



Markes International – Thermal Desorption

G8125A, G8126A, G8127A, G8128A, G8131A, G8132A,
G8136A, G8133A, MKI-MicroC

Site Preparation Checklist

Thank you for purchasing an Agilent instrument. To get you started and to assure a successful and timely installation, please refer to this specification or set of requirements.

Correct site preparation is the key first step in ensuring that your instruments and software systems operate reliably over an extended lifetime. This document is an **information guide AND checklist** prepared for you that outlines the supplies, consumables, space and utility requirements for your equipment for your site.

For additional information about our solutions, please visit our web site at
<http://www.chem.agilent.com/en-US/Pages/HomePage.aspx>

Customer Responsibilities

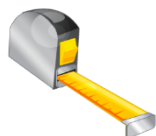
Make sure your site meets the following **prior to the installation date using the checklist below.**

For details, see specific sections within this document, including:

- the necessary **laboratory or bench space is available.**
- the **environmental conditions for the lab** as well as laboratory gases, tubing,
- the **power requirements** related to the product (e.g. **number & location** of electrical outlets)
- the **required operating supplies** necessary for the product and installation
- please consult **Other/Special Requirements** section below for other product-specific information
- If Agilent is delivering installation and familiarization services, users of the instrument should be present throughout these services; otherwise, they will miss important operational, maintenance and safety information.**

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1. If you have questions or problems in providing anything described as a *Customer Responsibilities* above, please contact your local Agilent or partner support/service organization for assistance prior to delivery. In addition, Agilent and/or its partners reserve the right to reschedule the installation dependent upon the readiness of your laboratory.
2. Should your site not be ready for whatever reasons, please contact Agilent as soon as possible to re-arrange any services that have been purchased.
3. Other optional services such as additional training, operational qualification (OQ) and consultation for user-specific applications may also be provided at the time of installation when ordered with the system, but should be contracted separately.

**Dimensions and Weight**

Identify the laboratory bench space before your system arrives based on the table below.

Pay special attention to the total height and total weight requirements for all system components you have ordered and avoid bench space with overhanging shelves. Also pay special attention to the total weight of the modules you have ordered to ensure your laboratory bench can support this weight.

Product	Description	Weight		Height		Depth		Width	
		Kg	lbs	cm	in	cm	in	cm	in
G8125A	Unity-xr with Manual Flow Control	16	35.3	46	18.1	51	20.1	16	6.3
G8126A	Unity-xr with Electr Flow Control	16	35.3	46	18.1	51	20.1	16	6.3
G8127A	TD100-xr with Man Flow Control	32	70.5	62	24.4	55	21.7	38	15.0
G8128A	TD100-xr with Electr Flow Control	32	70.5	62	24.4	55	21.7	38	15.0
G8131A	Unity-xr with Air Server	19	41.9	46	18.1	51	20.1	27	10.6
	CIA Advantage-xr	21	46.2	42	16.5	54	21.3	24	9.5
G8132A	Unity-xr with CIA Advantage-xr	37	81.5	46	18.1	54	21.3	45	17.7
G8136A	UltraA-xr Autosampler for Unity-xr	23	50.7	62	24.4	55	21.7	24	9.5
	Unity-xr with UltraA-xr	39	86	62	24.4	55	21.7	40	15.8
G8133A	Tube Conditioning Station	8	17.6	34	13.4	51	20.1	12	4.7
MKI-MicroC	Micro Chamber	15	33.1	42	16.5	52	20.5	16	6.3



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Environmental Conditions

Special Notes:

1. Performance can be affected by sources of heat & cold e.g. direct sunlight, heating/cooling from air conditioning outlets, drafts and/or vibrations.
2. The site's ambient temperature conditions must be stable for optimum performance.

