

## TDL Units *Single and Folded Paths*



## ER060L/ER080L Emitter and Receiver Sets

### for Continuous Emissions Monitoring and Process Control Manual or Automatic Calibration

Tunable Diode Laser Absorption Spectroscopy (TDL) uses optical IR gas analysers with unique properties of tunable diode lasers for gas analysis.

The ER060L light emitter and receiver set, designed for use with Opsis laser diode gas analyser, creates a light path across the internal diameter of a stack or duct. Light is generated by the analyser, passed through the emitter and projected to the receiver. From the receiver, it leads to the analyser through a fibre optic cable.

Both the emitter and the receiver are mounted on external flanges. The receiver uses an external power supply unit, which requires an electrical connection to mains. The interiors of the emitter and receiver are protected by windows, which have connections for cleaning by instrument air.

The ER080L transceiver creates a lightpath in a stack.

Light is generated by a xenon lamp in the emitter and reflected back to the receiver via mirrors. From the receiver, it is passed to the analyser through a fibre optic cable. The ER080L has particular applications in large diameter stacks.

The ER060L/ER080L can also be used together with the CB100 calibration bench for manual calibrations. The model ER060AUTOL is designed for automatic calibrations, together with the CU007 calibration unit.

Creating a lightpath with a single unit on one side, the ER080L is particularly designed for large diameter stacks.

Several separate lightpaths may be operated by one single Opsis system. In multiple path systems, the fibre optic connections to the analyser are made through a multiplexer.

## ER060L Emitter and Receiver

The ER060L emitter and receiver unit represents the most widely used Opsis configuration for continuous emissions monitoring.

### An ER060L Emitter and Receiver Set includes

- EM060L Emitter and receiver
- RC101L Receiver card
- PM101L Power supply
- Detector
- Fibre collimator

### Standard equipment – separately ordered

- OF010 Laser optical fibre
- CF120 Optical communication fibre
- Flanges

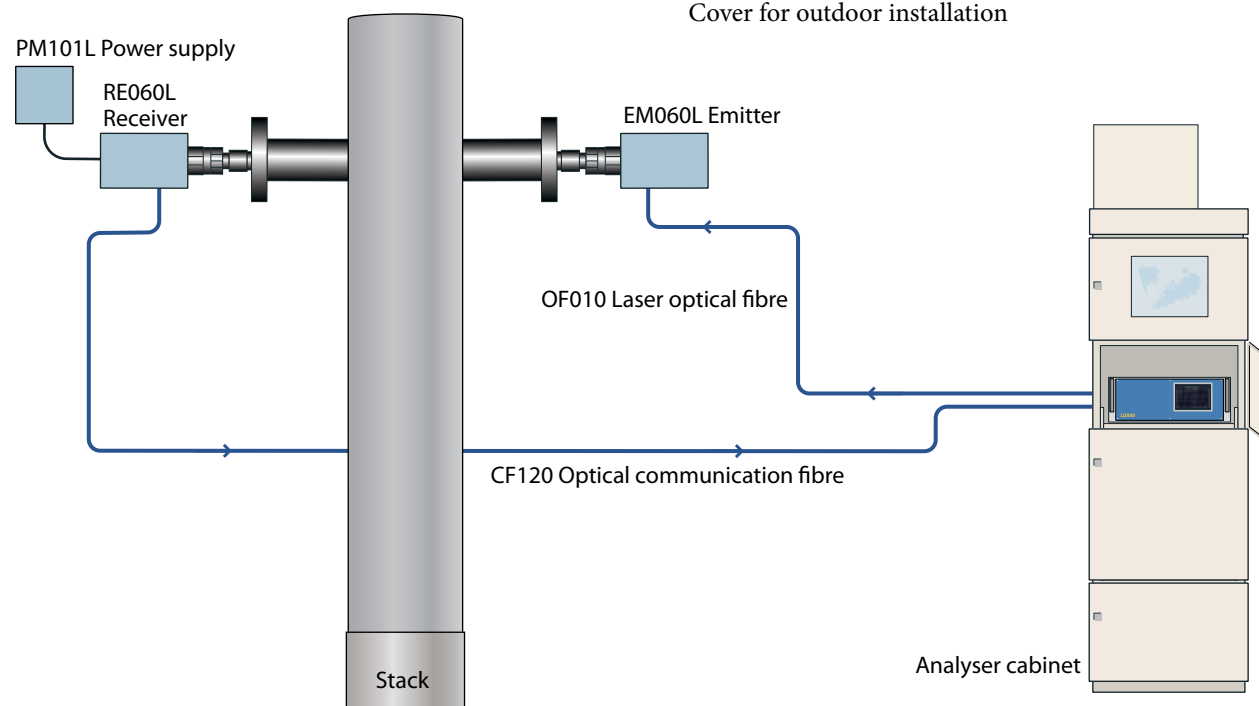
### Options

- OF005 O<sub>2</sub> cable
- ATEX/EEExp Zone 2
- High-temp version with separated electronics.

