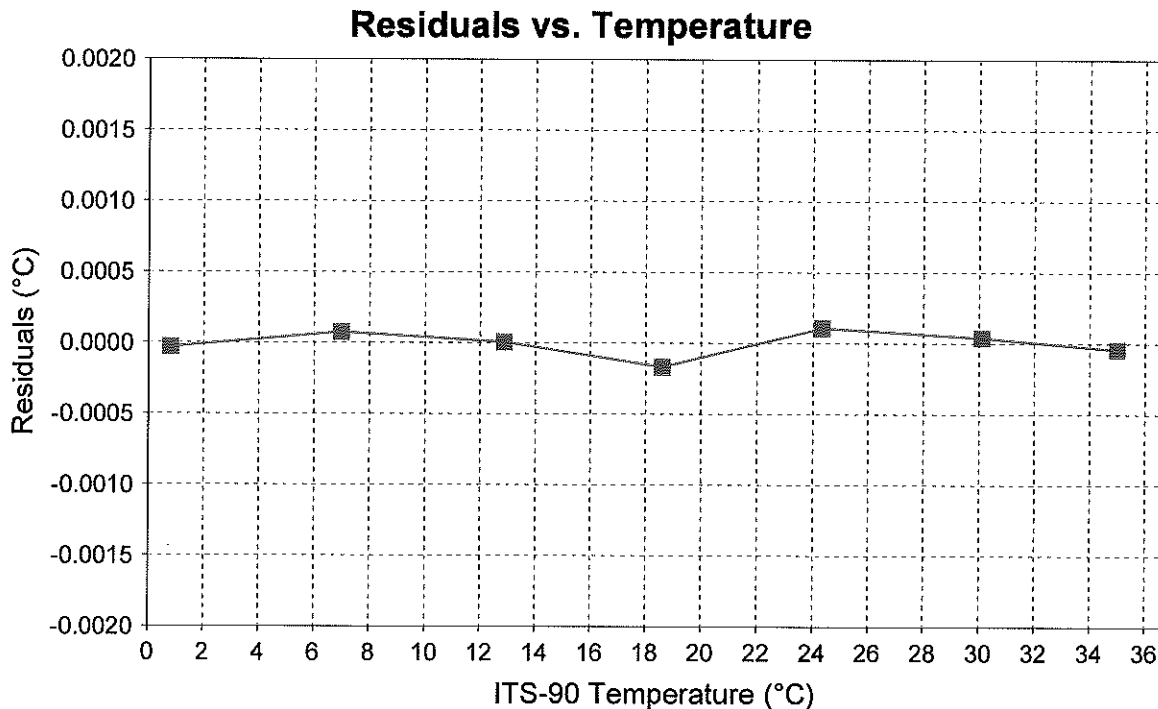


RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 1

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.641241	0.80700	-0.00003	C0: 0.003503557049637
6.99077	0.565255	6.99084	0.00008	C1: -0.000251037189265
12.86609	0.492778	12.86610	0.00001	C2: 0.000002508991711
18.60985	0.424587	18.60968	-0.00017	C3: -0.000000071495099
24.33755	0.361438	24.33766	0.00011	
30.11800	0.304098	30.11804	0.00004	
34.99404	0.261248	34.99399	-0.00004	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19875

Operator: *Danny*
dluong

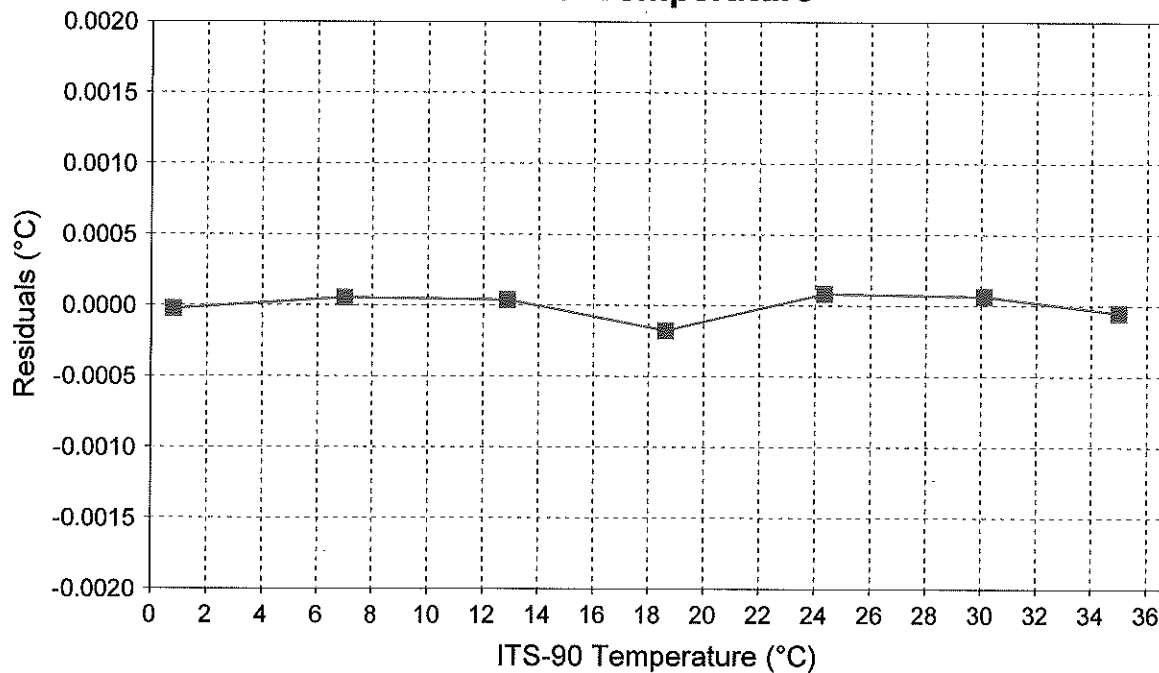
Approver: *J. Bucknor*
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 2

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients	
0.80703	0.619467	0.80701	-0.00002	C0:	0.003527376336783
6.99077	0.541949	6.99082	0.00006	C1:	-0.000250815995058
12.86609	0.469032	12.86613	0.00004	C2:	0.000002541822708
18.60985	0.401338	18.60967	-0.00018	C3:	-0.000000074766611
24.33755	0.339435	24.33763	0.00008		
30.11800	0.283879	30.11807	0.00007		
34.99407	0.242768	34.99402	-0.00005		

Residuals vs. Temperature



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19874

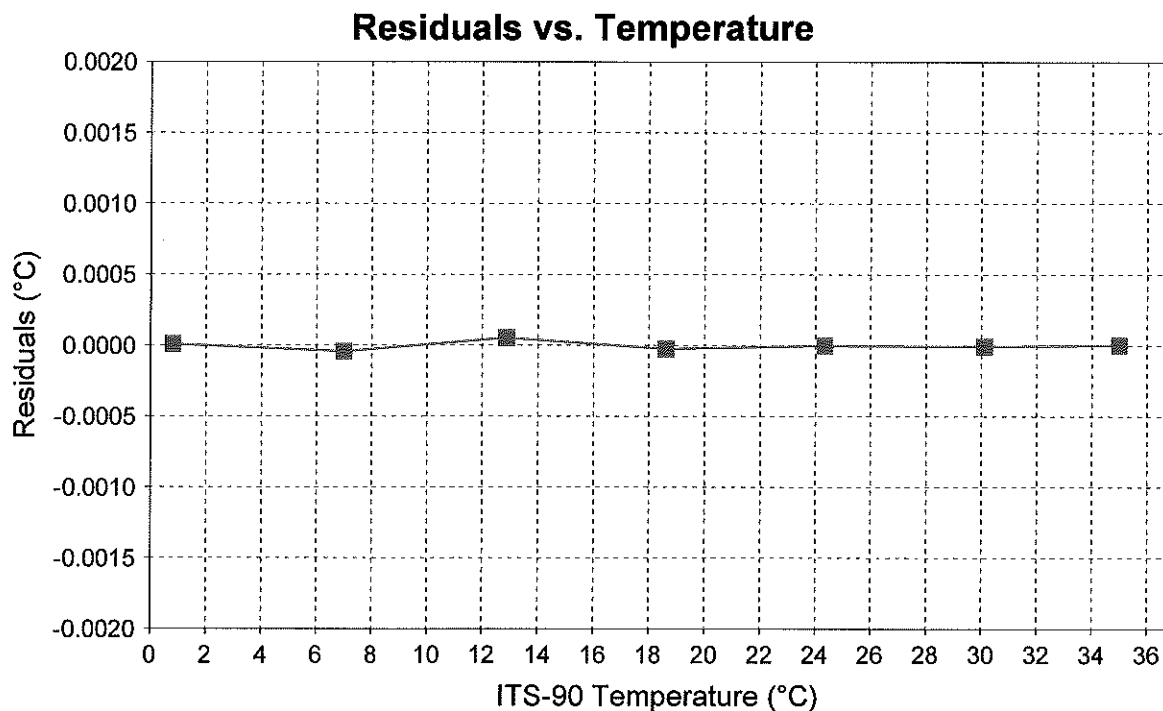
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 3

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.617493	0.80704	0.00001	C0: 0.003529152203778
6.99077	0.540083	6.99073	-0.00004	C1: -0.000251536850145
12.86609	0.467358	12.86615	0.00005	C2: 0.000002537505441
18.60985	0.399904	18.60982	-0.00002	C3: -0.000000059064438
24.33755	0.338264	24.33755	0.00000	
30.11801	0.282960	30.11800	-0.00001	
34.99407	0.242040	34.99407	0.00001	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19873

