

Aurora Consortium Road Temperature Sensor Study Summary

Summary Presented by: Control Products, Inc.

The purpose of this publication is to summarize the results of the Aurora Consortium Road Temperature Sensor Study. This scientific study compared Control Products Model 999J and Roadwatch mobile sensors. Aurora performed multiple tests in the lab and natural environment to determine the performance of both sensors. Study results have been categorized by response and accuracy, overall performance, and dependability. All conclusions found in this summary were derived from exact data found in the Aurora publication.

Mobile Sensor Response & Accuracy

The Aurora Study concluded the Control Products Mobile Sensor responded better than the Roadwatch Mobile Sensor with greater accuracy. This conclusion is consequent from quotes taken directly from the report and from test data found in EXHIBIT A & TABLE A.

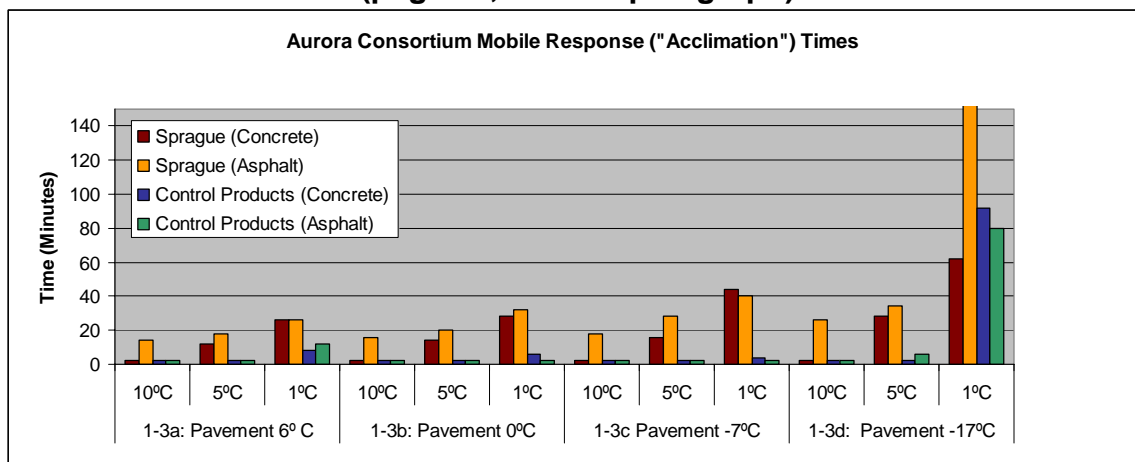
Exhibit A:

"The Sprague sensor consistently reported significantly longer acclimation times than the Control Products sensor,..."

(page 48, second paragraph).

"The Sprague sensor data, with its 0.55°C data resolution, illustrated the described test procedure significantly less clearly than the Control Products sensor."

(page 80, second paragraph)



"These results suggest that the Sprague sensor is more influenced by varying ambient air temperature than the Control Products sensor."

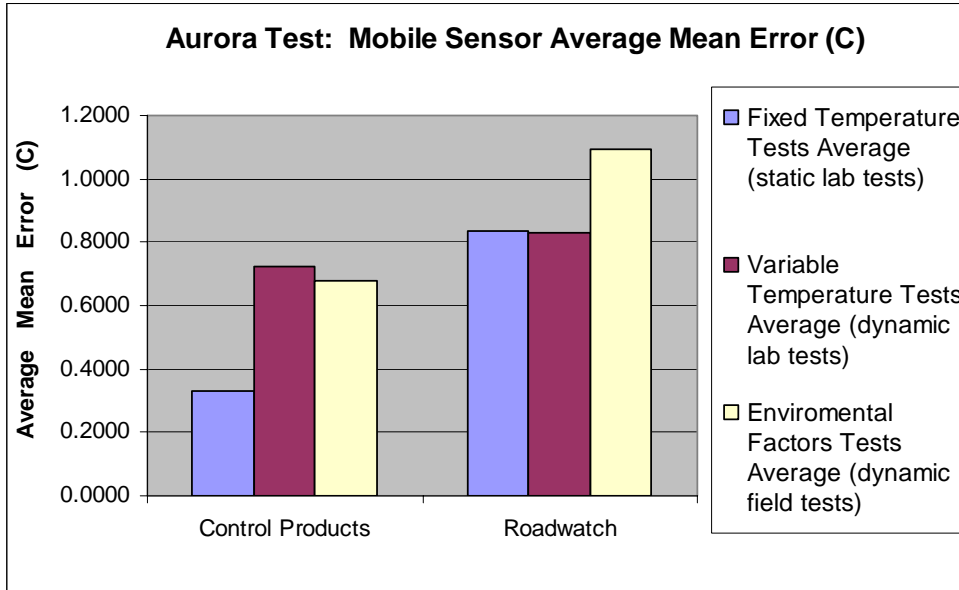
(page 62, second paragraph)

WHAT DOES THIS MEAN?

For example, when leaving a heated or insulated garage during winter conditions, the Roadwatch sensor will display inaccurate data for several miles. This can also occur during elevation changes and in shaded areas.

Mobile Sensor Performance

The following bar graph aggregates performance test data from the study. Each bar conveys fixed temperature, variable temperature, and natural environmental test results. Each bar demonstrates the average mean error of each test; greater errors result in higher bars. The tests indicate Control Products sensor outperformed Roadwatch in all categories.



* "Solar impact" data was not included in this graph. Our sensors are intentionally designed to be mounted under a vehicle to eliminate solar impact.

* Much of the data where the Roadwatch sensor failed was emitted b/c it would unfairly skew the graph.

Mobile Sensor Dependability

Throughout the Aurora Test Study, 36 tests were performed. The Sprague mobile sensor failed 10 of these tests for a **27% failure rate**. The Control Products mobile sensor failed 2 of these tests for a **5% failure rate**.

Table A Test 3-6c Emmisivity check (page 80 of Aurora report):

Sensor	Dry Concrete	Iced Concrete	Dry Asphalt	Iced Asphalt
Control Products, Inc.	-0.15	-0.15	0.50	0.64
Roadwatch	-1.08	-1.85	-1.76	-1.63
Roadwatch Inaccuracy Percentage	86% less accurate than CPI	91% less accurate than CPI	71% less accurate than CPI	60% less accurate than CPI

Mean error in degrees Celsius

WHAT DOES THIS MEAN?

The table shows how accurately the mobile sensors responded to sudden "step" changes in the surface temperature in which they were focused. This test shows how accurately these sensors perform in a real world and dynamic environment.

Data in this brochure is taken directly from the Aurora Consortium Report titled "*Laboratory and Field Studies of Pavement Temperature Sensors.*" The Aurora Program reviewed and approved the information in this document. The Aurora Program does not endorse any particular brand of sensor discussed herein.

Read the entire Aurora document here: www.aurora-program.org

OR

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