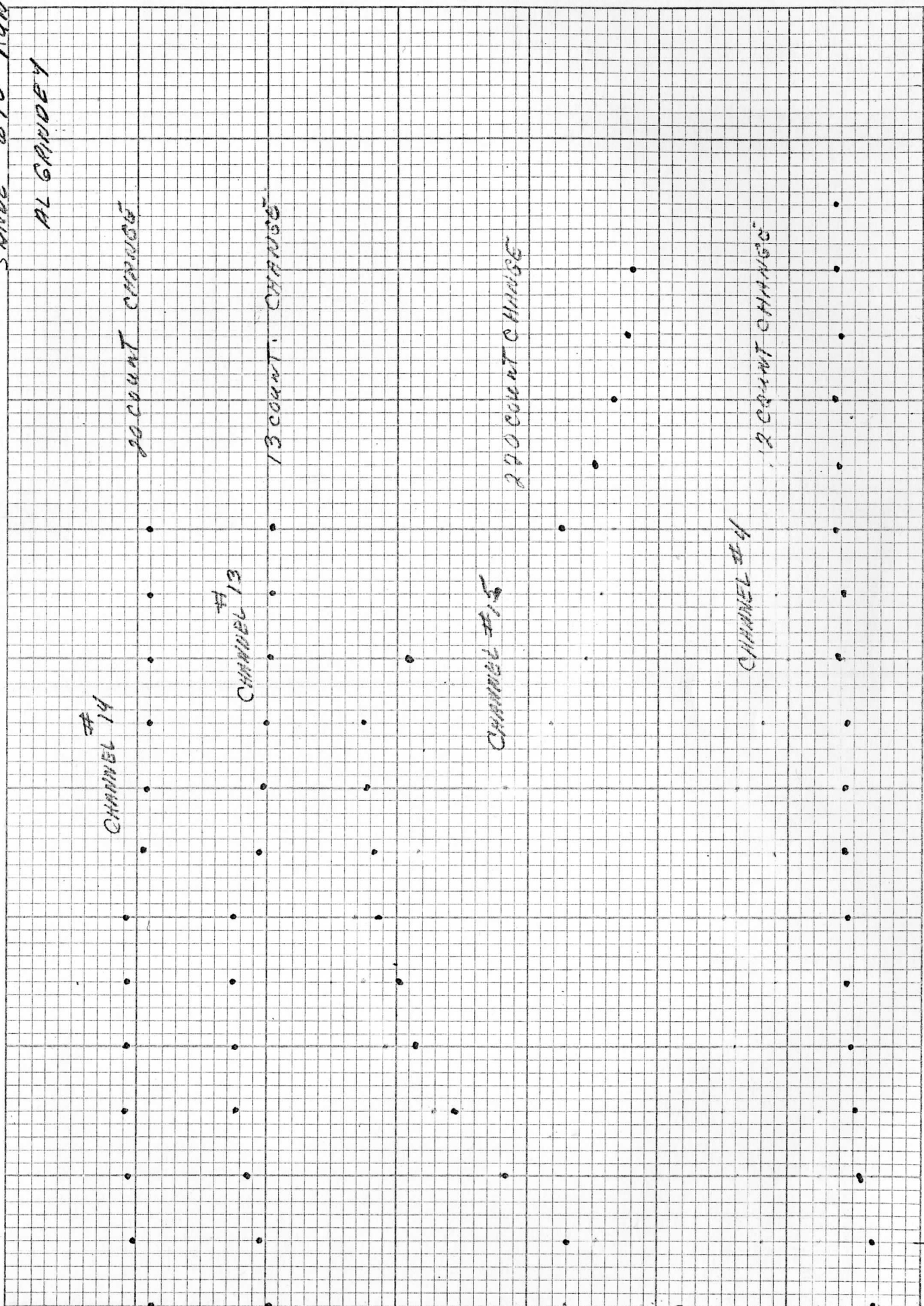
TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	754	8213	9596	688	With heat lamp on left side
2	758	8223	9608	734	of sonde
3	762	8228	9611	794	
4	767	8234	9613	842	
5	770	8237	9614	866	
6	772	8239	9614	883	
7	770	8242	9614	895	
8	773	8243	9614	903	
9	776	8242	9614	907	
10	777	8242	9614	911	Shut lamp off
11	777	8238	9605	878	
12	778	8233	9600	816	
13	778	8233	9599	780	
14	782	8231	9598	759	
15	784	8230	9598	748	
16	785	8229	9599	743	
17	784	8228	9598	740	
18					
20					

Sonde # 640ID # 19660

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	788	8229	9600	740	Heat lamp on right side
2	792	8234	9608	774	
3	794	8237	9610	816	
4	793	8239	9612	854	
5	796	8242	9612	877	
6	796	8243	9612	893	
7	796	8244	9612	903	
8	797	8244	9612	907	
9	796	8244	9613	911	
10	796	8244	9613	913	
11	796	8239	9605	891	
12	793	8235	9601	833	
13	795	8233	9599	798	
14	796	8233	9599	779	
15	796	8233	9599	764	
16	797	8232	9599	757	
17					
18					
20					