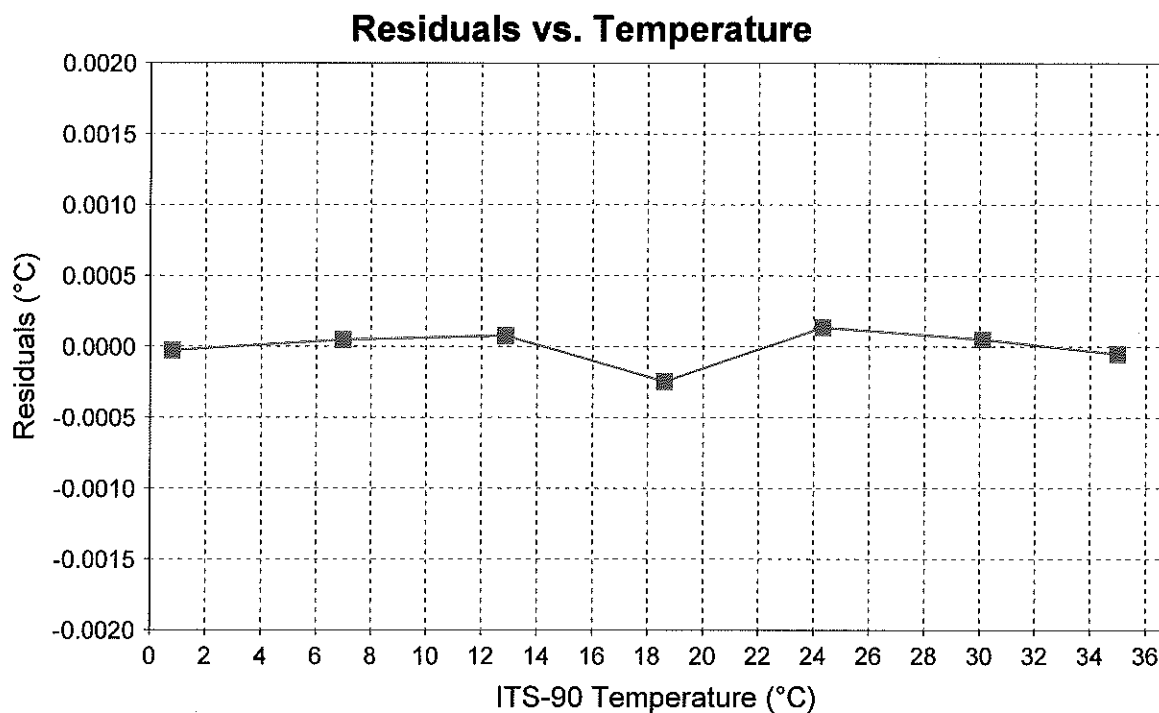
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 4

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.634526	0.80701	-0.00003	C0: 0.003510698834213
6.99080	0.558187	6.99085	0.00005	C1: -0.000251467119530
12.86609	0.485687	12.86617	0.00008	C2: 0.000002524402932
18.60985	0.417746	18.60960	-0.00024	C3: -0.000000062991374
24.33755	0.355053	24.33768	0.00014	
30.11802	0.298311	30.11808	0.00005	
34.99400	0.256017	34.99395	-0.00005	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19872

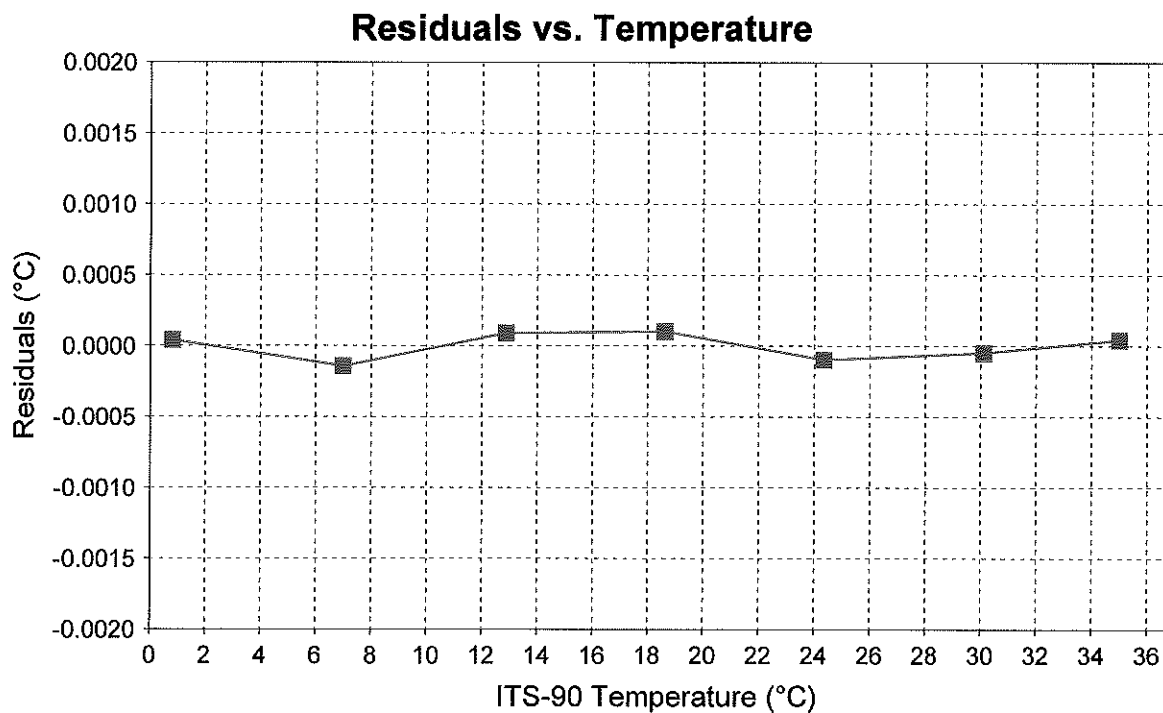
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 5

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.625634	0.80707	0.00004	C0: 0.003520482378316
6.99078	0.548646	6.99064	-0.00014	C1: -0.000251318512577
12.86609	0.475946	12.86618	0.00009	C2: 0.000002489363415
18.60985	0.408195	18.60995	0.00010	C3: -0.000000055980611
24.33756	0.346014	24.33747	-0.00010	
30.11801	0.290002	30.11796	-0.00005	
34.99400	0.248422	34.99404	0.00005	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19871

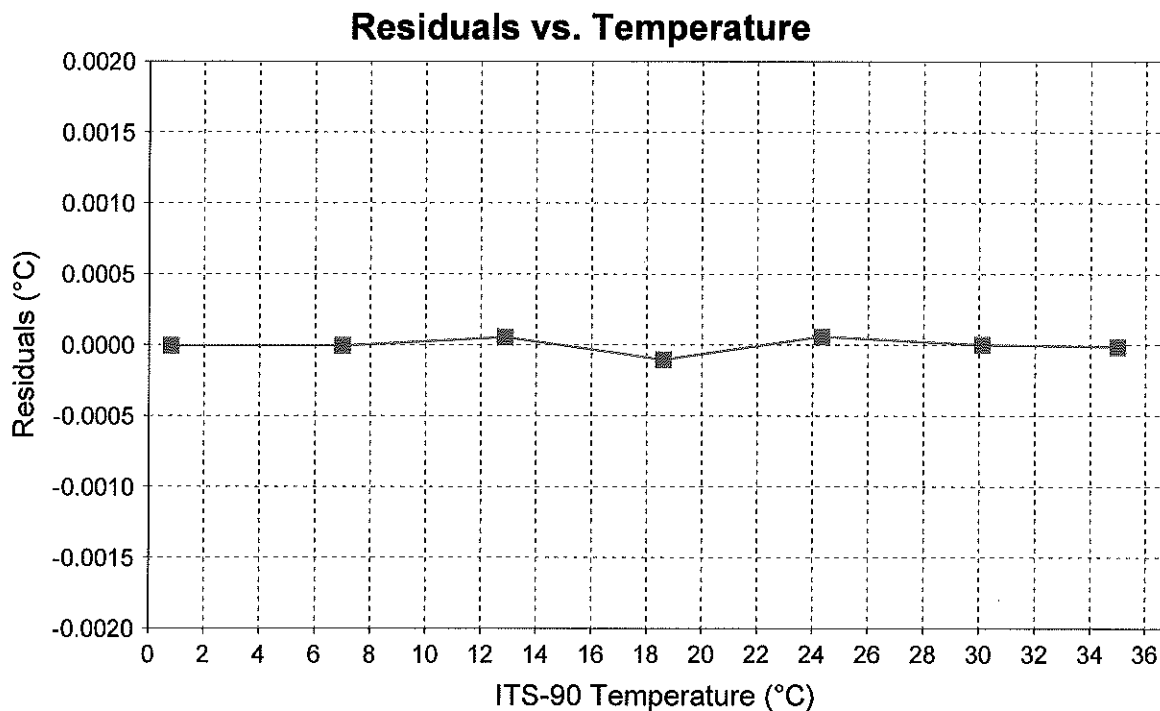
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 6

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.669860	0.80703	-0.00000	C0: 0.003472056506176
6.99078	0.595991	6.99078	-0.00000	C1: -0.000250010532465
12.86609	0.524206	12.86615	0.00006	C2: 0.000002458454303
18.60985	0.455463	18.60974	-0.00010	C3: -0.000000069499226
24.33755	0.390744	24.33761	0.00006	
30.11800	0.331079	30.11801	0.00000	
34.99404	0.285923	34.99403	-0.00001	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19870

