

runge 

mikron



Detectors for liquid chromatography



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FLUIDICS**

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Runge mikron – small detector, big advantage.

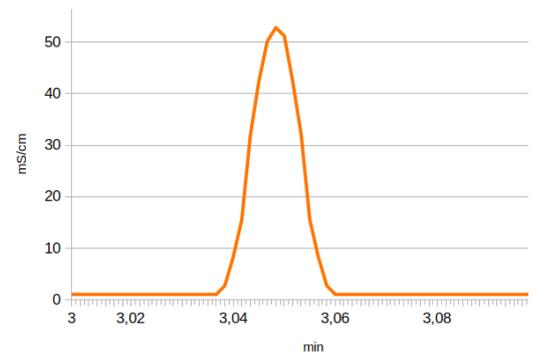
1:1



small and dynamic

No matter where you want to measure: the mikron is right there. With a diameter of 32 mm and a length of only 90 to 150 mm, it fits perfectly into any installation, mounted on the side of your system or simply on a laboratory stand.

Measuring the dynamic behaviour of conductivity at 100 Hz or – no problem with the mikron 81. Or measuring the absorbance on two wavelengths simultaneously at 10 Hz – the mikron 31 fulfils the task with ease.



cool

The mikron can be operated in refrigerated environments at 3 °C. With its small size, you can put it completely in the refrigerator, without any external cell with fibre optics.

And it stays cool during the measurement – the mikron 81 for conductivity anyway, the photometer and the fluorimeter too thanks to LED technology.

Just what you need for biochemical measurements.



biocompatible

For your application in medical and biotechnology, all measuring cells are available in PEEK or titanium, both chemically resistant and biologically inert.

The wetted materials are available in special qualities on request (PEEK with FDA certificate, USP Class VI, prion-free, titanium as ELI).

Your entire process remains compliant with regulations.



versatile

We offer a wide range of measuring cells – three cell geometries in three different materials for photometry, two electrical cell constants for conductivity.

There are two different interfaces for all detectors in the mikron family. And for the light sources, every wavelength available as an LED.

No wish of yours remains unfulfilled, we hope.



open

The mikron 81 talks in many ways, on the hardware side via USB or via the industry standard RS-485 with a robust round plug.

In addition to drivers for all common applications (Clarity, SCPA ChromStar, PrepCon, NI LabView)* there is the open Runge protocol for your own implementation.

You can start right away.



*) all trademarks are the property of their respective owners.

the mikron family



As detectors in the analytical laboratory or as one of many measuring channels in SMB systems or in process chromatography – where small size is important, the Runge mikrons are in their element.



Table mounting

		mikron 31	mikron 71	mikron 81
Dimensions	(mm)	Ø32x125/150	Ø32x128	Ø32x90
Cell material	stainl. steel ⁽¹⁾	•		
	titanium ⁽²⁾	•		
	PEEK ⁽³⁾	•	•	•
Protocol		open, text-based		
Power		< 2.5 W (500 mA at 5 V)		
Drivers		Clarity, ChromStar, PrepCon, LabVIEW		
Interfaces		USB-C or RS-485		
Markings		CE, UKCA		

(1) 1.4301, (2) 3.7615, also with extra low interstitials, (3) also available as USP Class VI, TSE-free



mikron 31 photometer

Absorption photometer with interchangeable LED light sources for flowing media,
Simultaneous measurement at two wavelengths. Four measuring cells in three materials.

Thanks to its modular concept, the mikron 31 remains adaptable even after purchase: another measuring cell, a second light source? No problem. Your task changes, the mikron 31 stays put.