I.R. TEST
SAMPLE # 690 Run # 1



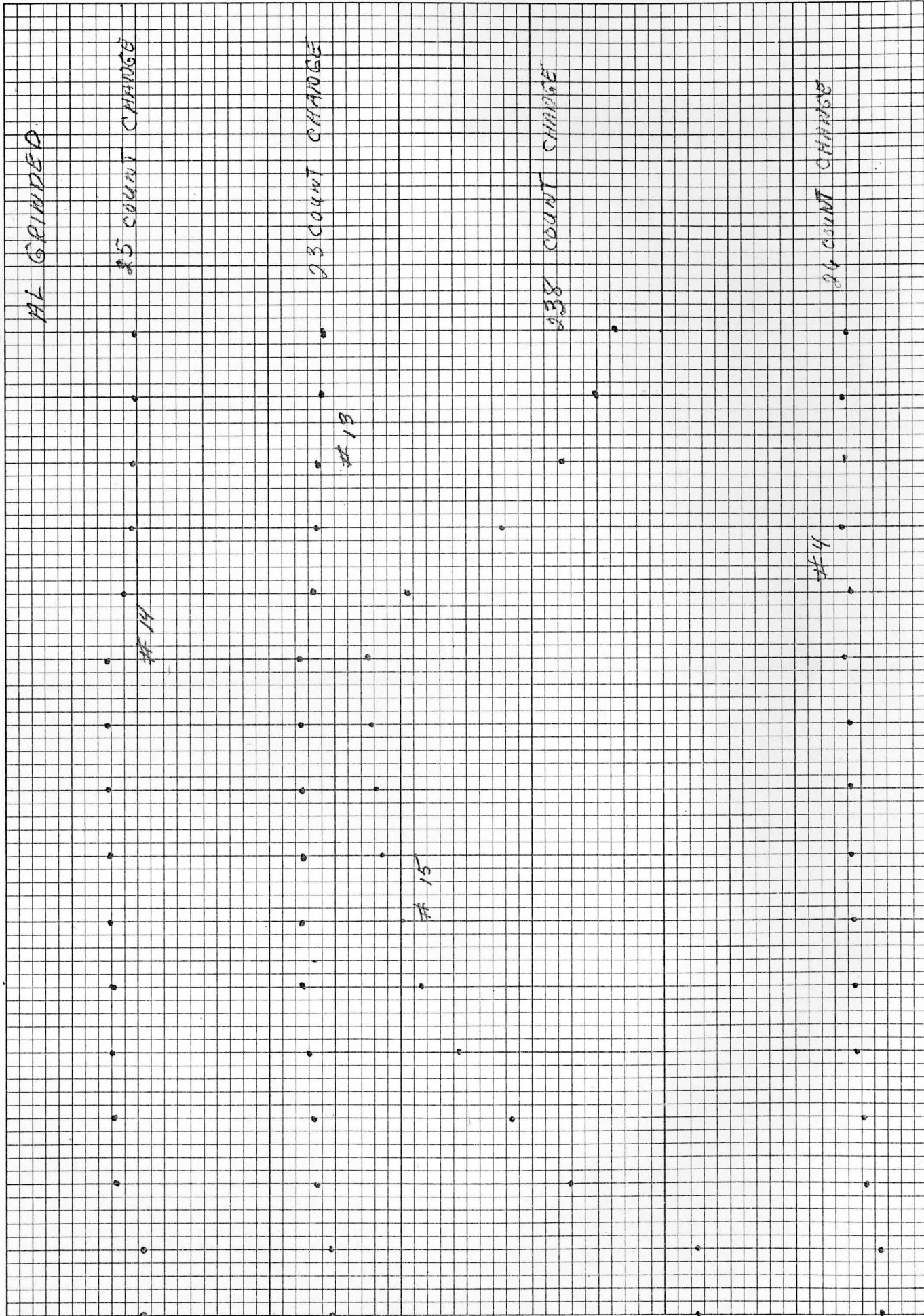
5 10 20 30 40 50 60

TIME IN MIN.

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MADE IN U.S.A.

