

Fluke Singapore Calibration Laboratory


# Certificate of Calibration

**Model : HART-5628****Serial Number : 2606****Description : SECONDARY STANDARD PRT**

Fluke South East Asia Pte Ltd declares that the Calibration System complies with the requirements of ISO/IEC 17025. The standards and Instruments used in this calibration are regularly calibrated at scheduled interval to maintain the required accuracy level and are traceable to National Metrology Centre (NMC), Singapore and NIST accordingly.

ISO/IEC 17025 states that Testing and Calibration laboratories that comply with ISO/IEC 17025:2005 International Standard will therefore also operate in accordance with ISO 9001.

It is recommended that this instrument be recalibrated 12 months from date of this calibration. However, the user or owner may choose to adopt another suitable calibration interval from this instruments specification that meet their requirement. This certificate is issued with 1 set(s) of report with this report number: 2622537-1. Please refer to report for traceability information.

  
\_\_\_\_\_  
Anthony Ng

08-Sep-2016

Laboratory Manager



Cert No: LA-1997-0126-C

The results reported herein have been performed in accordance with the terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme.

  
\_\_\_\_\_  
Eang Lian Siang

Calibrated By

Calibration Date : 08-Sep-2016

Page 1 of 1 (This report must not be reproduced except in full, without written permission from Fluke South East Asia Pte Ltd.)

# Report of Calibration

This instrument was submitted by;  
Nanyang Technological University, 50 Nanyang Ave, Singapore 639798

Report No. :	2622537-1	Temperature :	23 +/- 1 °C
Report Type :	FOUND/LEFT	Relative Humidity :	55 +/- 10 %
Model (UUT) :	HART-5628	Calibration date :	08-Sep-2016
Serial No. :	2606		
Description :	SECONDARY STANDARD PRT		
Procedure :	PRT Probe: ITS-90 W4/W7 COMP/AL/TPW REPORT MU		
Revision :	1.2		

(1) This Platinum Resistance Thermometer (PRT) was calibrated by comparison to a laboratory standard SPRT via a Precision DC Thermometer at a constant current of 1.0 mA. The procedure followed is based on the technical information contained in NIST Technical Note 1265, "Guidelines for Realizing the International Temperature Scale of 1990 (ITS-90)" pertaining to secondary PRT's. Calibration was performed in the direction from high to low temperature, possible uncertainty due to hysteresis is not included. Uncertainty associated with the coefficients according to ITS-90 definition is not included.

(2) The data taken in the "FOUND/LEFT" condition of this instrument are recorded on the following pages of the report. This instrument was originally received in a "Functional" condition.

(3) This calibration is traceable to National Standards through working standards stated on page 2 of this report or natural physical constants and is in compliance with the International Standard ISO/IEC 17025. The uncertainties stated in the test data were estimated at confidence level of approximately 95% with a coverage factor of  $k=2$ .



The results reported herein have been performed in accordance with the terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme.

  
Anthony Ng 08-Sep-2016  
Laboratory Manager

Calibrated By : Eang Lian Siang



Model : HART-5628  
Serial No. : 2606

Page 1 of 3 (ref: 160908-10:19:42)

*This report must not be reproduced except in full, without written permission from Fluke South East Asia Pte Ltd.*

# Report of Calibration

## Traceability Information

<u>Model</u>	<u>Report Number</u>	<u>Cal. Date</u>	<u>Due Date</u>
1590-A25177	2016022	27-Jul-2016	27-Jul-2017
5699-0332	B6610025	29-Jun-2016	29-Jun-2019

Model : HART-5628

Serial No. : 2606

Page 2 of 3 (ref: 160908-10:19:42)

*This report must not be reproduced except in full, without written permission from Fluke South East Asia Pte Ltd.*

# Report of Calibration

Test	Actual (°C)	Measured Resistance (Ω)	Measurement Uncertainty (°C)
Al_FP	660.322degC	85.9461404Ω	1.4E-002degC
Comp	419.723401degC	65.415778Ω	2.1E-002degC
Comp	232.049314degC	48.1983372Ω	1.9E-002degC
TPW	0.01degC	25.4641456Ω	2.6E-003degC
Comp	-39.9111398	21.3838862Ω	6.4E-003degC
Comp	-195.648603	4.8055616Ω	8.5E-003degC

The calibration data were fitted by the method of least squares to obtain the following values for the resistance at the triple point of water (RTPW) and the coefficients of the pertinent deviation functions of the ITS-90.