### Accessories

- Multiplexer
- Demultiplexer
- Flame filter
- CU004/CU007 Automatic calibration unit
- Cover for outdoor installation

*The ER060L emitter and receiver setup with LD500 laser diode gas analyser is the most widely used Opsis configuration in TDL applications.*



## ER060AUTOL with Automatic Calibration

The ER060AUTOL combines an RE060L receiver with a calibration light source, a calibration cell and a moving mirror to swap between the measurement path and the calibration path.

A control unit with a temperature controller and a mirror driver is connected to the ER060AUTOL through a 10 m cable assembly. For automatic calibrations, a CU004/CU007 calibration unit is added to the system.

### An ER060AUTOL Emitter and Receiver Set includes

- EM060L Emitter
- RE060AUTOL Receiver
- RC101L Receiver card
- PM101L Power supply
- Detector
- Fibre collimator
- Heated calibration cell
- Mirror switch

### Standard equipment – separately ordered

- OF010 Laser optical fibre
- CF120 Optical communication fibre
- Flanges
- IOMan system
- TM001 Temperature input module
- DM002/DM016 Relay output module

### Options

- Voltage supply to cell -230 V~ (+6%, -10%)/115 V~ (±10%), 50/60 Hz
- OF005 O<sub>2</sub> cable
- ATEX/EEExp Zone 2
- High-temp version with separated electronics.

### Accessories

- CU004/CU007 Automatic calibration unit
- Multiplexer
- Demultiplexer
- Flame filter
- Calibration equipment
- Cover for outdoor installation

## ER080L Transceiver

The ER080L transceiver unit creates a folded light path on one side of the stack. It has particular applications in large diameter stacks.

### An ER080L Transceiver Set includes

- ER080L Transceiver
- RC101L Receiver card
- PM101L Power supply
- Detector
- Fibre collimator

### Standard equipment – separately ordered

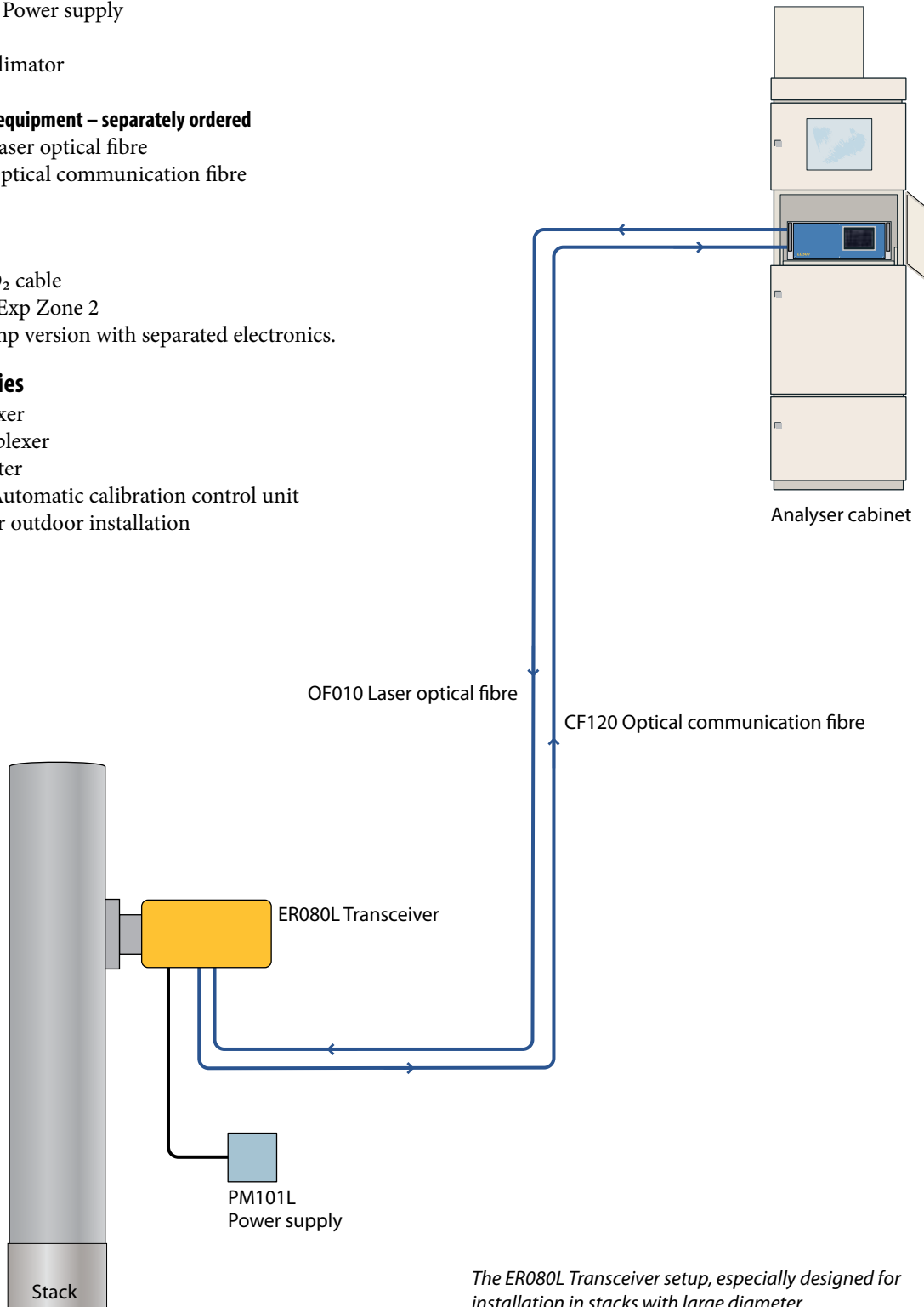
- OF010 Laser optical fibre
- CF120 Optical communication fibre
- Flanges

