Refractive Index Detector
Shodex RI-201

NEW

Higher Performance

A new refractive index (RI) detector series is now available. RI-201 is a highly sensitive RI detector incorporating a three-chamber flow cell.

Features
- A novel optical system (three-chamber flow cell) provides twice or better sensitivity than that of our previous detectors.
- The two-step temperature control method significantly reduces drift due to the fluctuation of room temperature.
- The detection limit for saccharides is approximately 2ng.

Refractive Index Detector
Shodex RI-201H

NEW

reasonable price

Features
- Adopts the same optical system as that of RI-101. (2 chamber-type)
- Reasonable price.

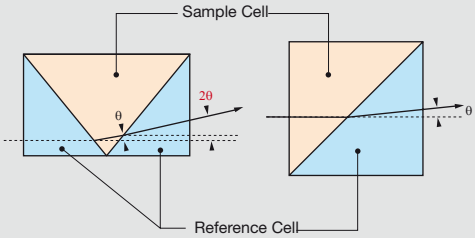
Product Code		F4010105	F4010106
Model		**RI-201**	**RI-201H**
		Analysis	
Flow Cell Type		3 Chamber-type	2 Chamber-type
Measurement Method		Deflection Type	
Refractive Index Range		1.00~1.75	
Measurement Range		0.125~256μRIU	0.25~512μRIU
Drift *		0.1μRIU/h	0.2μRIU/h
Linearity Range		≥ 300μ RIU	≥ 600μ RIU
Noise **		≤ 1nRIU	≤ 2.5nRIU
Response		0.1, 0.25, 0.5, 1, 1.5, 2, 3, 6sec	
Auto Zero		Full auto zero	
Auto Zero Range		All range	
Off-set Range		5μRIU	10μRIU
Off-set Resolution		25nRIU	50nRIU
Integrator Output (Sensitivity)		DC 0~1V (4mV/μRIU, 16mV/μRIU)	DC 0~1V (2mV/μRIU, 8mV/μRIU)
Cell volume		8μL	
Flow Rate	(Usual)	0.2~3.0mL/min	
	(Max.)	10mL/min (Solvent; Pure Water)	
Maximum Back Pressure		50kPa	
Internal Volume		IN→Cell ; 80μL Cell→OUT ; 600μL All (Cell→OUT) ; 690μL	IN→Cell ; 60μL Cell→OUT ; 600μL All (Cell→OUT) ; 670μL
Recorder Output		0~10mV/FS	
External Input		—	
External Output		(1) READY (Temperature Control) (2) LEAK (3) ERROR (ROM, RAM, PARAMETER, HOME-POSITION, OVER-HEAT, OPT.-BALANCE, INTENSITY)	
Temperature Control		OFF, 30~50°C (1°C Step), 77°C Temp. Fuse (Double Temperature Control)	
Communication Port		USB	
Operator Support Function		None	
Wetted Materials		Stainless Steel 316, Teflon, Quartz Glass	
Power Source, Power Consumption		AC100~240V±10%, 50/60Hz, 150VA max	
Dimension, Weight		W260 x D400 x H200 (mm), ca. 12kg	
Accessories		Power Cable, Signal Code, Connector Tube, Fuse, Operation Manual	

*Pure water 1mL/min, PURGE OFF
**Pure water, response: 1.5sec

Principle of New Optical System

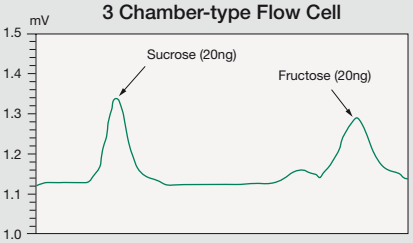
In our previous optical system, a measurement light passing through the flow cell is refracted only once. The new three-chamber flow cell allows the light to be refracted twice, thereby increasing sensitivity at least twice. This doubles the degree of polarization light and thus halves the noise and the influence of drift.