ITS-90 Coefficients:

RTPW = 25.464100  
a4 = 2.25670088 E-04  
b4 = 2.78963329 E-04  
a7 = -6.53506317 E-04  
b7 = 1.82141081 E-04  
c7 = -2.19210034 E-05

----- End of Report -----

Model : HART-5628

Serial No. : 2606



Page 3 of 3 (ref: 160908-10:19:42)

*This report must not be reproduced except in full, without written permission from Fluke South East Asia Pte Ltd.*

°C	Resistance	dr/dT	°C	Resistance	dr/dT	°C	Resistance	dr/dT
-196.00	4.7670	0.1100	-125.00	12.4940	0.1064	-54.00	19.9316	0.1033
-195.00	4.8770	0.1101	-124.00	12.6004	0.1064	-53.00	20.0349	0.1033
-194.00	4.9871	0.1102	-123.00	12.7068	0.1063	-52.00	20.1382	0.1032
-193.00	5.0973	0.1103	-122.00	12.8131	0.1063	-51.00	20.2414	0.1032
-192.00	5.2076	0.1103	-121.00	12.9194	0.1062	-50.00	20.3446	0.1032
-191.00	5.3179	0.1104	-120.00	13.0256	0.1062	-49.00	20.4478	0.1031
-190.00	5.4283	0.1104	-119.00	13.1317	0.1061	-48.00	20.5509	0.1031
-189.00	5.5387	0.1104	-118.00	13.2378	0.1060	-47.00	20.6540	0.1031
-188.00	5.6492	0.1105	-117.00	13.3439	0.1060	-46.00	20.7571	0.1030
-187.00	5.7596	0.1105	-116.00	13.4499	0.1059	-45.00	20.8601	0.1030
-186.00	5.8701	0.1105	-115.00	13.5558	0.1059	-44.00	20.9631	0.1030
-185.00	5.9805	0.1104	-114.00	13.6617	0.1058	-43.00	21.0661	0.1029
-184.00	6.0910	0.1104	-113.00	13.7675	0.1058	-42.00	21.1690	0.1029
-183.00	6.2014	0.1104	-112.00	13.8733	0.1057	-41.00	21.2719	0.1029
-182.00	6.3118	0.1104	-111.00	13.9790	0.1057	-40.00	21.3748	0.1028
-181.00	6.4221	0.1103	-110.00	14.0847	0.1056	-39.00	21.4776	0.1028
-180.00	6.5325	0.1103	-109.00	14.1903	0.1056	-38.00	21.5804	0.1028
-179.00	6.6427	0.1102	-108.00	14.2958	0.1055	-37.00	21.6831	0.1027
-178.00	6.7530	0.1102	-107.00	14.4014	0.1055	-36.00	21.7859	0.1027
-177.00	6.8632	0.1101	-106.00	14.5068	0.1054	-35.00	21.8886	0.1027
-176.00	6.9733	0.1101	-105.00	14.6122	0.1054	-34.00	21.9912	0.1026
-175.00	7.0834	0.1100	-104.00	14.7176	0.1053	-33.00	22.0939	0.1026
-174.00	7.1934	0.1100	-103.00	14.8229	0.1053	-32.00	22.1965	0.1026
-173.00	7.3034	0.1099	-102.00	14.9282	0.1052	-31.00	22.2990	0.1025
-172.00	7.4132	0.1098	-101.00	15.0334	0.1052	-30.00	22.4016	0.1025
-171.00	7.5231	0.1097	-100.00	15.1386	0.1051	-29.00	22.5041	0.1025
-170.00	7.6328	0.1097	-99.00	15.2437	0.1051	-28.00	22.6065	0.1024
-169.00	7.7425	0.1096	-98.00	15.3488	0.1050	-27.00	22.7090	0.1024
-168.00	7.8521	0.1095	-97.00	15.4539	0.1050	-26.00	22.8114	0.1024
-167.00	7.9616	0.1095	-96.00	15.5589	0.1050	-25.00	22.9138	0.1023
-166.00	8.0711	0.1094	-95.00	15.6638	0.1049	-24.00	23.0161	0.1023
-165.00	8.1805	0.1093	-94.00	15.7687	0.1049	-23.00	23.1184	0.1023
