

JUNIOR

Reaction Screening OSR

全自动高通量催化剂筛选仪



UNCHAINED
LABS

Cover all screening and optimization bases 涵盖全部筛选和优化变量

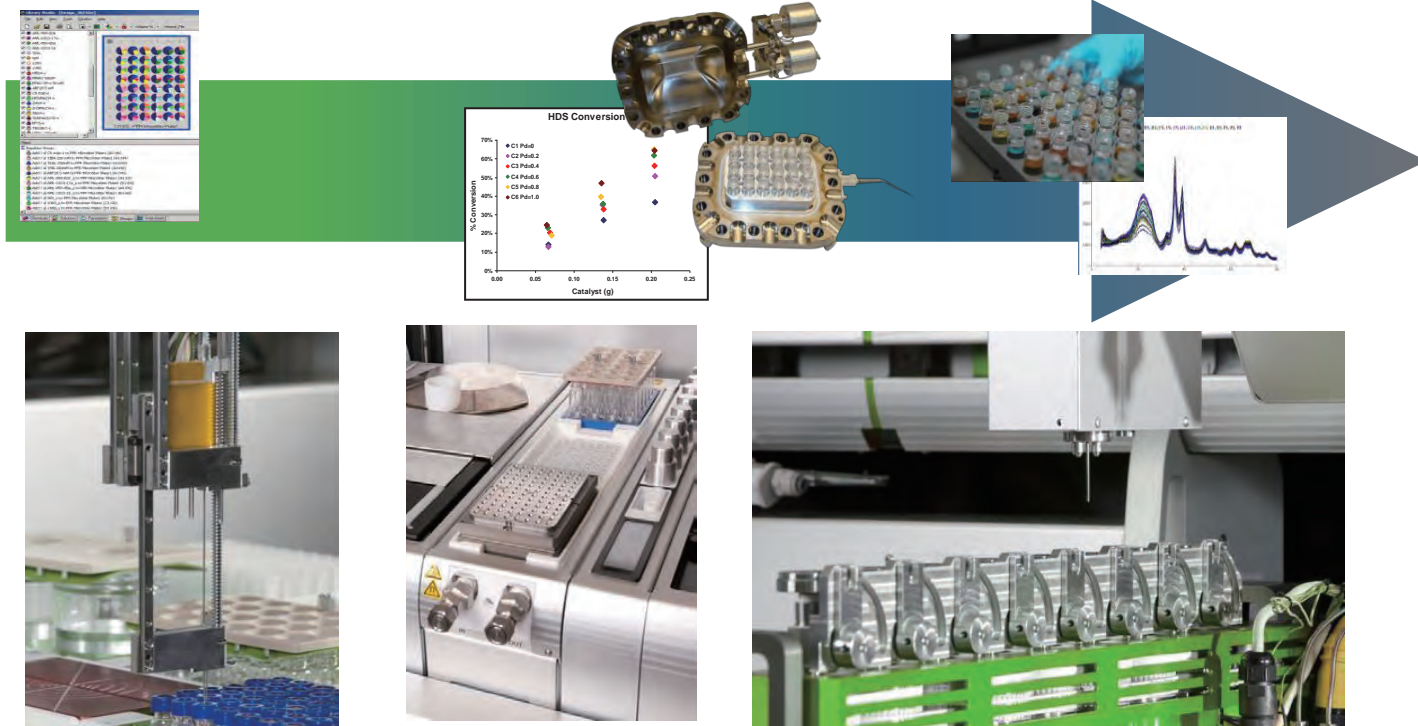
Junior screens all your substrates, catalysts, reactants, solvents and reaction conditions so you can tackle a huge range of organic transformations. Tight reaction control, stir plate temps, filtration and dilution mean your samples are ready for structural analysis whenever you are. Junior turns reaction screening and process optimization into totally routine activities. Build a software protocol for reaction screening and plow through hundreds of modifications per week, design real-time sampling to fine tune your chemistry pathways. Junior lets you dive deep so that you know exactly what tweaks to make next.