Operator: 
dluong

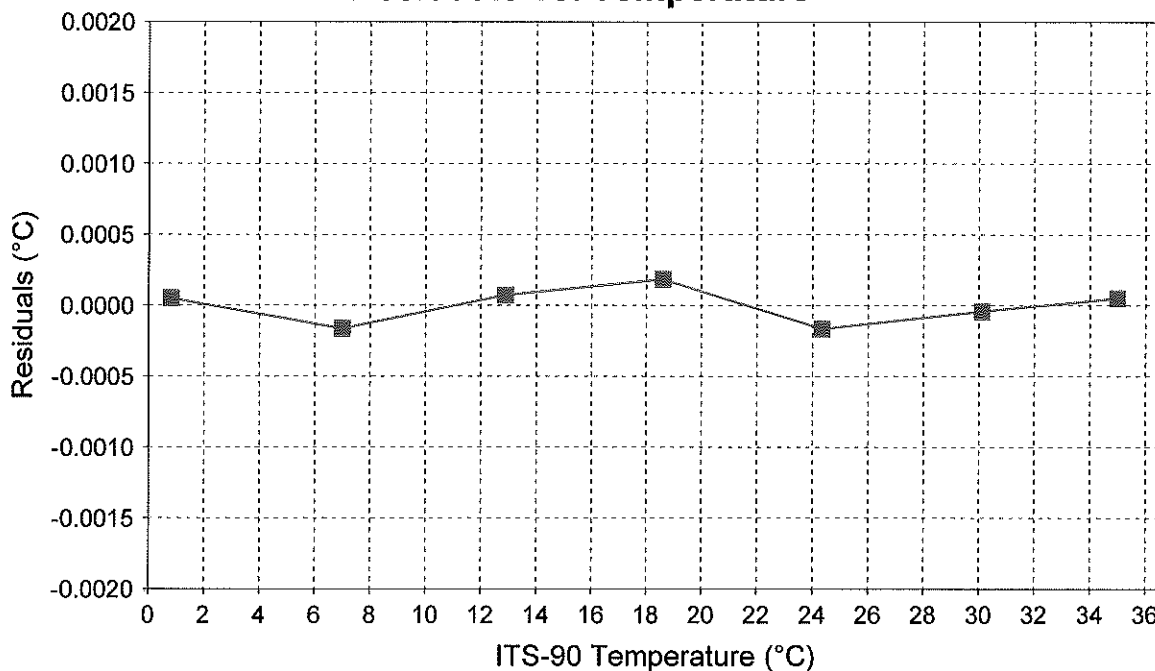
Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 7

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.616763	0.80708	0.00005	C0: 0.003530095460252
6.99077	0.539205	6.99061	-0.00016	C1: -0.000251233209349
12.86609	0.466382	12.86617	0.00007	C2: 0.000002479136300
18.60985	0.398884	18.61003	0.00019	C3: -0.000000052308741
24.33755	0.337252	24.33738	-0.00016	
30.11801	0.281991	30.11797	-0.00004	
34.99408	0.241128	34.99413	0.00005	

Residuals vs. Temperature



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19869

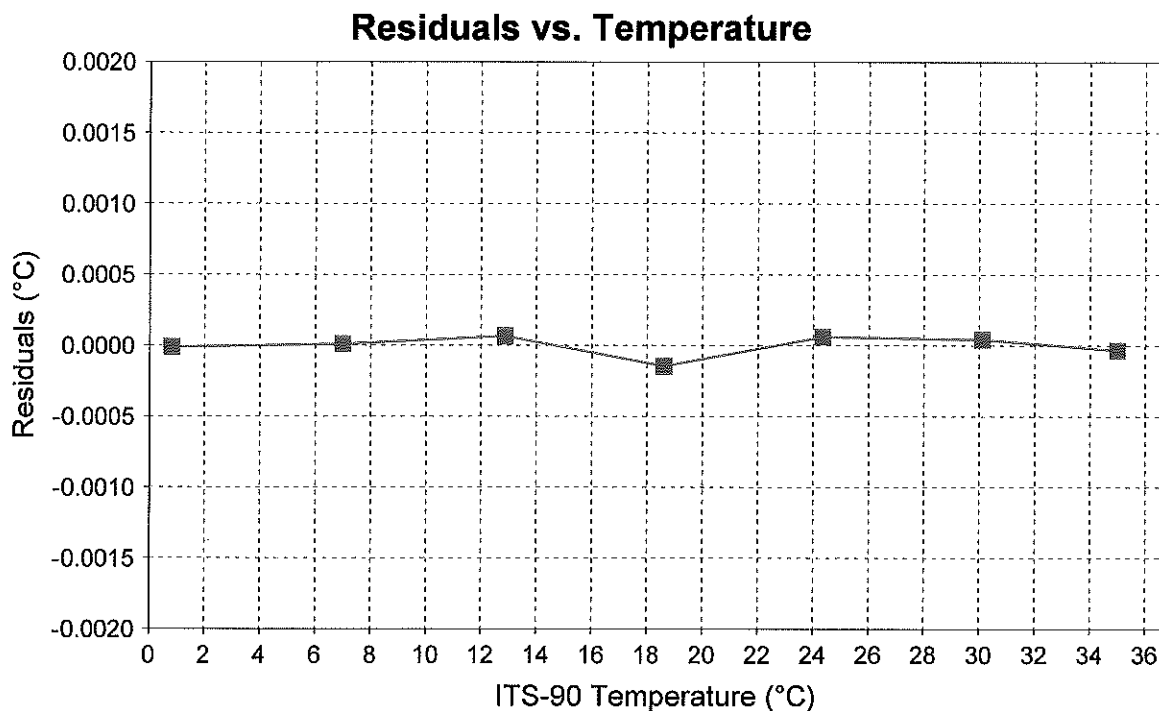
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 8

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.631300	0.80702	-0.00001	C0: 0.003514244561724
6.99077	0.554728	6.99078	0.00001	C1: -0.000251454866253
12.86609	0.482160	12.86616	0.00007	C2: 0.000002491953208
18.60985	0.414296	18.60970	-0.00014	C3: -0.000000069625711
24.33755	0.351799	24.33761	0.00006	
30.11800	0.295333	30.11805	0.00004	
34.99407	0.253309	34.99403	-0.00003	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19868

Operator: 
dluong

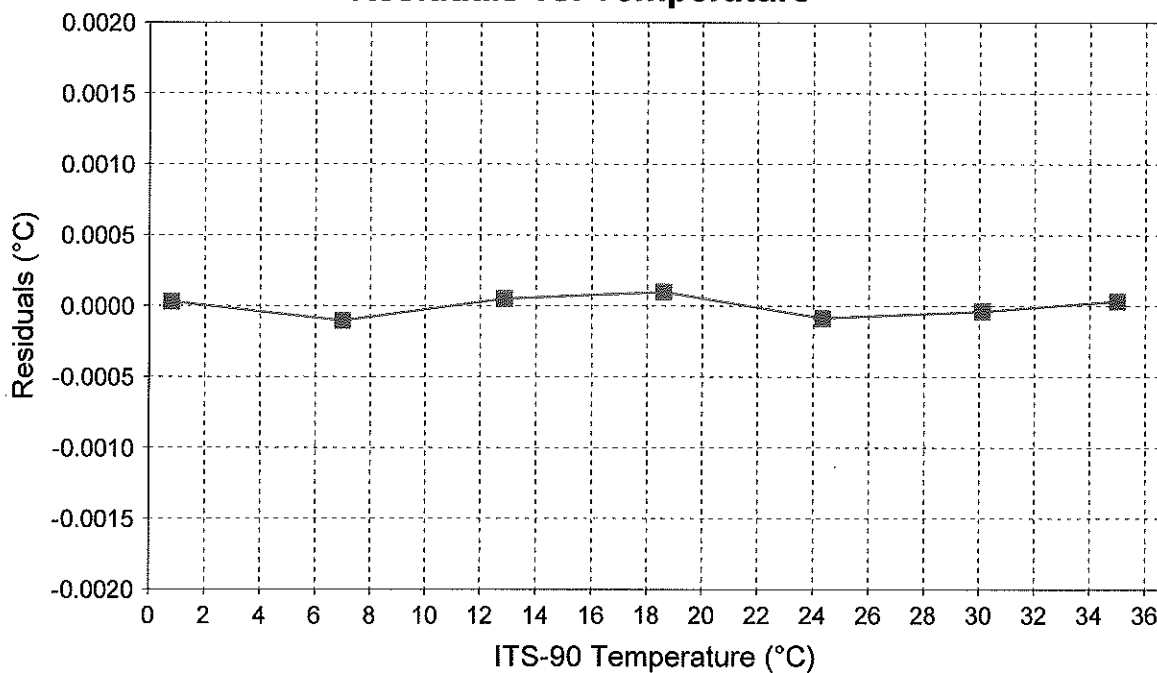
Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 9

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.629375	0.80706	0.00003	C0: 0.003516565302260
6.99077	0.552545	6.99066	-0.00010	C1: -0.000251038636598
12.86609	0.479819	12.86615	0.00005	C2: 0.000002493749621
18.60985	0.411895	18.60995	0.00010	C3: -0.000000057081125
24.33755	0.349433	24.33746	-0.00008	
30.11801	0.293069	30.11797	-0.00004	
34.99404	0.251169	34.99407	0.00004	