-164.00	8.2898	0.1092	-93.00	15.8736	0.1048	-22.00	23.2207	0.1023
-163.00	8.3990	0.1091	-92.00	15.9784	0.1048	-21.00	23.3230	0.1022
-162.00	8.5081	0.1091	-91.00	16.0832	0.1047	-20.00	23.4252	0.1022
-161.00	8.6172	0.1090	-90.00	16.1879	0.1047	-19.00	23.5274	0.1022
-160.00	8.7262	0.1089	-89.00	16.2926	0.1046	-18.00	23.6295	0.1021
-159.00	8.8351	0.1088	-88.00	16.3972	0.1046	-17.00	23.7317	0.1021
-158.00	8.9439	0.1088	-87.00	16.5018	0.1046	-16.00	23.8337	0.1021
-157.00	9.0527	0.1087	-86.00	16.6064	0.1045	-15.00	23.9358	0.1020
-156.00	9.1614	0.1086	-85.00	16.7109	0.1045	-14.00	24.0378	0.1020
-155.00	9.2700	0.1085	-84.00	16.8154	0.1044	-13.00	24.1398	0.1020
-154.00	9.3785	0.1084	-83.00	16.9198	0.1044	-12.00	24.2418	0.1019
-153.00	9.4869	0.1084	-82.00	17.0242	0.1044	-11.00	24.3438	0.1019
-152.00	9.5953	0.1083	-81.00	17.1286	0.1043	-10.00	24.4457	0.1019
-151.00	9.7036	0.1082	-80.00	17.2329	0.1043	-9.00	24.5476	0.1018
-150.00	9.8118	0.1081	-79.00	17.3372	0.1042	-8.00	24.6494	0.1018
-149.00	9.9199	0.1081	-78.00	17.4414	0.1042	-7.00	24.7512	0.1018
-148.00	10.0280	0.1080	-77.00	17.5456	0.1042	-6.00	24.8530	0.1018
-147.00	10.1360	0.1079	-76.00	17.6498	0.1041	-5.00	24.9548	0.1017
-146.00	10.2439	0.1078	-75.00	17.7539	0.1041	-4.00	25.0565	0.1017
-145.00	10.3517	0.1078	-74.00	17.8579	0.1040	-3.00	25.1582	0.1017
-144.00	10.4595	0.1077	-73.00	17.9620	0.1040	-2.00	25.2598	0.1016
-143.00	10.5672	0.1076	-72.00	18.0660	0.1040	-1.00	25.3615	0.1016
-142.00	10.6748	0.1075	-71.00	18.1699	0.1039	0.00	25.4631	0.1015
-141.00	10.7824	0.1075	-70.00	18.2739	0.1039	1.00	25.5646	0.1015
-140.00	10.8898	0.1074	-69.00	18.3778	0.1038	2.00	25.6660	0.1014
-139.00	10.9972	0.1073	-68.00	18.4816	0.1038	3.00	25.7674	0.1014
-138.00	11.1046	0.1073	-67.00	18.5854	0.1038	4.00	25.8688	0.1014
-137.00	11.2119	0.1072	-66.00	18.6892	0.1037	5.00	25.9702	0.1013
-136.00	11.3191	0.1071	-65.00	18.7929	0.1037	6.00	26.0715	0.1013
-135.00	11.4262	0.1071	-64.00	18.8966	0.1037	7.00	26.1728	0.1013
-134.00	11.5333	0.1070	-63.00	19.0003	0.1036	8.00	26.2741	0.1012
-133.00	11.6403	0.1069	-62.00	19.1039	0.1036	9.00	26.3753	0.1012
-132.00	11.7472	0.1069	-61.00	19.2075	0.1036	10.00	26.4765	0.1012
-131.00	11.8541	0.1068	-60.00	19.3111	0.1035	11.00	26.5777	0.1011
-130.00	11.9609	0.1067	-59.00	19.4146	0.1035	12.00	26.6788	0.1011
-129.00	12.0676	0.1067	-58.00	19.5181	0.1034	13.00	26.7800	0.1011
-128.00	12.1743	0.1066	-57.00	19.6215	0.1034	14.00	26.8810	0.1011
-127.00	12.2809	0.1066	-56.00	19.7249	0.1034	15.00	26.9821	0.1010
-126.00	12.3875	0.1065	-55.00	19.8283	0.1033	16.00	27.0831	0.1010