Junior可以筛选所有底物，催化剂，反应物，溶剂和反应条件，让您能够筛选出最理想的有机反应。通过严格控制反应条件，搅拌板温度，过滤和稀释条件等，可以提高后续样品分析的质量和效率。Junior完全标准化反应筛选和工艺优化。您可以通过软件程序建立反应筛选系统，并通过每周数百次实验进行调试和修改，设计实时采样以微调您的化学路径。Junior让您明确下一步的实验方案。



Reaction Screening Workflow 反应筛选过程

1. 催化样品分装和混匀
2. 反应釜进行筛选
3. 数据分析



Perform Multiple Applications 执行多种应用

Junior fully automated critical chemistry workflows to allow for you to walk up, set up your runs, and walk away worry-free.

Junior可自动化控制化学反应工作流程, 全过程实现无人监控。

Reaction screening and optimization

Process optimization

Real-time reaction kinetics

反应筛选与优化

工艺优化

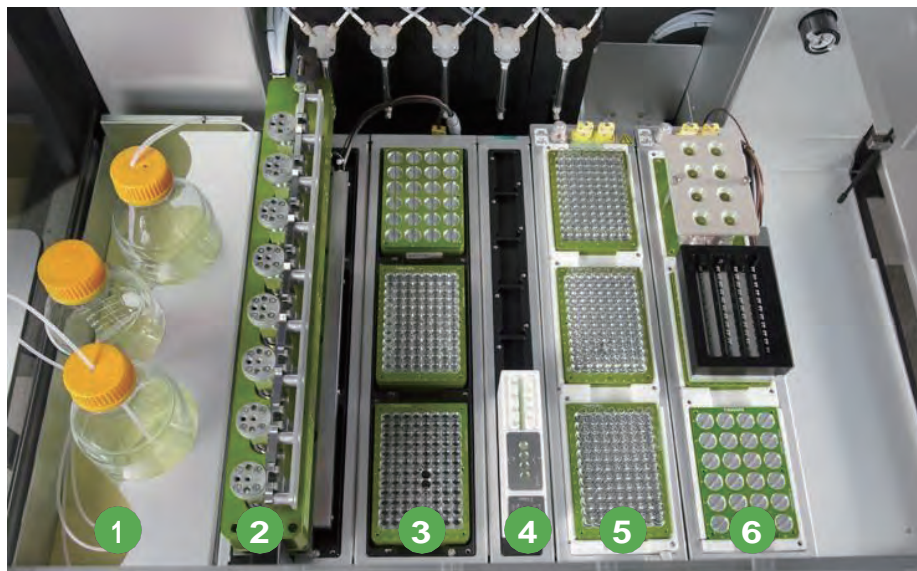
实时反应动力学



Dial in your Screening Process 了解您的化学反应

Junior lets you check out a ton of reaction screening variables like solvents, ligands, catalysts and reagents all at once. It'll plow through hundreds of modifications per week. Outfit one with an Optimization Sampling Reactor (OSR) to grab samples from your reactions as they're happening and know even more right now.

Junior 能协助您快速筛选反应变量，包括溶剂，配体，催化剂和试剂。Junior 能每周进行数百次不同实验。在 Junior 上配备一个高温高压优化反应釜（OSR）、恒温移液钢针，能实现在反应过程中实时取样并帮助您了解反应情况。

