

A) SPETTROFOTOMETRO Thermo Scientific Evolution 201 UV-Visible

Optical Design: Double Beam with sample and reference cuvette positions; Czerny-Turner Monochromator

Spectral Bandwidth: 1 nm

Light Source: Xenon flash lamp, 3-year warranty

Detector: Dual Silicon Photodiodes

Scan Ordinate Modes: Absorbance, % Transmittance, % Reflectance, Kubelka-Munk, log (1/R), log (Abs), abs*Factor, Intensity

Resolution: >1.8 (Toluene in Hexane)

Wavelength Range: 190 –1100 nm

Wavelength Accuracy: ± 0.5 nm (541.9, 546.1 nm mercury line) ± 0.8 nm (full range)

Wavelength Reproducibility: ≤ 0.05 nm (546.1 nm mercury line, SD of 10 measurements)

Scanning Speed: <1 to 6000 nm/min; continuously variable

Slew Speed: 31,000 nm/min

Data Intervals: 10, 5, 2, 1, 0.5, 0.2, 0.1 nm

Photometric Range: > 3.5 Abs

Photometric Accuracy: 1A: $\pm 0.006A$; 2A: $\pm 0.010A$; (440 nm; traceable neutral density filters)

Photometric Repeatability: $\pm 0.0002A$

Noise: 0A: $\leq 0.00015 A$; 1A: $\leq 0.00025 A$; 2A: $\leq 0.00080 A$; (260 nm, 1.0 nm SBW, RMS)

Drift: < 0.0005 A/hr (500 nm, 1.0 nm SBW, 1 hour warm-up)

Stray light: $\leq 1\%$ T at 198 nm (KCl), $\leq 0.05\%$ T at 220 nm (NaI), $\leq 0.05\%$ T at 340 nm (NaNO₂)

Baseline flatness: $\pm 0.0010 A$ (200-800 nm; 1.0 nm SBW, smoothing)

Keypad: Sealed Membrane Local Control

Display: Touchscreen LCD panel; 800 x 480; 17.8 cm (7 in) diagonal

Operating System: Microsoft Windows 7, Windows 8

Dimensions: 62.2 x 48.6 x 27.9 cm (24 x 19 x 11 in) L x W x H

Weight: 14.4 kg (32 lb)

Electrical Supply: 100 – 240 V, 50 – 60 Hz, Selected Automatically; 150 W maximum

B. GAS CROMATOGRAFO TRACE GC Mod. 1300 E ACCESSORI

1.TRACE 1300 MAINFRAME 230V: Trace 1300 Mainframe 230V includes: '1000-holes' fast GC oven with operating T range ambient +3 to 450°C; optional cooling to -100°C with LN₂ or -50°C with CO₂; Multiple-level temperature program with 32-ramp/33-plateaux with maximum heating rate of 25°C/min; Cooling down from 450°C to 50°C in less than 4 minutes; Six independent heated zones for individual control of injectors and detectors plus auxiliary zone; LAN interface; Simple start and stop buttons interface with status LED indicators.

- 2. TRACE 1300/1310 AUXILIARY TEMPERATURE MODULE:** valve control of the Oven cryo option; valve control of the front/back PTV cryo option; two heater controls for the DSQ II, ITQ or TSQ transfer line; 63 timed events to automatically drive up to 8 external on/off solenoid valves.
- 3. TRACE 1300 AUX CARRIER GAS MODULE:** Trace 1300 Aux Carrier Gas Module.
- 4. TRACE 1300 FID MODULE:** Instantaneously Connected-Flame Ionization Detector module: high performance in terms of sensitivity and dynamic range featuring acquisition rate as high as 300 Hz; MDL $<(><<)> 1.8 \text{ pg C/s}$; sensitivity $> 0.03 \text{ Coulombs/gC}$; linear dynamic range $= >10^7 (\pm 10\%)$; integrated electronic gas control (IEC); capillary column optimized compatible with 1/8' and 1/16' packed column; Flameout detection and automatic reignition; Max T = 450 °C; He or N₂ as make-up gas.
- 5. TRACE 1300 SSL INJECTOR MODULE:** Instantaneously Connected-Split/Splitless Injector module, includes: complete injector with integrated electronic gas control (IEC) featuring constant Flow and Pressure modes, programmable Flow and Pressure modes, Leak check and Column Evaluation; Max T = 400°C; split ratio up to 12500:1; Control of split flow in 1mL/min from 0 to 1250 mL/min; Purge flow from 0 to 50 ml/min (electronic control); Suitable for all capillary columns; Large Volume splitless injection up to 50 microL using specific liners and pre-column; Compatible with 1/8' and 1/16' packed column (using adapters); Supports P<(>&<)>T/TD/ by special adapter; Compatible with Merlin Microseal® septum
- 6. COLD ON COLUMN INJECTOR MODULE:** cold instantConnect On-Column module is based on the classic COC CE GROB injector series comprising:
- Direct injection
 - Merlin Microseal™ low maintenance septum
 - Continuous cooling of the injector body
 - Pre-Column with secondary cooling (secondary cooling).
 - Suitable for both manual introduction and automation via the sampler TriPlusRSH automatic
- The cold instantConnect On-Column module is supplied as standard to be installed in drawers dedicated to the injectors (right side of the Trace1300 GC).
- 7. CHROMELEON SINGLE EDITION (SE):** Workstation license enables control one Thermo Fisher Scientific instrument, including Instrument Controller, Class 1 Instrument license, Data Client, Instrument Operation, Report Designer Pro and Fraction Collection, license key.
- 8. GC TRAIN AND SUPPORT AT CUST SITE**

Responsabile dell'UO la Prof.ssa Antonella De Leonardis.

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