icountLCM20

Features & Benefits

Test time:	2 minutes
Particle counts:	MTD 4+, 6+, 14+, 21+, 38+ and 70+ microns(c) ACFTD 2+, 5+, 15+, 25+, 50+ and 100+ microns
International codes:	ISO 7-22, NAS 0-12
Data retrieval:	Memory access gives test search facility
Max. working pressure:	6000 psi (420 bar)
Max. flow rate:	106 GPM when used with system 20 Sensors. Higher with single point sampler
Working conditions:	LCM will operate with the system working normally
Computer compatibility:	Interface via RS232 connection @ 9600 baud rate.

- Special 'diagnostics' are incorporated into the icountLCM microprocessor control to ensure effective testing.
- Routine contamination monitoring of oil systems with icountLCM saves time and saves money.
- Contamination monitoring is now possible during application operation - icountLCM saves on production downtime.
- Data entry allows individual equipment test log details to be recorded.
- Data retrieval of test results from memory via hand set display.
- Automatic test cycle logging of up to 300 tests can be selected via hand set display.
- Totally portable, can be used as easily in the field as in the laboratory.
- Automatic calibration reminder.
- Instant, accurate results achieved with a 2 minute test cycle.
- Data entry allows individual equipment footprint record.
- Data graphing selectable via the integral printer.
- Auto 300-test cycle logging via LCD handset input.
- RS232 to USB computer interface.
- Limit level output to control peripheral equipment such as off-line filtration via internal relay limit switches.
- Auto-testing allows for the conducting of automatic sequencing tests on flushing systems for example.
- Optional bar code swipe wand to allow handset data loading.
- Worldwide service and technical support.
- Re-calibration - Annual certification by an approved Parker Service Center.

Typical Applications

- Construction machinery
- Industrial plant
- Hydraulic equipment & system manufacturers
- Research & testing institutes
- Offshore & power generation
- Marine
- Military equipment applications

icountLCM20
Specifications

Automatic Particle Counters (APC), have been widely used for many years in condition monitoring of hydraulic fluids. However, it is only recently that APCs have become flexible enough to enable the instruments to be taken out of the laboratory and used on-line in order to obtain the most credible form of results.

Unusually, the move from fixed laboratory use, to portable field use has not been at the expense of accuracy or user flexibility, but has actually enabled the instruments to be used over a wider range of applications and situations.

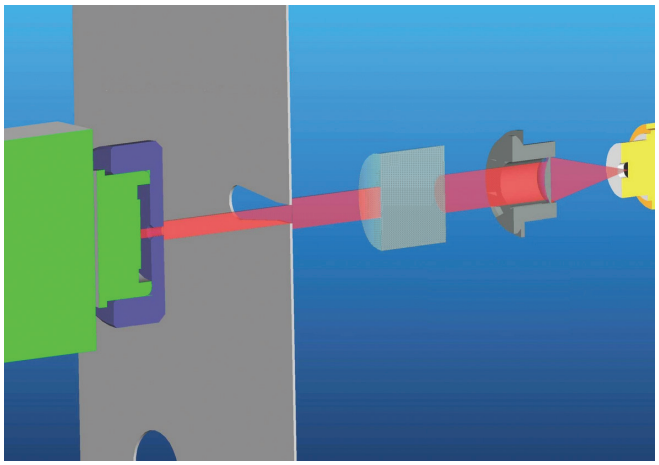
The most common monitoring technique used in APCs is that of light obscuration or light blockage. Here, a focused light source is projected through a moving column of oil, (in which the contaminants being measured are contained), causing an image of the contaminant to be projected on to a photo diode cell, (changing light intensity to an electrical output).

The electrical output of the photo diode cell will vary in accordance with the size of the particles contained in the column of oil; the larger the particle, the bigger the change in the photo diode electrical output.

On-line APCs must be able to test the oil sample at whatever cleanliness it is delivered to the machine. Parker therefore had to develop technology to ensure the on-line APC was able to test a sample without the conventional laboratory technique which requires dilution - a practice that would have been simply impossible with a portable unit.

By careful design and window sizing, 40,000 particles per ml can be achieved without making the instrument susceptible to counter saturation.

A focused light source is projected through a moving column of oil.



Laser Optical Sensing

icountLCM Proven Core technology

The icountLCM portable particle counter features microprocessor controlled optical scanning for accurate contaminant measurement with a calibration range from ISO 7 to ISO 22 with no counter saturation.

How does icountLCM work?

