icountLaserCM30

Particle Contamination Monitor

SIMPLEX TURBULO

Parker

ENGINEERING YOUR SUCCESS.

Meet the Next Generation

Particle Contamination Monitor - LCM30

The Parker icount LCM30 is a next generation fluid system contamination monitoring offering an under 90 seconds test procedure. Multi standard ISO 4406, NAS 1638, AS4059 & GOST cleanliness reporting, data entry and integral printing are all featured on this next generation contamination monitor.

Parker listened to their existing customers and then to the engineers and maintenance operatives to find out the features that have helped make the icountLaserCM a unique predictive maintenance instrument.

What's New...

- Auto testing – start test from hand set
- Shorter test time - under 90 seconds
- Updated main enclosure
- Enhanced handset design
- Refined user interface
- Improved rechargeable battery life
- Integrated RH% moisture sensor and temperature
- Thermal printer (long life) improved data recording
- 8 x reported sizes (6 x measured / 2 x calculated) reporting codes to ISO4406 - NAS1638, AS4059 & GOST
- Now with RS232 Data Transfer over USB
- Easy to use 'Clip On' battery pack

What's in the Case

1	Particle Contamination Monitor
1	Rechargeable Battery Pack
2	Printer Paper Roll (1 x fitted / 1 x spare)
1	USB cable
1	Flash Drive Memory Stick (inc. Manual and Download Software)
1	Quick Start Guide
1	Power Supply & Regional Power Cable

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Why On-Site Fluid Contamination Monitoring?

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

Features & Benefits

- Special 'diagnostics' are incorporated into the icountLaserCM microprocessor control to ensure effective testing.
- Routine contamination monitoring of oil systems and liquid fuels with icountLaserCM saves time and saves money.
- Contamination monitoring is now possible during applicaton operation - icountLaserCM 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 1000 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 test cycle in under 90 seconds.
- Data entry allows individual equipment footprint record.
- Auto 99 test logging, set up via hand set.
- Auto-testing allows for the conducting of automatic sequencing tests on flushing systems for example.
- Worldwide service and technical support.
- Re-calibration - Annual certification by an approved Parker Service Centre.

Principle of Operation

The LCM30 is a Particle Contamination Monitor (PCM) that automatically sizes and counts individual particles suspended in a fluid using a laser illuminated optical light extinction principle.

The sensor uses a focused light source that is projected through oil moving in a flow cell; any particulate contamination within the oil will cause a change in signal proportional to its size on the detector. On-board flow metering delivers a precise volume of fluid through a flow cell at a controlled rate. Focused laser light is projected through fluid in the flow cell and any particulate contamination within the fluid reduces the amount of light that reaches the detector. The signals are processed and the particle size distribution is reported to the user.

Particle sizes are reported in micrometres (1× (10) ^(-6) metres) and displayed as "µm" for ISO Medium Test Dust (MTD) calibration or "µm" for Air Cleaner Fine Test Dust (ACFTD) calibration.

LCM30 Technical Specification

Measurement

Part Number	Description
Particle Size Reporting Channels	MTD: >4, >6, >14, >21, >25[e] , >30, >38 and >70[e] µm[e] ACFTD: >2, >5, >10, >15, >20[e], >25, >50 and >100[e] µm
Reporting Contamination Standards[ii]	ISO 4406:Code 0 to 22 NAS 1638 0 to 12 GOST 17216:00 to 17 (consult Parker) SAE AS 4059F Table 1: 00 to 12 SAE AS 4059F Table 2: 00 to 12
Other Test Methods	IP564: determination of the level of cleanliness of aviation turbine fuel Automatic IP564 test mode to include single flush and three repeat tests - average and individual results displayed.
Reporting Repeatability.	Measured Channels: <7% at measured counts for MTD particles size 4, 6 and 14 µm [iii]
Calibration	MTD: Calibration in accordance with ISO 11943:Section 9 ACFTD: The LCM30 is calibrated against the Master PCM at the particle sizes shown within the specified limits Consult Parker for re-calibration.
Test Time	< 90 seconds in both single and multi-test mode.
Test Modes	Single / Multiple – fully automated.
Moisture Sensor	Compatible with mineral oils only. Relative Humidity (%RH) ±5% RH Stability: +-2% RH typical at 50% RH in one year. Temperature (°C) -25 to +150°C ±0.9%

e = calculated channel (indicated by the letter e on the handset display)

ii = The instrument only uses the shorthand in these standards for reporting contamination levels.

iii = 95% confidence level using an MTD distribution with a concentration of 6mg/L.