°C	Resistance	dr/dT	°C	Resistance	dr/dT	°C	Resistance	dr/dT
17.00	27.1841	0.1010	88.00	34.2763	0.0988	159.00	41.2159	0.0967
18.00	27.2851	0.1009	89.00	34.3751	0.0988	160.00	41.3125	0.0966
19.00	27.3860	0.1009	90.00	34.4739	0.0987	161.00	41.4091	0.0966
20.00	27.4869	0.1009	91.00	34.5726	0.0987	162.00	41.5057	0.0966
21.00	27.5878	0.1008	92.00	34.6713	0.0987	163.00	41.6023	0.0965
22.00	27.6886	0.1008	93.00	34.7700	0.0986	164.00	41.6989	0.0965
23.00	27.7894	0.1008	94.00	34.8686	0.0986	165.00	41.7954	0.0965
24.00	27.8902	0.1007	95.00	34.9672	0.0986	166.00	41.8918	0.0964
25.00	27.9909	0.1007	96.00	35.0658	0.0986	167.00	41.9883	0.0964
26.00	28.0916	0.1007	97.00	35.1644	0.0985	168.00	42.0847	0.0964
27.00	28.1923	0.1007	98.00	35.2629	0.0985	169.00	42.1811	0.0964
28.00	28.2930	0.1006	99.00	35.3614	0.0985	170.00	42.2775	0.0963
29.00	28.3936	0.1006	100.00	35.4599	0.0984	171.00	42.3738	0.0963
30.00	28.4942	0.1006	101.00	35.5583	0.0984	172.00	42.4701	0.0963
31.00	28.5947	0.1005	102.00	35.6567	0.0984	173.00	42.5664	0.0962
32.00	28.6953	0.1005	103.00	35.7551	0.0983	174.00	42.6626	0.0962
33.00	28.7958	0.1005	104.00	35.8534	0.0983	175.00	42.7588	0.0962
34.00	28.8962	0.1004	105.00	35.9517	0.0983	176.00	42.8550	0.0962
35.00	28.9967	0.1004	106.00	36.0500	0.0983	177.00	42.9511	0.0961
36.00	29.0971	0.1004	107.00	36.1483	0.0982	178.00	43.0473	0.0961
37.00	29.1975	0.1003	108.00	36.2465	0.0982	179.00	43.1434	0.0961
38.00	29.2978	0.1003	109.00	36.3447	0.0982	180.00	43.2394	0.0960
39.00	29.3981	0.1003	110.00	36.4428	0.0981	181.00	43.3354	0.0960
40.00	29.4984	0.1003	111.00	36.5410	0.0981	182.00	43.4314	0.0960
41.00	29.5987	0.1002	112.00	36.6391	0.0981	183.00	43.5274	0.0959
42.00	29.6989	0.1002	113.00	36.7371	0.0980	184.00	43.6234	0.0959
43.00	29.7991	0.1002	114.00	36.8352	0.0980	185.00	43.7193	0.0959
44.00	29.8992	0.1001	115.00	36.9332	0.0980	186.00	43.8152	0.0959
45.00	29.9994	0.1001	116.00	37.0312	0.0980	187.00	43.9110	0.0958
46.00	30.0995	0.1001	117.00	37.1291	0.0979	188.00	44.0068	0.0958
47.00	30.1995	0.1000	118.00	37.2270	0.0979	189.00	44.1026	0.0958
48.00	30.2996	0.1000	119.00	37.3249	0.0979	190.00	44.1984	0.0957
49.00	30.3996	0.1000	120.00	37.4228	0.0978	191.00	44.2941	0.0957
50.00	30.4996	0.0999	121.00	37.5206	0.0978	192.00	44.3898	0.0957
51.00	30.5995	0.0999	122.00	37.6184	0.0978	193.00	44.4855	0.0956
52.00	30.6995	0.0999	123.00	37.7162	0.0977	194.00	44.5811	0.0956
53.00	30.7993	0.0999	124.00	37.8139	0.0977	195.00	44.6768	0.0956
54.00	30.8992	0.0998	125.00	37.9116	0.0977	196.00	44.7723	0.0956
55.00	30.9990	0.0998	126.00	38.0093	0.0976	197.00	44.8679	0.0955
56.00	31.0988	0.0998	127.00	38.1070	0.0976	198.00	44.9634	0.0955
57.00	31.1986	0.0997	128.00	38.2046	0.0976	199.00	45.0589	0.0955
58.00	31.2983	0.0997	129.00	38.3022	0.0976	200.00	45.1544	0.0954
59.00	31.3980	0.0997	130.00	38.3997	0.0975	201.00	45.2498	0.0954
60.00	31.4977	0.0996	131.00	38.4972	0.0975	202.00	45.3452	0.0954
61.00	31.5974	0.0996	132.00	38.5947	0.0975	203.00	45.4406	0.0953
62.00	31.6970	0.0996	133.00	38.6922	0.0974	204.00	45.5360	0.0953
63.00	31.7966	0.0996	134.00	38.7897	0.0974	205.00	45.6313	0.0953
64.00	31.8961	0.0995	135.00	38.8871	0.0974	206.00	45.7266	0.0953
65.00	31.9956	0.0995	136.00	38.9844	0.0973	207.00	45.8218	0.0952
66.00	32.0951	0.0995	137.00	39.0818	0.0973	208.00	45.9170	0.0952
67.00	32.1946	0.0994	138.00	39.1791	0.0973	209.00	46.0122	0.0952
68.00	32.2940	0.0994	139.00	39.2764	0.0973	210.00	46.1074	0.0951
69.00	32.3934	0.0994	140.00	39.3737	0.0972	211.00	46.2026	0.0951
70.00	32.4928	0.0993	141.00	39.4709	0.0972	212.00	46.2977	0.0951
71.00	32.5921	0.0993	142.00	39.5681	0.0972	213.00	46.3927	0.0951
72.00	32.6914	0.0993	143.00	39.6652	0.0971	214.00	46.4878	0.0950
73.00	32.7907	0.0993	144.00	39.7624	0.0971	215.00	46.5828	0.0950
74.00	32.8900	0.0992	145.00	39.8595	0.0971	216.00	46.6778	0.0950
75.00	32.9892	0.0992	146.00	39.9566	0.0970	217.00	46.7728	0.0949
76.00	33.0884	0.0992	147.00	40.0536	0.0970	218.00	46.8677	0.0949
77.00	33.1875	0.0991	148.00	40.1506	0.0970	219.00	46.9626	0.0949
78.00	33.2867	0.0991	149.00	40.2476	0.0970	220.00	47.0575	0.0948
79.00	33.3858	0.0991	150.00	40.3446	0.0969	221.00	47.1523	0.0948
80.00	33.4848	0.0990	151.00	40.4415	0.0969	222.00	47.2471	0.0948
81.00	33.5839	0.0990	152.00	40.5384	0.0969	223.00	47.3419	0.0948
82.00	33.6829	0.0990	153.00	40.6353	0.0968	224.00	47.4367	0.0947
83.00	33.7819	0.0989	154.00	40.7321	0.0968	225.00	47.5314	0.0947
84.00	33.8808	0.0989	155.00	40.8289	0.0968	226.00	47.6261	0.0947
85.00	33.9797	0.0989	156.00	40.9257	0.0967	227.00	47.7208	0.0946
86.00	34.0786	0.0989	157.00	41.0225	0.0967	228.00	47.8154	0.0946
87.00	34.1775	0.0988	158.00	41.1192	0.0967	229.00	47.9100	0.0946

