

RBR Calibration Shipping Certificate

Calibration values for all channels when shipped.

Logger ID: XR-420 Serial No: 21968

2017/Nov/23 11:25:00

1: 0.003484678264200 -0.000250759461221 0.000002499113009 -0.000000067083560
2: 0.003504478108456 -0.000251101863493 0.000002575783897 -0.000000227914399
3: 0.003452480684625 -0.000249593350650 0.000002446947981 -0.000000081429813
4: 0.003525649508039 -0.000250821206021 0.000002575656762 -0.000000093021428
5: 0.003492511419199 -0.000250356836486 0.000002500809416 -0.000000080184942
6: 0.003475406287207 -0.000250923079407 0.000001683823413 0.000000246186139
7: 0.003509198903745 -0.000251508338420 0.000002549055880 -0.000000057026849
8: 0.003506191833839 -0.000250833143839 0.000002510402576 -0.000000078767385
9: 0.003468899662340 -0.000249868541645 0.000002465206483 -0.000000076490073
10: 0.003485312806815 -0.000250993593025 0.000002463404024 -0.000000077008678
11: 0.003475317181509 -0.000249803226060 0.000002606837204 0.000000106013258
12: 0.003462249199077 -0.000249903180850 0.000002462009516 -0.000000087762182
13: 0.003468905274364 -0.000250684866929 0.000002468294961 -0.000000009972720
14: 0.003511431702395 -0.000251016105978 0.000002538819192 -0.000000062342980
15: 0.003451450470215 -0.000249245178094 0.000002488701617 -0.000000083565699
16: 0.003466079488450 -0.000250349645080 0.000002509676613 -0.000000054536430
17: 0.003527242853501 -0.000251197572807 0.000002559910832 -0.000000085444001
18: 0.003537800205732 -0.000251509687910 0.000002575934329 -0.000000094620448
19: 0.003534616114713 -0.000251954869176 0.000002592509202 -0.000000103942884
20: 0.003508335420270 -0.000251175861294 0.000002501242895 -0.000000094107352
21: 0.003543370918735 -0.000251141868899 0.000002620993551 -0.000000079211155
22: 0.003472480356732 -0.000249576485727 0.000002520036852 -0.000000091015196
23: 0.003482618245901 -0.000250018753710 0.000002506580451 -0.000000077796211
24: 0.003517494733900 -0.000250795702380 0.000002566647970 -0.000000078908955

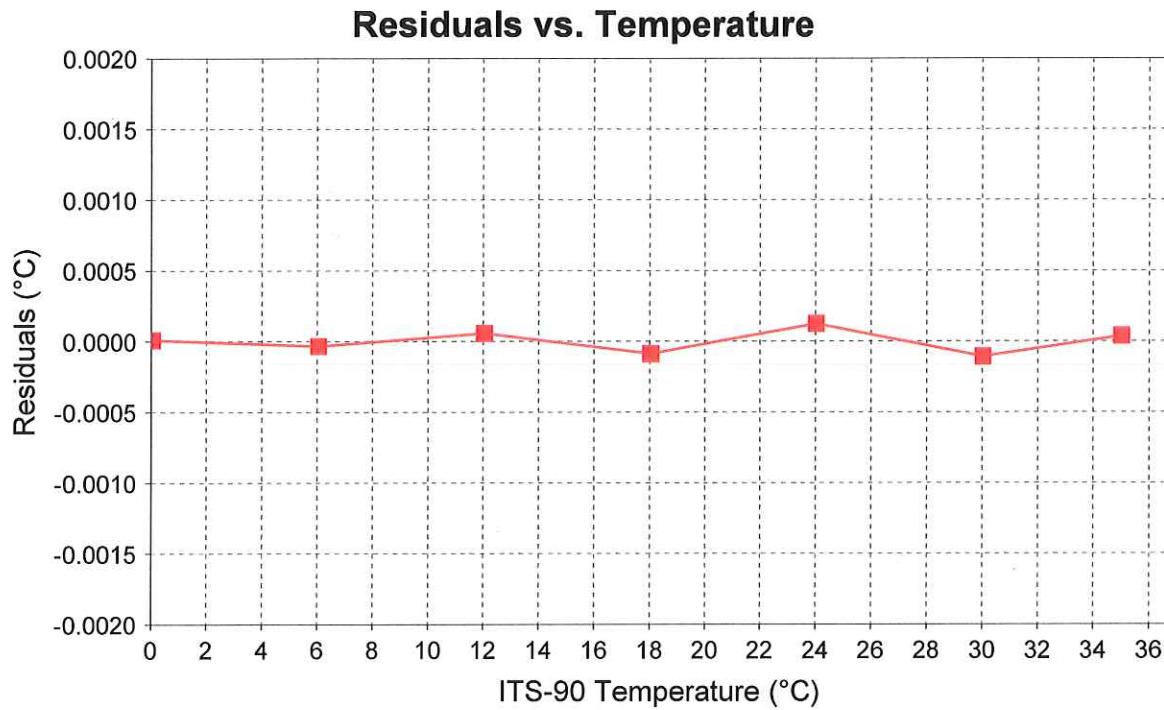
Operator:

24/Nov/2017

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 1

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.667205	0.04935	0.00001	C0 : 0.003484678264200
6.04681	0.595182	6.04677	-0.00003	C1 : -0.000250759461221
12.04366	0.521612	12.04371	0.00006	C2 : 0.000002499113009
18.03408	0.449798	18.03400	-0.00009	C3 : -0.000000067083560
24.03053	0.382323	24.03065	0.00012	
30.03127	0.321149	30.03116	-0.00011	
35.02772	0.275812	35.02776	0.00004	



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23204

Operator:


dlyuong

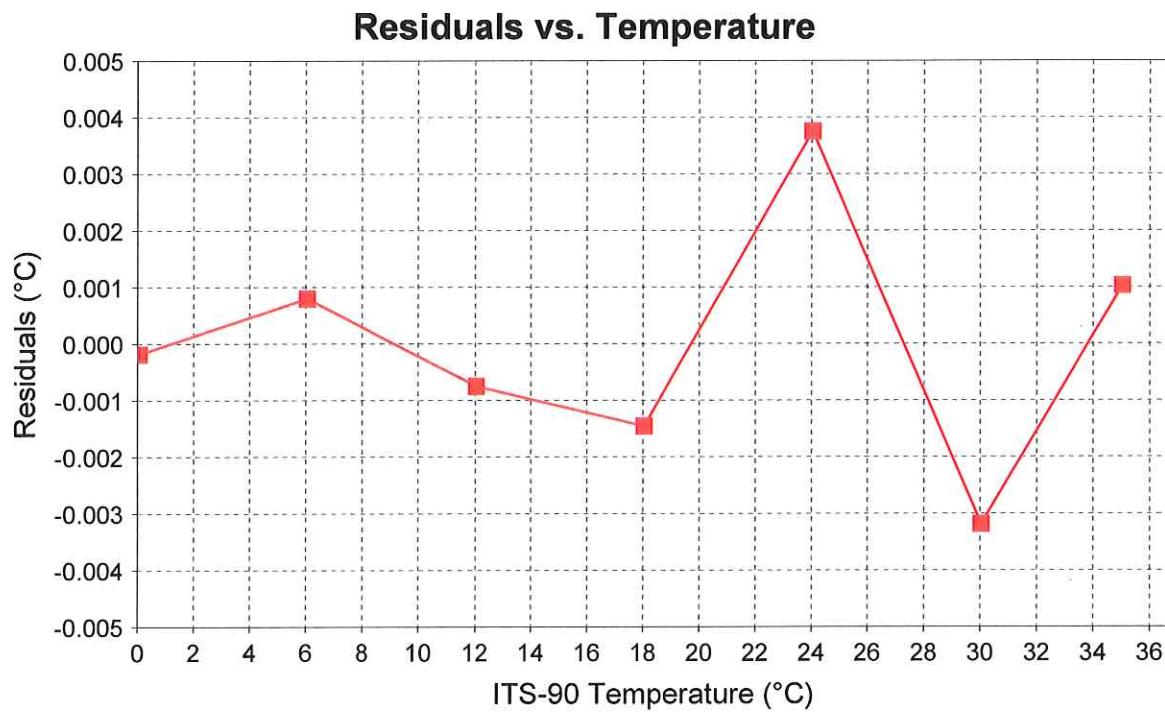
Approver:


sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 2

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.649439	0.04916	-0.00018	C0 : 0.003504478108456
6.04681	0.576034	6.04760	0.00080	C1 : -0.000251101863493
12.04365	0.501912	12.04290	-0.00075	C2 : 0.000002575783897
18.03410	0.430360	18.03264	-0.00146	C3 : -0.000000227914399
24.03053	0.363815	24.03428	0.00375	
30.03126	0.304230	30.02807	-0.00318	
35.02773	0.260374	35.02875	0.00103	