Residuals vs. Temperature




Calibration Date: 12/Apr/2017

Issue Date: 13/Apr/2017

Calibration ID: 19867

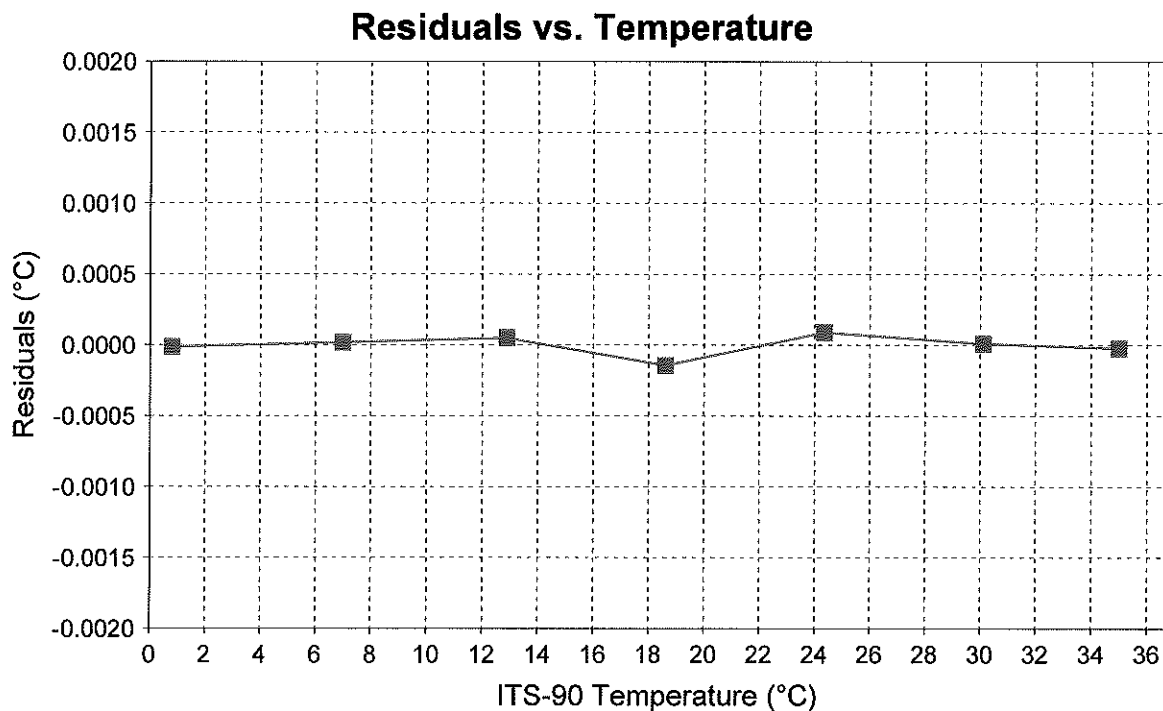
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 10

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.651039	0.80702	-0.00001	C0: 0.003492983201145
6.99077	0.575664	6.99079	0.00002	C1: -0.000250556715026
12.86609	0.503315	12.86614	0.00005	C2: 0.000002462133584
18.60985	0.434846	18.60970	-0.00014	C3: -0.000000073880383
24.33755	0.371096	24.33764	0.00009	
30.11802	0.312926	30.11804	0.00001	
34.99404	0.269278	34.99402	-0.00002	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19866

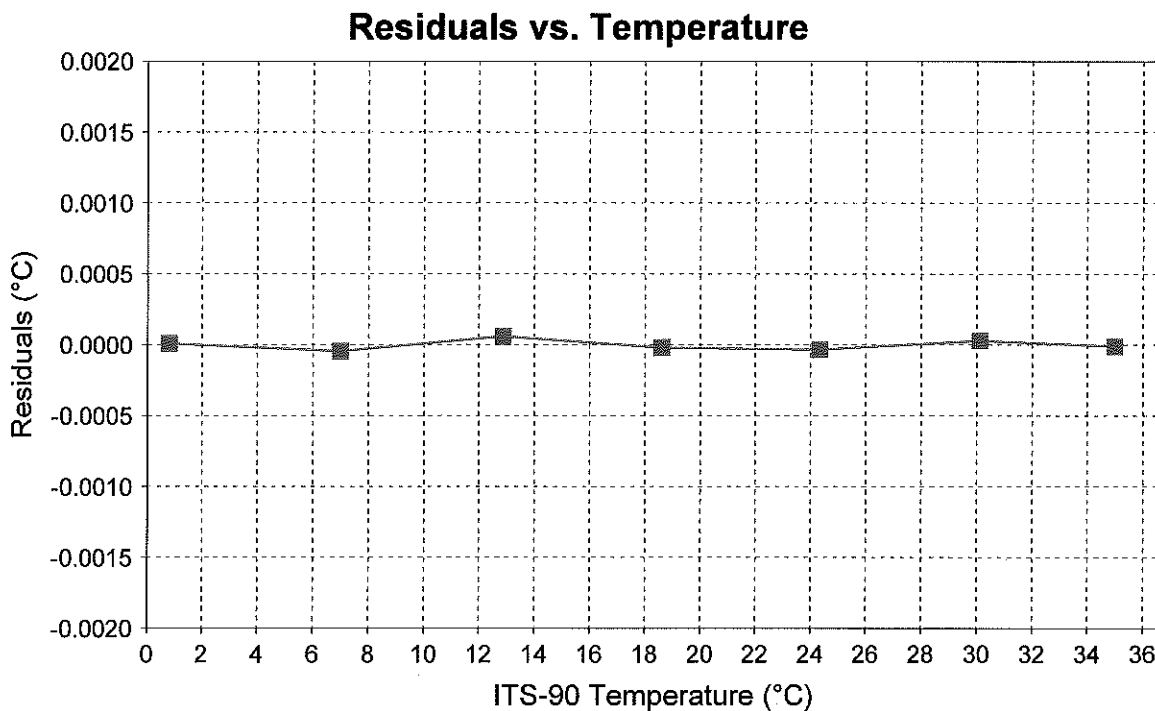
Operator: *Danny*
dluong

Approver: *S. Bucknor*
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 11

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.609781	0.80704	0.00001	C0: 0.003537216981729
6.99077	0.532078	6.99072	-0.00004	C1: -0.000251973122605
12.86609	0.459432	12.86615	0.00006	C2: 0.000002543076879
18.60985	0.392352	18.60983	-0.00002	C3: -0.000000056165056
24.33755	0.331298	24.33751	-0.00003	
30.11800	0.276713	30.11803	0.00003	
34.99407	0.236441	34.99406	-0.00001	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19865

Operator: *Danny*
dluong

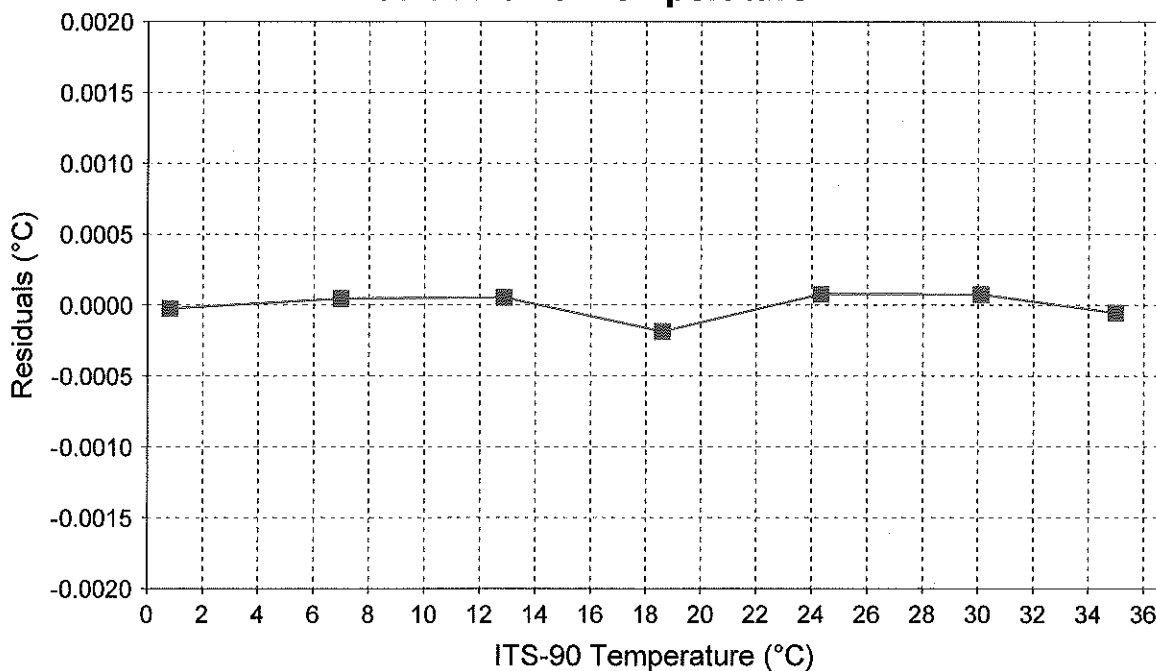
Approver: *S. Bucknor*
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 12

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.642891	0.80701	-0.00002	C0: 0.003501767447191
6.99078	0.567015	6.99083	0.00005	C1: -0.000250961547261
12.86609	0.494559	12.86615	0.00006	C2: 0.000002540600326
18.60985	0.426315	18.60966	-0.00019	C3: -0.000000066626025
24.33756	0.363054	24.33764	0.00008	
30.11800	0.305559	30.11808	0.00008	
34.99404	0.262561	34.99398	-0.00005	

Residuals vs. Temperature



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19864

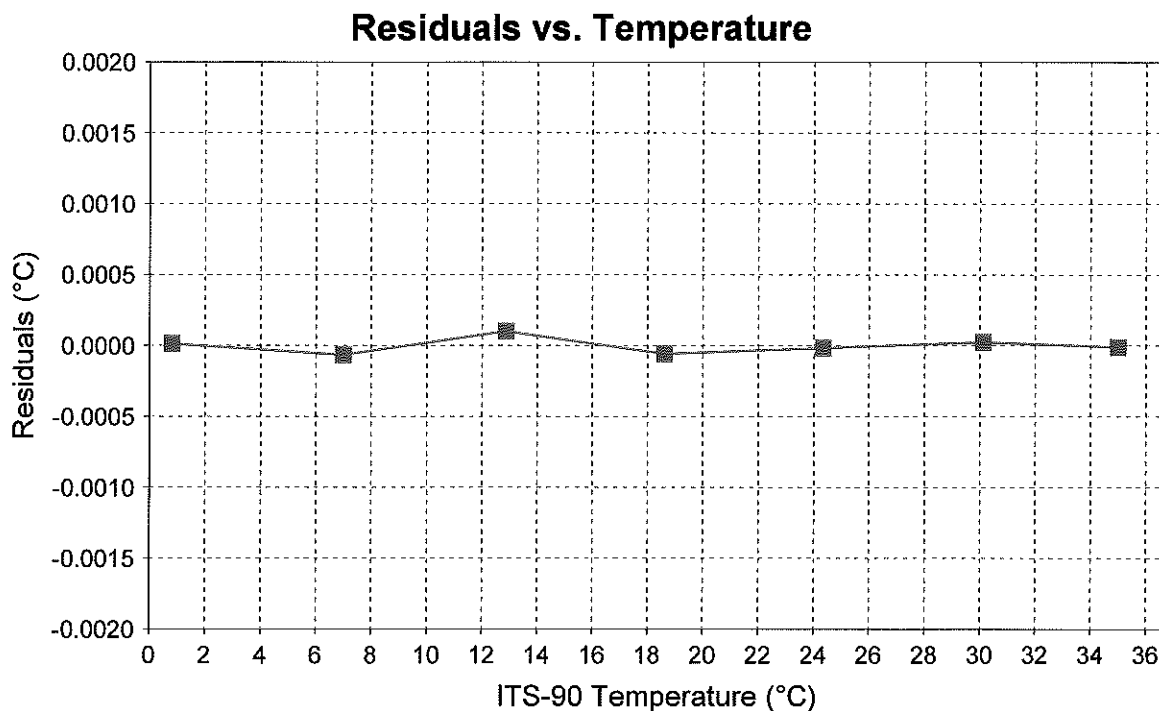
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 13

