Di Distillation

Powered by icon

All icon products are…

Easy to use: with an intuitive glass touch-screen, wipe-clean graphic user interface with multi-language options.

Certified to global standards: ATEX, IECEx, ETL approved to give absolute confidence and peace of mind in hazardous areas and manufactured under an ISO9001:2008 certified Quality Management System.

Robust and fully explosion proof: no air or inert gas purging required for safe operation in explosion hazard areas.

Safety assured: with an alarm for internal sample leakage.

Flexible: with auto validation calibration options and standard modbus, 4-20mA and alarm contact outputs.

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What does it do?

The Distillation Analyser is used to measure individual boiling points or the boiling ranges of petroleum products from the light to middle distillate ranges.

The results obtained may be directly correlated to standard test methods such as ASTM D86, IP123 and ISO3405
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How does it work?

The unit works by carrying out a small scale distillation on 20 ml of sample under controlled conditions. A complete distillation is achieved in ten to fifteen minutes.

Why choose the icon scientific Distillation Analyser?

Rapid cycle time

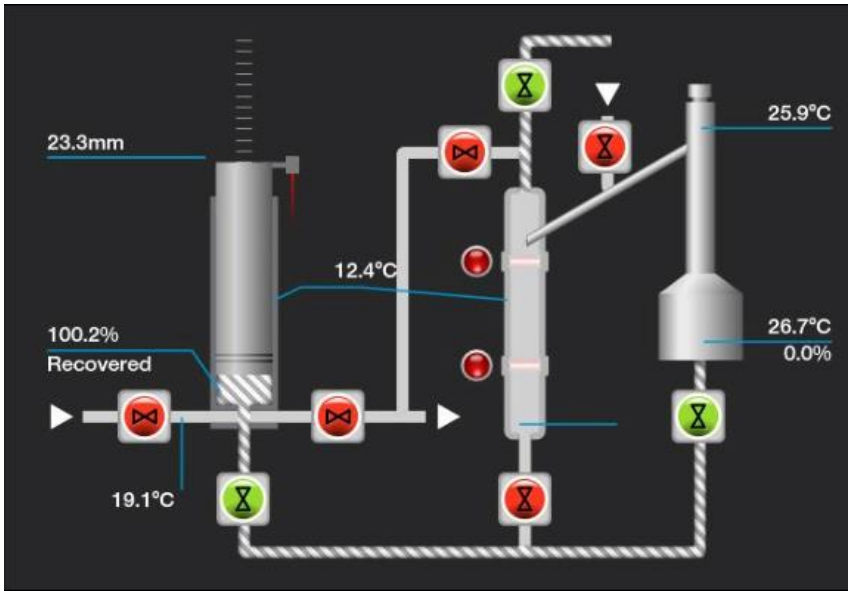
Rugged explosion proof construction: No purge gas required, analyser is rated to IP 67 suitable for installation in harsh environments.

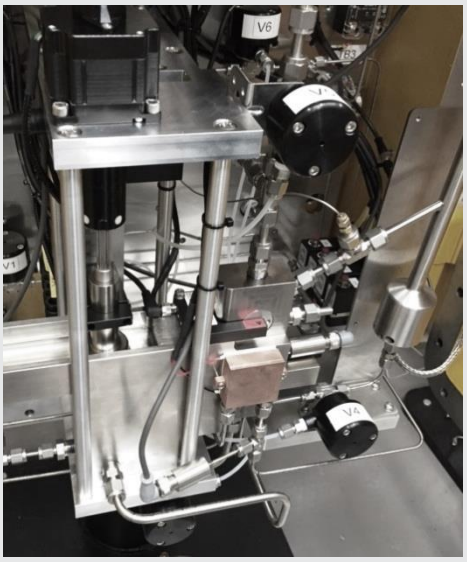
User friendly multi-language interface: Uses the same common PC system as all other icon analysers with user friendly 17" glass touchscreen graphic user interface with full size plotting of all parameters.

Auto validation/calibration: the analyser can be programmed to perform automatic validation or calibration on demand or on a timed basis.

Standard Modbus output: as well as 4-20mA outputs and alarm contacts the unit has a standard Modbus RS485 wired output (fibre optic optional) and LAN Ethernet connectivity.

Auto de coke: the analyser can be programmed to perform automatic de-coke cycle.





Specification

Measuring range	0 - 430°C
Repeatability	Within the repeatability criteria of the ASTM D86 test for the type of product under test and the measuring range.
Cycle Time	10-15 minutes dependent on method and sample type.

Sample Requirements

Filtration	Sample should be free from non-dissolved water and filtered to 10 microns
Sample Pressure at Inlet	3-5 bar(g)
Sample Pressure at Outlet	Atmospheric, continuous fall to sample return point.
Sample Temperature at Inlet	At least 15°C below expected initial boiling point.
Sample Consumption	Typically 10-30L/hr.
Vent	Atmospheric, continuous fall to vent point.

