

# Introducing the world's first **Winter Fuel Optimizer**

Precise

Affordable

Easy  
to use



Blending  
guide

Test result  
in 3 minutes

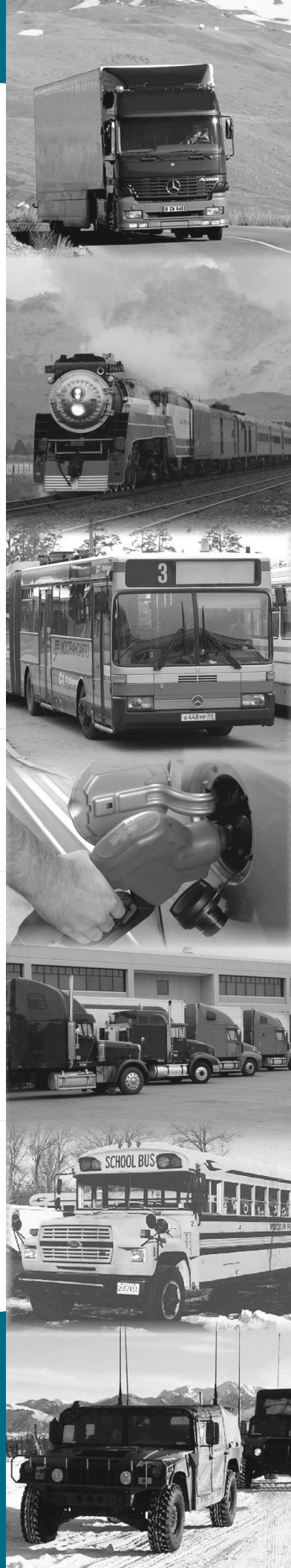
Portable

Touch-sensitive  
input panel

## **Cloud Point Analyzer**

**Model CPA-T30**

 **PHASE  
TECHNOLOGY**  
*Innovations in phase analysis solutions*



# COMPANY PROFILE

Phase Technology is the world leader in the design and manufacture of cold flow property instruments for petroleum products.

With a design based on 26 patents plus 2 patents in pending, Phase Technology's testing methods are compliant with all major petroleum industry standards and military specifications of the U.S., U.K. and NATO.

In the petroleum refining sector, Phase Technology analyzers are installed in almost every refinery in North America. Our cloud point analyzers are instruments of choice for certifying fuels in refineries worldwide.

Phase Technology attributes this success to proactive industry participation, ongoing product innovations and strong after-sale support.



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## WHAT IS CLOUD POINT?

Cloud Point is the temperature at which waxy solids first appear during cooling of diesel fuel. Keeping diesel fuel at cloud point over an extended period of time or cooling the fuel further will result in more extensive formation of wax solids.

Since fuel filters are vulnerable to plugging below this critical temperature, cloud point is the "fail-safe" operability standard adopted by the petroleum industry. It is also the primary cold flow property recommended by the Engine Manufacturers Association, the American Trucking Association and Filter Manufacturers Council.

## FUEL GELLING CHALLENGES

During the cold winter months, commercial trucks, automobiles, and buses may encounter diesel fuel gelling problems. Such problems often present themselves when unseasonably low ambient temperature occurs. It may also happen to long-haul trucks that travel from warm to cold regions where on-board fuel purchased in the warm region may not be adequate for cold temperatures.

While diesel supplies in most regions of the world are seasonally adjusted to meet regional weather requirements, these adjustments are based on historical records of normal climatic pattern. They cannot fully account for or anticipate abnormal weather situations. In the event of a "cold snap", it may take several days for the properly adjusted fuel to reach the end users, especially if long-distance pipelining is involved.

On the other hand, unscheduled vehicle downtime is unacceptable as it affects the reliability of freight fleets and the availability of critical services such as buses and emergency vehicles. In order to prevent any potential downtime, certain costly and time consuming preventive measures are routinely employed. They include blending diesel with kerosene (#1 diesel), use of additives, prolonged idling and frequent refueling. These practices are often executed blindly without the knowledge of the fuel cloud point, resulting in either under or over estimating the need to respond. While under-estimation leads to inoperable vehicles, over-reaction leads to excessive fuel costs, air pollution and productivity loss.

With precise cloud point information, preventive actions are often avoided completely. When such actions are needed, a cloud point measurement provides a reliable confirmation of the remedy. It eliminates all guesswork from winter fuelling.

Phase Technology is proud to introduce the world's most precise portable cloud point analyzer for automotive applications. It is specifically designed to address the needs of truck fleets and fuel suppliers.

# PRODUCT HIGHLIGHT

Features of Phase Technology's new Portable Cloud Point Analyzer, CPA - T30

- Fast
- Precise
- Easy to use
- Reliable
- Rugged
- Compact
- Light weight



Blending ratios are available based of measured cloud point values.