3 Chamber-type Flow Cell	Current 2 Chamber-type Flow Cell
RI-201	RI-100 Series, RI-201H

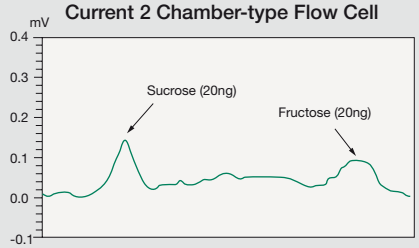


Application

3 Chamber-type Flow Cell



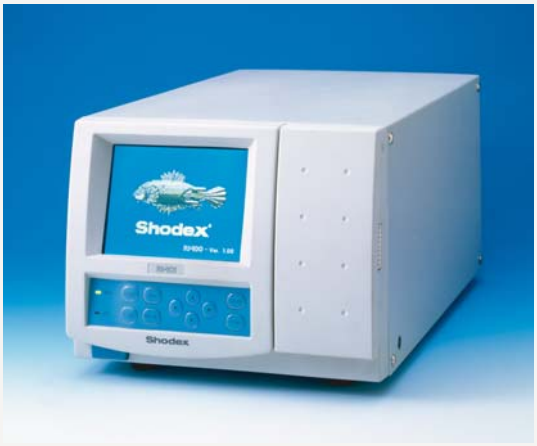
Current 2 Chamber-type Flow Cell



Refractive Index Detector

Shodex RI-100 Series

The Shodex RI-100 series includes versatile and highly sensitive RI detectors equipped with a color liquid crystal display, an automatic start-up function, and a validation wizard, and can be used with various HPLC systems.



Features

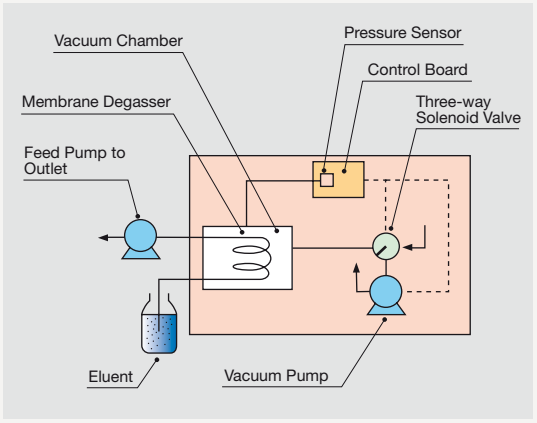
- Equipped with a color liquid crystal display; the detector monitors the status of the chromatograph in real time.
- The automatic start-up function automates complicated operations such as the substituting eluent in the reference cell and checking the baseline stabilization.
- The validation wizard achieves component validation with ease.
- Optimization of the temperature control method shortens the time for stabilization after the start-up and improves baseline stability.
- The leak sensor automatically stops the pump in case of solvent leakage.
- External input and output terminals and RS232C communication ports permit advanced automation of the system.

