Spark HOLLAND

Spark Holland introduces MISTRAL™

Dependable temperature control for better separations

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MISTRAL™

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Almost every parameter defining a chromatographic separation is temperature dependent. Suffice it to say that temperature control provides an indispensable tool to optimize your HPLC or UHPLC assay. As you will easily recognize, retention times will be more constant with constant temperature, but varying the temperature can also be a great help to tune selectivity, improve peak shape and reduce analysis time. Plus, high temperatures reduce column back pressure significantly, allowing higher solvent flow rates, narrower columns or smaller particles. Clearly, such benefits will only come true if the temperature itself is stable and precise, and without temperature gradients in the oven or the column. And this is exactly what we had in mind when we designed the MISTRAL™ with its forced air oven, excellent temperature control and integrated solvent pre-heater.

Easy fit

Extensive remote control I/O, including PC control, makes integration into your HPLC or UHPLC system an easy job. The large column area will accommodate almost any column size and the small footprint will hardly increase the bench space required by your system.

Automated column selection

Select up to 6 different columns via the keyboard or the PC! This feature comes as an option and will be a great help for method development or if you want to run multiple assays on a single system. UHPLC valve available!

OEM friendly

Designing instruments for OEM business has become our second nature. Few instrument companies are so dedicated to customization of hard- and software according to our customers needs. We aim to be your partner all along the way from designing the product to making its driver in your software package.

Reassuring reliability

Spark has over 25 years of experience in development and production of HPLC instruments and has sold more than 4000 column ovens. Reassuring numbers if you demand a reliable partner in HPLC instrumentation.

* MISTRAL™ with column switching option

Reduce acetonitrile use!
Higher column temperatures allow lower acetonitrile content in the mobile phase for the same separation or may even allow the use of methanol instead. An easy way to save on acetonitrile!

- 5 – 90°C
- Temperature gradient programming
- Excellent temperature stability
- Integrated solvent pre-heater
- Vapour sensor
- Automated column selection

Specifications

MISTRAL™		
Parameter	**value**	**conditions**
Temperature range	5°C - 90°C, with 1°C increments 5°C - 75°C, with 1°C increments, if optional Column Selection Valve is installed	Ambient temperature and humidity influence the lower temperature limit of the MISTRAL™. Typically, a ΔT of 18°C is feasible.
Temperature accuracy	Better than 0.1°C	Measured at 30°C in the centre of the oven compartment
Temperature stability	Better than 0.1°C	Measured at 30°C in the centre of the oven compartment
Temperature reproducibility	Better than 0.1°C	In the centre of the oven compartment
Temperature gradient	Better than 0.2°C	Measured in the column area
Temperature change	Up: 10°C/min from 40° to 60°C Down: 2°C/min from 60°C to 40°C	
Time programmable temperature change	Time base: 9hr59 total time with 1-minute increments Maximum 10 programmable steps	
Programmable temperature ramp	Up: 0.1 – 5.0°C/min Down: 0.1 – 1.5°C/min (75°C to 25°C)	It is possible to program a ramp up to 9.9°C/min; however, only the ramp ranges specified can be guaranteed for the actual temperature ramp.
Dimensions (H x W x D)	600 x 170 x 345 mm (h x w x d)	
Weight	16 kg	
Working Environment	5 - 40°C; 30 - 80% RH	
Power Requirements	115/230 VAC +15/-22%,; 50/60 Hz	
Power consumption	454 VAmax	

Column selection Valve	1-to-6 port high pressure solvent selection valve: HPLC version standard UHPLC 15,000 PSI version optional

Control		
Keyboard	All functionality can be accessed and read trough the integrated keyboard with display	
Outputs:	Temperature or vapor alarm (relay + buzzer)	Relay contacts: Vmax = 28 Vdc/Vac, Lmax = 0.25A
	Oven ready (relay), will be activated if the actual temperature is within 0.5°C of the set point temperature.	
Inputs:	Start temperature program (TTL)	TTL inputs are active low and must be low for at least 1 second.
	Emergency shut-down (TTL)	
PC interface	RS 232 is standard. USB or Ethernet possible on request.	A MultiLink output connector allows linking of RS 232 communication to other instruments Firmware updates can be uploaded via RS 232 SparkLink 4.0 software allows control of main MISTRAL™ functions from a PC.

Specifications

Safety	
Explosion prevention	Vapour detector with selectable alarm settings (low, standard high)
Excessive temperature	Hardware: switch interrupts power if temperature exceeds 125°C Software: maximum allowable temp can be set by user
Fan speed monitor	Oven heater shuts down in case of fan malfunctioning
Software malfunction	Watchdog in FPGA for embedded software check

Compliancies	
Safety	CE; CSA (UL), ROHS
Installation category	II (according to IEC-1010
Pollution degree	2
Quality	ISO 9001 certified

Ordering information

Item	Part number
MISTRAL™	SP 886.000
MISTRAL™ with Column Selection Valve	SP 886.005
MISTRAL™ cool	SP 886.004
MISTRAL™ cool with Column Selection Valve	SP 886.002

Upgrades (factory installed)	Part number
UHPLC Column Selection Valve	0886.830

For more information:

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