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23206

Operator:


dluong

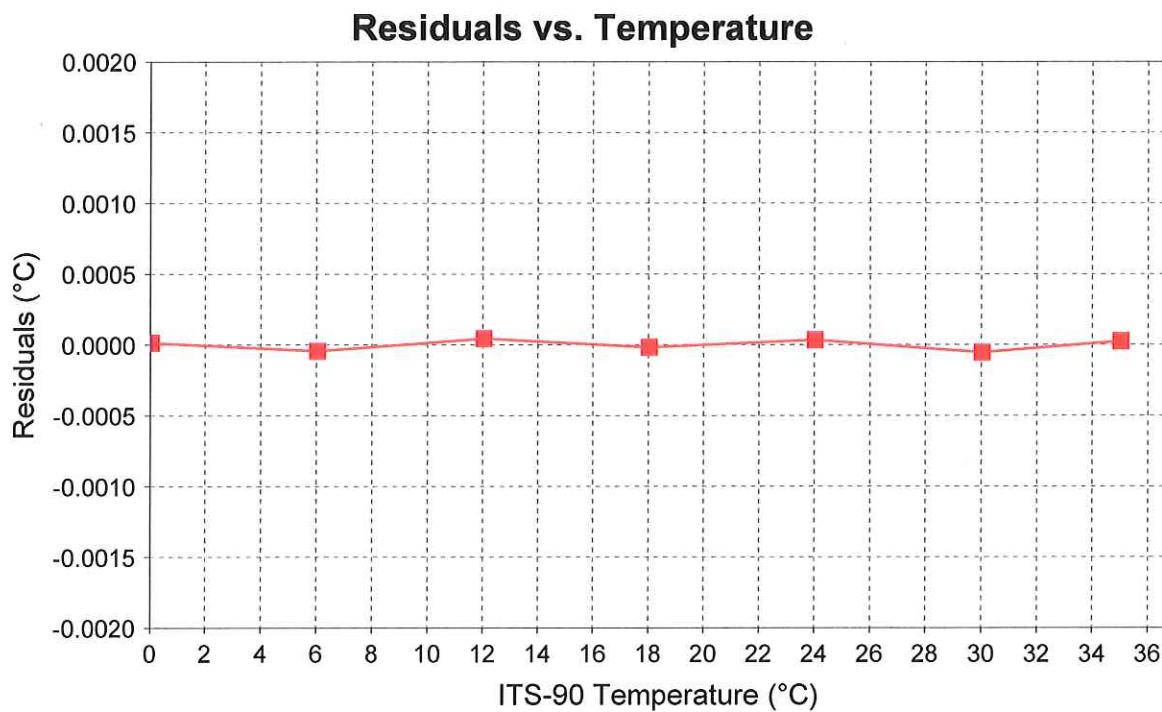
Approver:


sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 3

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.695484	0.04936	0.00001	C0 : 0.003452480684625
6.04681	0.625998	6.04676	-0.00004	C1 : -0.000249593350650
12.04365	0.553674	12.04369	0.00004	C2 : 0.000002446947981
18.03409	0.481739	18.03407	-0.00002	C3 : -0.000000081429813
24.03053	0.412931	24.03056	0.00003	
30.03126	0.349508	30.03120	-0.00005	
35.02772	0.301861	35.02775	0.00002	



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23202

Operator:


dlyuong

Approver:

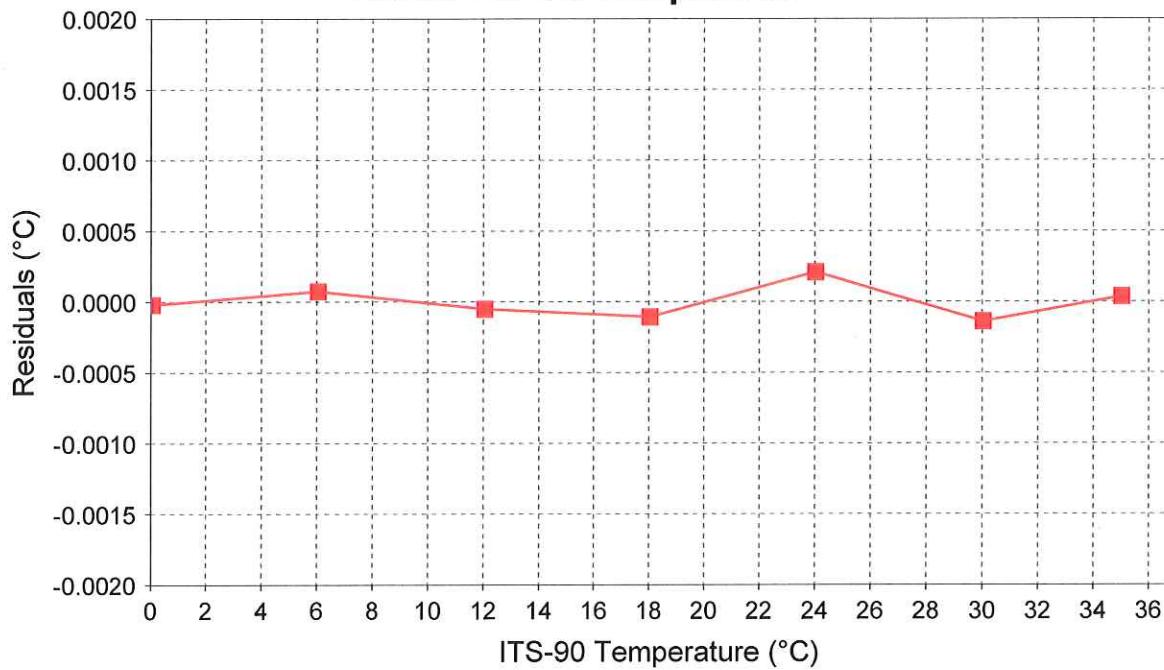

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RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 4

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.630411	0.04932	-0.00002	C0 : 0.003525649508039
6.04681	0.555510	6.04688	0.00007	C1 : -0.000250821206021
12.04365	0.480798	12.04359	-0.00005	C2 : 0.000002575656762
18.03408	0.409572	18.03398	-0.00011	C3 : -0.000000093021428
24.03053	0.344153	24.03074	0.00021	
30.03126	0.286082	30.03112	-0.00014	
35.02773	0.243788	35.02776	0.00004	

Residuals vs. Temperature



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23201

Operator:


danny
dluong

Approver:

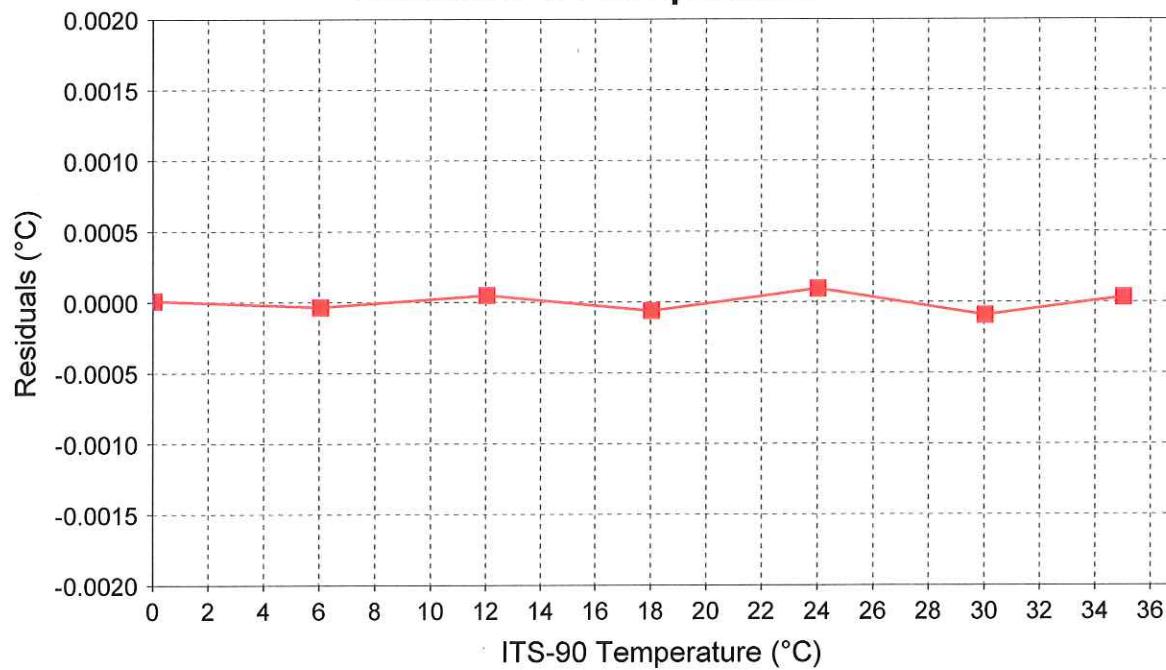

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sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 5

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.660562	0.04935	0.00001	C0: 0.003492511419199
6.04681	0.587826	6.04677	-0.00004	C1: -0.000250356836486
12.04365	0.513846	12.04369	0.00005	C2: 0.000002500809416
18.03408	0.441954	18.03402	-0.00006	C3: -0.000000080184942
24.03053	0.374709	24.03062	0.00010	
30.03126	0.314007	30.03117	-0.00009	
35.02772	0.269186	35.02776	0.00003	

Residuals vs. Temperature



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23200

Operator:

Danny
dluong

Approver:

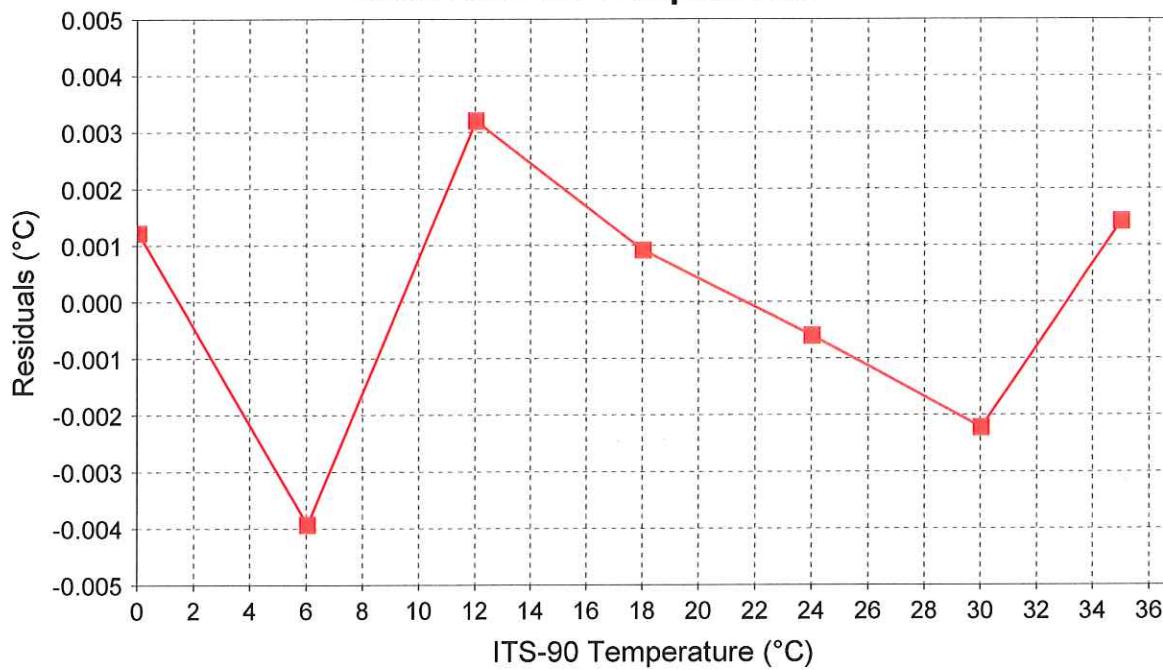
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RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 6

