

**D-R 290**

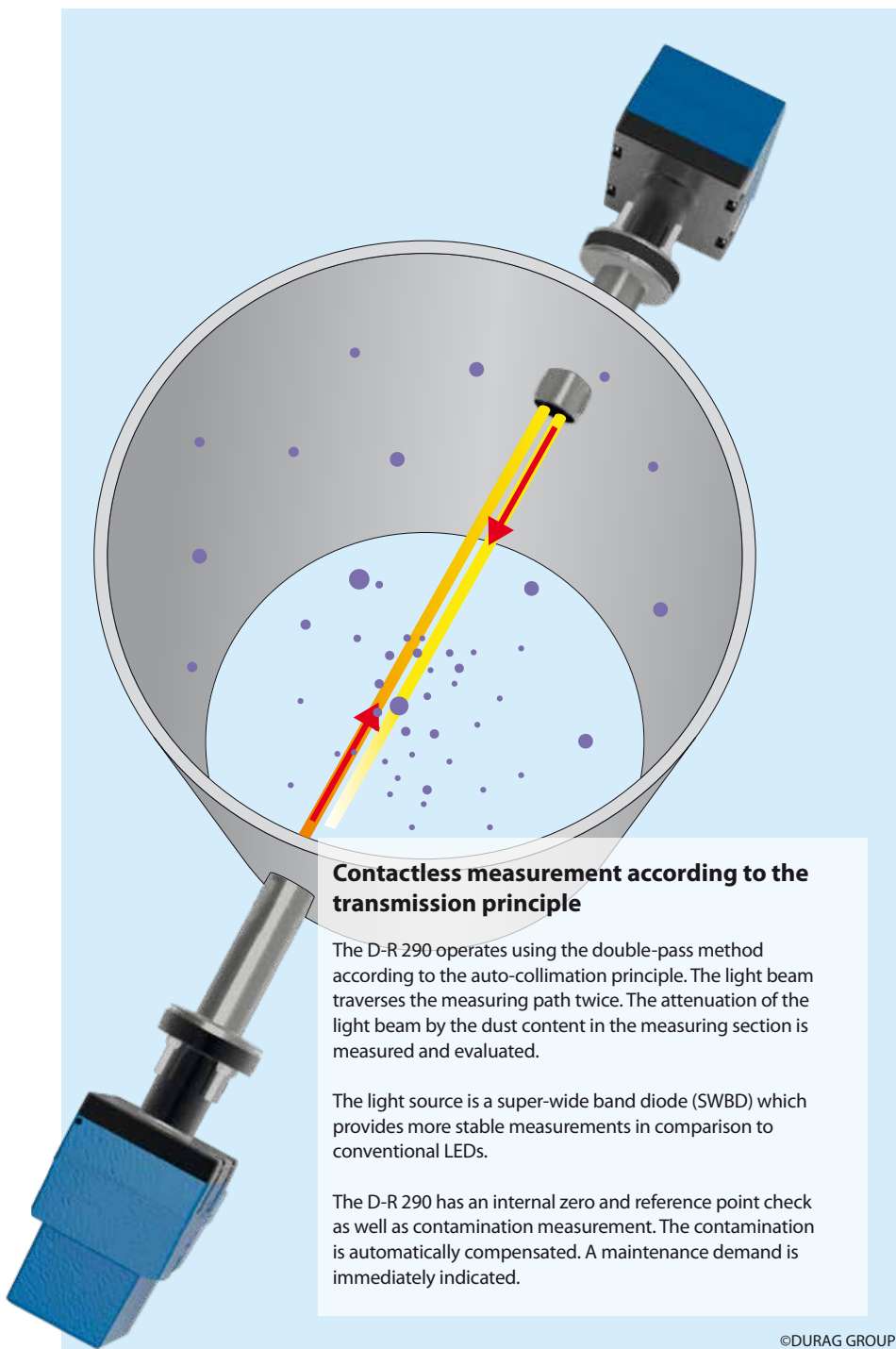
# Optical opacity / dust monitor

**New generation**



# The new generation D-R 290

## Reliable measurements for medium to high concentrations



### Features

- Continuous and contactless measurement
- Extremely powerful and stable SWBD LED light source
- New SMD electronics with digital Modbus RTU interface
- Convenient operation with remote access option
- Extremely low-maintenance

### Approvals

- Suitability-tested by TÜV
- Certified according to DIN EN 15267-3
- MCERTS
- Fully compliant with US EPA 40 CFR 60 PS 1 and ASTM 6216



- TÜV approved
- QAL 1 certified
- EN 15267-3 tested



Cement plant



Waste incineration plant



Power plant

## Convenient operation, readings anywhere accessible

The D-R 290 has been used successfully for more than 15 years in various applications. The operation of the new generation D-R 290 is more convenient and more flexible. It is either operated

- via USB interface
- via RS-485 interface
- with the universal operating unit D-ISC 100

The software D-ESI 100 allows for remote access via web interface. All settings can be changed without opening the device.

## Universal operating unit D-ISC 100

The universal operating unit D-ISC 100 allows the connection of several DURAG measuring systems. Dust and volume flow measurements can be combined.

- Operation either via the built-in panel or remote
- Modular design, many expansion options available

### Options

- Weather protection covers
- Automatic fail-safe shutters to protect the device in the event of a purge air failure
- Explosion proof design

## Applications

### Continuous emission monitoring e.g.

- on incineration plants
- on waste incineration plants
- on power plants
- on cement plants
- in the metal industry
- on plants according to 2001/80/EC LCPD
- on plants according to IED 2010/75/EU

### Opacity measurements in flue gas e.g.

- on cruise and container ships
- on plants in accordance with US EPA 40 CFR 60 PS1



## Technical data

measurements	extinction, transmission, opacity, dust concentration
measuring ranges	extinction: 0...2.0 opacity: 0...100 % dust: 0...80 mg/m <sup>3</sup> ... 0... 5000 mg/m <sup>3</sup>
sample gas temperature	Above dew point up to 250 °C, optional up to 1000 °C
inner duct pressure	-50...+20 hPa, optional higher
duct diameter	1...18 m
ambient temperature	-40...+60 °C



Refinery



Steel industry



Marine



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