Product	Description	Operating temp range °C (F)	Operating humidity range (%)	Heat Dissipation (BTU)
G8125A	Unity-xr with Manual Flow Control	15-30°C (60-86°F)	5 to 95% non-condensing	191
G8126A	Unity-xr with Electr Flow Control	15-30°C (60-86°F)	5 to 95% non-condensing	191
G8127A	TD100-xr with Man Flow Control	15-30°C (60-86°F)	5 to 95% non-condensing	191
G8128A	TD100-xr with Electr Flow Control	15-30°C (60-86°F)	5 to 95% non-condensing	191
G8131A	Unity-xr with Air Server	15-30°C (60-86°F)	5 to 95% non-condensing	191
	CIA Advantage-xr	15-30°C (60-86°F)	5 to 95% non-condensing	265
G8132A	Unity-xr with CIA Advantage-xr	15-30°C (60-86°F)	5 to 95% non-condensing	456
G8136A	UltraA-xr Autosampler for Unity-xr	15-30°C (60-86°F)	5 to 95% non-condensing	191
	Unity-xr with UltraA-xr	15-30°C (60-86°F)	5 to 95% non-condensing	382
G8133A	Tube Conditioning Station – 115V	15-30°C (60-86°F)	5 to 95% non-condensing	80
	Tube Conditioning Station – 230V	15-30°C (60-86°F)	5 to 95% non-condensing	80
MKI-MicroC	Micro Chamber	15-30°C (60-86°F)	5 to 95% non-condensing	191



Power Consumption

Special Notes:

1. If a computer system is supplied with your instrument, be sure to account for those electrical outlets.

Product	Description	Line Voltage & Frequency (V, Hz)	Maximum Inrush Current (amps)	Maximum Power Consumption (W)
G8125A	Unity-xr with Manual Flow Control	100-240V; 50-60 Hz	< 40	650
G8126A	Unity-xr with Electr Flow Control	100-240V; 50-60 Hz	< 40	650
G8127A	TD100-xr with Man Flow Control	100-240V; 50-60 Hz	< 40	650
G8128A	TD100-xr with Electr Flow Control	100-240V; 50-60 Hz	< 40	650
G8131A	Unity-xr with Air Server	100-240V; 50-60 Hz	< 40	650
	CIA Advantage-xr	100-240V; 50-60 Hz	< 40	900
G8132A	Unity-xr with CIA Advantage-xr	100-240V; 50-60 Hz	< 80	1,550
G8136A	UltraA-xr Autosampler for Unity-xr	100-240V; 50-60 Hz	< 40	350
	Unity-xr with UltraA-xr	100-240V; 50-60 Hz	< 80	1,000
G8133A	Tube Conditioning Station – 115V	115V; 50-60 Hz	< 80	270
	Tube Conditioning Station – 230V	230V; 50-60 Hz	< 40	270
MKI-MicroC	Micro Chamber	100-240V; 50-60 Hz	< 40	650



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Required Operating Supplies by Customer

Special Notes:

1. For information on Agilent consumables, accessories and laboratory operating supplies, please visit <http://www.chem.agilent.com/en-US/Products/consumables/Pages/default.aspx>



Other/Special Requirements

1. Recommended Supplies/Instruments

Item Description, (including dimensions etc)	Vendor/Part Number (if applicable)	Recommended Quantity
1/8" Tee, Brass	0100-0090	1
1/8" Tee, Stainless Steel	0100-0542	1
Digital Flow Meter	220-1171-U (US), 220-1171-E (Europe)	1
Helium Leak Detector	G3388B Electronic Leak Detector	1
Ceramic Column Cutters (4 pack)	5181-8836	1
Tubing Cutters, for copper	8710-1709	1
Tubing cutter, for plastic or PEEK tubing	8710-1930	1
Bulkhead connector kit for 7890/7820	G3430-60011	1