NO. 340-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH

IR TEST
SONDE # 640 Run # 2



5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80

I.R. TEST
SOURCE # 640 Run # 3
HEAT LAMP ON LEFT
SIDE

AL-GRADEY

18 COUNT CHANGE

29 COUNT CHANGE

23 COUNT CHANGE

23 COUNT CHANGE

#14

#13

#15

#4

75

65

55

45

35

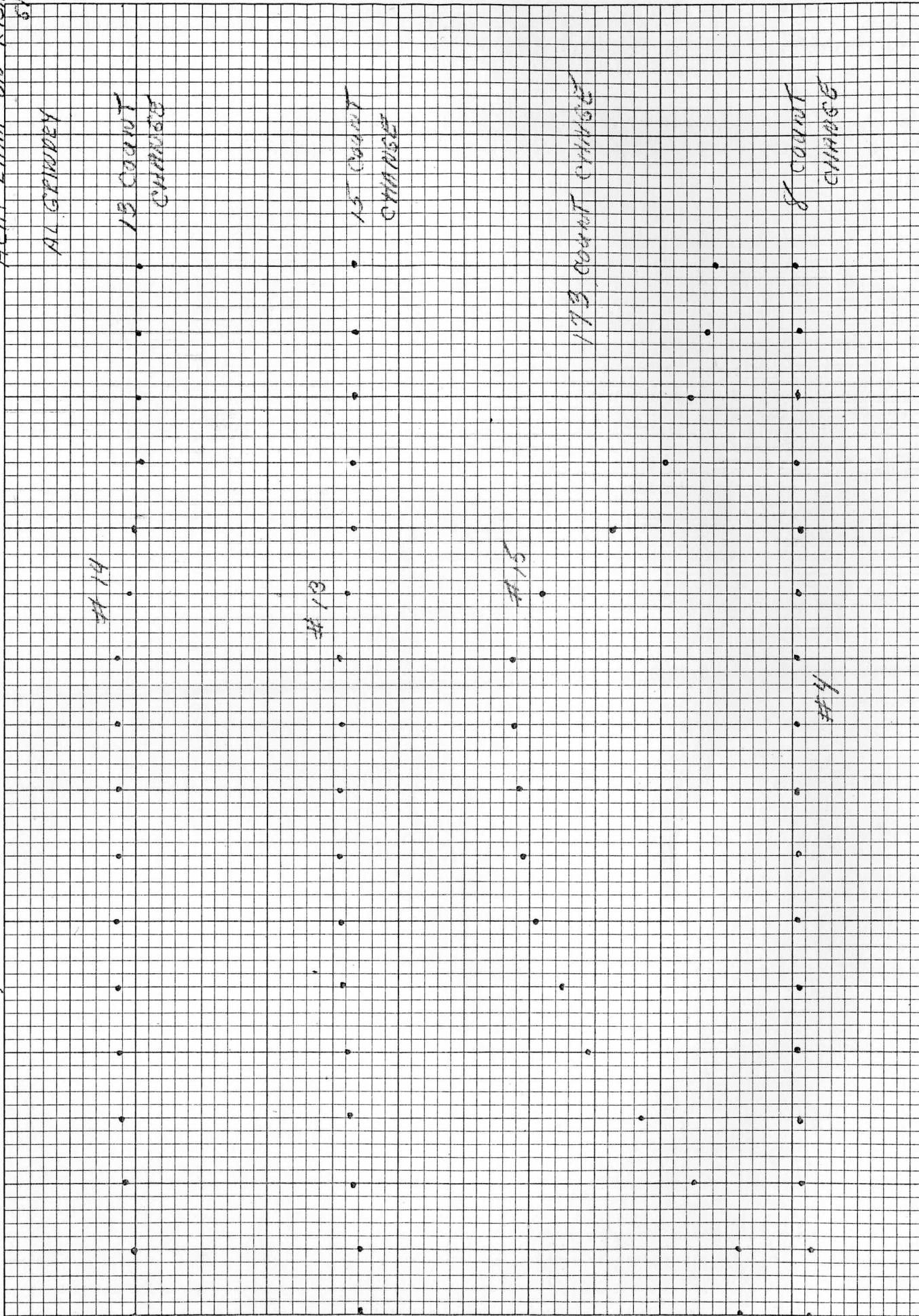
25

15

5

Time - min.

I.R. TEST
SONDE #640 Run #4
HEAT LAMP ON RIGHT
SIDE



5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

BATTERY VOLTAGE TEST
 +V. 6.0 -V. 6.0

SONDE # 725
 ID# 25700

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	461	1549	2025	8428	9949	771
9K	460	1549	1792			
10K	460	1550	1667			
12K	460	1550	1404			
15K	460	1550	1140			
20K	460	1550	877			
30K	460	1549	597			
50K	460	1549	371			
90K	460	1549	210	8431	9950	775
∞	466	1567	0	8434	9949	786

BATTERY VOLTAGE TEST
 +V. 5.5 -V. 5.5

SONDE # 725
 ID # 25700

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	463	1550	2019	8432	9948	777
9K	462	1550	1792			
10K	462	1550	1662			
12K	461	1550	1407			
15K	462	1550	1142			
20K	462	1550	880			
30K	461	1549	600			
50K	461	1549	372			
90K	462	1550	210	8436	9947	780
∞	467	1568	0	8434	9948	795

BATTERY VOLTAGE TEST
 +V. 5.0 -V. 5.0

SONDE # 725
 ID# 25700

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1550	2001	8519	10043	787
9K	464	1550	1784			
10K	464	1549	1662			
12K	464	1550	1407			
15K	464	1549	1144			
20K	463	1550	882			
30K	463	1550	602			
50K	464	1550	374			
90K	463	1548	210	8521	10045	790
∞	469	1567	0	8523	10045	803

BATTERY VOLTAGE TEST
 +V. 4.5 -V. 4.5

SONDE # 725
 ID # 25700

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	465	1538	1955	8643	10181	797
9K	465	1538	1756			
10K	466	1538	1644			
12K	466	1537	1400			
15K	465	1537	1143			
20K	465	1537	884			
30K	465	1537	603			
50K	465	1537	375			
90K	465	1536	211	8642	10181	797
∞	471	1555	0	8643	10181	811

BATTERY VOLTAGE TEST

+V. 4.0 -V. 4.0SONDE # 725ID# 25700

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	467	1481	1831	8527	10037	797
9K	467	1484	1669			
10K	467	1483	1574			
12K	467	1480	1360			
15K	468	1482	1126			
20K	466	1483	882			
30K	466	1481	604			
50K	465	1481	377			
90K	467	1482	212	8531	10045	800
∞	472	1499	0	8535	10046	812

BATTERY VOLTAGE TEST

+V. 3.5 -V. 3.5SONDE # 725ID # 25700

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	467	1398	1698	8434	9926	793
9K	467	1398	1561			
10K	467	1400	1481			
12K	467	1400	1298			
15K	467	1399	1091			
20K	466	1399	866			
30K	465	1399	602			
50K	466	1398	378			
90K	466	1398	213	8436	9925	794
∞	472	1415	2	8437	9924	805

BATTERY VOLTAGE TEST

SONDE # 725

+V. 3.0 -V. 3.0

ID# 25700

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	425	1147	1377	8298	8298	702
9K	426	1146	1269			
10K	426	1146	1208			
12K	426	1146	1072			
15K	425	1145	919			
20K	426	1146	749			
30K	425	1145	539			
50K	419	1115	342			
90K	419	1116	198	8271	8271	690
∞	424	1128	0	8272	8272	699

BATTERY VOLTAGE TEST

SONDE # _____

+V. _____ -V. _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0		8488	9953	785	Ambient 980 mb
4	626	8320	9952	786	
8	624	8139	9951	786	
12	621	7912	9951	785	
16	617	7638	8950	784	
20	610	7345	9948	784	
24	601	7031	9947	784	
28	593	6685	9945	784	
32	584	6257	9944	784	
36	575	5580	9942	784	
40	567	0813	9940	784	
44	562	0	9926	783	Plates shorted at 810 mb
48	553	0	9926	783	
52	552	0	9940	784	
56	555	5585	9942	784	
60	562	6242	9945	784	
64	570	6654	9946	784	
68	579	6996	9947	784	
72	589	7285	9948	785	
76	598	7518	9949	785	
80	604	7712	9950	786	
84	609	7902	9950	785	
88	614	8101	9951	786	
92	619	83	9952	786	
96	624	8479	9953	786	
100					
104					
108					
112					
116					
120					
124					
128					
132					
136					
140					