Detector

Absorbance	display	(AU)	0 ... 4.5
	linear	(AU)	200 μ ... 2.4 ⁽¹⁾
	noise	(AU)	$\pm 10 \mu$ ⁽²⁾
Sample rate (Hz)	1 ... 100		
Light sources	1, 2 with reference channel		
Operating modes	single-wavelength		
	single-wavelength, switchable		
	two-wavelength		



Light sources

Bandwidth	10 nm
Features	autom. recognition
	oper. hrs. counter
Delivery programme ⁽⁷⁾	
UV-C	235, 255, 280 nm
UV-B	300, 310 nm
UV-A	360 nm
visible violet	410, 415 nm

Measuring cells	analytical	preparative	capillary
Path length (mm)	10	0.5/1.0/1.5/2.0	OD = 360 μ m
Volume (μ l)	10 / 2.4	1.6/3.2/4.8/6.4	ID = 75/150 μ m
Ports	10-32 coned	1/4"-28 coned / flat-bt.	(über Adapter)
wetted	cell body ⁽³⁾ , fused silica, PTFE		capillary
Flow rate (ml/min)	50 / 10	1,000	2.5
Max. pressure (bar)	100 ⁽⁴⁾⁽⁵⁾ , 40 ⁽⁶⁾	100 ⁽⁴⁾⁽⁵⁾ , 40 ⁽⁶⁾	200 ⁽⁴⁾



(1) at 10 mm path length, $\lambda = 255$ nm, single light source, (2) at $\tau = 1$ s with 80/20 v/v water/methanol at 1 ml/min, (3) cell body materials see page 4, (4) stainl. steel, (5) titanium, (6) PEEK, (7) more wavelengths on request



mikron 71 fluorimeter

Fluorimeter with interchangeable LED light sources and filters for different substances, one measuring cell for flowing media.

The smallest fluorescence detector for liquid chromatography.



Detector		
Sensitivity	limit of detection	100 pmol/l ⁽¹⁾
	dynamic range	10 ⁵ /10 ³ ⁽²⁾
	noise (%)	< 0.1 ⁽³⁾
sample rate (Hz)	1 ... 100	
channels	1 with reference channel	

Measuring cell	analytical
Inner diameter (mm)	1.2
Volume (µl)	9
Ports	1/4"-28 flat-bottom
wetted	fused silica, PEEK ⁽⁵⁾
Flow rate (ml/min)	1.000
Maximum pressure (bar)	5 (72 psi)



Light sources	
Bandwidth	10 nm
Features	autom. recognition oper. hrs. counter

Filters	
Bandwidth	50 nm typ.
Features	autom. recognition

Delivery programme ⁽⁴⁾	
Substance	excitat./emission
Anthracene	340/450 nm
Aflatoxin, NADH	360/450 nm
Alexa Fluor 350	360/450 nm
CFP	430/480 nm
Fluorescein	490/520 nm
GFP	490/520 nm
5-TAMRA	530/580 nm

(1) fluorescein in PBS, λ = 490/520 nm, (2) with/without commutation of amplification, (3) without amplification
 (4) more wavelengths on request, (5) also available as USP Class VI, TSE-free



mikron 81 conductivity meter

Rapid measurement of electrical conductivity from 2 mS/cm in flowing media, temperature-compensated with up to 10 Hz. Two cell constants.

The compact conductivity meter for monitoring salt gradients in purification and many other applications.

Detector		Z=10/cm	Z=50/cm
Conductivity	display (mS/cm)	0 ... 1,000	
	linear (mS/cm)	2 ... 100	5 ... 250
	accuracy ⁽¹⁾	± 2 % 1 mS/cm	± 2 % 2 mS/cm
	precision ⁽¹⁾	± 0.1 % 0.1 mS/cm	± 0.2 % 0.2 mS/cm
Temperature	display range (° C)	0 ... 100	
	accuracy (° C)	± 0.1	
sample rate (Hz)		1 ... 10	
Features	Substance-dependent temperature compensation of conductivity automatic recognition of electrical cell constant		

Measuring cells	Z=10/cm	Z=50/cm
Bore diameter (mm)	2.2	1.0
Volume (µl)	53	11
Ports	1/4"-28 flat-bottom	
Wetted	cell body ⁽³⁾ , titanium ⁽²⁾ , PEEK ⁽³⁾	
Flow rate (ml/min)	1,000	
Maximum pressure (bar)	150 (2,175 psi)	

(1) the higher value applies, (2) 3.7615, also with extra low interstitials, (3) also USP Class VI, TSE-free



Mounting bracket



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