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.662438	0.80704	0.00001	C0: 0.003480121275476
6.99077	0.588060	6.99070	-0.00006	C1: -0.000250579119228
12.86609	0.516131	12.86620	0.00010	C2: 0.000002506369234
18.60985	0.447561	18.60979	-0.00006	C3: -0.000000039687869
24.33755	0.383270	24.33753	-0.00001	
30.11800	0.324213	30.11802	0.00003	
34.99404	0.279651	34.99403	-0.00001	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19863

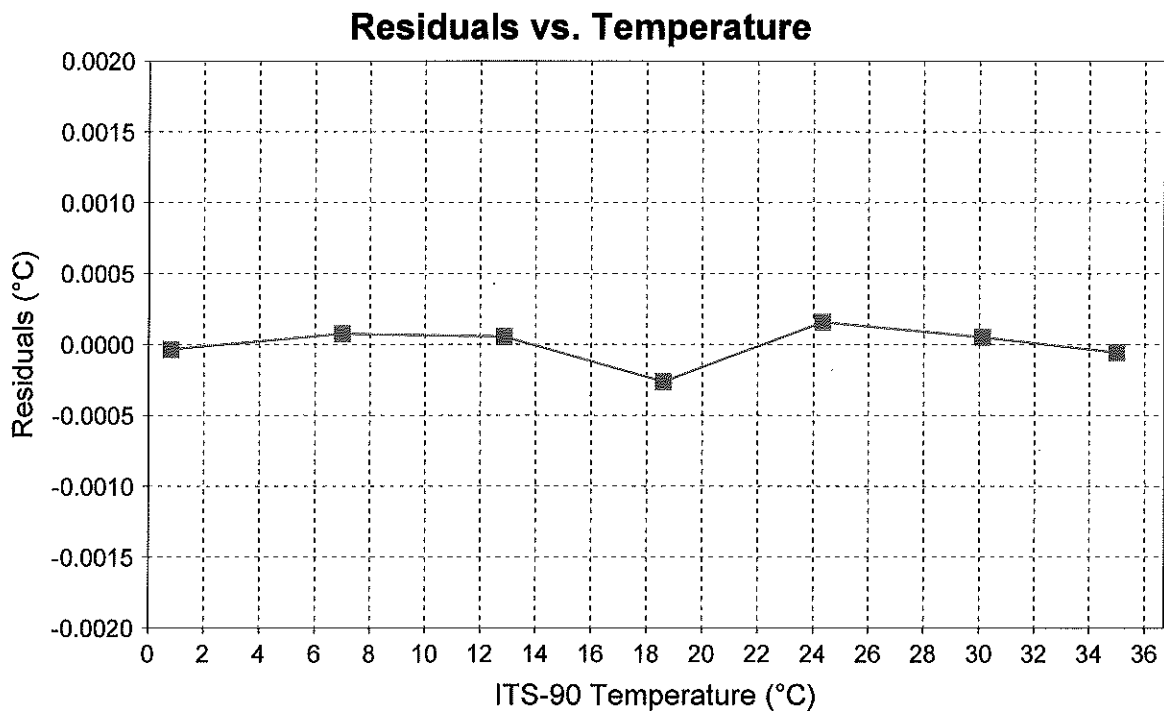
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate


Logger ID: XR-420 Serial No: 21964 Channel No: 14

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.624771	0.80700	-0.00003	C0: 0.003521371309533
6.99077	0.547758	6.99084	0.00008	C1: -0.000251373017631
12.86609	0.475067	12.86615	0.00006	C2: 0.000002554211683
18.60985	0.407351	18.60959	-0.00026	C3: -0.000000075779034
24.33756	0.345214	24.33772	0.00016	
30.11801	0.289270	30.11806	0.00005	
34.99404	0.247754	34.99398	-0.00005	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19862

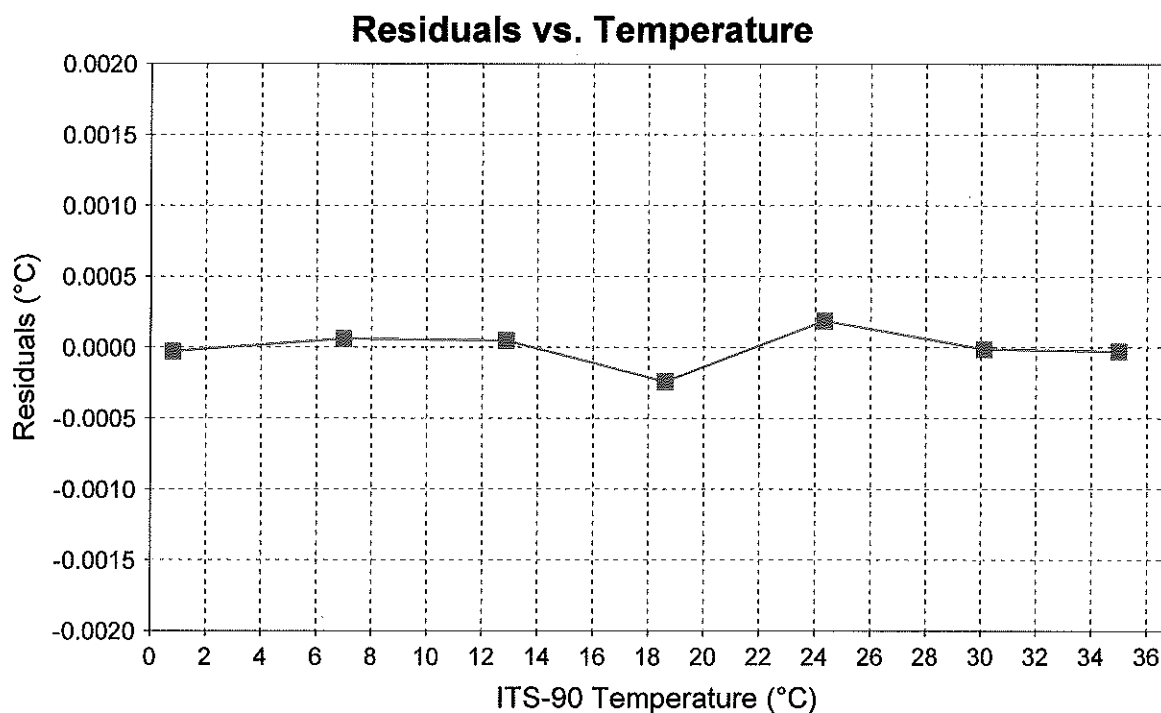
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 15

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.679485	0.80700	-0.00003	C0: 0.003460616731808
6.99077	0.606696	6.99083	0.00006	C1: -0.000250439044334
12.86609	0.535517	12.86614	0.00005	C2: 0.000002443588588
18.60985	0.466926	18.60961	-0.00024	C3: -0.000000070538213
24.33756	0.401946	24.33775	0.00019	
30.11802	0.341687	30.11801	-0.00001	
34.99404	0.295844	34.99401	-0.00003	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19861

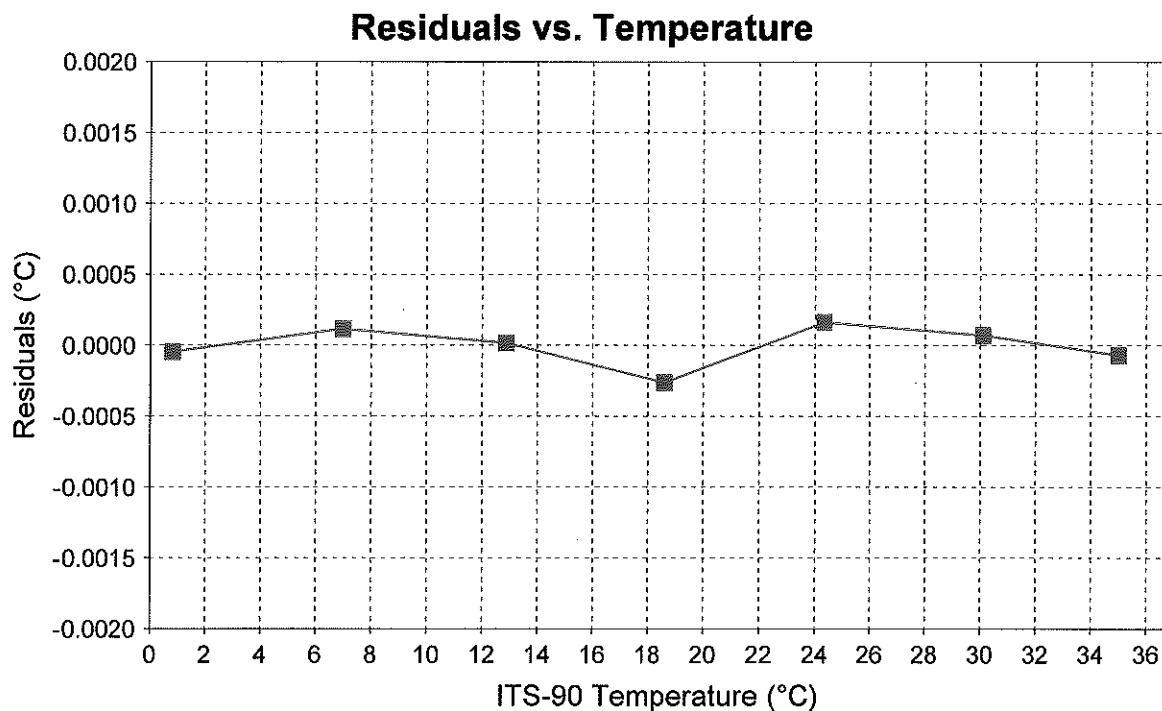
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 16