Sonde # 725
 ID # 25700

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	674	8459	9958	819	Heat lamp on center
2	674	8459	9958	828	
3	678	8455	9955	889	
4	678	8458	9952	977	
5	680	8463	9950	1044	
6	678	8467	9949	1089	
7	680	8471	9948	1112	
8	680	8471	9947	1130	
9	681	8473	9946	1141	
10	684	8473	9947	1147	
11	683	8476	9947	1147	Heat lamp off
12	683	8480	9948	1099	
13	685	8480	9950	996	
14	685	8476	9953	935	
15	685	8473	9954	898	
16	684	8473	9955	880	
17	688	8472	9956	868	
18	689	8471	9955	864	
20					

DIETZGEN CORPORATION
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NO. 340-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH

I.R. TEST
SONDE #725

HEAT LAMP AND CENTER

AL GRIDDEY

#14 (11) COUNT CHANGE

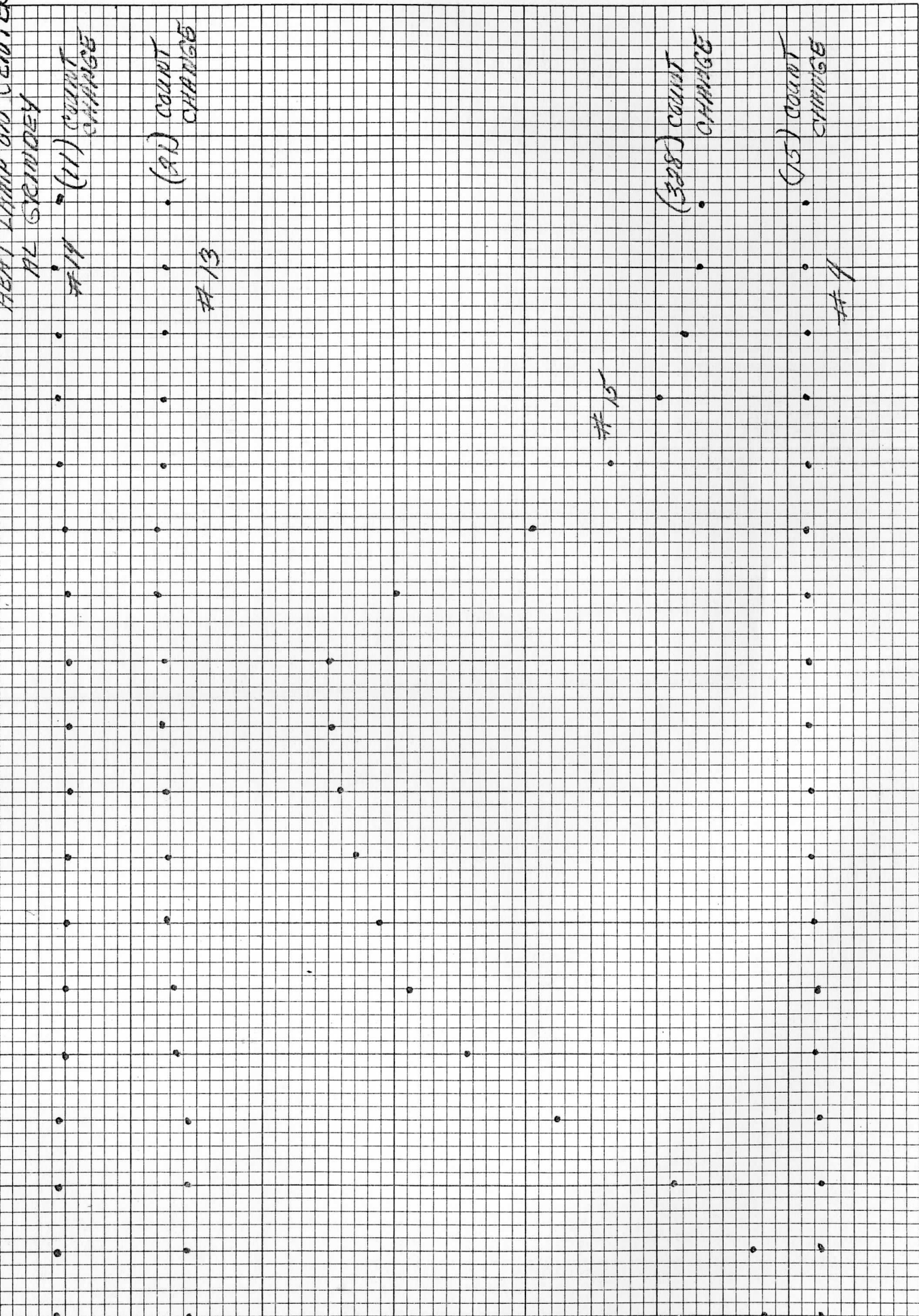
(91) COUNT CHANGE

#13

(308) COUNT CHANGE

(65) COUNT CHANGE

#4



5 10 15 25 35 45 55 65 75

BATTERY VOLTAGE TEST

SONDE # 730+V. 6.0 -V. 6.0ID# 2185

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	486	1642	2147	8049	9633	781
9K	487	1641	1904			
10K	487	1641	1763			
12K	487	1641	1480			
15K	486	1641	1198			
20K	487	1640	921			
30K	487	1641	628			
50K	487	1640	392			
90K	486	1637	224	8049	9633	782
∞	492	1656	5	8048	9631	794

BATTERY VOLTAGE TEST

SONDE # 730+V. 5.5 -V. 5.5ID # 2185

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	485	1630	2125	8044	9628	779
9K	484	1630	1885			
10K	484	1629	1750			
12K	483	1629	1470			
15K	482	1629	1191			
20K	483	1629	917			
30K	483	1628	625			
50K	483	1627	388			
90K	483	1626	222	8444	9228	778
∞	490	1645	4	8046	9627	795