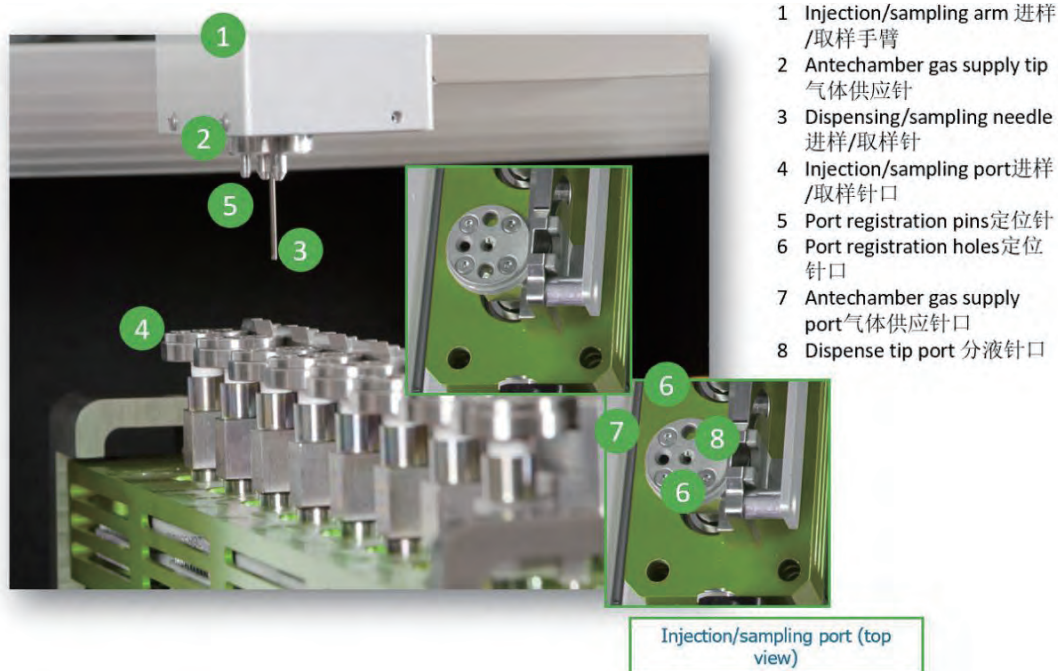


- | | | | |
|---|---------------------------------------|---|----------------------------------------------|
| 1 | Solvent tray 溶剂瓶 | 4 | Wash station 清洗工作站 |
| 2 | Optimization Sampling Reactor (OSR) | 5 | Heating/cooling/stirring station 加热/降温/搅拌工作站 |
| 3 | 3-Position vortexing station 涡流震荡工作站 | 6 | 3-Position plate rack 孔板架 |

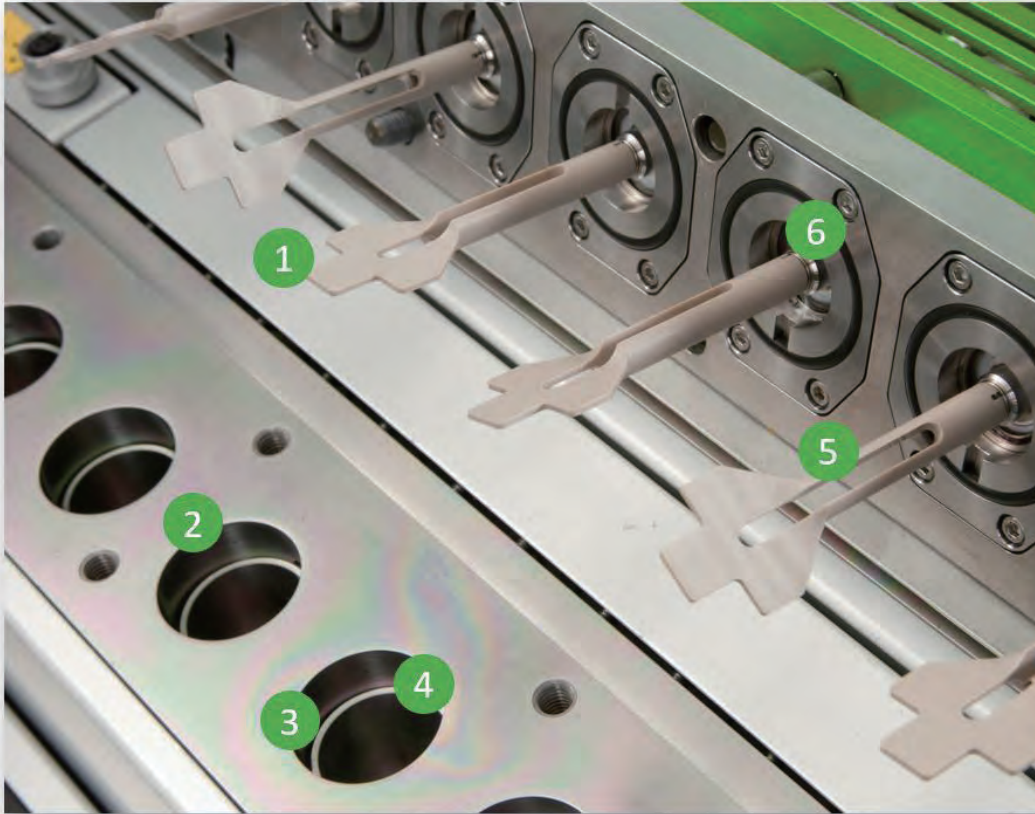
OSR Heated Tip High Pressure Sampling OSR高温高压取样针设计