°C	Resistance	dr/dT	°C	Resistance	dr/dT	°C	Resistance	dr/dT
230.00	48.0046	0.0945	301.00	54.6442	0.0925	372.00	61.1358	0.0904
231.00	48.0991	0.0945	302.00	54.7367	0.0924	373.00	61.2261	0.0903
232.00	48.1936	0.0945	303.00	54.8291	0.0924	374.00	61.3165	0.0903
233.00	48.2881	0.0945	304.00	54.9215	0.0924	375.00	61.4068	0.0903
234.00	48.3826	0.0944	305.00	55.0139	0.0923	376.00	61.4971	0.0903
235.00	48.4770	0.0944	306.00	55.1062	0.0923	377.00	61.5873	0.0902
236.00	48.5714	0.0944	307.00	55.1985	0.0923	378.00	61.6776	0.0902
237.00	48.6658	0.0943	308.00	55.2908	0.0923	379.00	61.7678	0.0902
238.00	48.7601	0.0943	309.00	55.3830	0.0922	380.00	61.8579	0.0901
239.00	48.8544	0.0943	310.00	55.4753	0.0922	381.00	61.9481	0.0901
240.00	48.9487	0.0943	311.00	55.5675	0.0922	382.00	62.0382	0.0901
241.00	49.0430	0.0942	312.00	55.6596	0.0921	383.00	62.1282	0.0900
242.00	49.1372	0.0942	313.00	55.7518	0.0921	384.00	62.2183	0.0900
243.00	49.2314	0.0942	314.00	55.8439	0.0921	385.00	62.3083	0.0900
244.00	49.3256	0.0941	315.00	55.9359	0.0920	386.00	62.3983	0.0900
245.00	49.4197	0.0941	316.00	56.0280	0.0920	387.00	62.4883	0.0899
246.00	49.5138	0.0941	317.00	56.1200	0.0920	388.00	62.5782	0.0899
247.00	49.6079	0.0940	318.00	56.2120	0.0920	389.00	62.6681	0.0899
248.00	49.7019	0.0940	319.00	56.3039	0.0919	390.00	62.7580	0.0898
249.00	49.7959	0.0940	320.00	56.3959	0.0919	391.00	62.8478	0.0898
250.00	49.8899	0.0940	321.00	56.4878	0.0919	392.00	62.9376	0.0898
251.00	49.9839	0.0939	322.00	56.5796	0.0918	393.00	63.0274	0.0898
252.00	50.0778	0.0939	323.00	56.6715	0.0918	394.00	63.1172	0.0897
253.00	50.1717	0.0939	324.00	56.7633	0.0918	395.00	63.2069	0.0897
254.00	50.2656	0.0938	325.00	56.8551	0.0918	396.00	63.2966	0.0897
255.00	50.3594	0.0938	326.00	56.9468	0.0917	397.00	63.3863	0.0896
256.00	50.4532	0.0938	327.00	57.0386	0.0917	398.00	63.4759	0.0896
257.00	50.5470	0.0938	328.00	57.1303	0.0917	399.00	63.5655	0.0896
258.00	50.6407	0.0937	329.00	57.2219	0.0916	400.00	63.6551	0.0895
259.00	50.7345	0.0937	330.00	57.3136	0.0916	401.00	63.7446	0.0895
260.00	50.8282	0.0937	331.00	57.4052	0.0916	402.00	63.8341	0.0895
261.00	50.9218	0.0936	332.00	57.4967	0.0915	403.00	63.9236	0.0895
262.00	51.0154	0.0936	333.00	57.5883	0.0915	404.00	64.0131	0.0894
263.00	51.1091	0.0936	334.00	57.6798	0.0915	405.00	64.1025	0.0894
264.00	51.2026	0.0935	335.00	57.7713	0.0915	406.00	64.1919	0.0894