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.660064	0.80699	-0.00004	C0: 0.003482846696401
6.99077	0.585460	6.99088	0.00012	C1: -0.000250508448874
12.86609	0.513422	12.86611	0.00002	C2: 0.000002518635253
18.60985	0.444848	18.60959	-0.00026	C3: -0.000000067871280
24.33755	0.380643	24.33771	0.00016	
30.11800	0.321757	30.11808	0.00007	
34.99407	0.277380	34.99400	-0.00007	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19860

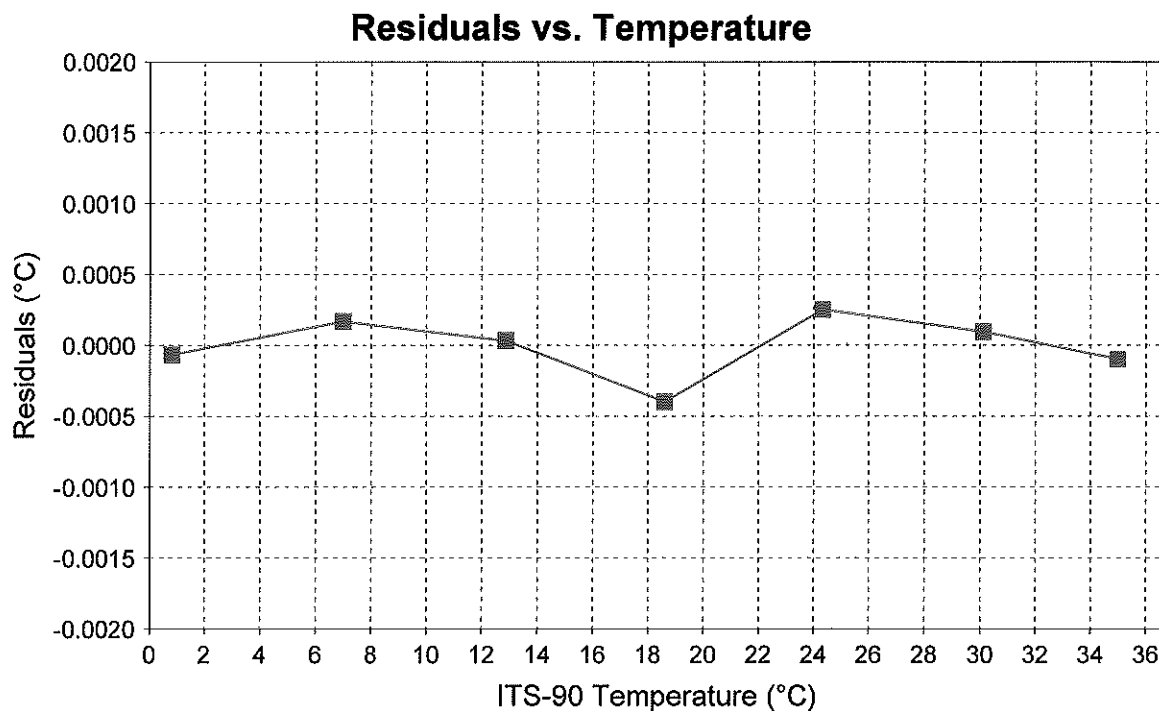
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 17

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.653584	0.80697	-0.00006	C0: 0.003490266362664
6.99077	0.578361	6.99094	0.00017	C1: -0.000250317660527
12.86609	0.506031	12.86613	0.00003	C2: 0.000002510339034
18.60983	0.437466	18.60944	-0.00040	C3: -0.000000082622964
24.33755	0.373526	24.33780	0.00025	
30.11800	0.315112	30.11809	0.00010	
34.99408	0.271237	34.99398	-0.00010	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19859

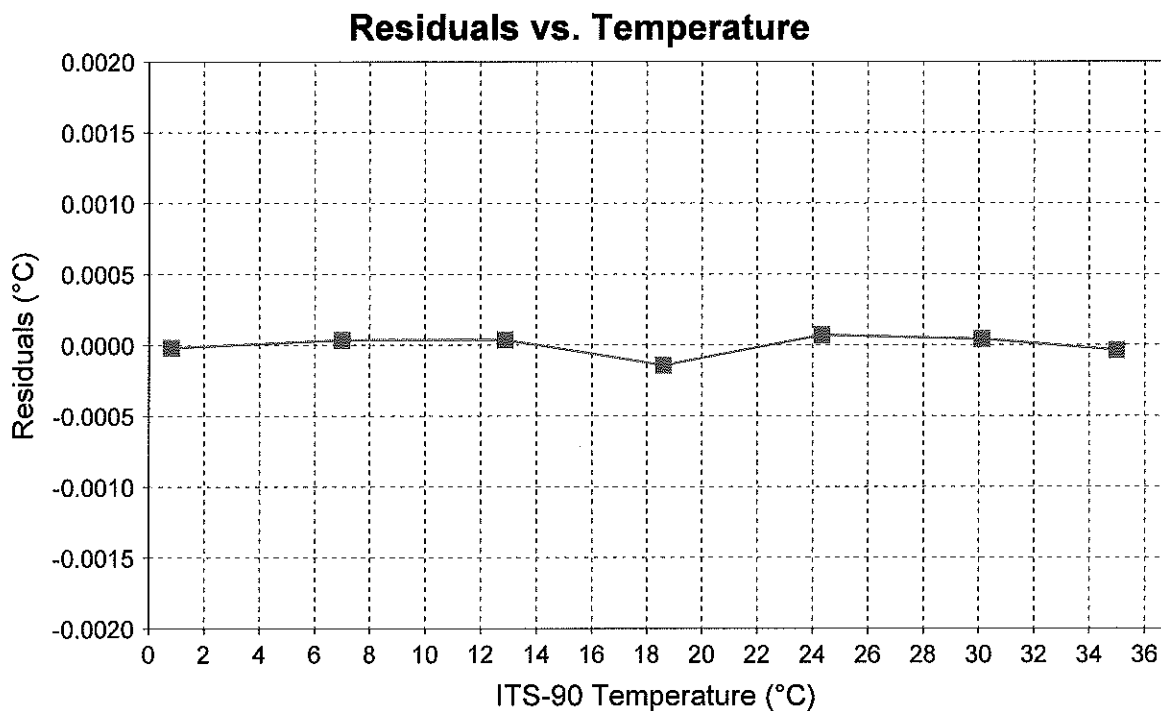
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 18

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.608362	0.80701	-0.00002	C0: 0.003538805896139
6.99077	0.530531	6.99080	0.00004	C1: -0.000251805166074
12.86609	0.457834	12.86613	0.00004	C2: 0.000002545333686
18.60985	0.390766	18.60971	-0.00014	C3: -0.000000059158460
24.33755	0.329775	24.33762	0.00007	
30.11800	0.275298	30.11805	0.00004	
34.99407	0.235135	34.99403	-0.00004	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19858

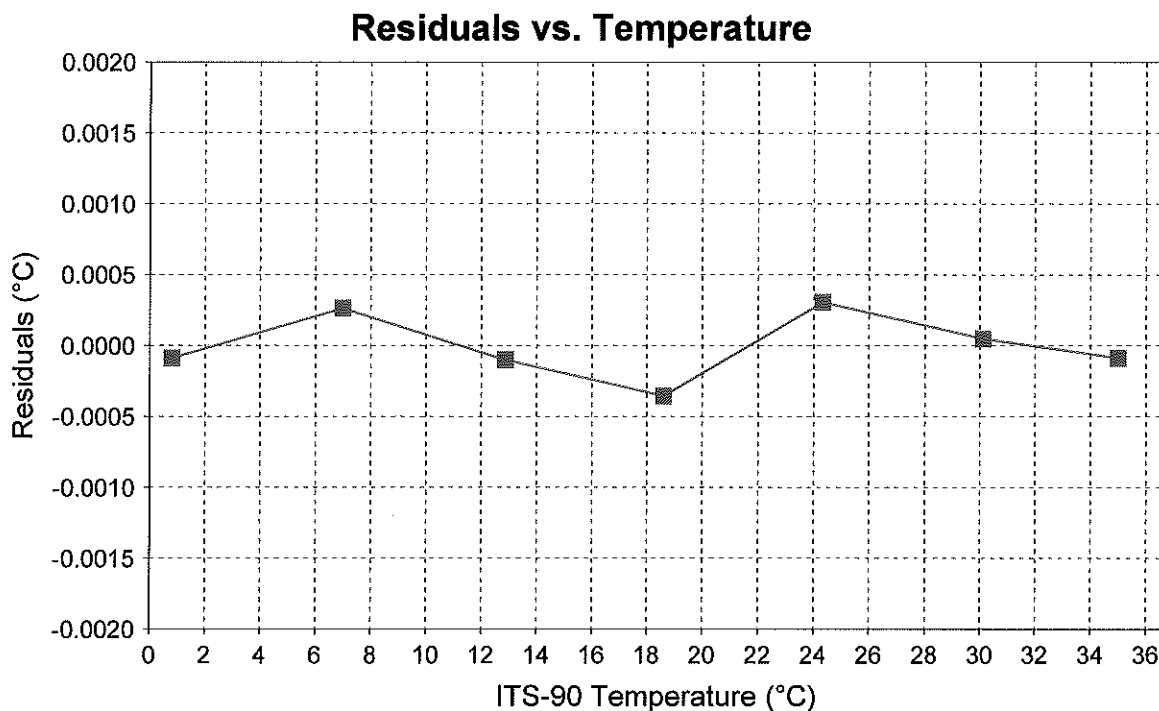
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 19