- The particles are measured by a photo diode that converts light intensity to a voltage output which is recorded against time.
- As the particle moves across the window the amount of light lost is proportional to the size of the particle. This reduction in voltage is measured and recorded.
- This “voltage” lost relates directly to the area of the particle measured, is changed into a “positive” voltage and then in turn changed into a capacitance value.
- This value is counted and stored in the icountLCM computer in one of 6 channels according to particle size.
- Readouts are displayed on the hand-held LCD in the accepted ISO and NAS standards ready for hard copy printing or RS232 computer download.
- The on-board computer allows storage of up to 300 test results.

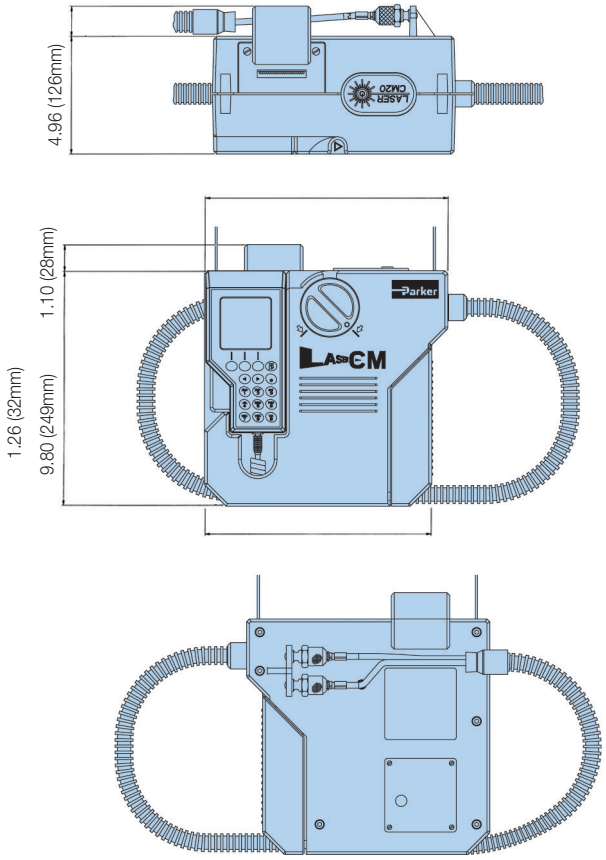
icountLCM20

Portable Particle Counter

Specification

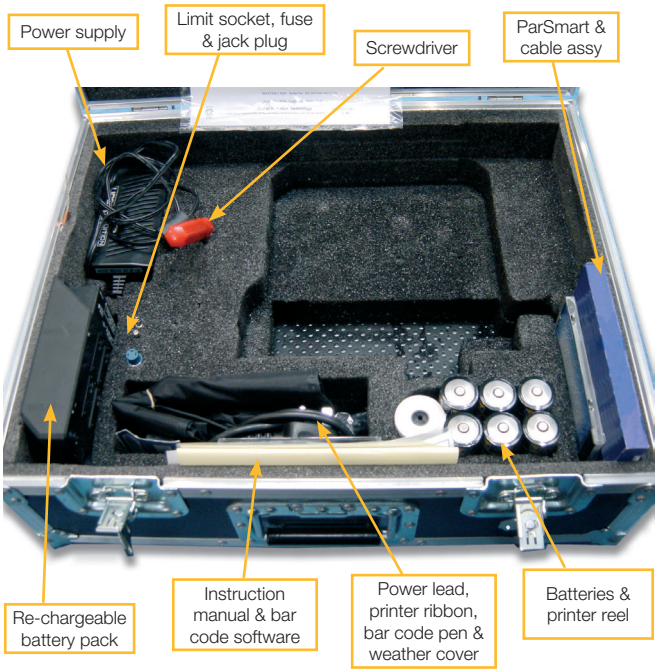
Description	LaserCM (LCM20 20 22)	LaserCM (LCM20 20 62)
ABS structural foam and injection moulded case	●	●
ABS handheld display	●	●
Mechanical composition – Brass, plated steel, stainless steel and aluminium	●	●
Fluorocarbon seals	●	
Perfluoroelastomer seals		●
Nylon hoses (kevlar braided microbore)	●	●
Stainless steel armoured hose ends	●	●
1.2m fluid connection hose	●	●
Rechargeable battery pack	●	●
12Vdc power supply	●	●
Fast blow fuse	●	●
Unique optical scanning system	●	●
Bonded glass optical window enclosed in SS plate	●	●
Micron channels analysis (Six)	●	●
Analysis range ISO 7 to 22 incl. (NAS 0 to 12)	●	●
32 character dot matrix LCD. Alpha numeric keypad	●	●
Data retrieval	●	●
Calibration to ISO standards*	●	●
Viscosity range 2 to 100 cSt. 500 cSt.with SPS	●	●
Operating temp. 41°F to 176°F (+5°C to +80°C)	●	●
Ambient temp. 41°F to 104°F (+5°C to +40°C)	●	●
2 minute test completion time	●	●
Memory store – 300 test memory	●	●
Battery operated 6 x 1.5 D cells	●	●
Phosphate Ester group compatibility		●
Mineral oil & petroleum based fluid compatibility	●	●
Up to 420 bar (6000 psi)	●	●
Integral 16 column printer	●	●
RS232 to USB computer interface	●	●
Astra board case weight – (lb.)	11	11
Unit weight – (lb.)	17.6	17.6
ParSmart software and cable link pack	●	●
Weather protector cover	●	
CE certified	●	●
Auto logging	●	●

