

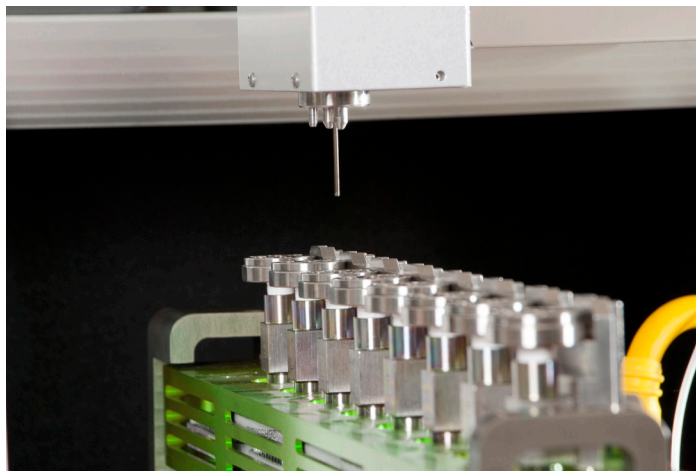
# Optimization Sampling Reactor (OSR) For Big Kahuna and Junior

The eight-channel Optimization Sampling Reactor (OSR) enables scientists to screen a broad experimental space with precise and fully-independent pressure and temperature control for each reactor. With innovative controlled atmosphere sampling port technology, you have the ability to automatically dispense and sample at pressure and temperature without the risk of sample loss. Customized OSR options include inserts to run low volume reactions, and Dursan/Hastelloy components for corrosive conditions.

## Specifications

### Optimization Sampling Reactor (PN: F163506, F163506-DS)

Description	Specifications
Element size (U) width	2 U (120 mm)
Number of reactors	8
Total reactor volume	50 mL
Vial volume	40 mL
Reactor seal material	FEP-encapsulated Viton fluoroelastomer O-rings (valves and main stirtop seal), Kalrez (injection port), Viton-ETP for stirrer, Viton for antechamber port



Injection and sampling needle preparing to sample from the reactor



Overhead view of the OSR

## Stirring

Description	Specifications
Stirring type	Rotary, overhead magnetic coupling
Stirring zone	1 (1 for all 8 reactor cells)
Stirring speed range	0-750 rpm
Maximum material viscosity	1000 cP

## Temperature control

Description	Specifications
Number of heated/cooled zones	8 heated/cooled (1 per reactor) + 4 heated for stir top
Reactor operating temperature	-20–200 °C
Reactor temperature accuracy	±2 °C
Temperature ramp rate	<ul style="list-style-type: none"> <li>Up to 5 °C/min heating (20–120 °C)</li> <li>Up to 2 °C/min cooling (120–20 °C) (with liquid cooling using chiller)</li> </ul>
Maximum possible gradient between two reactor cells	50 °C

## Pressure control

Description	Specification
Minimum operating pressure	30 psi
Maximum allowable working pressure (MAWP)	<ul style="list-style-type: none"> <li>750 psi at 200 °C</li> <li>Rupture disks rated at 750 psi</li> </ul>
Maximum allowed operating pressure (MAOP)	400 psi at 200 °C
Control accuracy	±2 psi vs. set point
Pressure control zones	Each of 8 reactor cell independent
Number of process gas ports	1 common for all 8 reactor cells
Number of vent ports	1 common for all 8 reactor cells

## Gas supply panel

Description	Automated gas supply panel	Manual gas supply panel
Process gases	2	1
Gas control	2 Tescoms	2 manual gas regulators

## OSR injection arm (F00536)

Description	Specification
Element type	Arm element
Pressure	650 psi maximum
Needle size	16 gauge, non-piercing
Needle extension	0–190 mm
Liquid viscosity	Compatible with standard syringe pump aspiration
Syringe size	5 mL
Syringe pressure rating	500 psi maximum
Maximum allowed operating pressure (MAOP)	400 psi

## Liquid addition/sampling

Description	Specification
Number of sampling/addition ports	1 per reactor cell, valve operated by injection arm
Liquid/sampling tip	16 gauge autosampler tip on injection arm
Sampling pressure range	Up to 400 psi

## Consumables

### Reaction vials

Unchained Labs part number	Description	Specification
F160662	Borosilicate glass reaction vial, 30 x 65 mm	5-25 mL working volume 40 mL max volume
F167689	Stainless steel reaction vial, 30 x 65 mm	5-25 mL working volume 40 mL max volume
VD00535	Low volume borosilicate glass culture tube, 12 x 75 mm	1-4 mL working volume 6 mL max volume

### Stir paddles

Unchained Labs part number	Description
F164773	PEEK molded stir paddle, standard width, pack of 24
F164773-SV	Low volume PEEK molded stir paddle, narrow width, pack of 24

### Low volume inserts

Unchained Labs part number	Description
ME00759	Low volume stainless steel insert
ME00759-DS	Low volume Dursan coated stainless steel insert



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