

Detailed Analysis of fuel (gasoline, diesel, and jet fuel) with a **SINGLE ANALYZER!**

- **Liquid Type:** fuel, lubricant, solvent (including water)...
- **Fuel Type:** diesel, gasoline, jet, biodiesel, synthetics...
- **Contaminants:** lubricants, solvents, adulterants (sodium silicate), comingled fuels (specifically biodiesel)...
- **Critical Properties:** cetane index, density, sulfur, viscosity, cloud point, flash point, and distillation points
- **Additional Properties:** freeze and pour points, acid number, dissolved water, percent aromatics, olefins, saturates, and FSII

Based on these results the *Portable Fuel Analyzer* determines if a liquid can be used in ground equipment and vehicles.



The *Portable Fuel Analyzer* is field usable:

- No Sample Preparation
- 1 Minute Start-up
- 20 second Measurement
- Easy-to-Use (4 step operation)
- Portable (30 pounds)
- Battery Operated (3 hours)
- Vibration & Spill Resistant
- Drop Tested
- Operates -4 to 110 °F

Validated by Southwest Research Institute

Portable Fuel Analyzer

The *Portable Fuel Analyzer* is as easy to use.

START-UP INSTRUCTIONS

1. Check Battery and Temperature (will not operate outside -4 to 110 °F)
2. Press Main Power Switch
3. Turn ON Computer
4. Follow Instructions on Computer Touch Screen

Follow Instructions:

MAIN

1. Fill Sample Vial

2. Place Vial in SAMPLE HOLDER

3. Press 'Begin Analysis'

Buttons: Begin Analysis, Show Properties, Help, Shutdown PFA

Status: Ready for Next Sample or Shutdown

Fill Sample Vial



Place Vial in Sample Holder



Press Begin Analysis & Read Results:

Green = Good Fuel (GO)

MAIN

Suitable For Use As

Fuel Type: DL-2

Buttons: Begin Analysis, Show Properties, Help, Shutdown PFA

Status: Ready for Next Sample or Shutdown

Red = Bad Fuel (NO GO)

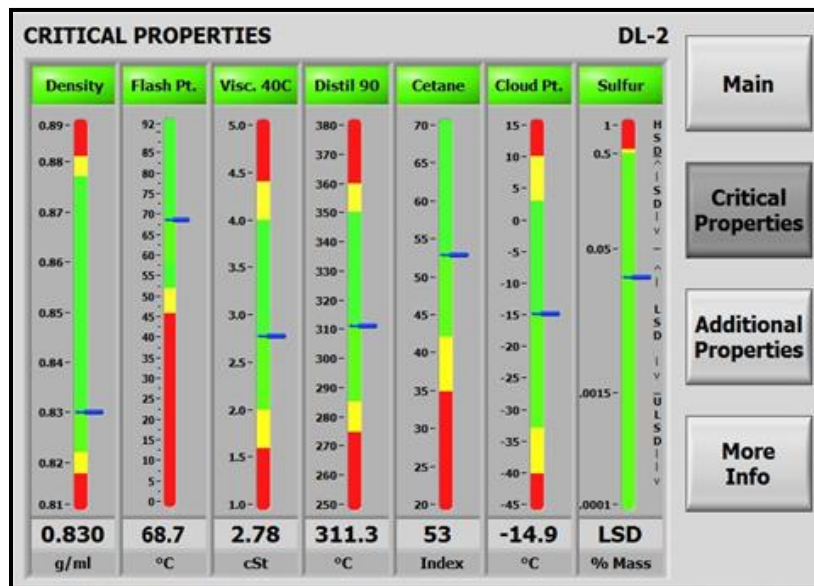
MAIN

DO NOT USE!

Fuel Type: DL-2 Contaminated

Buttons: Begin Analysis, Show Properties, Help, Shutdown PFA

Status: Ready



The Show Properties button allows viewing the 7 Critical Properties that determine if a fuel can be used. The acceptable range is green, marginal range is yellow, and unacceptable range is red. Additional Properties are also available. If a sample is rejected, as much information as possible is be provided, such as sample type, fuel type, contaminant type.

Portable Fuel Analyzer

Specification	Portable Fuel Analyzer	
Analyzer Type	Dispersive Raman Spectrometer with 1064 nm laser	
Detector	256 pixel InGaAs (thermo-electrically cooled)	
Spectral Resolution	23 to 14 cm ⁻¹ (250 to 1850 cm ⁻¹)	
Spectral Range	250 to 1850 cm ⁻¹	
Warm-up/Analysis Time	60 / 20 seconds	
Dimensions	22.06 x 17.93 x 10.43" (56 x 45.5 x 26.5 cm)	
Weight	30 lbs (13.6 kg), Man Portable per MIL-STD 1472	
Power Supply	2557/U Battery (28.8V Li ion- 3 hours)	
Back-up Power Supply	24 VDC or 120/240 VAC (50/60Hz)	
	Computer	
CPU	AMREL Rock DB6	
Hard Disk Drive/Memory	32 GB SSD / 2 GB DDR 533 MHz	
Data Access	USB Port	
Display	5.0" (800 x 480) Sunlight readable LED Backlit	
	Software	
Name	Fuel Analysis	
OS Supported	Windows 7	
Data Export	Various formats supported	
Critical Properties	Analysis (Limit or Range & Error)	
* Validated by SWRI		
Cetane Index*	Diesel-2 40 ± 2.4 °C, minimum	JP-5 or JP-8 Does not apply
Cloud Point*	-5 to -35 ± 4.5 °C (>6 °C<ambient)	Does not apply
Density*	0.82 to 0.86 ± 0.0055 g/mL	0.775 to 0.845 ± 0.003 g/mL
Distillation*	282 to 338 ± 9.5 °C @ 90%	300 ± 10.5, maximum @ 100%
Flash Point*	52 ± 6 °C, minimum	38 (JP-5:60) ± 6 °C, minimum
Viscosity*	1.9 to 4.1 ± 0.30 cSt @ 40 °C	8.5 ± 0.32 cSt, maximum @ -20 °C
Sulfur	0.5 ± 0.05 % mass, maximum	0.3 ± 0.05 % mass, maximum
Additional Properties	** Unspecified Range	
Aromatics	35 ± 3.4 % volume, maximum	25 ± 3.4 % volume, maximum
Olefins & Saturates	± 3 (10 and 70, typical)**	Does not apply
Pour Point	Regional ± 6.8 °C	Regional ± 6.8 °C
Acid Number	Does not apply	0.015±0.08 mg KOH/g, maximum
Lubricity	0.52 ± 0.05 scar/mm, maximum	Unspecified ± 0.07 scar/mm
Net Heat	Does not apply	42.8 ± 0.46 MJ/kg/min
Freeze Point	Does not apply	-47 ± 2.5 °C, maximum
	Environmental	
Operation Temperature	-4 to 110 °F (-20 to 43 °C)	
Storage Temperature	-40 to 140 °F (-40new to 60 °C)	
Humidity	Operates at up to 95 % relative humidity	
Vibration	Certified: MIL-STD 810G, Vibration 514.5, Category 4, C.2:	
Shock	Composite Wheeled Vehicles – Restrained Cargo International Safe Transit Association – ASTM D 5276	