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.675614	0.05056	0.00122	C0 : 0.003475406287207
6.04681	0.604129	6.04287	-0.00393	C1 : -0.000250923079407
12.04364	0.530766	12.04684	0.00320	C2 : 0.000001683823413
18.03409	0.459034	18.03500	0.00091	C3 : 0.000000246186139
24.03052	0.391376	24.02992	-0.00060	
30.03127	0.329771	30.02904	-0.00222	
35.02772	0.283881	35.02915	0.00142	

Residuals vs. Temperature



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23205

Operator:


dluong

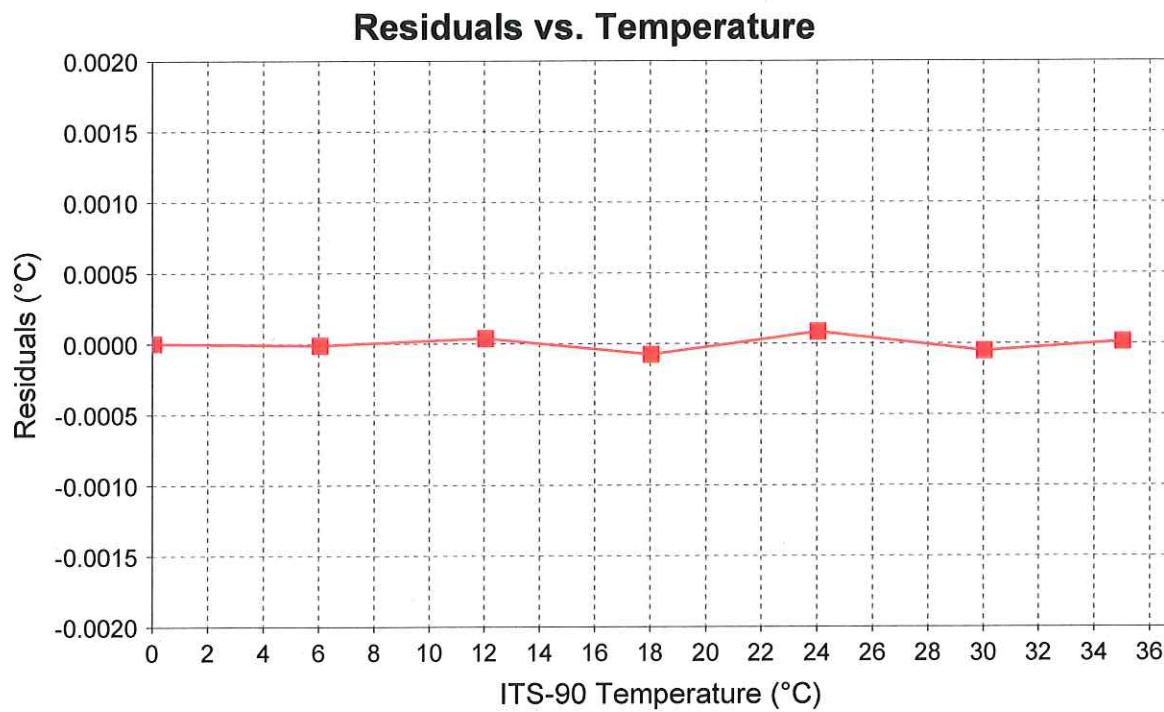
Approver:


sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 7

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.645024	0.04935	0.00000	C0 : 0.003509198903745
6.04681	0.571368	6.04680	-0.00001	C1 : -0.000251508338420
12.04365	0.497207	12.04369	0.00004	C2 : 0.000002549055880
18.03408	0.425832	18.03401	-0.00008	C3 : -0.000000057026849
24.03054	0.359661	24.03062	0.00008	
30.03126	0.300396	30.03121	-0.00005	
35.02773	0.256910	35.02775	0.00001	



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23198

Operator:


dluong

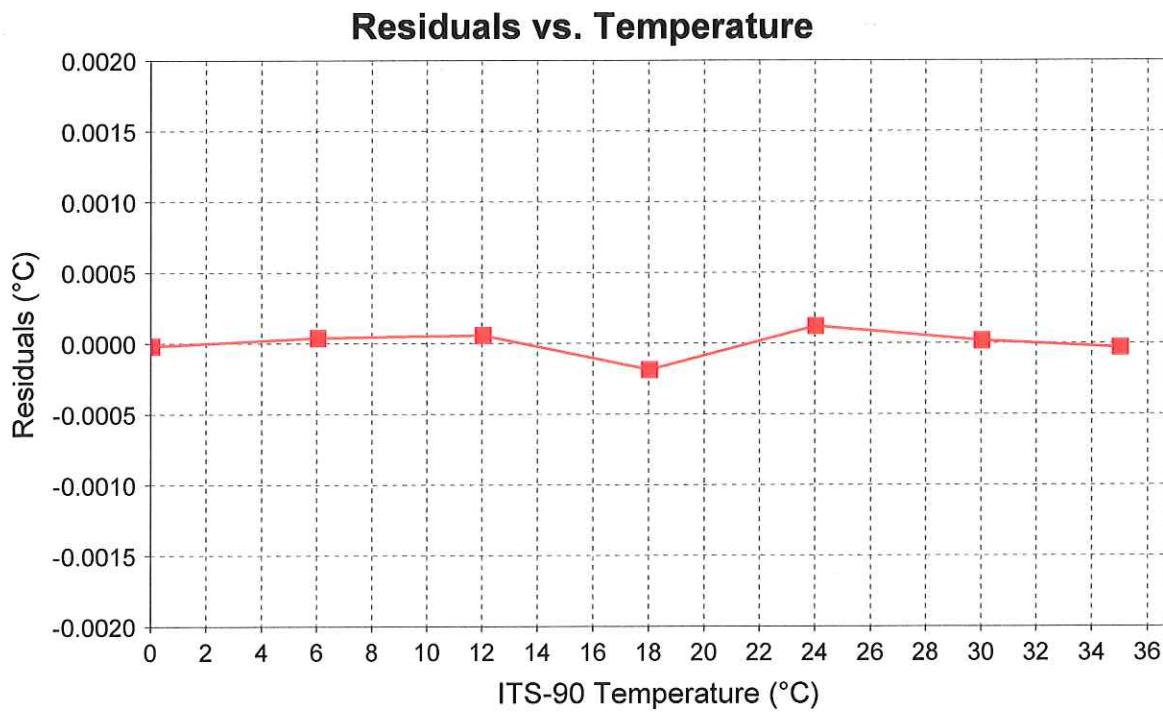
Approver:


sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 8

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.648102	0.04932	-0.00002	C0 : 0.003506191833839
6.04681	0.574474	6.04685	0.00004	C1 : -0.000250833143839
12.04365	0.500196	12.04370	0.00006	C2 : 0.000002510402576
18.03409	0.428589	18.03390	-0.00019	C3 : -0.000000078767385
24.03053	0.362110	24.03065	0.00012	
30.03126	0.302509	30.03128	0.00002	
35.02772	0.258747	35.02769	-0.00003	



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23197

Operator:


dluong

Approver:

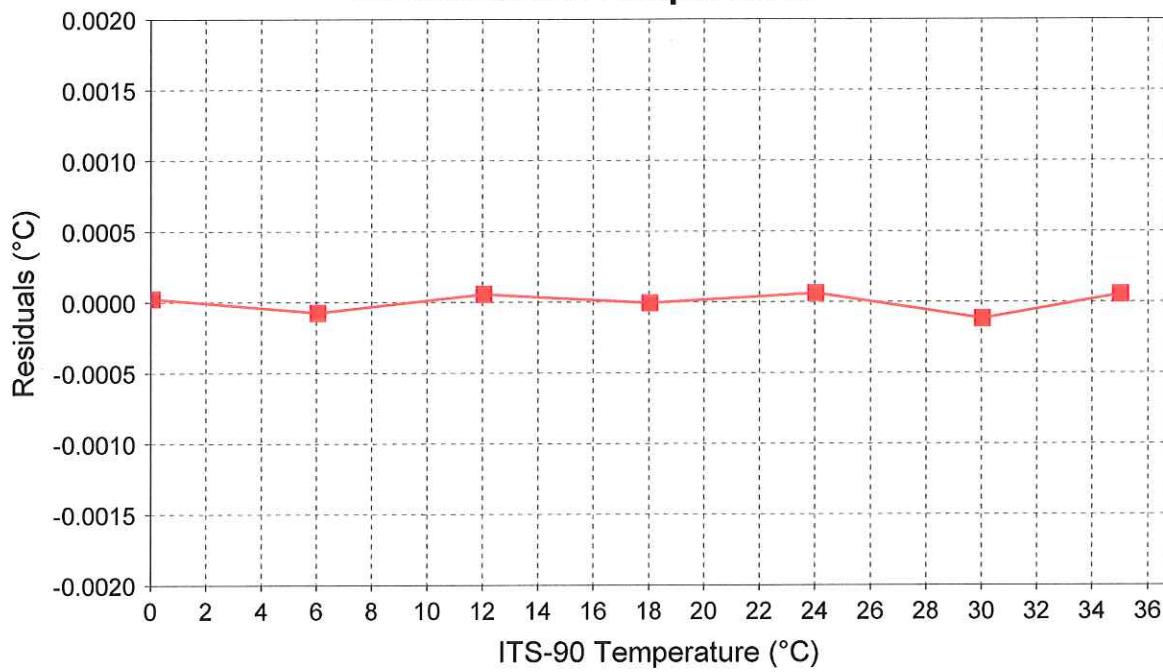

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RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 9

