

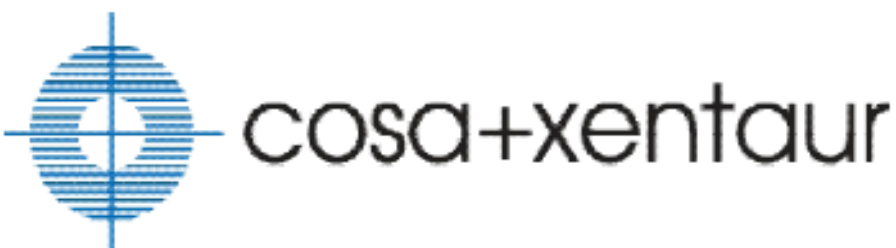
# Aspect AI-60 60 MHz High Resolution FT-NMR System for Laboratory, At-Line, and On-Line Applications

## Advantages

The Aspect AI-60's permanent magnet design requires no cryogenics as the system is powered by one standard wall outlet (110/220v). Samples can be run neat, in conventional protonated solvents, or, in deuterated NMR solvents. Deuterated solvents are not required. Probes accept standard 5 mm or 10 mm NMR tubes. Flow cell options are also available. Software operates under Windows® 7 or Windows® XP. Complete automation of all NMR tasks (Acquisition, Processing, Integration, Results Reporting) enable walk-up applications with minimum user training and/or experience. Spectral processing facilitates use of a variety of chemometric based routines for multiple property measurements.

## Specifications

Field Strength at 45°C	1.4 Tesla
Fringe Field	Less than 1 gauss Clear Bore Size 30 mm diameter
Operating Frequency	60.1± 1MHz <sup>1</sup> H 54.6 ± 1MHz <sup>19</sup> F 24.3 ± 1MHz <sup>31</sup> P
Dimensions (HxWxD)	37.5 x 22 x 24 inches 560 x 460 x 460 mm
Weight	~325 lbs ~160 Kg
Lab Probes	5 mm, 10 mm, and, Flow Through
Non-Spin Resolution	Less than 4 Hz at half height and less than 20 Hz at 1/10 height
Line Shape (5 mm)	Less than 80 Hz at the average peak height of <sup>13</sup> C satellites (0.55%)
<sup>1</sup> H Sensitivity	>25:1 (S/N), 1 pulse, 1% ethyl- benzene (CH <sub>3</sub> ) in CDCl <sub>3</sub>
<sup>1</sup> H Pulse	<20 µsec 90° flip angle at 7 watt RF power for 5mm probe (Q of 150)



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# 3<sup>rd</sup> Generation Process NMR Systems



Features	3 <sup>rd</sup> Generation	Advantages & Benefits
<b>Magnet</b> Weight & Size Field strength Bore size Mechanical	170Kg; 40 x 40 x 45 cm 1.47 Tesla (60Mhz for H+) 30mm to 34mm 10 pieces	Improvement in the mechanical structure and enhances the overall magnet stability. Better temperature insulation between magnet and the process probe.
<b>Process Probe</b>	Plain Ceramic pipe	Minimize heat transfer between samples and magnet. Better temperature insulation. Increased reliability and robustness. Higher Q (better SNR)
<b>Shim Coils</b>	2 PC boards contain 40 copper coils, fit together as a SHIM cassette	Standardize location of the shim coils. Additional thermal insulation. Easy replacement of the SHIM cassette. Elimination of cables & soldering.
<b>Hardware</b>	3 Electronic units Minimal wiring	Increased reliability. Overall small foot-print.
<b>Software</b>	Windows XP or 7;	New algorithm for standard Models. Fully automated process capacity. Extensive remote diagnostic capabilities.
<b>Temperature Susceptibility</b> Environment Fluctuations between streams	Must be within : $\pm 3^{\circ}\text{C}$ Should not exceed : $\pm 10^{\circ}\text{C}$	Enables the analyzer to be applied to any stream, notwithstanding the temperature differences between them. Simpler Sampling System.