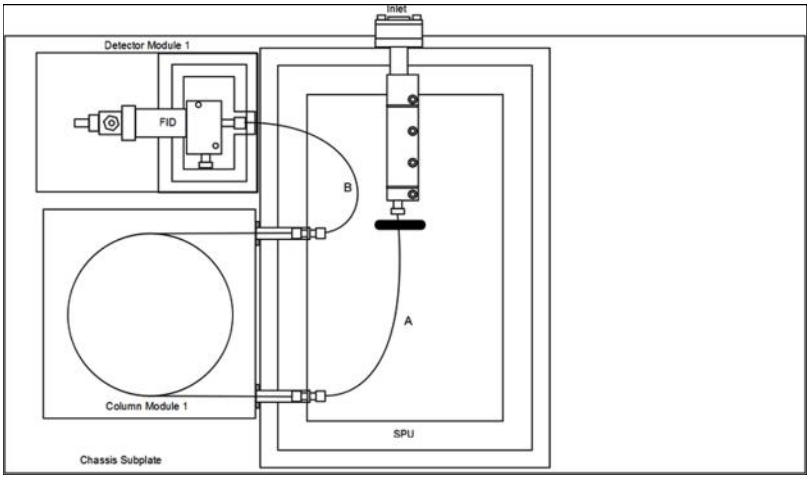
Application Note:

CALIDUS™ 101 HT microGC Ultra Fast ASTM D2887 SimDist Application November 2012

SimDist GC analysis for liquid fuels and fuel component characterization by boiling range distribution including gasoline range organics up through gas oil and even crude oil, i.e. analysis for hydrocarbons to C_{50} – in less than five minutes.

Figure 1: CALIDUS Model 101 – HT Functional Diagram .



Application Overview **(Reference Figure 1)**

The Sample Processing Module with a standard split/splitless injection port, incorporating either a syringe through septum injection, Auto Sampler, or automated liquid sample valve delivers the sample to a Programmed Temperature Column Module (PTCM). The inlet includes septum purge to prevent bleed components from entering the system.

The PTCM is controlled by the method. It contains a MXT-1 High Temperature Resistively Heated Stainless Steel Capillary Column and is operated in a temperature programmed mode. The column provides the separation of the hydrocarbons in the liquid fuel sample.

(See Figures 2 & 3)

Figure 2: Chromatogram of the Reference Gas Oil Obtained with Ultrafast Chromatograph.

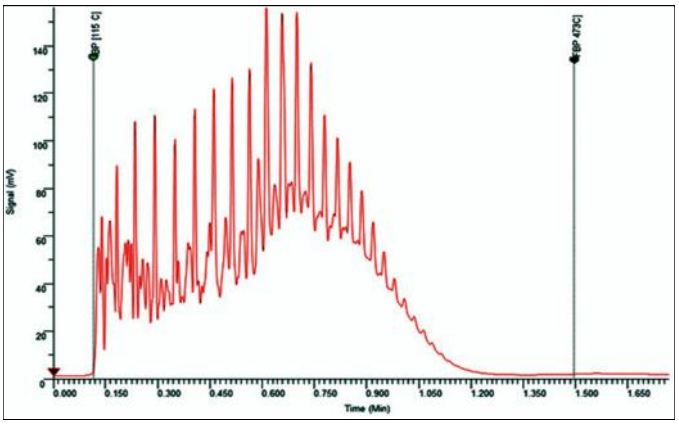


Figure 3: Blank, RT Standard & Gas Oil Overlaid. Run Time 84 Seconds.

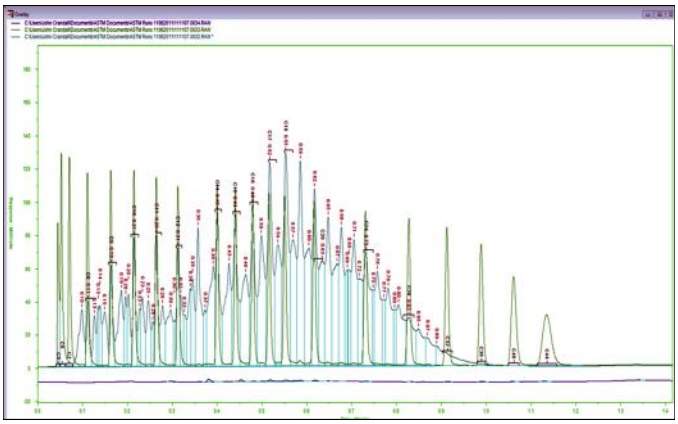
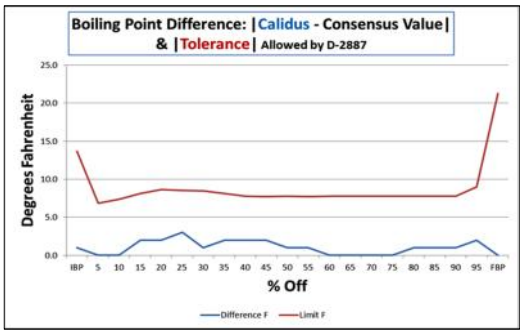