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.681416	0.04937	0.00002	C0 : 0.003468899662340
6.04681	0.610504	6.04673	-0.00007	C1 : -0.000249868541645
12.04365	0.537383	12.04370	0.00006	C2 : 0.000002465206483
18.03409	0.465344	18.03408	-0.00001	C3 : -0.000000076490073
24.03053	0.397070	24.03059	0.00006	
30.03126	0.334682	30.03114	-0.00012	
35.02772	0.288149	35.02778	0.00005	

Residuals vs. Temperature



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23196

Operator:


dluong

Approver:

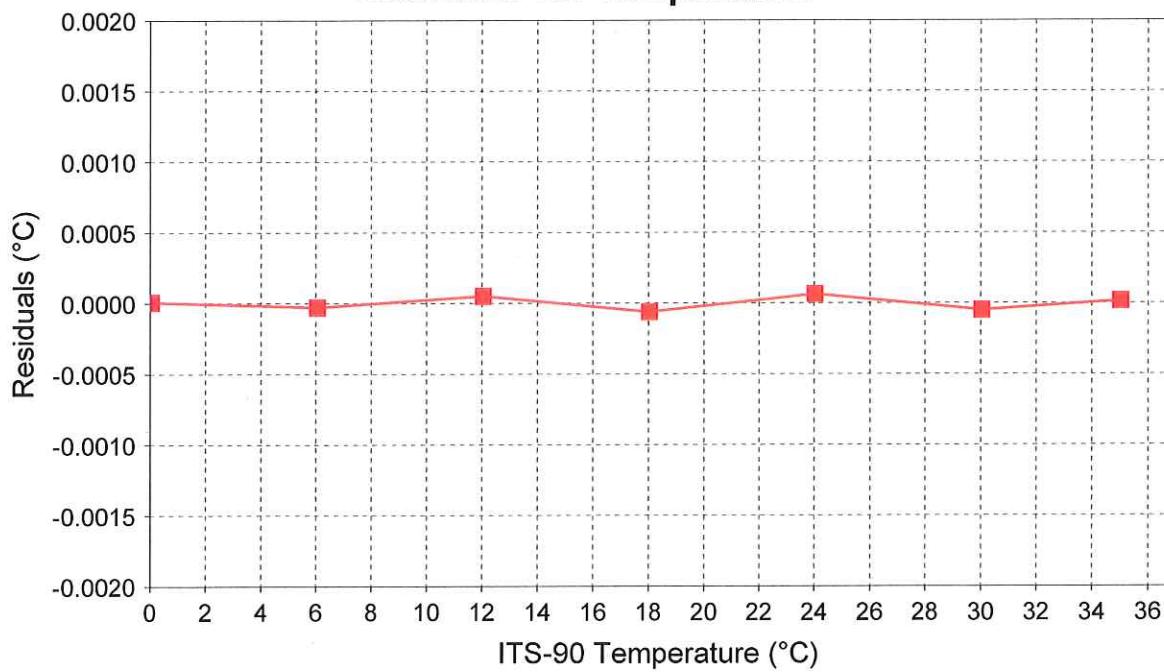

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RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 10

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.666521	0.04935	0.00001	C0 : 0.003485312806815
6.04681	0.594496	6.04678	-0.00003	C1 : -0.000250993593025
12.04365	0.520963	12.04370	0.00005	C2 : 0.000002463404024
18.03408	0.449218	18.03402	-0.00006	C3 : -0.000000077008678
24.03053	0.381837	24.03059	0.00006	
30.03126	0.320766	30.03121	-0.00005	
35.02772	0.275515	35.02774	0.00002	

Residuals vs. Temperature



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23195

Operator:


dluong

Approver:

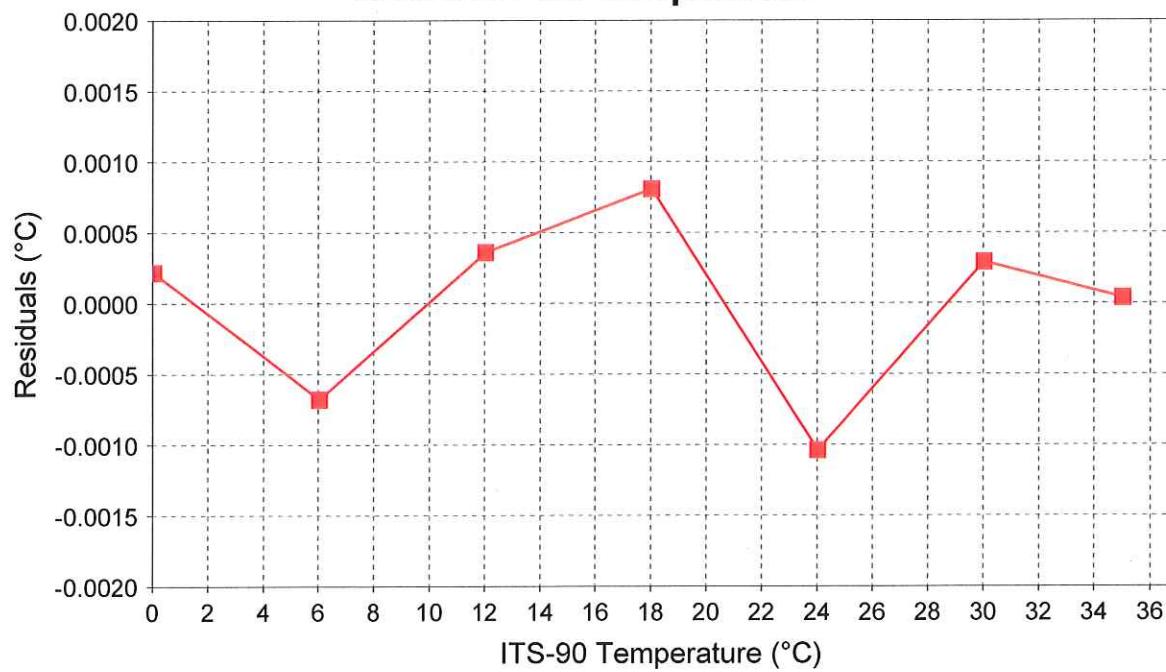

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RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 11

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.675935	0.04956	0.00022	C0 : 0.003475317181509
6.04681	0.604456	6.04613	-0.00068	C1 : -0.000249803226060
12.04365	0.531012	12.04401	0.00036	C2 : 0.000002606837204
18.03409	0.458916	18.03489	0.00081	C3 : 0.000000106013258
24.03053	0.390829	24.02949	-0.00104	
30.03126	0.328741	30.03155	0.00029	
35.02774	0.282544	35.02778	0.00004	

Residuals vs. Temperature



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23194

Operator:

Danny
dluong

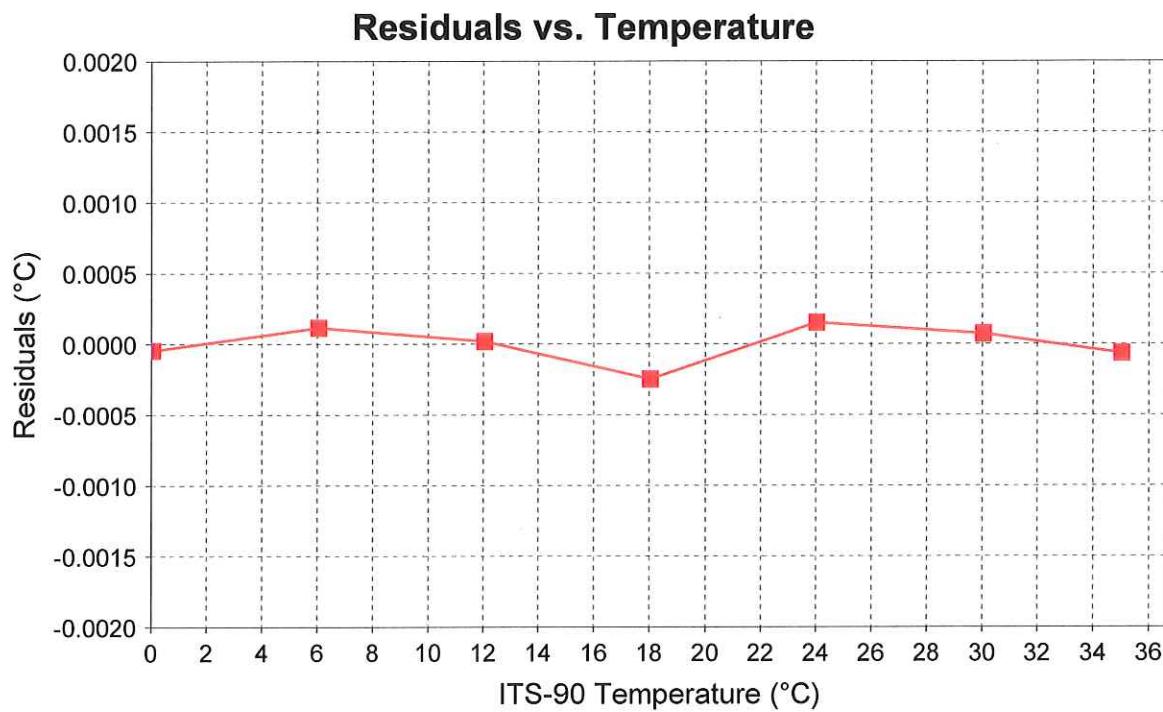
Approver:

J. Bucknor
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 12

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.687052	0.04930	-0.00005	C0 : 0.003462249199077
6.04681	0.616738	6.04692	0.00012	C1 : -0.000249903180850
12.04365	0.543966	12.04367	0.00002	C2 : 0.000002462009516
18.03408	0.471995	18.03384	-0.00025	C3 : -0.000000087762182
24.03053	0.403523	24.03068	0.00015	
30.03126	0.340736	30.03133	0.00007	
35.02774	0.293769	35.02767	-0.00007	



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23193

Operator:


dluong

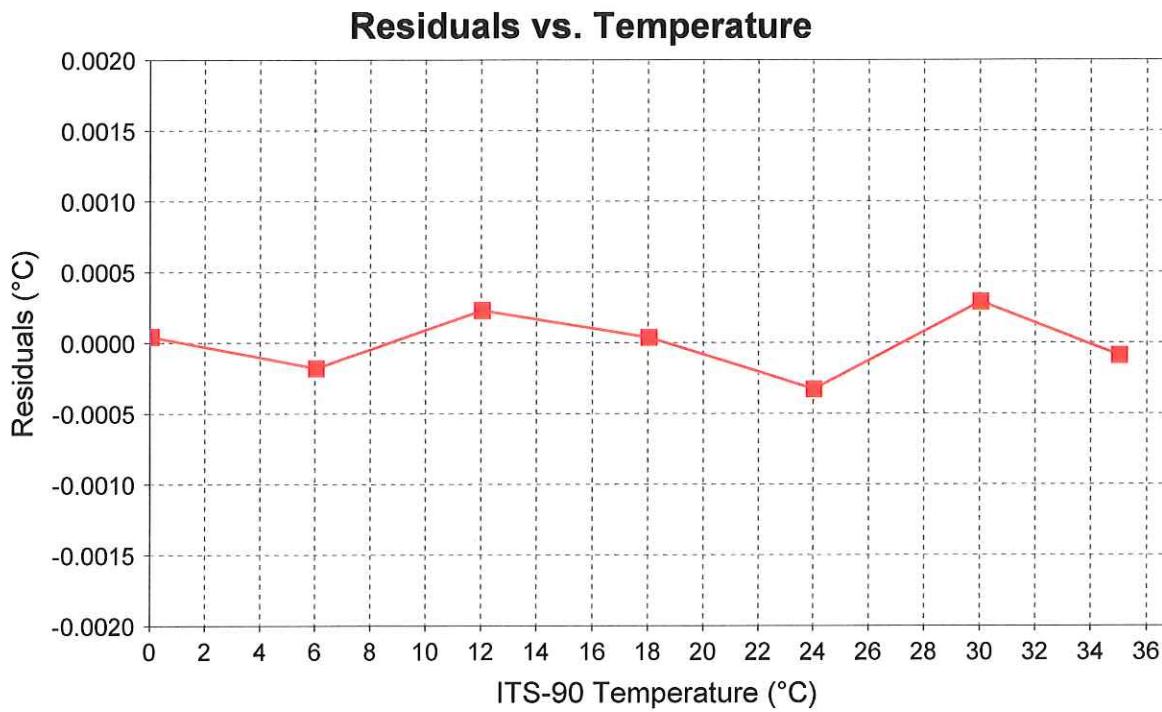
Approver:


sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 13

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.680905	0.04939	0.00004	C0 : 0.003468905274364
6.04681	0.610161	6.04663	-0.00018	C1 : -0.000250684866929
12.04365	0.537255	12.04387	0.00023	C2 : 0.000002468294961
18.03409	0.465451	18.03412	0.00004	C3 : -0.000000009972720
24.03053	0.397392	24.03020	-0.00033	
30.03126	0.335158	30.03155	0.00029	
35.02772	0.288718	35.02763	-0.00009	



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23192

Operator:


dluong

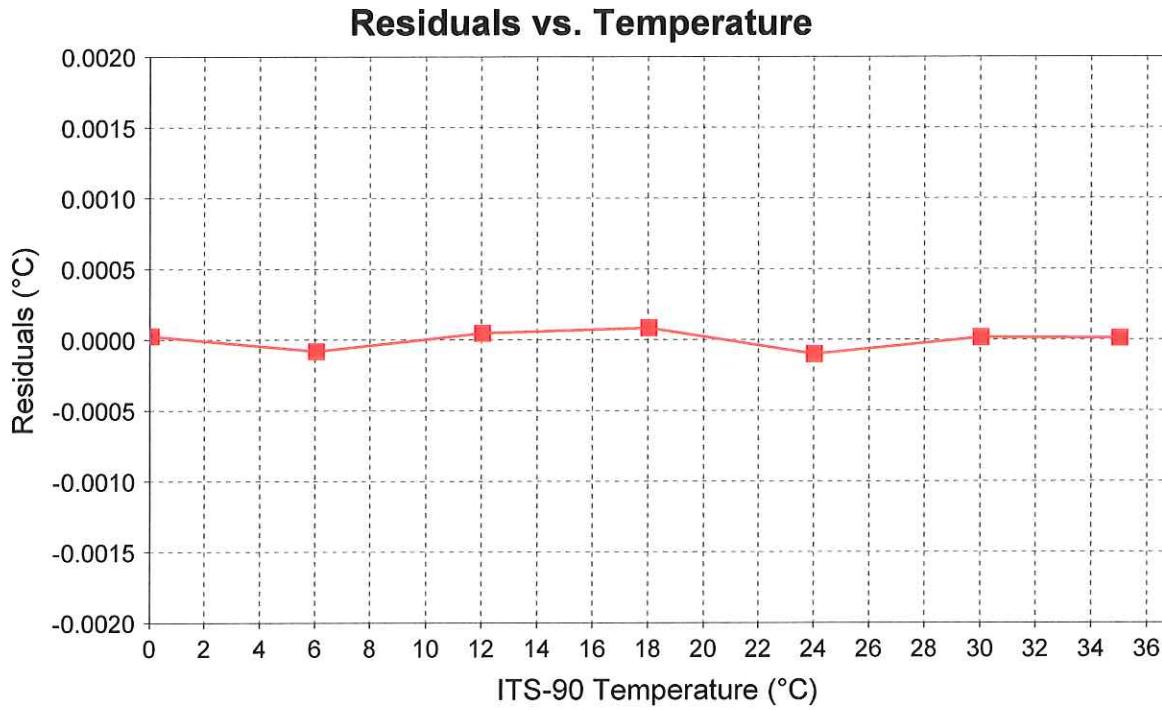
Approver:


sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 14

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.643277	0.04937	0.00003	C0 : 0.003511431702395
6.04682	0.569340	6.04674	-0.00008	C1 : -0.000251016105978
12.04365	0.494977	12.04370	0.00005	C2 : 0.000002538819192
18.03409	0.423500	18.03417	0.00008	C3 : -0.000000062342980
24.03055	0.357334	24.03045	-0.00010	
30.03126	0.298153	30.03127	0.00002	
35.02772	0.254789	35.02773	0.00001	



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23191

Operator:


dlyuong

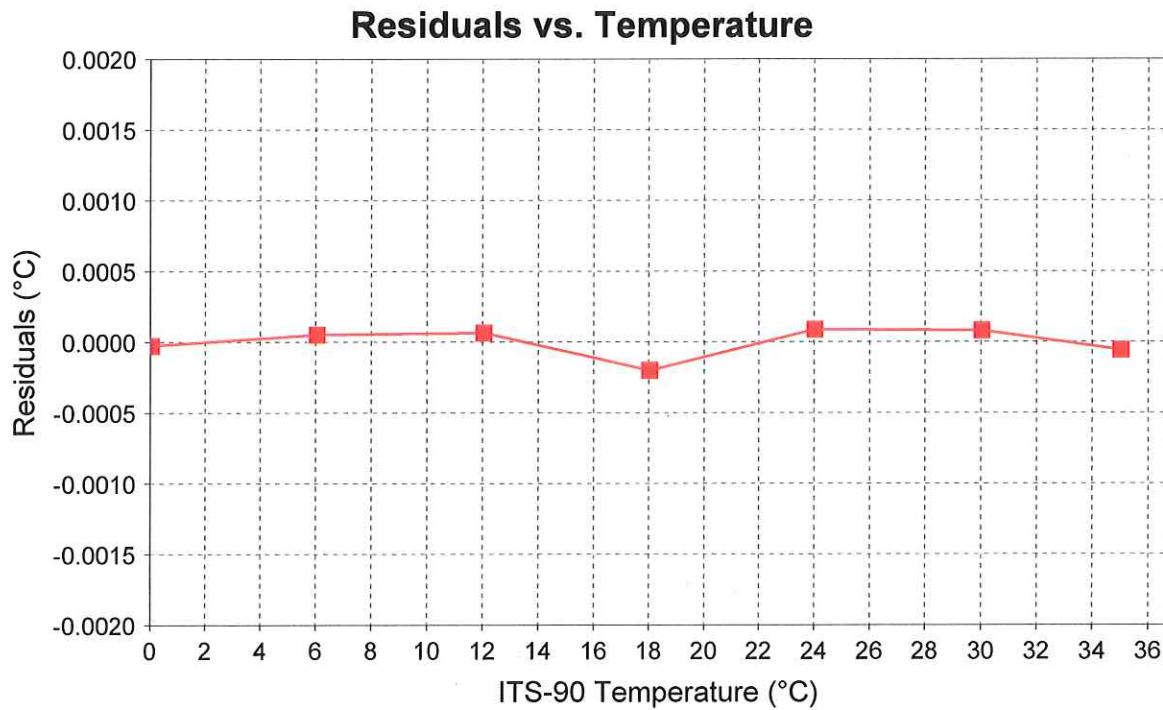
Approver:


sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 15

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.696559	0.04932	-0.00003	C0 : 0.003451450470215
6.04681	0.627110	6.04686	0.00005	C1 : -0.000249245178094
12.04365	0.554762	12.04371	0.00006	C2 : 0.000002488701617
18.03408	0.482748	18.03388	-0.00020	C3 : -0.000000083565699
24.03053	0.413815	24.03061	0.00009	
30.03125	0.350244	30.03133	0.00008	
35.02772	0.302472	35.02767	-0.00006	



