



Amanda Bolduc  
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Hi Amanda,

According to the manufacturer of the detectors, Hamamatsu, they began applying a "thermal process to improve stability of device performance". They identified detectors with and without this application as follows:

P/N	Qty	S/N	Thermal process
P9696-02SPL6435	500p	579-365	no
P9696-02SPL7862	237p	640-990	no
P9696-02SPL7862	438p	266-	yes

The "process" was implemented due to the fact that some (not all) of the detectors were exhibiting a measurable drift in the detector output that, if sufficient enough, would cause status messages to be produced by the DMT and preclude the running of those tests.

With the drift concern addressed, we have noticed better stability of detector voltages over the burn in period here. Since there is a certain amount of drift in the output of the overall system (as evidenced by the use of the ambient zeroing routine) the question "what is too much drift?" can only be answered as: "a level in the positive direction which causes Filter 1, 2 or 3 won't zero or a level in the negative direction which produces an internal standard error. A variation of up to +/- .2 volts or so in the detector voltage relative to an original set point is viewed as insignificant. General guidelines, but not absolute limits for the detector voltage would be anywhere in the range of -0.3 to +0.8 volts. Any given instrument may or may not produce a status message operating at these limits. If a status message is not produced, the instrument will function accurately as intended.

It is not necessary, nor is it advisable, to put specific limits on what is an acceptable detector voltage drift level. Identifying the drift trend of a particular detector could assist in identifying one that may produce a status message at some future point. Our position is that the adoption of any other policy is simply not warranted and potentially too constrictive.

We understand that you have incorporated a check to ensure the detector voltage is within 0.3 volts of zero. While we certainly have no issue with this, it must be noted that this range is reduced from the limits built into the instrument ensuring proper operation and increases the likelihood of not using, as is, an instrument in proper working order. Drift is normal in any infrared system and must be accommodated. While we did see a number of detectors from a batch exhibiting a larger than desired drift, very few were actually drifting to the point where they produced a status message and in no event would the integrity of any given test have been jeopardized.

If you have any additional questions, please let me know.

Regards,

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