265.00	51.2962	0.0935	336.00	57.8628	0.0914	407.00	64.2813	0.0893
266.00	51.3897	0.0935	337.00	57.9542	0.0914	408.00	64.3706	0.0893
267.00	51.4832	0.0935	338.00	58.0456	0.0914	409.00	64.4599	0.0893
268.00	51.5766	0.0934	339.00	58.1370	0.0913	410.00	64.5492	0.0893
269.00	51.6701	0.0934	340.00	58.2283	0.0913	411.00	64.6385	0.0892
270.00	51.7635	0.0934	341.00	58.3196	0.0913	412.00	64.7277	0.0892
271.00	51.8568	0.0933	342.00	58.4109	0.0913	413.00	64.8169	0.0892
272.00	51.9502	0.0933	343.00	58.5022	0.0912	414.00	64.9061	0.0891
273.00	52.0435	0.0933	344.00	58.5934	0.0912	415.00	64.9952	0.0891
274.00	52.1367	0.0933	345.00	58.6846	0.0912	416.00	65.0843	0.0891
275.00	52.2300	0.0932	346.00	58.7757	0.0911	417.00	65.1734	0.0890
276.00	52.3232	0.0932	347.00	58.8669	0.0911	418.00	65.2624	0.0890
277.00	52.4164	0.0932	348.00	58.9580	0.0911	419.00	65.3514	0.0890
278.00	52.5096	0.0931	349.00	59.0491	0.0910	420.00	65.4404	0.0890
279.00	52.6027	0.0931	350.00	59.1401	0.0910	421.00	65.5294	0.0889
280.00	52.6958	0.0931	351.00	59.2311	0.0910	422.00	65.6183	0.0889
281.00	52.7889	0.0930	352.00	59.3221	0.0910	423.00	65.7072	0.0889
282.00	52.8819	0.0930	353.00	59.4131	0.0909	424.00	65.7961	0.0888
283.00	52.9749	0.0930	354.00	59.5040	0.0909	425.00	65.8849	0.0888
284.00	53.0679	0.0930	355.00	59.5949	0.0909	426.00	65.9737	0.0888
285.00	53.1609	0.0929	356.00	59.6858	0.0908	427.00	66.0625	0.0887
286.00	53.2538	0.0929	357.00	59.7766	0.0908	428.00	66.1512	0.0887
287.00	53.3467	0.0929	358.00	59.8674	0.0908	429.00	66.2399	0.0887
288.00	53.4396	0.0928	359.00	59.9582	0.0908	430.00	66.3286	0.0887
289.00	53.5324	0.0928	360.00	60.0490	0.0907	431.00	66.4173	0.0886
290.00	53.6252	0.0928	361.00	60.1397	0.0907	432.00	66.5059	0.0886
291.00	53.7180	0.0928	362.00	60.2304	0.0907	433.00	66.5945	0.0886
292.00	53.8108	0.0927	363.00	60.3211	0.0906	434.00	66.6831	0.0885
293.00	53.9035	0.0927	364.00	60.4117	0.0906	435.00	66.7716	0.0885
294.00	53.9962	0.0927	365.00	60.5023	0.0906	436.00	66.8601	0.0885
295.00	54.0888	0.0926	366.00	60.5929	0.0905	437.00	66.9486	0.0885
296.00	54.1815	0.0926	367.00	60.6835	0.0905	438.00	67.0371	0.0884
297.00	54.2741	0.0926	368.00	60.7740	0.0905	439.00	67.1255	0.0884
298.00	54.3666	0.0925	369.00	60.8645	0.0905	440.00	67.2139	0.0884
299.00	54.4592	0.0925	370.00	60.9549	0.0904	441.00	67.3022	0.0883
300.00	54.5517	0.0925	371.00	61.0454	0.0904	442.00	67.3906	0.0883