Figure 5: Absolute Values of Difference from the Consensus Values (Red is the D-2887 Tolerance)



Major Analytical Advantages

Fastest analysis time in the industry for ASTM D2887 with excellent performance and reliability.

Incorporates patent pending Resistively Heated Stainless Steel Capillary Column Module and its thermal management system, resulting in a paradigm shift in GC analysis.

One of the most durable, compact and transportable analytical solutions for Ultra Fast D2887 method (43 cm L X 21.5 cm D X 27.9 cm W, wt. 9.07 kg).

Pending ASTM Ultra Fast D2887 Method.

Area normalization and Line-Up account for sample syringe volume and any retention time variance, providing more repeatable data results.

The analyzer includes ChromPerfect chromatography data system, fully integrated, with Line-Up and SimDist 2000 running on a Windows PC for liquid hydrocarbon characterization by boiling range and reports defined by the pending ASTM Ultra Fast D2887 method.

(See Figures 4, 5 & 6)

Figure 4: SimDis 2000 2887 Report Chromatogram w/ BP Curve & Blank Chromatogram Overlaid. Selected BP Data Shown in Table.

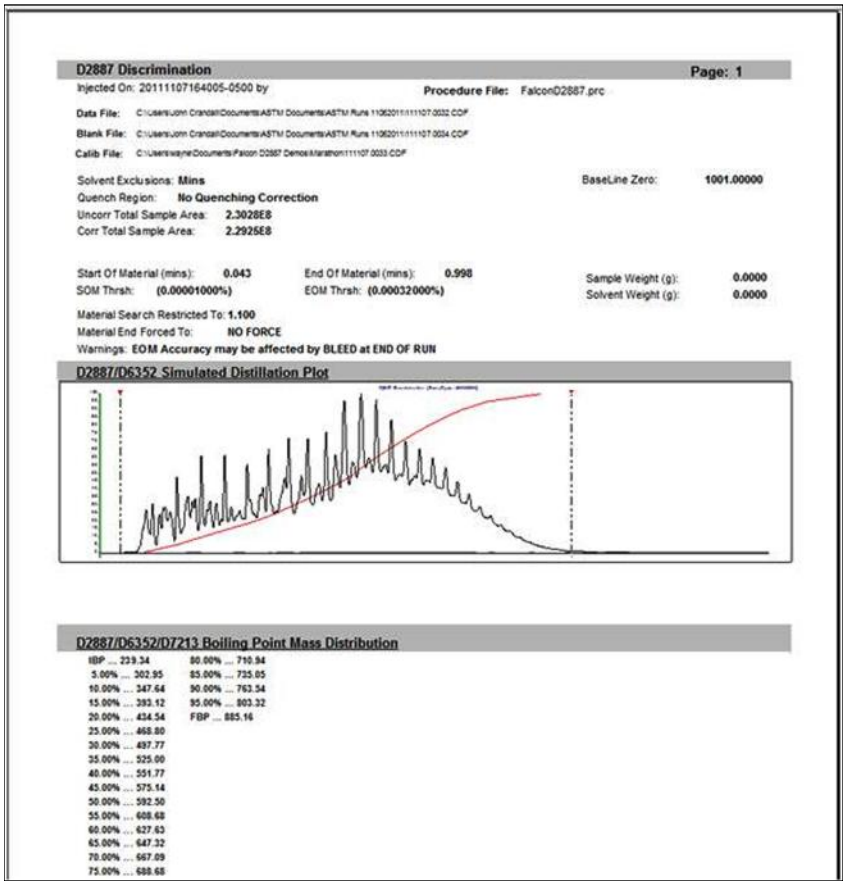


Figure 6: Chrom Perfect Setpoint Files Define GC Operations. Method Files Define System Controls.