



NSF Protocol P235  
Temperature Mimicking Sensors  
Temperature mimicking sensors are not intended to  
monitor the air temperature of the refrigerated  
location in which they are being used.

eCube is a temperature mimicking sensor (TMS<sup>1</sup>) tested under Protocol P235 by NSF International. It is designed for placement into refrigeration containing dairy, meat, ready meals & other food products meant to be maintained at or below 41°F. eCube is designed to accurately reflect the temperature of food under refrigeration conditions, and warm more quickly than food products upon equipment failure. (<sup>1</sup> TMS is a separate, non-invasive device consisting of a food simulant material with a thermocouple or thermistor attached.)

NSF International's mission is to "protect you by certifying products & writing standards for food, water & consumer goods. As an independent, not for profit organization, NSF International's ongoing public health commitment is to encourage everyone to live safer."<sup>2</sup>

Under the performance requirements of Protocol P235, eCube passed the following tests<sup>3</sup>:

- The temperature indicated by eCube is between  $\pm 2^{\circ}\text{F}$  of the refrigerated food products 15mm below their surface during the normal refrigeration operations test. The purpose of the test is to insure that eCube accurately mimics the food product temperatures.
- The temperature indicated by eCube is no more than  $-2^{\circ}\text{F}$  lower and no more than  $+5^{\circ}\text{F}$  higher than the refrigerated food products during the warm up test, which imitates a refrigeration failure. The purpose of the test is for eCube to indicate a higher temperature than the food products to provide advanced warning and allow users to take remedial actions.
- eCube carries this NSF logo for Protocol P235:



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Under Protocol P235, eCube is also required to adhere to standards ANSI/NSF 51 for Food Equipment Materials Requirements & ANSI/NSF 2 for Food Equipment Requirements for Design & Construction. Both of these standards insure that the eCube's design is easily cleanable & the materials used are not harmful when operated in the refrigeration environment.

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1. Excerpt from NSF International Protocol P235 [www.nsf.org](http://www.nsf.org)
2. NSF International website [www.nsf.org](http://www.nsf.org)
3. Excerpt from NSF International Protocol P235 [www.nsf.org](http://www.nsf.org)