°C	Resistance	dr/dT	°C	Resistance	dr/dT	°C	Resistance	dr/dT
443.00	67.4789	0.0883	514.00	73.6716	0.0861	585.00	79.7107	0.0839
444.00	67.5671	0.0882	515.00	73.7577	0.0861	586.00	79.7947	0.0839
445.00	67.6554	0.0882	516.00	73.8438	0.0861	587.00	79.8786	0.0839
446.00	67.7436	0.0882	517.00	73.9299	0.0860	588.00	79.9625	0.0839
447.00	67.8318	0.0882	518.00	74.0159	0.0860	589.00	80.0463	0.0838
448.00	67.9199	0.0881	519.00	74.1019	0.0860	590.00	80.1301	0.0838
449.00	68.0081	0.0881	520.00	74.1879	0.0859	591.00	80.2139	0.0838
450.00	68.0962	0.0881	521.00	74.2738	0.0859	592.00	80.2977	0.0837
451.00	68.1842	0.0880	522.00	74.3598	0.0859	593.00	80.3814	0.0837
452.00	68.2722	0.0880	523.00	74.4457	0.0859	594.00	80.4651	0.0837
453.00	68.3603	0.0880	524.00	74.5315	0.0858	595.00	80.5488	0.0836
454.00	68.4482	0.0879	525.00	74.6173	0.0858	596.00	80.6324	0.0836
455.00	68.5362	0.0879	526.00	74.7031	0.0858	597.00	80.7160	0.0836
456.00	68.6241	0.0879	527.00	74.7889	0.0857	598.00	80.7996	0.0835
457.00	68.7120	0.0879	528.00	74.8746	0.0857	599.00	80.8831	0.0835
458.00	68.7998	0.0878	529.00	74.9603	0.0857	600.00	80.9666	0.0835
459.00	68.8876	0.0878	530.00	75.0460	0.0856	601.00	81.0501	0.0834
460.00	68.9754	0.0878	531.00	75.1317	0.0856	602.00	81.1336	0.0834
461.00	69.0632	0.0877	532.00	75.2173	0.0856	603.00	81.2170	0.0834
462.00	69.1509	0.0877	533.00	75.3029	0.0856	604.00	81.3004	0.0834
463.00	69.2386	0.0877	534.00	75.3884	0.0855	605.00	81.3837	0.0833
464.00	69.3263	0.0876	535.00	75.4739	0.0855	606.00	81.4670	0.0833
465.00	69.4140	0.0876	536.00	75.5594	0.0855	607.00	81.5503	0.0833
466.00	69.5016	0.0876	537.00	75.6449	0.0854	608.00	81.6336	0.0832
467.00	69.5891	0.0876	538.00	75.7303	0.0854	609.00	81.7168	0.0832
468.00	69.6767	0.0875	539.00	75.8157	0.0854	610.00	81.8000	0.0832
469.00	69.7642	0.0875	540.00	75.9011	0.0853	611.00	81.8832	0.0831
470.00	69.8517	0.0875	541.00	75.9864	0.0853	612.00	81.9663	0.0831
471.00	69.9392	0.0874	542.00	76.0717	0.0853	613.00	82.0494	0.0831
472.00	70.0266	0.0874	543.00	76.1570	0.0852	614.00	82.1325	0.0830
473.00	70.1140	0.0874	544.00	76.2422	0.0852	615.00	82.2155	0.0830
474.00	70.2014	0.0873	545.00	76.3275	0.0852	616.00	82.2985	0.0830
475.00	70.2887	0.0873	546.00	76.4126	0.0852	617.00	82.3815	0.0829
476.00	70.3760	0.0873	547.00	76.4978	0.0851	618.00	82.4645	0.0829
477.00	70.4633	0.0873	548.00	76.5829	0.0851	619.00	82.5474	0.0829
478.00	70.5506	0.0872	549.00	76.6680	0.0851	620.00	82.6303	0.0829