### Options

- OF005 O<sub>2</sub> cable
- ATEX/EExp Zone 2
- High-temp version with separated electronics.

### Accessories

- Multiplexer
- Demultiplexer
- Flame filter
- CU007 Automatic calibration control unit
- Cover for outdoor installation



*The ER080L Transceiver setup, especially designed for installation in stacks with large diameter.*



# Technical Specifications

## ER060L

	<b>Emitter</b>	<b>Receiver</b>
Material	aluminium and stainless steel	aluminium and stainless steel
Dimensions (L × W × H)	305 × 295 × 250 mm	385 × 200 × 115 mm
Weight (approx.)	8.5 kg	8.5 kg
Window diameter	50 mm	50 mm
Window material	quartz glass	quartz glass
Ambient temperature	-40°C to +55°C (-40°F to +130°F)	-40°C to +50°C (-40°F to +120°F)
Degree of protection	IP 54	IP 54
Monitoring path length (recommended)	0.5 to 5 m	0.5 to 5 m
Mounting attachment	1 1/2" externally threaded pipe socket	1 1/2" externally threaded pipe socket
Purge air connection (tube O.D.)	6 mm	6 mm

## ER060AUTOL

	<b>Emitter</b>	<b>Receiver</b>
Material	aluminium and stainless steel	aluminium and stainless steel
Dimensions (L × W × H)	305 × 295 × 250 mm	720 × 310 × 330 mm
Weight (approx.)	8.5 kg	23 kg
Window diameter	50 mm	50 mm
Window material	quartz glass	quartz glass
Ambient temperature	-40°C to +55°C (-40°F to +130°F)	-40°C to +55°C (-40°F to +130°F)
Degree of protection	IP 54	IP 54
Monitoring path length (recommended)	0.5 to 5 m	0.5 to 5 m
Mounting attachment	1 1/2" externally threaded pipe socket	1 1/2" externally threaded pipe socket
Purge air connection (tube O.D.)	6 mm	6 mm

## ER080L

	<b>Emitter/Receiver</b>
Material	stainless steel
Dimensions (L × W × H)	1950 × 310 × 250 mm
Weight (approx.)	55 kg
Window diameter	50 mm
Window material	quartz glass
Ambient temperature	-40°C to +55°C (-40°F to +130°F)
Degree of protection	IP 54
Process temperature (max. standard)	+200°C (+390°F) (optionally higher)
Monitoring path length (recommended)	1 m
Purge air connections (tube O.D.)	6 mm

Please contact your Opsis supplier to discuss your particular system requirements. Separate product and application sheets are available describing individual items of Opsis system hardware.

*Specifications subject to change without notice*

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