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LCM30 - Technical Data (cont)

Operating environment

Fluid Compatibility	Mineral oils and petroleum based fluids. For other fluids consult Parker
Working Viscosity	2 to 100 cSt 2 to 200 cSt when used with LCM30 Case Mounted Pump (100 cSt when reporting in GOST standard and using Heated Bath) 2 to 500 cSt when used with Single Point Sampler Higher viscosities when used with Trace Heated Hoses
Environmental Temperature	+5°C to +40°C
Fluid Temperature	+5°C to +80°C
Working Pressure	2.5 bar when using Case Mounted Pump; up to 420 bar when CMP not used
Flow Rate	35ml/min when using Case Mounted Pump; 6 - 380 l/min max. when used with System 20 Sensors, higher with Single Point Sampler
Inlet and Outlet Fittings	M16 MINIMESS®

Electrical

Instrument External Power	10 to 24V - 3A max.
Trace Heated Hose (THH)	12V DC 5A max - 24V DC 2.5A max.
Rechargeable Battery	12V / Capacity: 4.5Ah with - 12V Nom.
Rechargeable Battery Pack	Input Voltage: 18V DC - Input Current: 2.5A Charge Time: Typically 4.0 hours for full charge Number of Tests: Typically 320 - 450 depending on product variant and operating conditions.
Regional Plugs	UK (Type G) - EU (Type C) - US (Type B) - Australasia (Type I)

Interface

Data Communication Port	USB B
Menu Structure and Layout	Intuitive menu structure
Case Mounted Pump (CMP)	CMP operation via handset - Automatic CMP operation when test enabled
Trace Heated Hose (THH)	Trace Heated Hose (THH) initiated via hand set.
Printer	Thermal printer

Materials

Outer Mouldings	Mouldings: Structural foam ABS / Coating: Polyurethane
Material Wetted Flow Path	Nylon with Kevlar Reinforcement Microbore Hose / Brass / Viton / Polyacetal (Delrin) / Zinc Plated Mild Steel / Stainless Steel 302, 303 and 316 / Soda-lime Glass

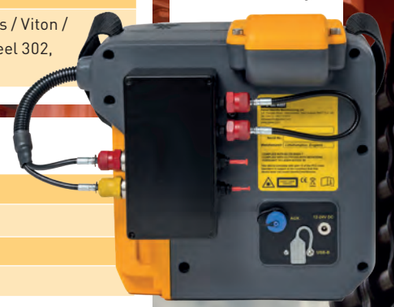
Standard product table

LCM302022	icountLCM30 (MTD calibration)
LCM302028	icountLCM30 (MTD calibration) (Case Mounted Pump)
ACC6NW005	Printer Paper Roll
ACC6NE054	LCM30 Rechargeable Battery Pack

i = calculated channel (indicated by the letter e on the display)

ii = The instrument only uses the shorthand in these standards for reporting contamination levels.

iii = 95% confidence level using an MTD distribution with a concentration of 6mg/L.



Supporting Products

Universal Bottle Sampler

Simple and efficient offline oil sampling

The UBS provides the dynamic link to portable particle and water counters. The UBS off-line sampler has microprocessc technology to recognise and adjust to the connecting monitor including the icountLCM30 and H_2Oil water in oil monitor.

Part Number	Description
UBS9002	Universal bottle sampler (includes aluminium case and accessories)
UBS9003	Universal bottle sampler

Single Point Sampler

Lightweight and compact connection

The SPS (Single Point Sampler) is a lightweight, compact and easy to use online sampling unit that connects an icountLCM30 or H_2Oil to a single pressure test point in a fluid system. Suitable for use with mineral and biodegradable oils, petroleum based fluids, the SPS offers fingertip operated control even at high pressures - 420 bar (6000 PSI) rated maximum pressure.

Part Number	Supersedes	Description
SPS2021	SPS.2021	Single point sampler (Mineral Oil fluids)
ACC6NW003	B84784	Waste bottle (Universal)
ACC6NH001	B84224	Extension hose/coupling (Mineral fluids)
ACC6NH003	B84788	Waste hose (Mineral Oil)

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