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.616588	0.80694	-0.00009	C0: 0.003529889736035
6.99077	0.539276	6.99103	0.00026	C1: -0.000252035011440
12.86609	0.466694	12.86599	-0.00010	C2: 0.000002538922743
18.60983	0.399394	18.60948	-0.00035	C3: -0.000000059485308
24.33755	0.337897	24.33785	0.00031	
30.11801	0.282734	30.11806	0.00005	
34.99408	0.241914	34.99400	-0.00008	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19857

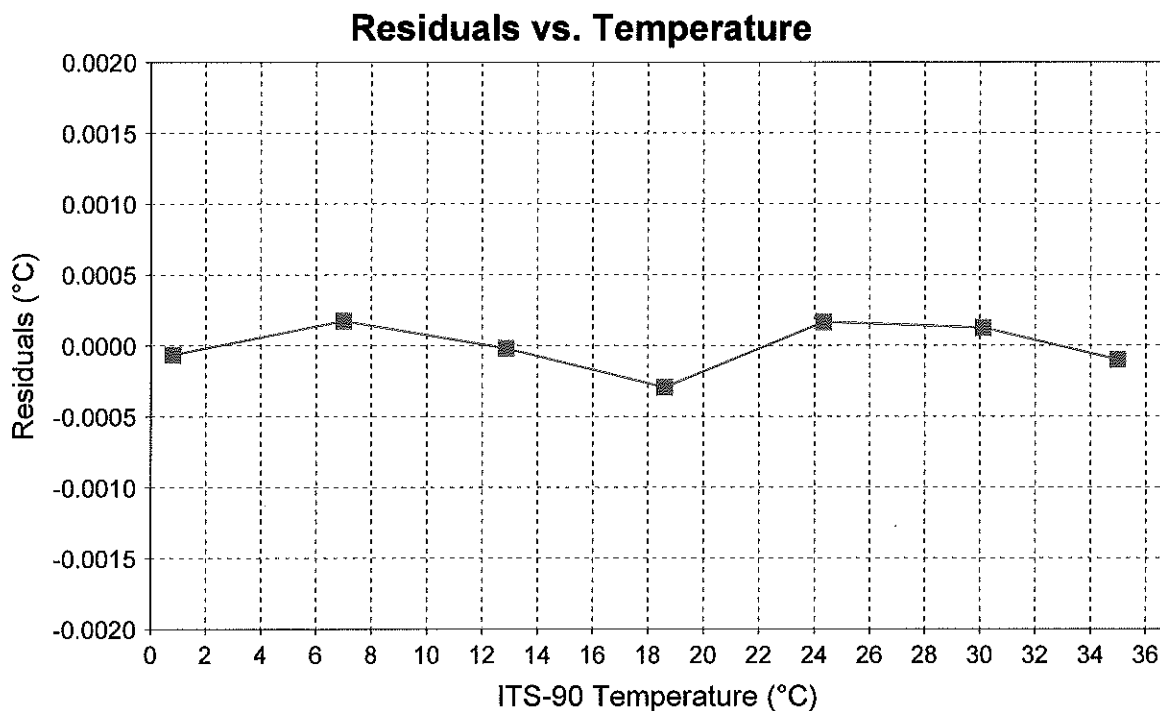
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 20

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.623175	0.80697	-0.00006	C0: 0.003523133741651
6.99077	0.546037	6.99094	0.00018	C1: -0.000251320223971
12.86609	0.473311	12.86608	-0.00002	C2: 0.000002528732318
18.60985	0.405630	18.60955	-0.00029	C3: -0.000000067469786
24.33755	0.343587	24.33771	0.00017	
30.11800	0.287777	30.11812	0.00013	
34.99407	0.246392	34.99397	-0.00010	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19856

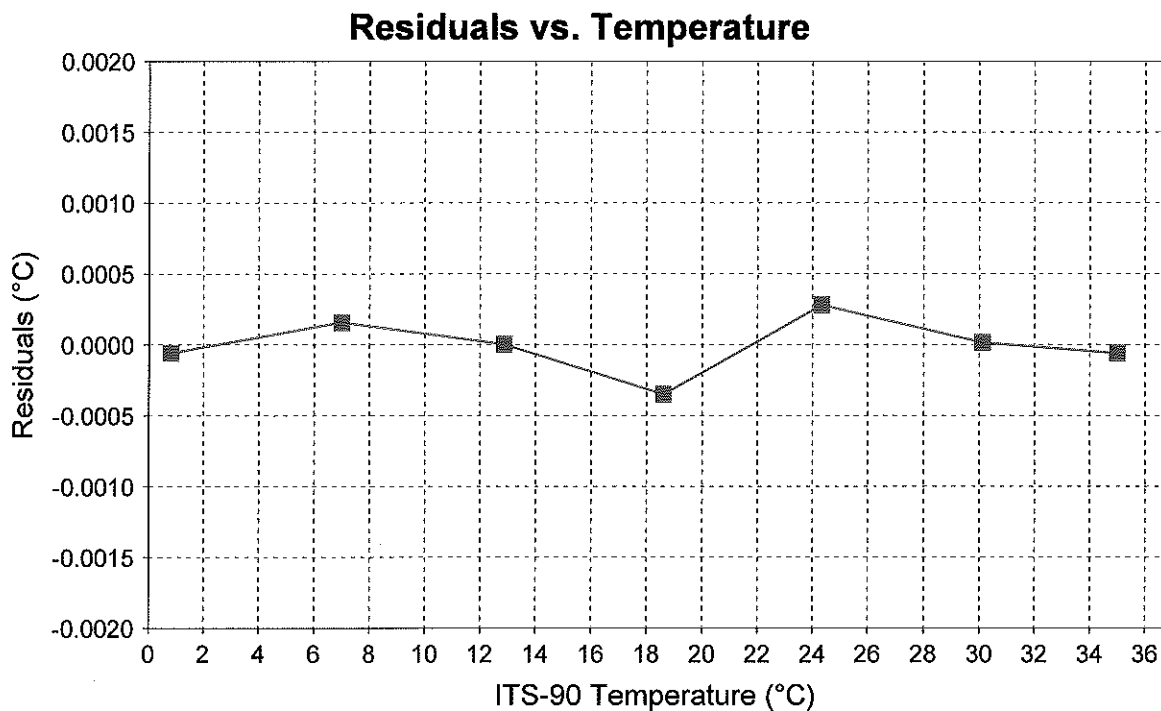
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 21

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.638942	0.80697	-0.00006	C0: 0.003506140365147
6.99077	0.562762	6.99093	0.00016	C1: -0.000250924318119
12.86609	0.490200	12.86610	0.00001	C2: 0.000002549708161
18.60985	0.422023	18.60950	-0.00035	C3: -0.000000085366911
24.33756	0.358966	24.33785	0.00028	
30.11801	0.301792	30.11803	0.00002	
34.99404	0.259111	34.99398	-0.00006	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19855

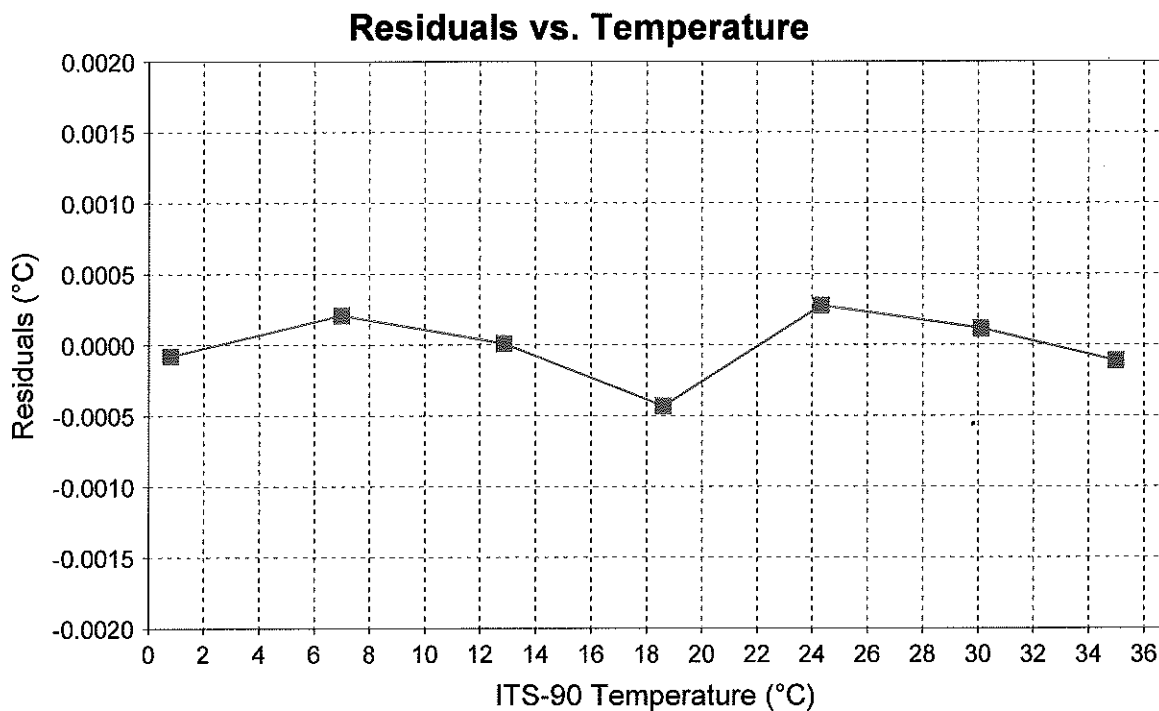
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 22