2. Injectors and Electronic carrier control

- a. UNITY/TD100 thermal desorption systems couple directly to the analytical column via a heated transfer line, and as such no conventional GC injector is required for their operation. However, Agilent strongly recommends using the split/splitless electronic pneumatic module (EPC) from the standard split/splitless injector to supply and control carrier gas pressure to the thermal desorption system. This will stabilise retention times independent of split flow, act as a diagnostic tool for flow discrepancy and allow carrier gas settings to be saved with the GC method.
- b. Note: A U-GAS01 is supplied with every Agilent system and is recommended for all UNITY / TD-100 installations, whether with manual or electronic carrier control (ECC). The U-GAS01 provides step down pressure regulation and read-out for the carrier gas and dry pneumatic gas used to activate the heated valve and prevent ice formation on the Peltier cooler

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- a. The heated and insulated portion of the UNITY / TD-100 transfer line must extend as far as the skin of the GC oven. A 25 mm access hole is thus required into the GC, with a 6.5 mm hole in the GC inner oven wall. Alternatively the transfer line can pass through and be anchored to the split/splitless injector body – although this is only recommended if the inlet will not be used for injection in the future.
- b. Ready and external start connections are required on the GC in order to synchronize the equipment. If all remote ports are used on the GC and Y or H cable should be ordered)

4. Filters

- a. It is recommended that suitable filters (to remove oxygen, organics and water) are included in the carrier gas line just upstream of connection to the TD-GC analytical system.

Part Number	Description	Use
CP738407	Mounting Plate for 2 Filters (1/8 in. tube)	Holds up to two filters
CP736520	Mounting Plate for 4 Filters (1/8 in. tube)	Holds up to four filters
CP17973 ¹	Agilent Gas Clean GC/MS Filter	Combination filter; removes water, oxygen, and organic compounds
CP17971	Agilent Gas Clean Moisture Filter	Removes water, oil, and other foreign material from the gas stream
CP17972	Agilent Gas Clean Charcoal Filter	Removes organic compounds from gas streams

¹ CP17973 cannot be used on the Purge Gas Line if Air is used as Purge Gas

5. Gas Purity and Selection

- a. Two gas supplies are required for TD operation according to the following recommendations:

	Purge Gas	Carrier Gas
Gas Type	Air or N ₂ (dry)	He, N ₂ or H ₂ ¹
Purity	Zero Grade Air 5.0 (99.999%) N ₂	5.5 (99.9995%)
Function	Purges cold trap box and actuates heated valve	Carrier Gas supply for entire TD-GC(MS) System
Min Pressure (psig)	50	0
Max Pressure (psig)	60	60
Recommended Pressure (psig)	50	Depends on GC Column
Line Pressure (psig)	10 psig higher than supplied to Unity-xr or TD100-xr	10 psig higher than supplied to Unity-xr or TD100-xr
Control	Secondary pressure regulation to the TD system is recommended. ²	Secondary pressure regulation prior to any carrier control is recommended. ²
Dew Point	< - 50°C	
Consumption	~ 100 ml/min	Dependent on column and split flows



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¹ Although Hydrogen may be used as a carrier gas on most TD systems care must be taken in case the high temperatures involved in thermal desorption cause hydrogenation of reactive and / or unsaturated species. The usual safety precautions, with respect to monitoring for leaks, must be taken if hydrogen is used.

NOTE: Hydrogen must not be used as carrier gas on CIA Advantage systems.

² Agilent recommend the use of MKI-GAS01

2. **Your TD system is shipped with one pre-conditioned Tenax sorbent tube which has been pre-loaded with a checkout standard (benzene, toluene, o-xylene, camphene, di-octyl phthalate – nominal concentration 90 ng/NL).**
3. **Most TD systems are shipped with a general purpose cold trap which is suitable for the analysis of VOCs from C4/5 to C30-32.**
4. **CIA Advantage systems are supplied with an air toxics analyzer cold trap suitable for the analysis of VOCs from ethane to C30.**
5. **You will require additional sorbent tubes, and you may need to select a different cold trap for your application.**