BATTERY VOLTAGE TEST

SONDE # 730+V. 5.0 -V. 5.0ID# 2185

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	483	1615	2083	8022	9595	784
9K	482	1615	1859			
10K	482	1615	1730			
12K	482	1615	1459			
15K	482	1615	1186			
20K	482	1614	914			
30K	482	1614	623			
50K	482	1613	387			
90K	482	1613	221	8025	9594	792
∞	487	1631	3	8026	9593	800

BATTERY VOLTAGE TEST

SONDE # 730+V. 4.5 -V. 4.5ID # 2185

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	478	1576	1994	7984	9544	781
9K	478	1576	1795			
10K	478	1576	1684			
12K	477	1575	1431			
15K	478	1575	1169			
20K	477	1575	904			
30K	478	1574	617			
50K	478	1575	382			
90K	477	1574	217	7985	9543	789
∞	482	1591	0	7986	9543	795

BATTERY VOLTAGE TEST

SONDE # 730

+V. 4.0 -V. 4.0

ID# 2185

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	475	1505	1889	9483	9483	782
9K	475	1505	1700			
10K	475	1506	1599			
12K	475	1505	1376			
15K	475	1505	1142			
20K	475	1505	891			
30K	475	1504	614			
50K	475	1504	380			
90K	475	1504	216	9481	9481	799
∞	481	1520	1	9481	9481	791

BATTERY VOLTAGE TEST

SONDE # 730

+V. 3.5 -V. 3.5

ID # 2185

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	470	1371	1691	9407	9406	773
9K	470	1372	1545			
10K	471	1371	1463			
12K	471	1371	1286			
15K	470	1371	1078			
20K	470	1370	855			
30K	470	1371	606			
50K	470	1371	379			
90K	470	1371	215	9408	9409	784
∞	475	1386	0	9405	9406	784

BATTERY VOLTAGE TEST

+V. 3.0 -V. 3.0

SONDE # 730

ID# 2185

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	429	1135	1381	9305	9304	666
9K	428	1134	1268			
10K	427	1135	1202			
12K	427	1134	1059			
15K	427	1134	905			
20K	429	1134	736			
30K	428	1134	535			
50K	427	1135	350			
90K	428	1134	203	9309	9309	580
∞	432	1145	0	9305	9305	682

BATTERY VOLTAGE TEST

+V. _____ -V. _____

SONDE # _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 730

ID # 32768

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0	607	8153	9628	791	Ambient 980 mb
4	606	7954	9627	791	
8	605	7677	9627	791	
12	602	7404	9625	791	
16	602	7161	9625	791	
20	594	6902	9624	791	
24	589	6621	9623	791	
28	584	6324	9621	791	
32	578	6001	9622	790	
36	571	5632	9620	791	
40	566	5240	9618	791	
44	566	5058	9619	790	
48	566	4964	9618	791	
52	565	4934	9618	790	
56	560	4917	9618	790	
60	553	4905	9617	790	
64	544	4894	9618	790	
68	540	4882	9619	790	
72	535	4868	9618	789	
76	535	4851	9617	789	
80	533	4832	9618	789	
84	526	4813	9617	790	
88	522	4793	9617	789	
92	519	4779	9617	789	Plates did not short down
96	514	4812	9618	790	to 700 mb
100	517	4862	9618	789	
104	524	4892	9618	790	
108	534	4911	9618	789	
112	540	4923	9617	790	
116	551	4930	9618	790	
120	566	4930	9617	790	
124	567	5062	9618	790	
128	582	5801	9620	791	
132	591	6519	9621	791	
136	600	7054	9623	791	
140	602	7451	9625	791	

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 730 -

ID # 32768

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
144	607	7789	-626	792	
148	611	8119	9626	791	
152	613	8178	9627	792	
16					
20					
24					
28					
32					
36					
40					
44					
48					
52					
56					
60					
64					
68					
72					
76					
80					
84					
88					
92					
96					
100					
104					
108					
112					
116					
120					
124					
128					
132					
136					
140					

Sonde # 730ID # 2185

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	665	8066	9646	839	Heat lamp on center
2	653	8067	9644	839	
3	653	8061	9639	889	
4	655	8056	9634	969	
5	659	8059	9630	1036	
6	660	8063	9627	1071	
7	662	8066	9624	1108	
8	661	8065	9621	1126	
9	664	8066	9618	1138	
10	664	8068	9617	1147	
11	665	8068	9615	1152	Heat lamp off
12	662	8073	9614	1107	
13	661	8072	9614	990	
14	662	8069	9614	960	
15	661	8069	9614	920	
16	661	8065	9614	896	
17	661	8061	9614	875	
18	661	8062	9613	874	
20					

DIETZGEN CORPORATION
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NO. 340-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH

I.R. TEST
SAMPLE #730

HEAT STAMP IN CENTER
ALL SAMPLES

#14
(32) COUNT
CHANGE

(17) COUNT
CHANGE

#13

(313) COUNT
CHANGE

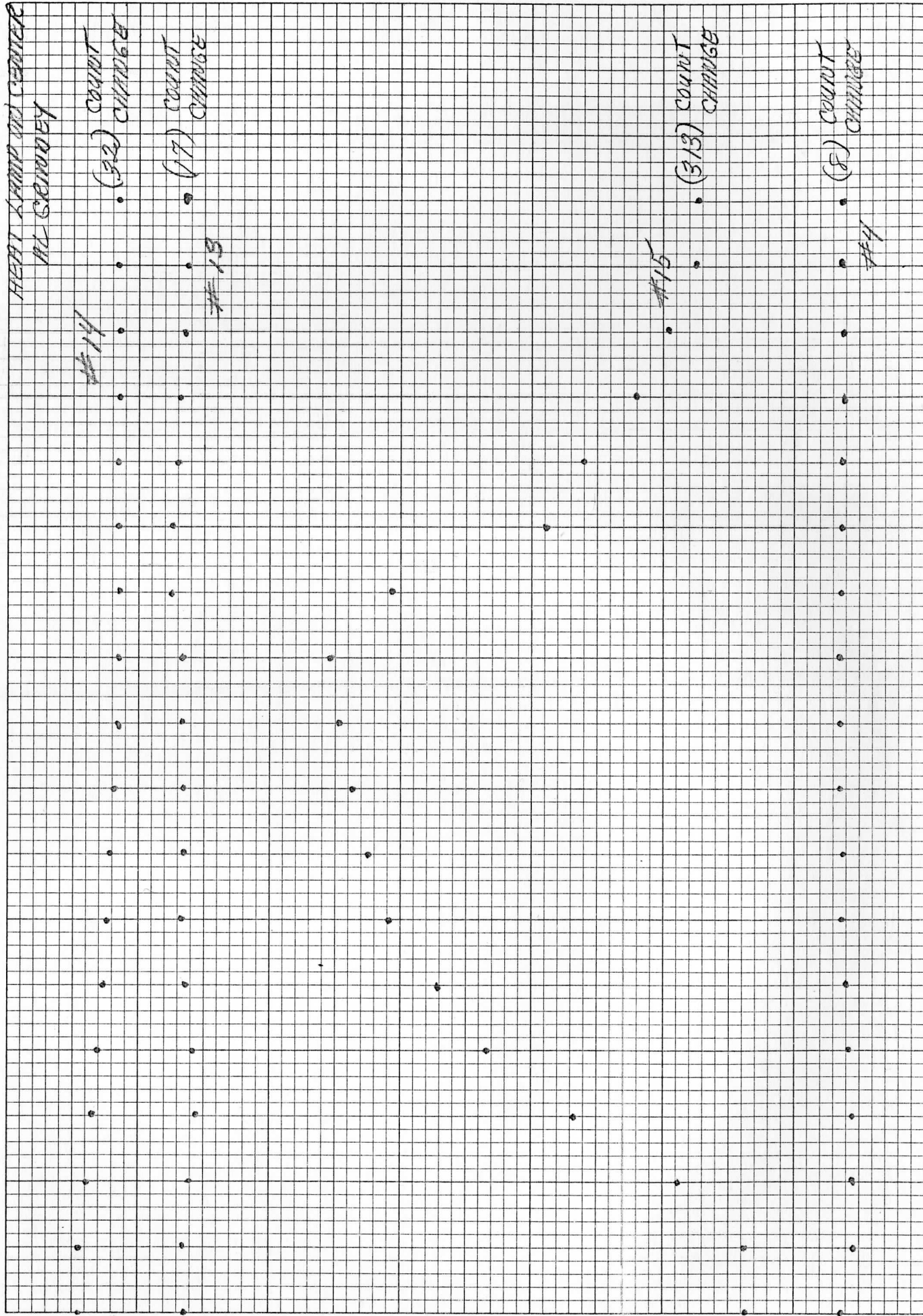
#15

(8) COUNT
CHANGE

#11

5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

TIME IN MIN.



BATTERY VOLTAGE TEST

SONDE # 820+V. 6.0 -V. 6.0ID# 17476

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	470	1558	2037	9045	9864	689
9K	470	1559	1809			
10K	470	1559	1681			
12K	470	1558	1409			
15K	470	1558	1146			
20K	470	1557	890			
30K	470	1557	602			
50K	469	1557	376			
90K	469	1556	212	9046	9864	694
∞	470	1572	0	9045	9863	704

BATTERY VOLTAGE TEST

SONDE # 820+V. 5.5 -V. 5.5ID # 17476

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	469	1556	2017	9045	9863	705
9K	469	1555	1800			
10K	469	1555	1674			
12K	470	1555	1409			
15K	470	1554	1145			
20K	469	1555	892			
30K	469	1555	603			
50K	470	1554	376			
90K	470	1552	212	9045	9863	706
∞	469	1570	0	9045	9863	716

BATTERY VOLTAGE TEST

SONDE # 820+V. 5.0 -V. 5.0ID# 17476

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	469	1549	1983	9031	9846	709
9K	469	1550	1785			
10K	469	1550	1663			
12K	469	1549	1407			
15K	469	1550	1145			
20K	469	1549	895			
30K	469	1548	604			
50K	469	1548	377			
90K	469	1547	213	9032	9845	718
∞	469	1563	0	9031	9846	730

BATTERY VOLTAGE TEST

SONDE # 820+V. 4.5 -V. 4.5ID # 17476

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	467	1515	1930	8992	9802	733
9K	467	1515	1729			
10K	467	1514	1620			
12K	467	1514	1395			
15K	467	1514	1132			
20K	467	1514	885			
30K	467	1514	602			
50K	467	1513	375			
90K	467	1513	211	8993	9801	732
∞	466	1529	0	8994	9801	733

BATTERY VOLTAGE TEST

+V. 4.0 -V. 4.0SONDE # 820ID# 17476

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1452	1809	8947	9749	736
9K	464	1452	1640			
10K	464	1452	1547			
12K	464	1452	1341			
15K	464	1452	1106			
20K	464	1452	872			
30K	464	1452	599			
50K	464	1451	375			
90K	464	1451	210	8947	9749	736
∞	464	1466	0	8946	9749	750

BATTERY VOLTAGE TEST

+V. 3.5 -V. 3.5SONDE # 820ID # 17476

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	460	1344	1632	8880	9676	708
9K	461	1344	1494			
10K	461	1344	1414			
12K	461	1344	1246			
15K	461	1344	1053			
20K	461	1344	840			
30K	461	1343	588			
50K	461	1343	372			
90K	461	1343	210	8880	9675	709
∞	461	1357	0	8879	9675	710

BATTERY VOLTAGE TEST

SONDE # 820+V. 3.0 -V. 3.0ID# 17476

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	416	1103	1337	9560	9560	622
9K	416	1103	1224			
10K	416	1104	1162			
12K	416	1103	1026			
15K	416	1103	877			
20K	416	1103	716			
30K	416	1102	519			
50K	416	1103	340			
90K	415	1103	198	9560	9560	625
∞	421	1113	0	9560	9560	628