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.625789	0.80695	-0.00008	C0: 0.003520052659966
6.99077	0.548970	6.99098	0.00021	C1: -0.000251788065729
12.86609	0.476417	12.86610	0.00001	C2: 0.000002565796659
18.60983	0.408776	18.60940	-0.00043	C3: -0.000000074337461
24.33755	0.346650	24.33783	0.00028	
30.11800	0.290669	30.11812	0.00012	
34.99407	0.249090	34.99395	-0.00011	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19854

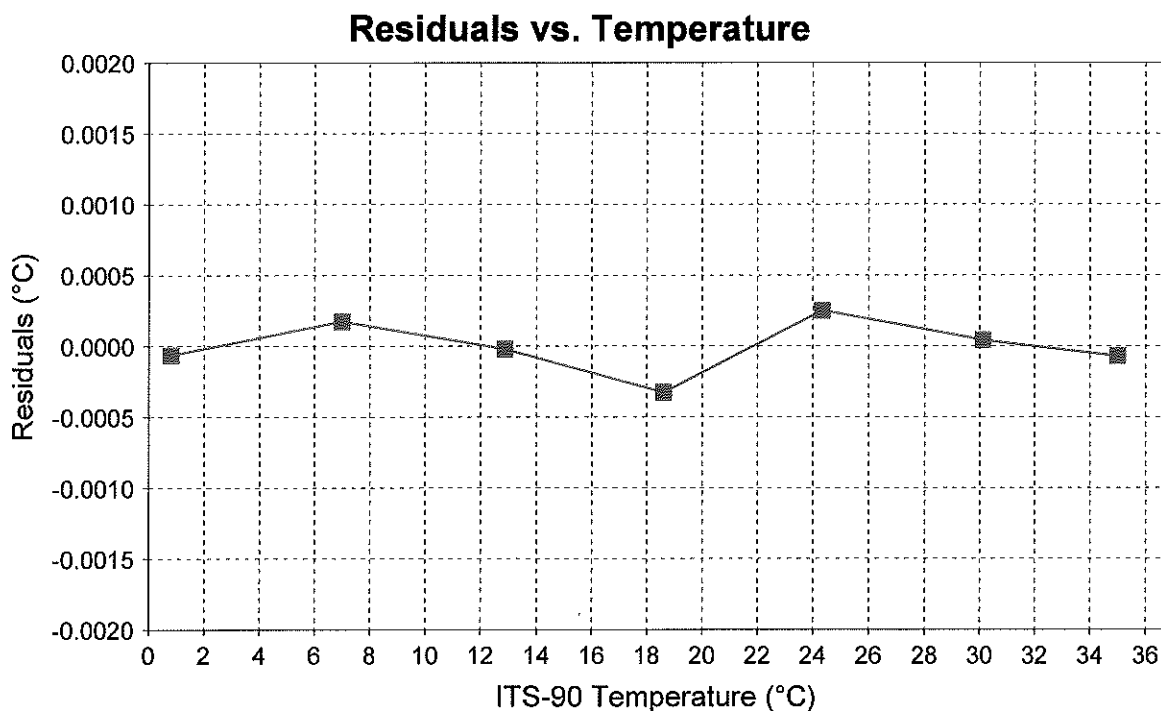
Operator: 
dluong

Approver: 
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 23

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.655918	0.80697	-0.00006	C0: 0.003488198854938
6.99077	0.580652	6.99094	0.00018	C1: -0.000249312557906
12.86609	0.508127	12.86607	-0.00002	C2: 0.000002757781125
18.60985	0.439252	18.60952	-0.00032	C3: -0.000000058103328
24.33755	0.374931	24.33780	0.00025	
30.11800	0.316105	30.11805	0.00004	
34.99404	0.271893	34.99397	-0.00007	



Calibration Date: 12/Apr/2017
Issue Date: 13/Apr/2017
Calibration ID: 19853

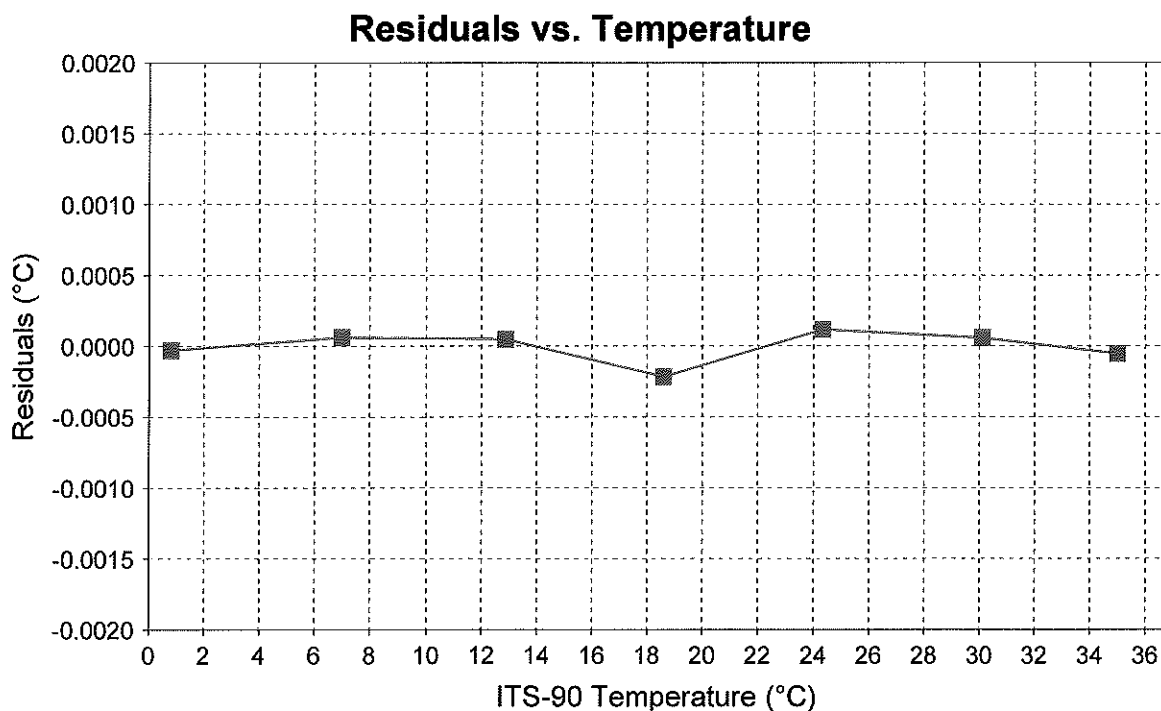
Operator: *Danny*
dluong

Approver: *S. Bucknor*
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21964 Channel No: 24

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.80703	0.645645	0.80700	-0.00003	C0: 0.003498556739776
6.99077	0.570057	6.99083	0.00006	C1: -0.000251266656298
12.86609	0.497761	12.86614	0.00005	C2: 0.000002473248664
18.60985	0.429556	18.60963	-0.00021	C3: -0.000000064078511
24.33756	0.366225	24.33768	0.00012	
30.11802	0.308574	30.11808	0.00006	
34.99400	0.265396	34.99395	-0.00005	



Calibration Date: 12/Apr/2017

Issue Date: 13/Apr/2017

Calibration ID: 19852

Operator:

Danny
dluong

Approver:

S. Bucknor
sbucknor

RBR Calibration Shipping Certificate

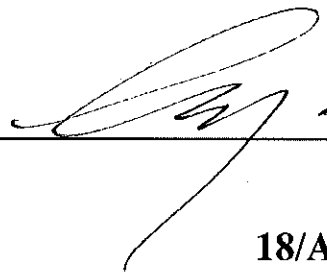
Calibration values for all channels when shipped.

Logger ID: XR-420 Serial No: 21964

2017/Apr/13 09:05:56

1: 0.003503557049637 -0.000251037189265 0.000002508991711 -0.000000071495099
2: 0.003527376336783 -0.000250815995058 0.000002541822708 -0.000000074766611
3: 0.003529152203778 -0.000251536850145 0.000002537505441 -0.000000059064438
4: 0.003510698834213 -0.000251467119530 0.000002524402932 -0.000000062991374
5: 0.003520482378316 -0.000251318512577 0.000002489363415 -0.000000055980611
6: 0.003472056506176 -0.000250010532465 0.000002458454303 -0.000000069499226
7: 0.003530095460252 -0.000251233209349 0.000002479136300 -0.000000052308741
8: 0.003514244561724 -0.000251454866253 0.000002491953208 -0.000000069625711
9: 0.003516565302260 -0.000251038636598 0.000002493749621 -0.000000057081125
10: 0.003492983201145 -0.000250556715026 0.000002462133584 -0.000000073880383
11: 0.003537216981729 -0.000251973122605 0.000002543076879 -0.000000056165056
12: 0.003501767447191 -0.000250961547261 0.000002540600326 -0.000000066626025
13: 0.003480121275476 -0.000250579119228 0.000002506369234 -0.000000039687869
14: 0.003521371309533 -0.000251373017631 0.000002554211683 -0.000000075779034
15: 0.003460616731808 -0.000250439044334 0.000002443588588 -0.000000070538213
16: 0.003482846696401 -0.000250508448874 0.000002518635253 -0.000000067871280
17: 0.003490266362664 -0.000250317660527 0.000002510339034 -0.000000082622964
18: 0.003538805896139 -0.000251805166074 0.000002545333686 -0.000000059158460
19: 0.003529889736035 -0.000252035011440 0.000002538922743 -0.000000059485308
20: 0.003523133741651 -0.000251320223971 0.000002528732318 -0.000000067469786
21: 0.003506140365147 -0.000250924318119 0.000002549708161 -0.000000085366911
22: 0.003520052659966 -0.000251788065729 0.000002565796659 -0.000000074337461
23: 0.003488198854938 -0.000249312557906 0.000002757781125 -0.000000058103328
24: 0.003498556739776 -0.000251266656298 0.000002473248664 -0.000000064078511

Operator: _____



18/Apr/2017