479.00	70.6378	0.0872	550.00	76.7531	0.0850	621.00	82.7131	0.0828
480.00	70.7250	0.0872	551.00	76.8381	0.0850	622.00	82.7959	0.0828
481.00	70.8122	0.0871	552.00	76.9231	0.0850	623.00	82.8787	0.0828
482.00	70.8993	0.0871	553.00	77.0081	0.0849	624.00	82.9615	0.0827
483.00	70.9864	0.0871	554.00	77.0930	0.0849	625.00	83.0442	0.0827
484.00	71.0735	0.0870	555.00	77.1779	0.0849	626.00	83.1269	0.0827
485.00	71.1605	0.0870	556.00	77.2628	0.0848	627.00	83.2096	0.0826
486.00	71.2475	0.0870	557.00	77.3476	0.0848	628.00	83.2922	0.0826
487.00	71.3345	0.0870	558.00	77.4324	0.0848	629.00	83.3748	0.0826
488.00	71.4215	0.0869	559.00	77.5172	0.0848	630.00	83.4574	0.0825
489.00	71.5084	0.0869	560.00	77.6020	0.0847	631.00	83.5399	0.0825
490.00	71.5953	0.0869	561.00	77.6867	0.0847	632.00	83.6224	0.0825
491.00	71.6821	0.0868	562.00	77.7714	0.0847	633.00	83.7049	0.0824
492.00	71.7690	0.0868	563.00	77.8560	0.0846	634.00	83.7873	0.0824
493.00	71.8558	0.0868	564.00	77.9407	0.0846	635.00	83.8697	0.0824
494.00	71.9425	0.0867	565.00	78.0253	0.0846	636.00	83.9521	0.0823
495.00	72.0293	0.0867	566.00	78.1098	0.0845	637.00	84.0345	0.0823
496.00	72.1160	0.0867	567.00	78.1944	0.0845	638.00	84.1168	0.0823
497.00	72.2027	0.0866	568.00	78.2789	0.0845	639.00	84.1991	0.0823
498.00	72.2893	0.0866	569.00	78.3634	0.0844	640.00	84.2813	0.0822
499.00	72.3759	0.0866	570.00	78.4478	0.0844	641.00	84.3636	0.0822
500.00	72.4625	0.0866	571.00	78.5322	0.0844	642.00	84.4458	0.0822
501.00	72.5491	0.0865	572.00	78.6166	0.0843	643.00	84.5279	0.0821
502.00	72.6356	0.0865	573.00	78.7009	0.0843	644.00	84.6100	0.0821
503.00	72.7221	0.0865	574.00	78.7853	0.0843	645.00	84.6921	0.0821
504.00	72.8086	0.0864	575.00	78.8695	0.0843	646.00	84.7742	0.0820
505.00	72.8950	0.0864	576.00	78.9538	0.0842	647.00	84.8562	0.0820
506.00	72.9814	0.0864	577.00	79.0380	0.0842	648.00	84.9382	0.0820
507.00	73.0678	0.0863	578.00	79.1222	0.0842	649.00	85.0202	0.0819
508.00	73.1541	0.0863	579.00	79.2064	0.0841	650.00	85.1022	0.0819
509.00	73.2404	0.0863	580.00	79.2905	0.0841	651.00	85.1841	0.0819
510.00	73.3267	0.0863	581.00	79.3746	0.0841	652.00	85.2659	0.0818
511.00	73.4130	0.0862	582.00	79.4587	0.0840	653.00	85.3478	0.0818
512.00	73.4992	0.0862	583.00	79.5427	0.0840	654.00	85.4296	0.0818
513.00	73.5854	0.0862	584.00	79.6267	0.0840	655.00	85.5114	0.0818



<b>°C</b>	<b>Resistance</b>	<b>dr/dT</b>
<b>656.00</b>	85.5931	0.0817
<b>657.00</b>	85.6749	0.0817
<b>658.00</b>	85.7565	0.0817
<b>659.00</b>	85.8382	0.0816
<b>660.00</b>	85.9198	0.0816