BATTERY VOLTAGE TEST

SONDE # _____

+V. _____ -V. _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 820

ID # 17476

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0	789	8991	9865	672	Ambient 980 mb
4	787	8556	9864	673	
8	779	8118	9863	671	
12	760	7598	9862	672	
16	758	6996	9860	673	
20	744	6382	9859	671	
24	729	5709	9857	672	
28	710	5139	9856	672	
32	704	4758	9855	672	
36	692	4369	9855	673	
40	681	4019	9854	672	
44	676	3572	9852	672	
48	669	3189	9852	673	
52	657	0457	9849	672	
56	657	0	9848	672	Plates shorted 740 mb
60	657	0	9848	672	
64	657	0	9852	672	
68	657	3354	9853	673	
72	666	3940	9853	672	
76	683	4344	9854	673	
80	700	4719	9855	672	
84	712	5029	9855	673	
88	730	5466	9856	672	
92	746	6297	9858	672	
96	758	6909	9860	672	
100	760	7383	9861	673	
104	775	7798	9862	673	
108	785	8154	9863	674	
112	794	8440	9863	673	
116	799	8720	9865	673	
120	804	9034			
124					
128					
132					
136					
140					

Sonde # 820

ID # 17476

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	863	9050	9873	706	Heat lamp on center
2	851	9054	9873	707	
3	852	9048	9870	764	
4	852	9047	9869	813	
5	854	9047	9868	860	
6	852	9047	9867	898	
7	852	9045	9866	918	
8	851	9040	9866	927	
9	852	9035	9865	937	
10	854	9042	9865	940	
11	856	9041	9864	941	Heat lamp off
12	855	9045	9867	897	
13	852	9040	9868	837	
14	854	9037	9870	799	
15	856	9030	9871	760	
16	859	9029	9871	761	
17	856	9024	9872	746	
18	855	9024	9872	740	
20					

DIETZGEN CORPORATION
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I.R. TEST
SONDE # 820

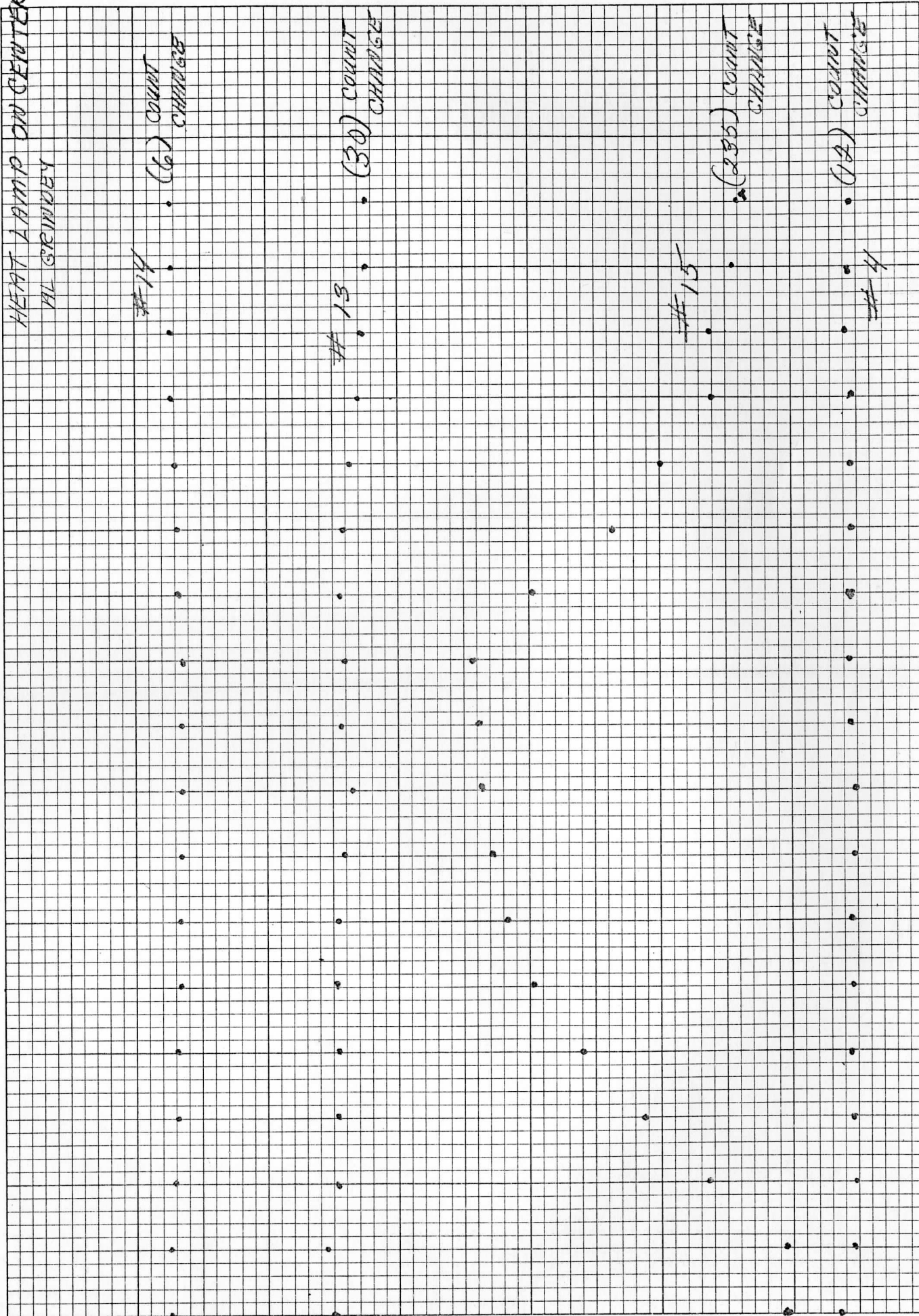
HEAT LAMP ON CENTER
AL GRINDERY

#14 (6) COUNT CHANGE

#13 (30) COUNT CHANGE

#15 (235) COUNT CHANGE

#4 (12) COUNT CHANGE



5 10 15 20 25 30 35 40 45 50 55 60 65 70 75
TIME IN MIN.