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## PRODUCT APPLICATIONS

The portable analyzer will provide fleet managers, fuel wholesalers, retailers, and service technicians with accurate information on the cold flow operability of their diesel fuels, biodiesels and heating oils.

### Applications:

- Blending of #1 and #2 diesel fuels for winter operation
- Optimize the use of cold flow additives
- Blending of biodiesels with petroleum stocks

### Features:

- An accurate indication on whether any preventive measure is needed to avoid cold flow problems
- A guide to blend #1 and #2 diesel fuels to meet weather requirements
- A guide to optimize the use of cold flow additives; knowing when and when not to use additives

### Benefits:

- Fuel cost reduction. Proper blending ratio reduces the use of #1 diesel, which is more costly in terms of price, energy content and maintenance (lower lubricity)
- Additive optimizer. To fleet operators, cold flow additive is a cost item. Adding sufficient amount, if required, to meet current weather conditions without overdosing improves the company's bottom line
- Downtime prevention. Accurate cloud point information prevents fuel gelling problems due to cold temperatures. In a "just in time" trucking industry, the benefit of eliminating downtime can make the difference between success and failure of delivery contracts
- Fuel quality monitor. Cloud point results can be used to track fuel quality from various suppliers
- Peace of mind. Accurate fuel cloud point assures the drivers that their diesel fuels meet the requirements of anticipated weather conditions
- Idling reduction. Accurate cloud point data will allow drivers to make informed decisions on whether idling or heating is needed to prevent fuel gelling, ultimately reducing the need for idling and fuel heating
- Exceptional payback period. The cloud point analyzer can pay for itself in just one winter

# GLOBAL CLIENTS

Phase Technology continues to advance their proprietary technologies for greater return on investment for their customers. To name a few, our global customers include:

BP  
ChevronTexaco  
Citgo  
ConocoPhillips  
Flying J  
ExxonMobil  
Petro-Canada  
Shell  
Sunoco  
Valero

Castrol  
Pennzoil-Quaker  
State  
Prestone  
Valvoline

BNSF Railways  
Boeing  
Mercedes-Benz  
Continental Airlines  
Northwest Airlines  
United Airlines

U.S. Air Force  
U.S. Army  
U.S. Navy  
U.S. National Guard  
FAA



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## SIMPLE TO USE

1. Put a cup under the Drain Port in the front recessed area to recover sample waste.
2. Fill a new syringe with 10 mL of fuel sample.
3. Firmly fit the syringe tip into the Injection Port and discharge the entire sample into the analyzer.
4. Touch the "START TEST" button on the display screen.
  - a. The analyzer will do the test automatically.
  - b. Cloud point result will appear in a few minutes.
5. Dispose the syringe safely. Sample in the drain cup is unspoiled by the test and can be used as fuel.



## PAYBACK CALCULATION

The following table shows the payback of your investment in a CPA-T30 in terms of total fuel consumption of your fleet. The red column lists the fuel blending savings. For example, if your normal practice is to blend 50% #1 diesel with #2 diesel on cold winter days. While the CPA-T30 indicates a blend ratio of 20% #1 diesel and 80% #2 diesel is sufficient, then your blend ratio savings is 50% - 20% = 30%. Use this number to select the row in the payback table. The next step is to find out the price difference between #1 and #2 diesels. Use that price difference to select the column in the payback table. The payback number is the table entry where the previously selected row and column intersect. This number is the total gallons of fuel your fleet has to consume to payback for your \$3,000 investment of a CPA-T30, assuming the price of the CPA-T30 is \$3,000.

### PAYBACK LOOKUP TABLE\* (in gallons of fuel consumption)

Blend Ratio	-----Price difference between #1 and #2 diesels-----			
	Savings 5¢/gallon	10¢/gallon	15¢/gallon	20¢/gallon
10%	600,000	300,000	200,000	150,000
20%	300,000	150,000	100,000	75,000
30%	200,000	100,000	66,667	50,000
40%	150,000	75,000	50,000	37,500
50%	120,000	60,000	40,000	30,000

\* Other payback models such as additive and fuel energy optimization are available upon request.

## PRODUCT SPECIFICATIONS

CLOUD POINT	OPERATIONAL	ELECTRICAL
Precision: Within 1°C (1.8°F) of ASTM D-5773 and D-2500 Minimum sample temperature: -40°C/F	Sample size: 10 mL Test duration: 3 min. Operator time: 0.5 min.	100 - 240 VAC 50 - 60 Hz or 12 VDC input

OUTPUTS	PHYSICAL	OPTIONS
<b>Analyzer Display:</b> Test results Run history Blend formulation	<b>Weight:</b> 1.3 kg (3 lbs.) <b>Dimensions:</b> W x H x D 25 x 14 x 13 cm 10.0 x 5.5 x 5.0"	Rechargeable battery Cigarette lighter adaptor