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23190

Operator:


dlyuong

Approver:

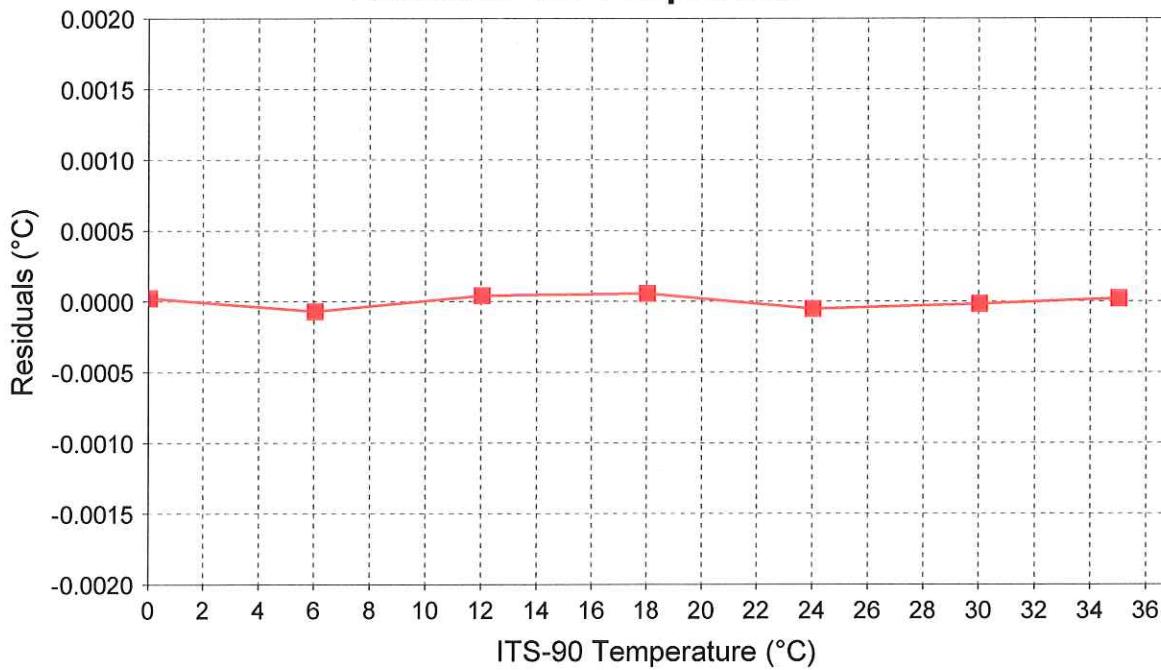

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RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 16

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04935	0.683495	0.04937	0.00002	C0 : 0.003466079488450
6.04681	0.612946	6.04674	-0.00007	C1 : -0.000250349645080
12.04365	0.540102	12.04369	0.00004	C2 : 0.000002509676613
18.03409	0.468220	18.03414	0.00006	C3 : -0.000000054536430
24.03053	0.399979	24.03047	-0.00005	
30.03126	0.337502	30.03124	-0.00002	
35.02772	0.290827	35.02774	0.00002	

Residuals vs. Temperature



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23189

Operator:


dluong

Approver:

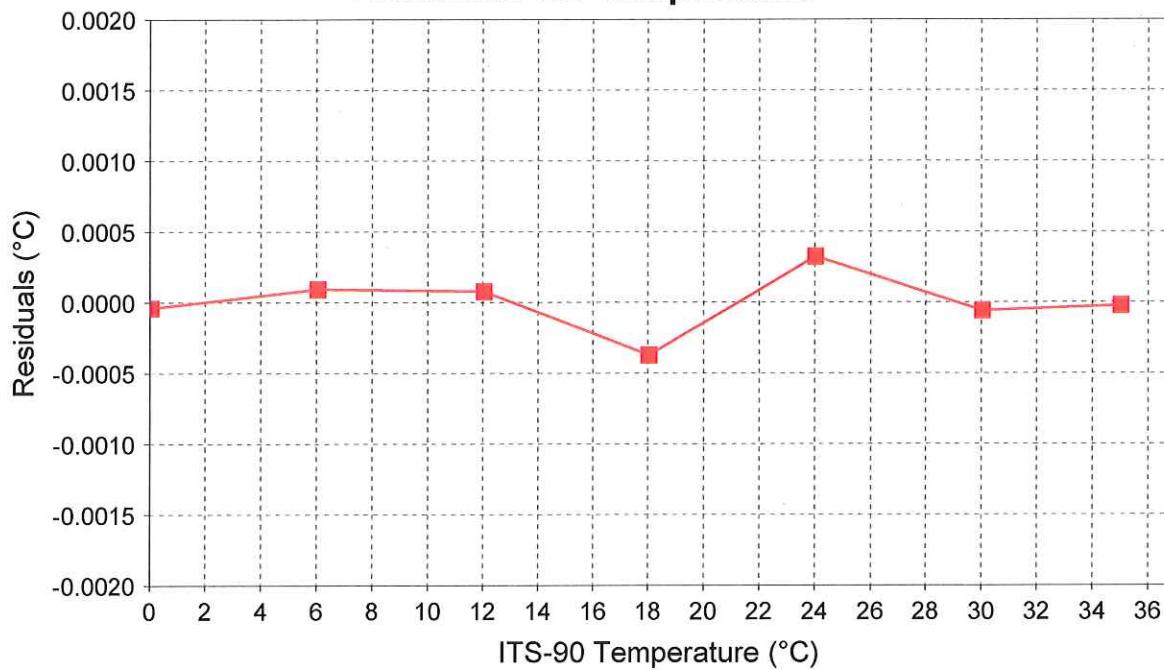

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RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 17

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.628768	0.04930	-0.00004	C0: 0.003527242853501
6.04681	0.553869	6.04690	0.00009	C1: -0.000251197572807
12.04365	0.479239	12.04372	0.00008	C2: 0.000002559910832
18.03408	0.408165	18.03371	-0.00037	C3: -0.000000085444001
24.03053	0.342928	24.03085	0.00032	
30.03126	0.285054	30.03120	-0.00006	
35.02773	0.242921	35.02770	-0.00002	

Residuals vs. Temperature



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23188

Operator:


danny
dluong

Approver:

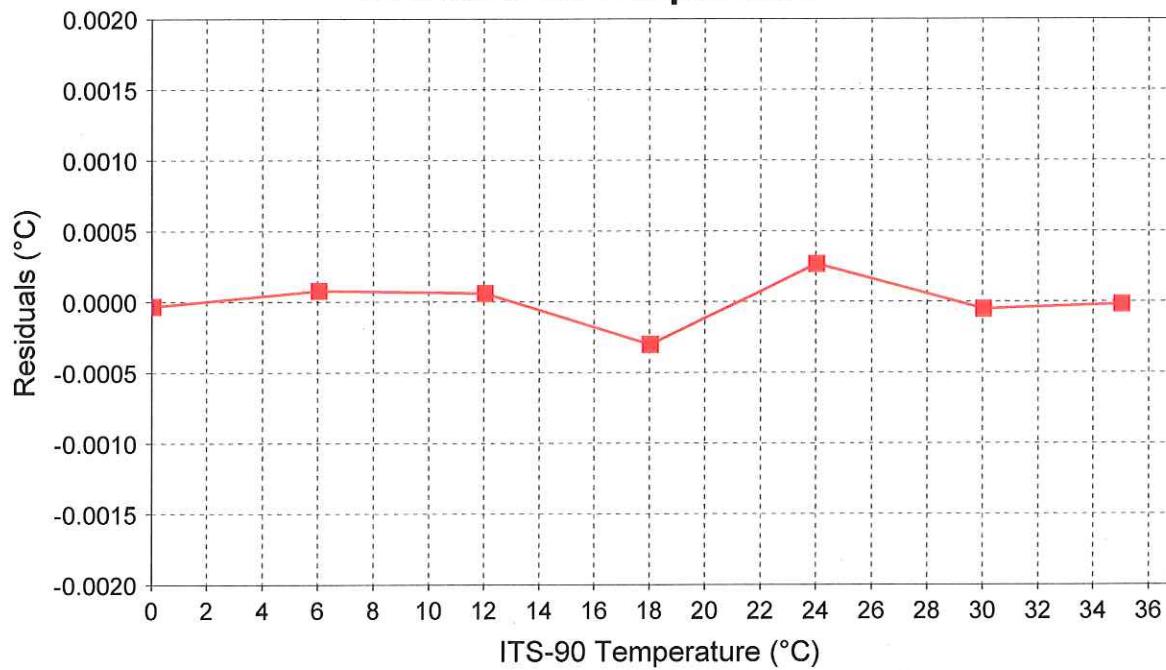

J. Bucknor
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 18

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.618865	0.04931	-0.00003	C0 : 0.003537800205732
6.04681	0.543450	6.04689	0.00008	C1 : -0.000251509687910
12.04366	0.468778	12.04372	0.00006	C2 : 0.000002575934329
18.03409	0.398095	18.03378	-0.00030	C3 : -0.000000094620448
24.03053	0.333586	24.03079	0.00027	
30.03126	0.276648	30.03121	-0.00005	
35.02772	0.235368	35.02770	-0.00002	