Utility Requirements

Instrument Air	Required for decoking 5 barg, 5-10 L/min
Coolant	3 - 5 barg, minimum differential pressure 2 bar, flowrate 10-20L/hr filtered to 70 microns. Temperature for ASTM group 1 samples ≤ 25°C For other ASTM groups ≤ 40°C
Power	115VAC 50Hz, 230VAC 50Hz 115VAC 60Hz, 230VAC 60Hz, Max 1000VA

Installation Requirements

Location	Unit must be located out of direct wind sun and rain
Ambient Temperature	+5 to +40ºC
Ambient Humidity	0-95% RH, non-condensing.

Control System

Control System	Based on fan-less industrial PC with solid state hard drive.
Graphical User Interface(GUI)	17” armoured glass touch-screen. The GUI is used to program the unit and display current and historical analyser results and alarm status.
Language	User selectable multi-language.

Inputs/Outputs

Analog Output	4 x 4-20ma active isolated outputs and 4 non-isolated outputs are provided as standard user configurable to be % recovered / evaporated at temperature or temperature at % recovered / evaporated including IBP and FBP.
Communications	Full distillation curve (1% steps) over Modbus RTU over RS-485 and/or Ethernet (TCP/IP) as Standard – fibre optic optional & OPC over RS-485 and/or Ethernet (TCP/IP) as Standard – fibre optic optional
Analog Inputs (optional)	The analyser can read in up to 4 active 0-10V or 4-20mA signals. These inputs may be displayed and the values can have alarm levels associated with them.
Digital (contacts) Inputs (optional)	The analyser can monitor up to four volt free external contacts. The contacts may be included in the alarm table.
Alarms	Any available alarm condition within the analyser may be allocated as active or inactive. Active alarms are notified on screen and stored in the alarm history table. Active alarms can be set by the user to activate a warning alarm contact or a fatal alarm contact. A warning alarm is for notification only while a fatal alarm causes the analyser to suspend its operation.
Digital (contacts) Outputs	In addition to the above Alarm contacts, the analyser also provides the following contact outputs; **New Result**: a 10 second contact to notify that a new analyser result is available. **Data Valid**: this contact will operate if the analyser is operating but the data is not valid because calibration or validation is in progress or the analyser is being run in manual mode. **Calibration/Validation**: indicates that the analyser is in calibration/validation. **Spill Alarm**: This contact will operate in the case of a leak being detected in the analyser enclosure. All contact ratings are 24VDC 0.5A, 230VAC, 1A

Certification

Hazardous Area Certification	The icon Distillation analyser is ATEX and IECEx certified suitable for zone 1 or zone 2 use in gas groupings of IIA, IIB or IIB+H2 with a variable T-rating depending upon application. Also ETL listed for the USA and Canada Class 1 Div1 Group C/D
IP Ratings	Tested and certified to IP67 (dust tight and protected from temporary total immersion in water). Classification broadly equivalent to NEMA 6

Dimensions & Weights

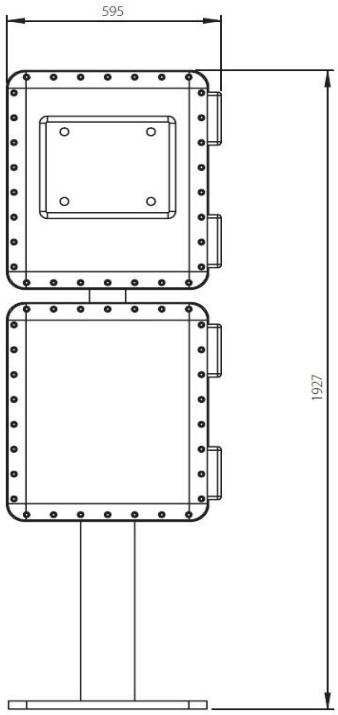
Notes:

All dimensions in mm

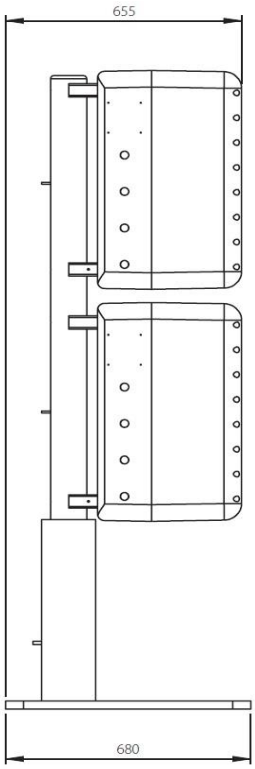
Unpacked weight approx. 418kg

Packed weight approx. 525kg

Front view



Side view



Note: *icon scientific products are subject to a program of continuous development and improvement and specifications are liable to change without notice. Please check that you have the latest information available before relying on any specification.* *V02 (01/2017)*