

Ultra Zero Air. HiQ® Ultra Zero Air Station.



Background Pure air is commonly used in the chromatographic world mainly as fuel for flames in detectors such as Flame Ionisation Detectors (FIDs) and Flame Photometric Detectors (FPDs). The advantage with the HiQ® Ultra Zero Air station is that it helps creating a truly flat baseline. The pure air can be delivered in classic gas cylinders or be produced on site from oil-free compressed air. Designed with safety and convenience in mind, this system will generate purified and hydrocarbon-free air without the need of connecting to an external compressor.

Description The HiQ® Ultra Zero Air stations reduce total hydrocarbons (THC) to less than 0.1 ppm, CO and NO_x pollutants to less than 0.05 ppm, CO₂ to less than 5 ppm and removes particles down to 0.1 micron. In the lab, they provide several advantages. Eliminating the need to use and store high-purity air in cylinders saves valuable laboratory floor space. Using an on-site gas generator also eliminates the need to purge systems or recalibrate instruments after replacing empty cylinders with full ones. The operation of the generator requires low levels of electrical power. This complete turnkey system is engineered with the highest quality components, is easy to install, and requires only minimal annual maintenance. The log file can easily be downloaded to a PC via the USB interface to make the traceability and diagnostics more efficient.

The HiQ® Ultra Zero Air station do not need any external compressed air supply. It is compatible to all major voltages and power supplies.

Functioning Air Principle The HiQ® Ultra Zero Air station models utilise a multi-stage process to purify ambient air into high-purity analytical grade air. Compressed ambient air is initially passed through highly efficient pre-filtration to remove both moisture and particles greater than 5 microns. After filtration, the air is passing through a dual-column pressure swing absorption (PSA) air-dryer to remove any remaining moisture and carbon dioxide. The air is then channelled into a stainless steel catalyst chamber to remove background hydrocarbons and carbon monoxide. The chamber is filled with a highly efficient platinum + palladium catalyst which has been heated to very high temperature to ensure final hydrocarbon removal to less than 0.1 ppm. The ultra zero air is stored in an internal storage tank allowing the compressor to stop when reached the upper pressure level and starting again when at the lower level. An additional final high-grade filter is used to remove 99.99% of particles greater than 0.5 microns.

Laboratory Applications With its trouble free operational and low maintenance environment, the HiQ® Ultra Zero Air station is the preferred source of air fuel gas for GC-FID, GC-FPD and THC analysers. It helps creating a truly flat baseline to any chromatograph on the market. With its low hydrocarbon content (less than 0.1 ppm), CO and NO_x pollutants (less than 0.05 ppm), CO₂ (less than 5 ppm) and removal of particles down to 0.1 micron, the HiQ® Ultra Zero Air generator is also ideal for zero air to THC, total organic compounds (TOC) and total sulphur analysers.

Specifications

HiQ® Ultra Zero Air Station 1.5	Flow rate: 1.5 NL/min
HiQ® Ultra Zero Air Station 3	Flow rate: 3 NL/min
HiQ® Ultra Zero Air Station 6	Flow rate: 6 NL/min
HiQ® Ultra Zero Air Station 10	Flow rate: 10 NL/min
HiQ® Ultra Zero Air Station 20	Flow rate: 20 NL/min
HiQ® Ultra Zero Air Station 30	Flow rate: 30 NL/min

Delivery pressure:	Up to 5 barg (75 Psig)
Air purity:	<0.1 ppm Total Hydrocarbons <0.05 ppm CO / <5 ppm CO ₂ / <0.05 ppm NO _x / <-50°C DP (-58°F)
Sound level:	<50 dB(A)
Particle filtration level:	<0.1 µm
Fittings:	Outlet Air 1/4" Swagelok
User interface:	Pressure setting, system status, user parameter / Touch screen / LCD graphic display
Remote command:	USB / download of the logfile possible

Dimensions (cm) (WxDxH):	36x64x67
Shipping Dim (cm) (WxDxH):	45x80x80
Power requirements:	230V/50Hz - 230V/60Hz - 115V/60Hz - 100V/60Hz

Air flow rate (NL/min) (max):	1.5	3	6	10	20	30
Net weight (kg):	55	55	55	65	65	70
Shipping weight (kg):	65	65	65	75	75	90
Power consumption (Watt):	420	420	420	520	520	570

Spare Parts and Consumables for maintenance

Maintenance compressor Kit model 1.5L to 6L
Maintenance compressor Kit model 10L to 20L
Maintenance compressor Kit model 30L
Set of filters (coalescent / dust filter) model 1.5L to 6L
Set of filters (coalescent / dust filter) model 10L to 30L
Refill of specific scrubbers material models 1.5L to 6L
Refill of specific scrubbers material models 10L to 30L
Replacement catalysis oven 1.5L to 6L (new)
Replacement catalysis oven 10L to 30L (new)

HiQ® Ultra Zero Air station in principle