Residuals vs. Temperature



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23187

Operator:


duong

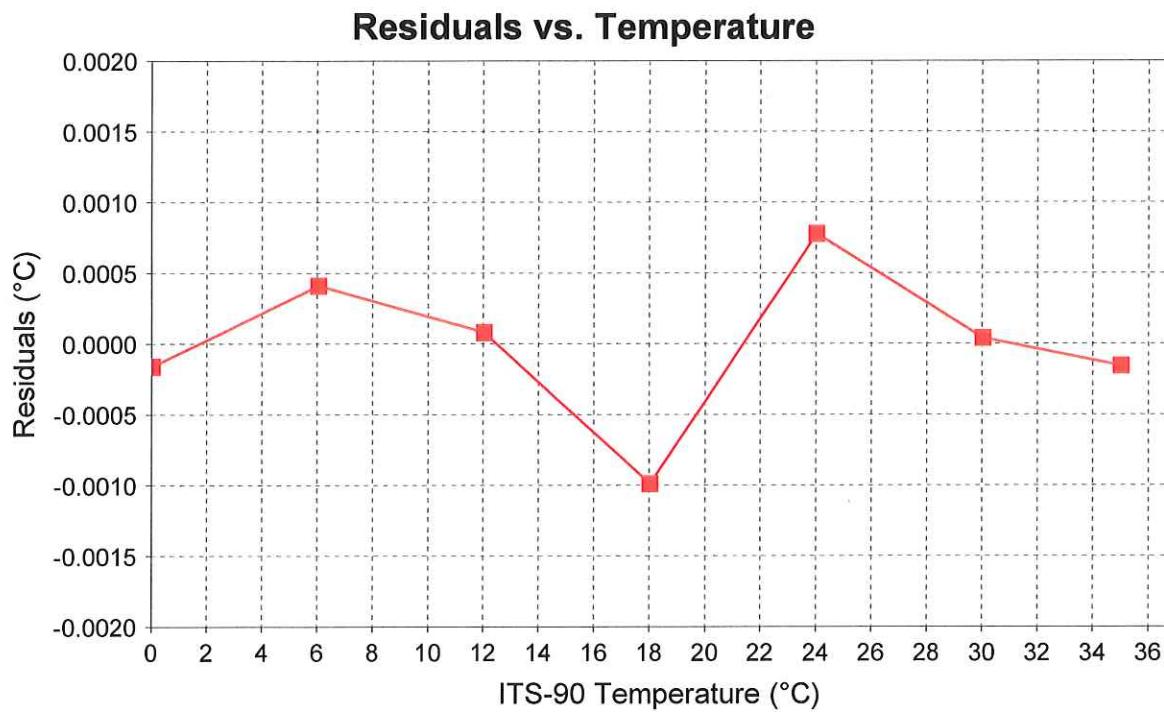
Approver:


sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 19

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.621608	0.04918	-0.00016	C0 : 0.003534616114713
6.04681	0.546491	6.04722	0.00041	C1 : -0.000251954869176
12.04365	0.471989	12.04373	0.00008	C2 : 0.000002592509202
18.03409	0.401334	18.03310	-0.00099	C3 : -0.000000103942884
24.03053	0.336707	24.03130	0.00078	
30.03126	0.279574	30.03130	0.00004	
35.02773	0.238083	35.02757	-0.00016	



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23186

Operator:


dlyuong

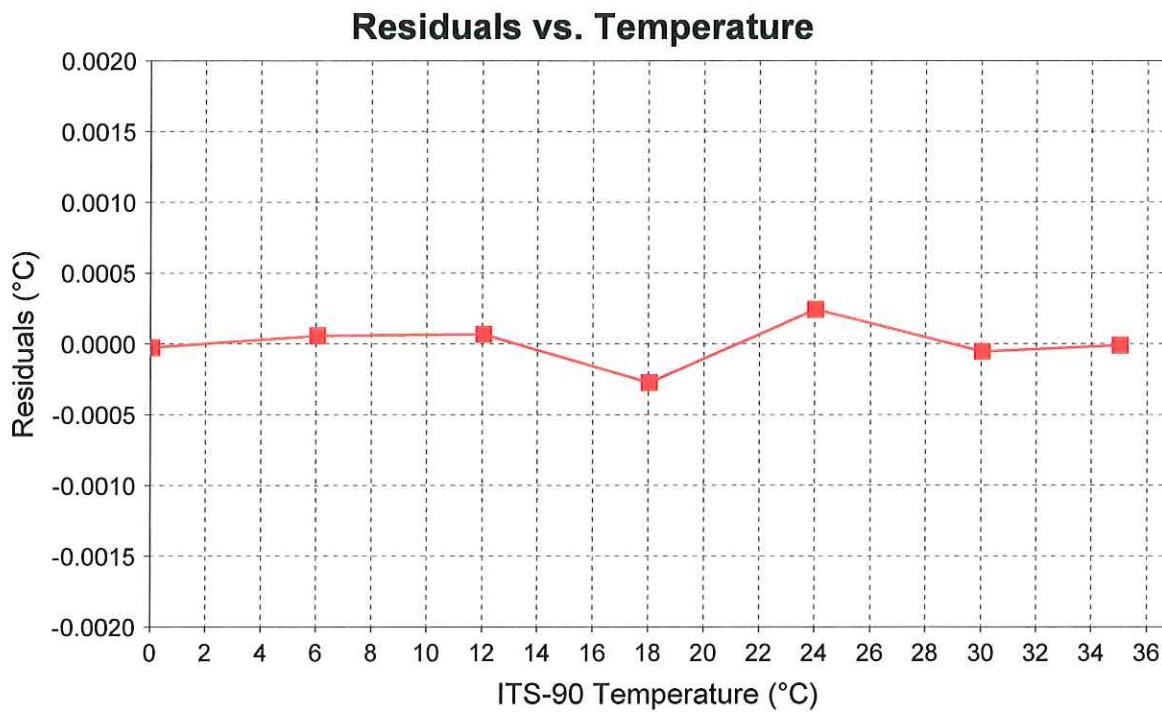
Approver:


sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 20

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.645989	0.04932	-0.00003	C0 : 0.003508335420270
6.04681	0.572299	6.04687	0.00006	C1 : -0.000251175861294
12.04365	0.498062	12.04371	0.00007	C2 : 0.000002501242895
18.03409	0.426587	18.03381	-0.00027	C3 : -0.000000094107352
24.03053	0.360304	24.03077	0.00024	
30.03126	0.300939	30.03120	-0.00006	
35.02772	0.257382	35.02771	-0.00001	



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23185

Operator:


dlyuong

Approver:

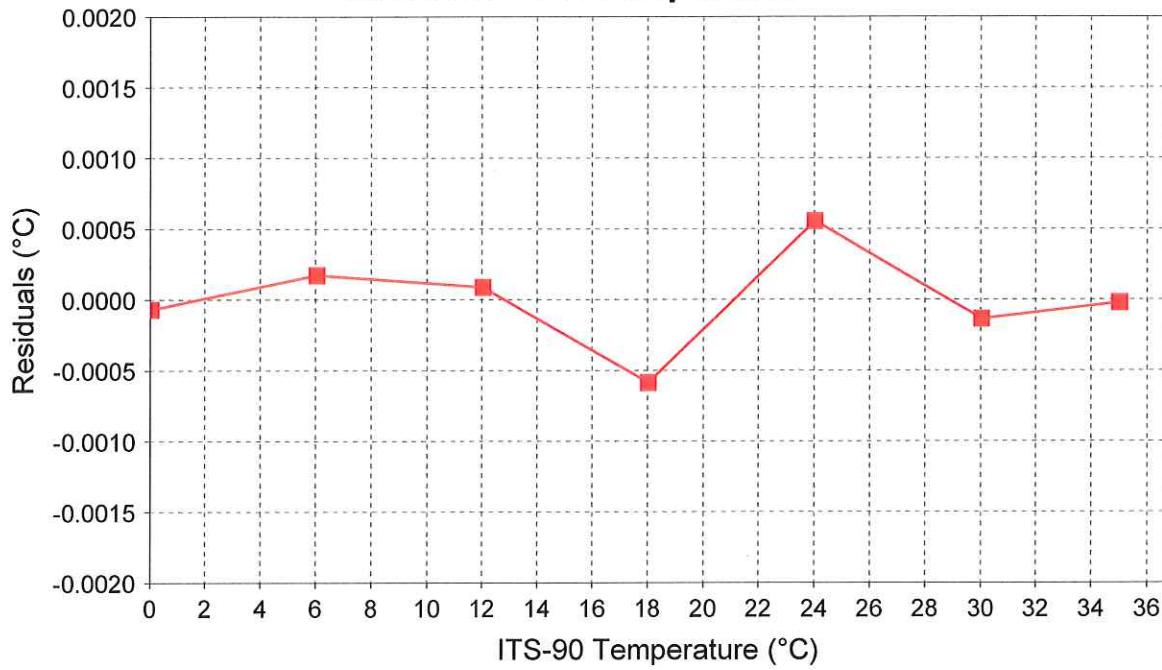

sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 21

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.613831	0.04927	-0.00007	C0 : 0.003543370918735
6.04681	0.538021	6.04698	0.00017	C1 : -0.000251141868899
12.04365	0.463196	12.04373	0.00009	C2 : 0.000002620993551
18.03409	0.392595	18.03350	-0.00059	C3 : -0.000000079211155
24.03055	0.328349	24.03110	0.00056	
30.03126	0.271816	30.03112	-0.00014	
35.02773	0.230926	35.02771	-0.00002	

Residuals vs. Temperature



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23184

Operator:

Danny
dluong

Approver:

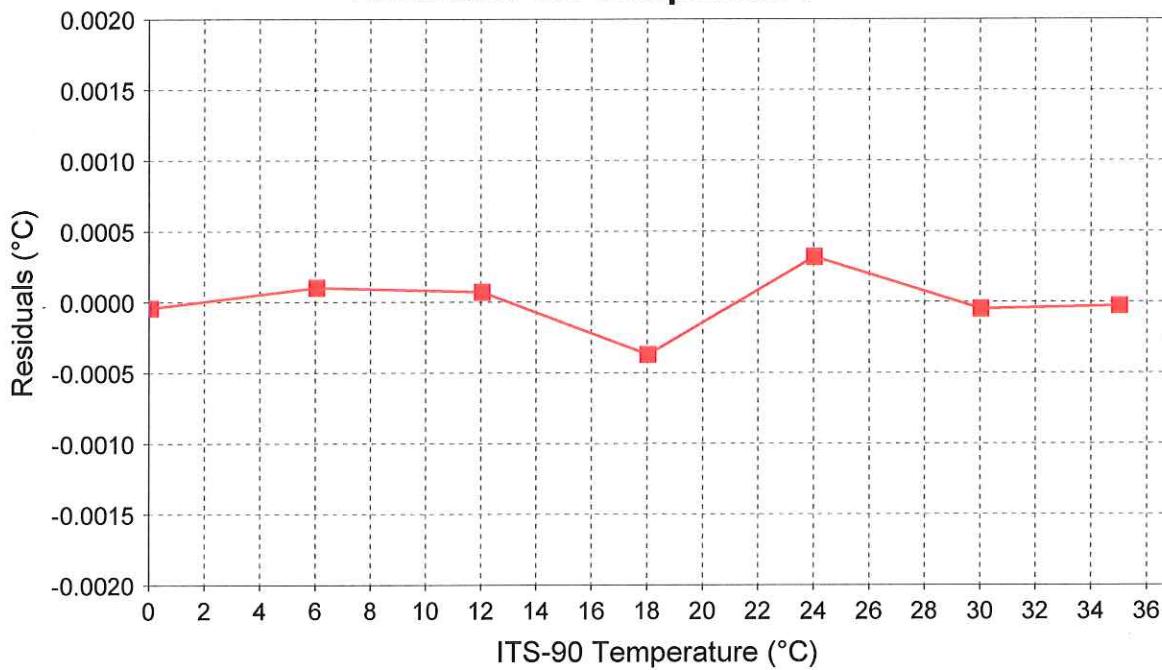
J. Bucknor
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 22

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.678502	0.04930	-0.00004	C0: 0.003472480356732
6.04681	0.607229	6.04691	0.00010	C1: -0.000249576485727
12.04365	0.533867	12.04372	0.00007	C2: 0.000002520036852
18.03409	0.461729	18.03371	-0.00037	C3: -0.000000091015196
24.03053	0.393483	24.03085	0.00032	
30.03126	0.331251	30.03121	-0.00005	
35.02772	0.284916	35.02769	-0.00003	

Residuals vs. Temperature



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23183

Operator:


dluong

Approver:

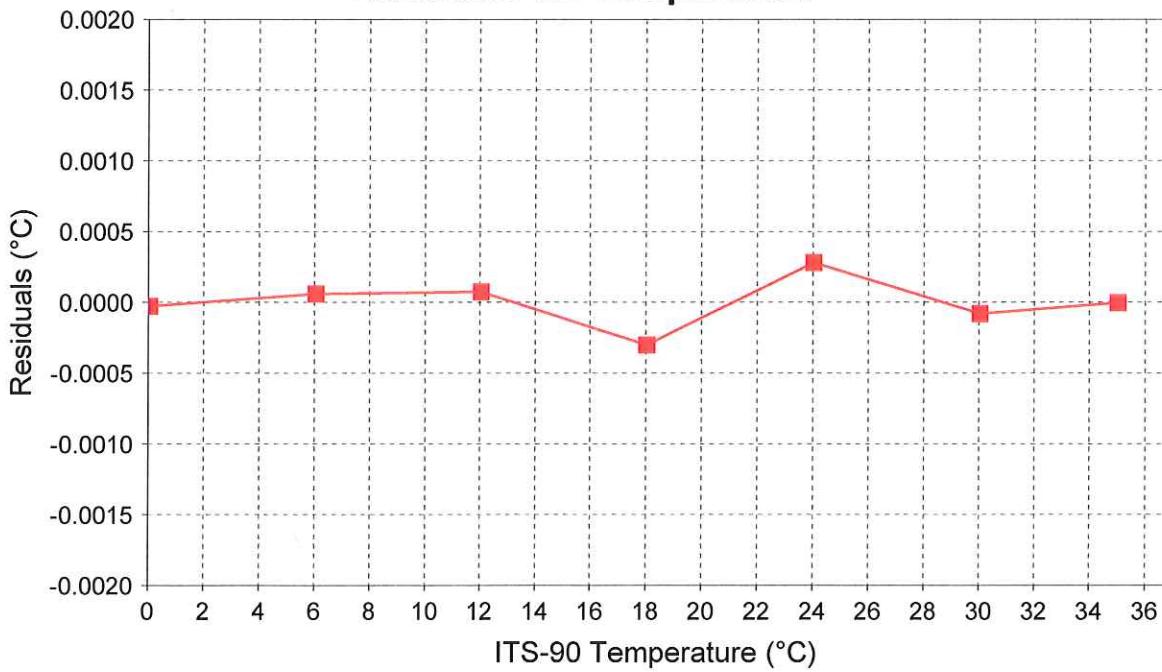

sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 23

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.669450	0.04932	-0.00003	C0: 0.003482618245901
6.04681	0.597419	6.04687	0.00006	C1: -0.000250018753710
12.04365	0.523728	12.04372	0.00007	C2: 0.000002506580451
18.03409	0.451700	18.03378	-0.00030	C3: -0.000000077796211
24.03053	0.383947	24.03081	0.00028	
30.03126	0.322483	30.03118	-0.00008	
35.02772	0.276910	35.02772	-0.00000	

Residuals vs. Temperature



Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23182

Operator:

Danny
dluong

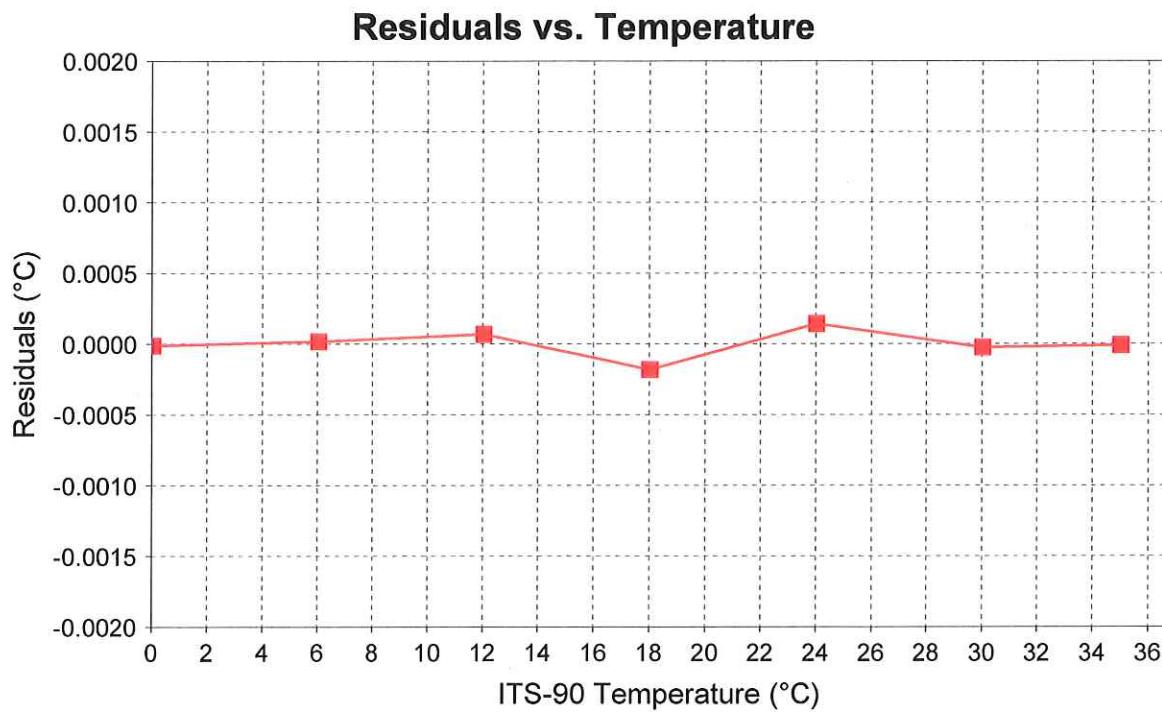
Approver:

J. Bucknor
sbucknor

RBR Temperature Calibration Certificate

Logger ID: XR-420 Serial No: 21968 Channel No: 24

Reference Temperature, ITS-90	Voltage ratio, V	Measured Temperature, ITS-90	Calibration error	Coefficients
0.04934	0.637885	0.04933	-0.00001	C0 : 0.003517494733900
6.04681	0.563491	6.04683	0.00002	C1 : -0.000250795702380
12.04365	0.488926	12.04371	0.00007	C2 : 0.000002566647970
18.03408	0.417505	18.03390	-0.00018	C3 : -0.000000078908955
24.03053	0.351608	24.03067	0.00014	
30.03126	0.292866	30.03123	-0.00003	
35.02773	0.249939	35.02772	-0.00001	

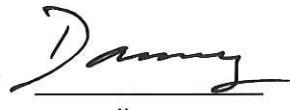


Calibration Date: 22/Nov/2017

Issue Date: 23/Nov/2017

Calibration ID: 23181

Operator:


dlyuong

Approver:


sbucknor