*Note: In compliance with international standards, all Parker portable particle counters can meet the ISO Medium test dust standards. The icountLCM's, in addition to the complete range of Condition Monitoring products, are capable of achieving certification to ISO 4406:1999 and with traceability to ISO 11171 for SRM 2806, via ISO 11943.



dimensions in inch (mm)

Accessory Kit for icountLCM Classic



icountLCM20

Portable Particle Counter

Why On-Site Fluid Contamination Monitoring?

- Certification of fluid cleanliness levels.
- Early warning instrument to help prevent catastrophic failure in critical systems.
- Immediate results with laboratory accuracy.
- To comply with customer cleanliness requirements and specifications.
- New equipment warranty compliance.
- New oil cleanliness testing.

Data Download Management

Dedicated software, provides the link between an icountLCM20 and your computer management system.

16-column printer for hard copy data. A feature of the icountLCM is the on-board printout data graphing option developed to support predictive maintenance procedures.

icountLCM Test

ON LINE TEST

TEST NUMBER 022

	D M Y
Date	04-03-10
Time	15-52
ISO:	20/15/09

Count / 100ml

>4µ (c)	820721
>6µ (c)	31564
>14µ (c)	314
>21µ (c)	64
>38µ (c)	14
>70µ (c)	0

NOTES

ISO 4406 - 1999

icountLCM Test

ON LINE TEST

TEST NUMBER 022

	D M Y
Date	04-03-10
Time	15-52
NAS CLASS:	7

Count / 100ml

4/6µ (c)	789157
6/14µ (c)	31250
NAS CLASS	7
14/21µ (c)	250
NAS CLASS	3
21/38µ (c)	50
NAS CLASS	3
38/70µ (c)	14
NAS CLASS	4
>70µ (c)	0
NAS CLASS	0

NOTES

Correlation to NAS 1638

icountLCM20

Portable Particle Counter

Introducing the new icountLCM ‘Classic’

There is a new addition to the proven range – the icountLCM ‘Classic’. Only available from Parker, the ‘Classic’ retains all the technology that made the icountLCM one of the most accurate, reliable and popular portable particle counters available.

Our design engineers have re-configured the icountLCM specification in a way that has reduced our manufacturing costs. These savings have been passed onto icountLCM ‘Classic’ customers.

How have we done this?

Parker listened to our existing customers and then to the engineers and maintenance operatives to find out the features that make the icountLCM a unique predictive maintenance instrument.

Then, we removed peripheral items such as the aluminium case and all the accessories, so a customer receives the icountLCM, with a CD user guide, professionally and securely boxed. One thing that has not altered is the icountLCM accuracy and icountLCM reliability. Our in-house software engineers have re-configured the EPROM, removing Data programming, User ID, Automatic Testing, Data retrieval, Alarm level settings, the barcode pen and Graph printing functions to reduce costs still further without in any way reducing the efficiency of the icountLCM. The icountLCM ‘Classic’ remains an instrument to be proud of.

Ordering Information (icountLCM and ‘Classic’ icountLCM)

Model	Fluid Type		Options	
LCM2020	**2**	Hydraulic mineral	1	icountLCM20 (ACFTD calibrated)
	6	Skydrol	**2**	icountLCM20 (MTD calibrated)
			3	icountLCM20 ‘classic’ (ACFTD calibrated)
			4	icount LCM20 ‘ classic’ (MTD calibrated)

Note 1: Part numbers featured with bold highlighted codes will ensure a ‘standard’ product selection.
Note 2: Alternate displayed part number selection will require you to contact Parker Filtration for availability.

Part Number	Supersedes	Description
ACC6NE015	B84702	Printer roll x 5
ACC6NE014	P.843702	Printer ribbon
ACC6NE013	B84609	Re-chargeable battery pack
ACC6ND002	P849603	Weather protector cover
ACC6ND000	B84703	USB to RS232 Download Cable
LCM20.ACCKIT		Accessory Kit for LCM Classic (see p. 4 for content)

Note 1: Part numbers featured with bold highlighted codes will ensure a ‘standard’ product selection.
Note 2: Alternate displayed part number selection will require you to contact Parker Filtration for availability.