BATTERY VOLTAGE TEST

+V. 6.0 -V. 6.0SONDE # 925ID# 27756

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	455	1521	1966	8482	9540	736
9K	454	1521	1747			
10K	454	1521	1625			
12K	454	1520	1363			
15K	454	1522	1112			
20K	454	1520	864			
30K	454	1520	586			
50K	454	1520	365			
90K	454	1519	205	8483	9540	752
∞	458	1539	1	8483	9539	766

BATTERY VOLTAGE TEST

+V. 5.5 -V. 5.5SONDE # 925ID # 27756

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	455	1529	1966	8479	9532	764
9K	455	1529	1752			
10K	455	1529	1631			
12K	454	1528	1365			
15K	455	1529	1118			
20K	455	1528	867			
30K	455	1529	591			
50K	454	1529	367			
90K	455	1526	207	8475	9531	772
∞	461	1545	0	8477	9534	785

BATTERY VOLTAGE TEST

SONDE # 925+V. 5.0 -V. 5.0ID# 27756

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	458	1528	1944	8453	9507	781
9K	457	1528	1741			
10K	459	1528	1627			
12K	459	1528	1371			
15K	458	1528	1122			
20K	458	1528	864			
30K	459	1528	594			
50K	459	1527	370			
90K	459	1526	208	8453	9506	786
∞	465	1546	1	8453	9595	797

BATTERY VOLTAGE TEST

SONDE # 925+V. 4.5 -V. 4.5ID # 27756

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	462	1510	1894	8425	9474	794
9K	462	1510	1709			
10K	462	1510	1601			
12K	462	1509	1358			
15K	462	1510	1121			
20K	461	1510	863			
30K	461	1509	596			
50K	461	1509	372			
90K	461	1508	210	8428	9473	794
∞	468	1527	1	8428	9474	805

BATTERY VOLTAGE TEST

+V. 4.0 -V. 4.0SONDE # 925ID# 27756

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	464	1459	1802	8391	9432	798
9K	464	1459	1639			
10K	464	1458	1543			
12K	463	1459	1347			
15K	464	1459	1107			
20K	464	1458	861			
30K	464	1458	598			
50K	464	1458	373			
90K	464	1457	210	8394	9431	797
∞	470	1475	0	8395	9432	809

BATTERY VOLTAGE TEST

+V. 3.5 -V. 3.5SONDE # 925ID # 27756

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	466	1347	1654	8345	9375	802
9K	466	1346	1513			
10K	465	1346	1438			
12K	464	1346	1262			
15K	465	1345	1060			
20K	465	1345	852			
30K	465	1345	597			
50K	465	1346	375			
90K	465	1346	213	8347	9376	803
∞	470	1368	0	8347	9376	833

BATTERY VOLTAGE TEST

SONDE # 925

+V. 3.0 -V. 3.0

ID# 27756

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K	430	1162	1409	8277	9296	719
9K	430	1162	1295			
10K	430	1162	1226			
12K	429	1162	1079			
15K	429	1162	923			
20K	430	1162	750			
30K	430	1162	547			
50K	429	1162	354			
90K	430	1162	206			
∞	435	1174	0	8279	9296	731

BATTERY VOLTAGE TEST

SONDE # _____

+V. _____ -V. _____

ID # _____

RESISTOR VALUE IN CHANNEL 12 (NOMINAL)	CHANNELS					
	#6	#7	#12	#13	#14	#15
8K						
9K						
10K						
12K						
15K						
20K						
30K						
50K						
90K						
∞						

PRESSURE/PRESSURE REFERENCE TEST

Sonde # 925 -

ID # 27756

TIME (SECS)	CHANNEL 4	CHANNEL 13	CHANNEL 14	CHANNEL 15	PRESSURE AND NOTES
0		8596	9538	716	Ambient 980 mb
4	693	8438	9538	716	
8	690	8164	9539	717	
12	686	7886	9538	717	
16	680	7568	9536	717	
20	673	7252	9536	717	
24	665	6930	9533	717	
28	655	6590	9532	717	
32	649	6242	9535	717	
36	638	5872	9533	717	
40	636	5456	9533	717	
44	636	4970	9530	717	
48	632	867	9529	717	
52	622	0	9524	718	Plates shorted 815 mb
56	615	0	9522	718	
60	610	0	9526	718	
64	612	0	9526	718	
68	619	5052	9531	718	
72	630	5467	9532	718	
76	636	5838	9534	719	
80	636	6164	9533	719	
84	649	6532	9535	719	
88	659	6932	9534	719	
92	669	7300	9535	719	
96	680	7627	9537	720	
100	686	7905	9538	720	
104	694	8212	9539	720	
108	701	8527	9540	721	
112					
116					
120					
124					
128					
132					
136					
140					

Sonde # 925ID # 27756

RADIATION TEST

TIME (x 5 min)	CHANNEL				NOTES
	4	13	14	15	
1	765	8646	9542	785	Heat lamp on center
2	757	8647	9541	787	
3	759	8641	9541	832	
4	762	8644	9540	923	
5	765	8657	9538	1010	
6	771	8671	9537	1091	
7	771	8680	9536	1165	
8	777	8660	9533	1217	
9	783	8658	9533	1255	
10	782	8657	9534	1285	
11	783	8650	9531	1308	
12	787	8651	9532	1328	Heat lamp off
13	761	8646	9531	1251	
14	755	8657	9535	1088	
15	756	8654	9538	979	
16	758	8644	9540	909	
17	758	8632	9542	868	
18	758	8628	9541	846	
20					

I.R. TEST
SONDE # 925
HEAT LAMP ON CENTER
AL GRINDEL

