

GC Engineered Solutions

Detailed Hydrocarbon Analyzer Model 4050 and 4050x



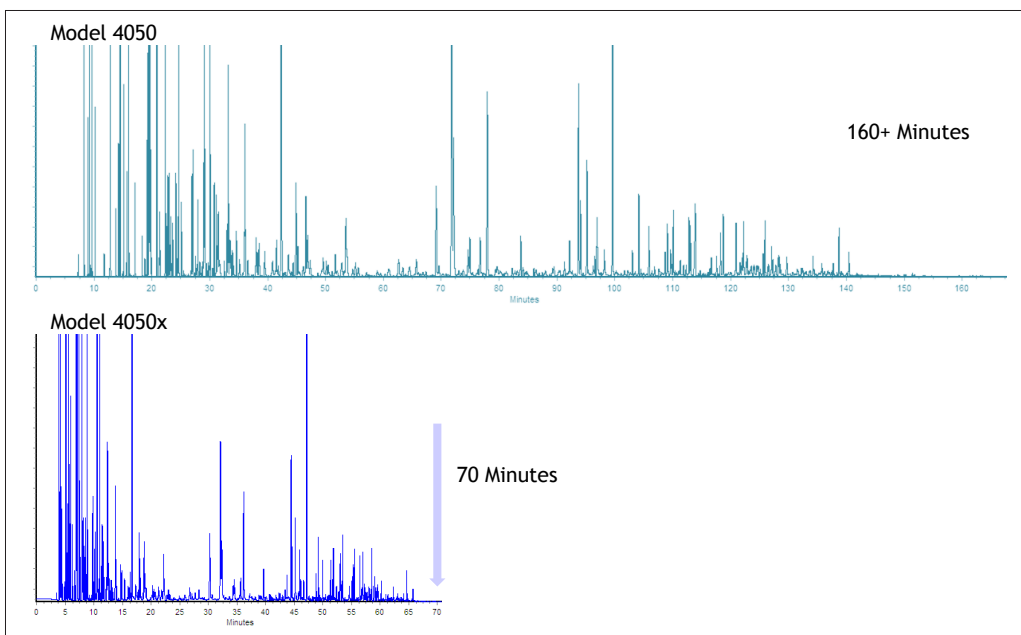
The Model 4050 Detailed Hydrocarbon Analyzer provides a complete analysis of petroleum products in the range of gasoline through high-efficiency gas chromatography. Using a convenient graphical interface, the software provides a one-screen display to visually observe the chromatogram and manipulate the data calculation in order to obtain the optimum results for analysis and data presentation.

The Model 4050x uses hydrogen carrier gas instead of helium to cut the analysis time to 90 minutes for higher sample throughput, and to reduce helium consumption.

The Detailed Hydrocarbon Analyzer software uses PKI Dragon DHA® software which is fully integrated with PerkinElmer's TotalChrom® Workstation.

Key Features

- Meets: ASTM Methods D5134, D6729, D6730 and D6733
- Quick database creation
- Fast peak identification and results processing
- "Unknowns" tab lists unidentified peaks in order of concentration
- "Unknown" indexer takes the user directly to the unknown peak for manual identification
- Unique dashboard feature continuously presents the user with all calculated results; results are instantly recalculated when changes are made
- Hydrocarbon group-type filtering
- Full preview/printing of reports
- Results are 'bound' with the chromatographic data for instant retrieval/archiving
- Original files and data are never effected (CFR Part 11/ISO 17025)
- Result files are saved as CDF (AIA) format files and can be accessed by any third-party application that supports reading the AIA file format
- Result files work as fully functional reference databases
- Full reports are stored with results for easy retrieval without reprocessing
- Support for component databases to C26 and beyond (extended and biodiesel analyses)
- Support for automated post-acquisition reporting and transfer to LIMS
- Formula creation for expanded reporting
- Post-run application links to extend functionality
- Built-in chemical and physical property calculations (see sample report):
 - Vapor pressure
 - Oxygenate content
 - Relative density
 - Average molecular weight
 - Calculated motor octane number
 - Calculated research octane number
 - % carbon, % hydrogen
 - Calculated bromine number
 - Mass% and Vol% multisubstituted ring aromatics
 - TBP boiling-point distribution
 - Wt%, Vol%, Mole% of types by carbon number
 - Wt%, Vol%, Mole% of individual components



DHA analysis for Models 4050 and 4050x

| SUMMARY REPORT | | | |
|-----------------|--------------|-------------|-------------|
| Group Type | Total(Mass%) | Total(Vol%) | Total(Mol%) |
| Paraffins: | 15.4462 | 16.4896 | 13.8046 |
| I-Paraffins: | 31.5880 | 34.2184 | 30.0676 |
| Olefins: | 7.0447 | 7.7235 | 8.5280 |
| Napthenes: | 11.9517 | 11.4859 | 10.8095 |
| Aromatics: | 22.5233 | 19.0596 | 19.4507 |
| Total C14+: | 1.7309 | 1.6800 | 0.8434 |
| Total Unknowns: | 1.1214 | 1.1861 | 0.7719 |

Oxygenates:

| | | |
|-----------------------|---------------|--------------|
| Total: | 8.5937(Mass%) | 8.1569(Vol%) |
| Total Oxygen Content: | 2.6023(Mass%) | |

Multisubstituted Aromatics: 14.6200(Mass%) 12.4340(Vol%)

Average Molecular Weight: 88.3672

Relative Density: 0.6768

Reid Vapor Pressure @ 100F: 7.2000

Calculated Octane Number: 80.4

Motor Octane Number (Jenkins Calculation): 74.2

| | IBP | T10 | T50 | T90 | FBP |
|--------------------|-------|-------|--------|--------|--------|
| BP by Mass (Deg F) | 68.09 | 97.41 | 240.10 | 354.51 | 488.66 |
| BP by Vol (Deg F) | 38.70 | 96.91 | 231.13 | 349.02 | 488.66 |

Percent Carbon: 84.0425 Percent Hydrogen: 13.3551

Bromine Number (Calc): 13.5122

Page 1 of a more than 30 page report generated by the PKI Dragon Software

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