

Tiger Optics HALO KA and LaserTrace 3 versus Servomex DF-749

I. Overview:

Servomex Ltd., in a March 2013 press release, called attention to the performance of its DF-749 analyzer, following tests of the device by the National Metrology Institute of Japan (NMIJ) from December 5th, 2012 to January 11th, 2013. Based on that report, we compare the DF-749 to two analyzers from Tiger Optics LLC that excel in the analysis of ultra-high-purity gases.

First let us look at the published specifications for these analyzers, as follows:

Specifications	DF-749 (Servomex)	Halo KA (Tiger Optics)	LaserTrace 3 (Tiger Optics)
Low Detection Limit	0.4 ppb*	0.2 ppb**	0.1 ppb**
Accuracy	±3% or ± 0.40 ppb	±4% or 0.1 ppb	±4% or 0.05 ppb
Operating Range	0-20 ppm	0-20 ppm***	0-5 ppm***
Response Time	< 3 min to 90%	< 1 min to 90%	< 3 min to 95%
Sensitivity	0.2 ppb	0.06 ppb	0.05 ppb
Precision	N/A	±0.75% or 1/3 sensitivity	±0.75% or 1/3 sensitivity

*parts-per-billion, no explanation provided

**based on peak-to-peak variation over 24 hours in Helium

***In Nitrogen

II. Sensitivity:

Judging by product specifications, the two Tiger Optics analyzers have far greater sensitivity than the Servomex DF-749. The compact HALO KA boasts more than three times the DF-749 sensitivity, while the multi-channel LaserTrace 3 is four times more sensitive than the Servomex instrument.

III. Speed of Response:

Both the Halo KA and the LaserTrace 3 have a quicker response time than that of the DF-749. The published test report from the National Metrology Institute of Japan indicates that the Servomex DF-749 instrument took six hours to dry down by 95% from 1000 ppb to 50 ppb. By way of comparison, the LaserTrace 3 routinely dries down to 95% in approximately three minutes.

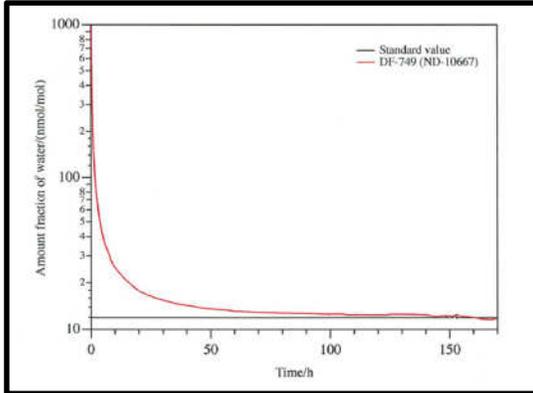


Figure 1: As shown above, the Servomex DF-749 took 6 hours to reach 95% dry down. Source: National Metrology Institute of Japan (NMIJ) Test Report for Servomex LTD. (issued January 20, 2013)

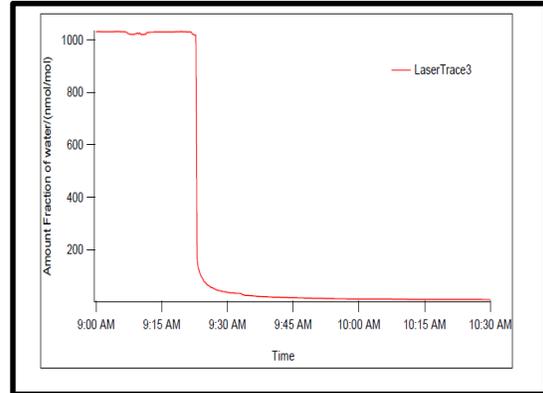


Figure 2: In a test conducted in January of 2012, a LaserTrace 3 unit took 3 minutes to dry down 95%. Source: Tiger Optics LLC

IV. Summary:

Tiger's UHP analyzers outdo the DF-749 for all critical parameters. The NMIJ test results show that the DF-749 has a significantly longer dry-down time than the HALO KA and the LaserTrace 3. Based on the Servomex specifications provided to customers, the DF-749 has a higher LDL, and a slower response time than both Tiger high-purity analyzers. The results underscore the fact that Tiger Optics presents a superior solution.