

Infrared Spectroscopy

# OilExpress 4 Oil Conditioning Monitoring Systems



High-throughput oil analysis has never been easier, more reliable or more cost-effective. Our OilExpress™ 4 system delivers highly automated, rapid, reliable oil condition monitoring results using recognized industry standard protocols such as ASTM®, JOAP and Caterpillar® S•O•S<sup>SM</sup>.

PerkinElmer offers a range of solutions for fast and accurate IR analysis of in-service lubricants based on the acclaimed Spectrum Two™ FT-IR system. From single sample analysis

to fully automated batch runs with up to 384 samples there is a system to suit all throughput requirements.

OilExpress 4 systems are also adaptable to meet changing batch size, sample throughput (number of samples per hour) and automation requirements. For example, OilExpress 4 can be upgraded to OilExpress 4 DUO for faster batch turnaround times, or expanded to include automated oil dilution for ICP by addition of the OilPrep™ module. This system flexibility provides the most cost-effective automated FT-IR oil analysis system available.

## Specifications

	Spectrum Two In-Service Lubricants System	OilExpress 4	OilExpress 4 DUO	OilExpress 4 XL	OilExpress 4 XL DUO
Throughput – Samples/Hour 15W40 Oil (120 cSt)	Manually operated. 3 minutes of analysis	70	100	70	100
Oil Viscosity Range (cSt at 40 °C)		1-900			
Maximum capacity: 17 mm tubes 4 oz bottle	N/A N/A	192 32	192 32	384 96	384 96
Maximum bottle height, all racks	N/A	100 mm			
Maximum diameter for 32-position rack	N/A	50 mm O.D.			
Maximum diameter for 96-position rack	N/A	17 mm O.D.			
Sampling tips	N/A	1000 µL, wide bore disposable tip			

## Specifications, continued

	Spectrum Two In-Service Lubricants System	OilExpress 4	OilExpress 4 DUO	OilExpress 4 XL	OilExpress 4 XL DUO
Typical solvent consumption	10 mL	3 mL for 15W40 oil			
Typical sample volume	4 mL	800 µL			
Cleaning solvent	Heptane, hexane, mineral spirits, kerosene, etc.	Recommended solvent heptane for efficient cleaning. Odorless mineral spirits (kerosene) can also be used but a greater volume of cleaning solvent is required.			
Tubing material	Included	Tubing FEP (Fluorinated Ethylene Propylene)			
Possible upgrades	Yes • Any OilExpress 4 autosampler	Yes • OilExpress 4 DUO • Liquid-level sensor arm • Oil dilution	Yes • Liquid-level sensor arm • Oil dilution	Yes • OilExpress 4 DUO • Liquid-level sensor arm	Yes • Liquid-level sensor arm
Ultrasonic liquid-level sensor arm for variable volume measurement	N/A	Optional. Part numbers available for 17 mm tubes and 4 oz bottles			
Oil dilution capability for ICP wear metals analysis	N/A	Optional		Included	
		Separate software package for Oil dilution (WinPREP) runs independently of the FT-IR analysis software (OilExpress 4)			
Maximum oil dilution capability	N/A	96 x 17 mm tube samples (1 rack) Not compatible with 4 oz bottles		192 x 17 mm tubes or 64 x 4 oz bottles (2 racks)	
FT-IR spectrometer	Please refer to Spectrum Two FT-IR Specification Sheet.				
Number of FT-IR units	1	1	2	1	2
FT-IR options	Choice of windows (KBr and ZnSe)				

## General features

Control software	FT-IR: OilExpress 4 V1.00; Oil dilution: WinLab V 4.8.2 (min.)				
Dimensions (mm) maximum size for diluter with FT-IR/s and FCM (excluding PC, bottles and cabling)	D=300 W=450 H=210	D=800 W=1000 H=850	D=800 W=710 H=850	D=800 W=1450 H=850	D=800 W=1500 H=850
Weight (kg)	15	97	114	118	135
Power	100/120 and 200/230 VAC; Spectrometer incl. shuttle and FCM, universal voltage power supply				
Operation relative humidity	80% at 30 °C non-condensing				
Operating ambient temperatures	Overall system: 15-35 °C; FT-IR spectrometer: 5-45 °C				
Safety and certifications	<ul style="list-style-type: none"> <li>Emergency halt button on autosampler               <ul style="list-style-type: none"> <li>Clear Safety front-panel</li> </ul> </li> <li>CE Mark and NRTL safety certification</li> </ul>				