Product Code		F4010101	F4010104	F4010102
Model		**RI-101**	**RI-104**	**RI-102**
		Analysis	**Semi-micro**	**Preparative**
Flow Cell Type		2 Chamber-type		
Measuring Method		Deflection Type		
Refractive Index Range		1.00~1.75		
Measurement Range		0.25~512μRIU	0.25~512μRIU	2.5~5120μRIU
Drift *		0.2μRIU/h	0.2μRIU/h	2μRIU/h
Linearity Range		≥ 600μRIU	≥ 600μRIU	≥ 6000μRIU
Noise **		≤ 2.5nRIU	≤ 5nRIU	≤ 25nRIU
Response		0.1, 0.25, 0.5, 1, 1.5, 2, 3, 6sec		
Auto Zero		Full Auto Zero		
Auto Zero Range		All Range		
Off-set Range		0~500mV (Same as Integrator Output)		
Off-set Resolution		10mV (Same as Integrator Output)		
Integrator Output (Sensitivity)		DC 0~1V (2mV/μRIU, 8mV/μRIU)	DC 0~1V (2mV/μRIU, 8mV/μRIU)	DC 0~1V (0.2mV/μRIU, 0.8mV/μRIU)
Cell Volume		8μL	2.5μL	8μL
Flow Rate	(Usual)	0.2~3.0mL/min	0.2~1.0mL/min	1.0~50mL/min
	(Max.)	10mL/min (Solvent; Pure Water)	1.0mL/min (Solvent; Pure Water)	100mL/min (Solvent; Pure Water)
Maximum Back Pressure		50kPa		
Internal Volume		IN→Cell: ca. 60μL Cell→OUT: ca. 600μL All (Cell→OUT): ca. 670μL	IN→Cell: ca. 10μL Cell→OUT: ca. 355μL All (Cell→OUT): ca. 370μL	IN→Cell: ca. 120μL Cell→OUT: ca. 510μL All (Cell→OUT): ca. 640μL
Recorder Output		0~10mV/FS		
External Input		Purge On/Off, Auto Zero, Marker		
External Output		(1) READY (Automatic Start-up) (2) LEAK (3) ERROR (OVER HEAT/LOW LIGHT INTENSITY/NULL GLASS HOME POSITION/LOST PARAMETERS/OPTICAL BALANCE) (Contact Capacity: DC24V 0.1A max.)		
Temperature Control		OFF, 30~50°C (1°C step), 77°C Temp. fuse		
Communication Port		RS232C		
Operational Support Functions		(1) Automatic Start-up (Start-up Sequence) (2) Span/Validation Guide (3) Real Time Baseline Monitor		
Wetted Materials		Stainless Steel 316, Teflon, Quarts glass		
Power Source, Power Consumption		AC100~240±10%, 50/60Hz, 150VA max		
Dimensions, Weight		W260 x D400 x H200 (mm), ca.13kg		
Accessories		Power Cable, Signal Code, Connector Tube, Fuse, Operation Manual		

*Pure water 1mL/min, PURGE OFF
**Pure water, response: 1.5 sec

Eluent Degassing Device

DEGASSER® ERC-3000α Series
ERC-3115α, 3215α, 3315α, 3415α



*[DEGASSER®] is the registered trademark of E.R.C. Co., Ltd.

Principle

The liquid to be degassed runs through a membrane made of special synthetic resin in a vacuum chamber. Dissolved gas in the liquid passes through the membrane and is eliminated from the liquid because of its small molecular size, higher mobility than that of the liquid, and higher affinity with the special synthetic resin membrane.

Features

- Pressure sensor and leak monitor assure high safety.
- Dead volume is minimized to 7mL/channel.
- Any pump can be used because differential pressure is low.
- Continuous degassing mode helps eluent preparation for high-sensitivity analysis.
- EMC and LVD compliance, with CE marking.

Product Code	Y4617007	Y4617000	Y4617002	Y4617004
Model	**ERC-3115α**	**ERC-3215α**	**ERC-3315α**	**ERC-3415α**
Solvent Channels	1 Channel	2 Channels	3 Channels	4 Channels
Degassing Capacity	When ion-exchanged water saturated with air at 25˚C is put through at a flow rate of 3 mL/min, no bubble is observed at the outlet of the apparatus. (Measured dissolved oxygen level at the outlet: 2 ppm at flow rate of 3 mL/min)			
Internal Volume	7mL/Channel			
Max. Flow Rate	20mL/min for each Channel (Eluent: 25˚C Pure water)			
External Output	An open connector signal is delivered to the external output signal terminal, when "PRES" and "LEAK" LEDs light.			
Dimensions	W71 x D310 x H136 (mm)			
Power Source	AC100V~AC240V, 50/60Hz			
Functions, Displays	• Power On/Off Display: "POWER" LED lights, when the power is supplied. • Status monitoring function: "READY" LED lights, when the internal pressure in the vacuum chamber is below a predetermined limit. • Pressure monitoring function: "PRES" LED lights, when the internal pressure in the vacuum chamber does not reach a predetermined level within a predetermined time. • Leak monitor: "LEAK" LED lights, when the liquid leaks in the apparatus. • Self cleaning: The vacuum line is cleaned by air suction. • Vacuum pump operation switching function: NORM.: Controlled operation in normal run CONT.: Continuous operation in case of high degree of degassing			
Weight	ca. 5.0kg	ca. 5.1kg	ca. 5.4kg	ca. 5.5kg

* For use of special solvents, such as fluorinated organic solvents, please contact Shodex or our distributors near you.