# Calibration Report: Pyrometer (Infrared Radiation Thermometer) S/N: 1415

10 January 2012

Bryan Fabbri Science Systems and Applications, Inc. Hampton, Virginia

## Summary

Calibration date: 10 Jan 2012

Next Calibration date: 10 Jan 2013

A collection, analysis and calibration of data from a Heitronics Pyrometer (Infrared Radiation Thermometer or IRT), S/N: 1415, has been completed. The calibration was performed by Wintronics, Inc. These data were collected by Wintronics on 10 January 2012.

Model: KT19.85 Serial Number: 1415

The test data presented in table format is displayed on the next page. The IRT was NOT in tolerance "as received". The IRT needed the reference adjusted as it was out of spec at 0 & 30C, even with the new lens. The old lens (K8AR, NR.1415) was in bad shape and gave poor results. A new lens (K8AR, NR.1416) was used in the "Outgoing" calibration process. Since this IRT will be used as a sea surface temperature measurement device, the numbers of most value are between 0-30 degrees C (273.15-303.15 Kelvin). It is determined an offset(y-int.) of -0.28 degrees C (-0.28 Kelvin) will be applied to instrument data. Wintronics, Inc. quality program is registered to ISO 9001:2000. Traceability is achieved through calibrations to NIST (National Institute of Standards and Technology) or compared to consensus standards.

The following pages provide more detail into the calibration process and results.

Application: Standard Campbell datalogger program for KT19.85 pyrometer.

### Wintronics, Inc. **50 Division Avenue**

Millington, NJ 07946 Phone: (908) 647-0144 Fax: (908) 647-8379

## **Certificate of Calibration**

ANSI/NCSL Z540-1-1994

**Certificate No.:** J0094595

Manufacturer: Heitronics Model No: KT19.85

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Description: Infrared Thermometer

1415 Serial No:

Temperature (C):

Humidity (%):

Procedure:

NASA Langley Research Center Customer: 21 Langley Blvd, Bld1250,Rm124 Hampton, VA 23681-0001

W60985

23 39

Technician: PLW

Customer PO:

Customer Asset No:

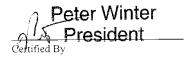
Date Cal: 1/10/2012 Date Due: 1/10/2013

The manufacturer's specifications of the above instrument have been confirmed by comparison to standards which are regularly calibrated using accepted values of natural physical constants, ratio type self-calibrating techniques, comparison to standards which are traceable to NIST, or compared to consensus standards. Wintronics' calibration procedures comply with ANSI/NCSL Z540-1 & MIL-STD-45662A. Wintronics' Quality program is registered to ISO9001:2008.

Out of Tolerance As received condition: As shipped condition: In Tolerance Type of Calibration: Normal

#### **Calibration Standards**

				Calibration		
Manufacturer	Model	<b>Description</b>	<b>Asset #</b>	<b>Date</b>	<b>Date Due</b>	Cert. No.
Heitronics	TRT3.82	Transfer Infrared Pyrometer	W185	11/4/2011	11/4/2012	J0093158



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Company: NASA Lan		P.O. Box 337, Millington, N. Mfg: Heitronics	Madali		<sup>Job</sup> J0094595 Date:01/10.12	
Company: NASA Langley Research Center		Heitronics	K	Г19.85(-II)		
S/N:	1415	Cust. Asset #:			Tech: PLW	
Function or Range	Nominal Value or Cal Range <sub>K</sub>	As Received	Outgoing ⊭_	Tolerance	TUR	
Degrees C	0.0°C 273.15	+0.9 274.05	-0.3 272.85	±0.71°C		
	10.0°C 383.15	not tested AA	9.8 282.95	±0.64°C		
	20.0°C 💥 📊	not tested NA	20.1 293.25	±0.57°C		
	30.0°C 345.5	<b>30.7</b> 303.85	30.0 303.15	±0.50°C		
	40.0°C	not tested $\kappa/4$	<b>39.4</b> ಕ್ರಾಕ್ಷಕ್	±0.57°C		
	50.0°C 333 5	not tested	49.5 322.65	±0.64°C		
	60.0°C 33}, ∑	not tested NIA	59.7 332.85	±0.71°C		
······································	70.0°C 39.5	not tested 6/A	<b>69.6</b> 340.75	±0.78°C		
	80.0°C 353, 5	not tested 60 A	79.7 350,85	±0.85°C		
	90.0°C 3.4.5	not tested 7. A	89.8 362.75	±0.92°C		
	100.0°C	99.8 372 45	99.8 373,95	±0.99°C		
	Cal Factor	1938	1946	No Tolerance		
		Before Reference	After Reference			
		Adjustment	Adjustment	,		
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