Going the one variable at a time route doesn't cut it when you need to know how all your different reaction variables play together. Add an Optimization Sampling Reactor (OSR) to Junior and get real-time kinetics on all your reactions. OSR grabs time-point samples from up to 8 pressure and temp-controlled vessels at a time without interrupting a single reaction. Each vessel makes sure the heating, cooling and stirring for each of your reactions is just right.

当您需要了解不同反应变量之间的关系，且每次只改变一个变量又不能满足需求，而使用OSR能了解所有反应的动力学。OSR能从最多8个不同压力和温度控制的反应釜里适时的抓取反应样品，并且能保证不改变其他反应条件。每个反应釜皆能确保提前设计好的反应过程中的温度，压力和搅拌速度。

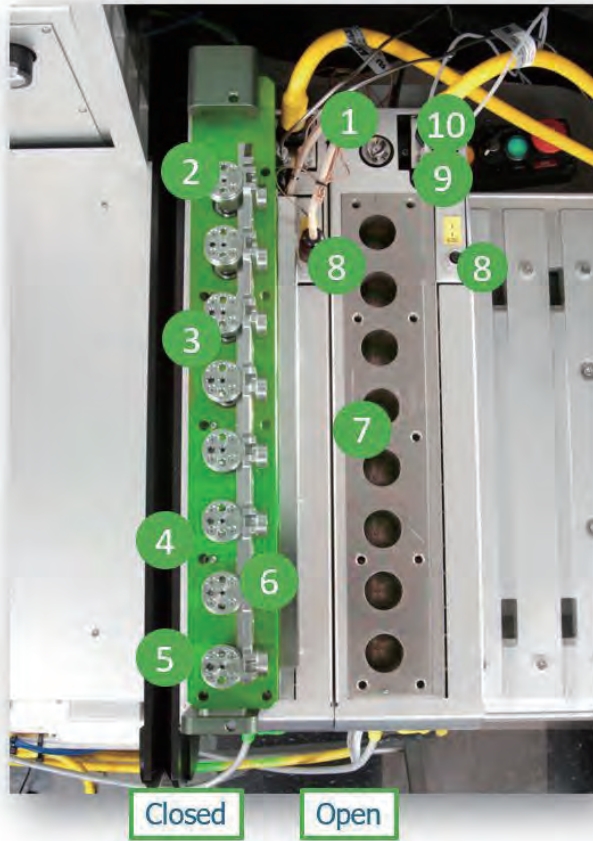


OSR Reactor Stir Paddle OSR 反应釜搅拌桨



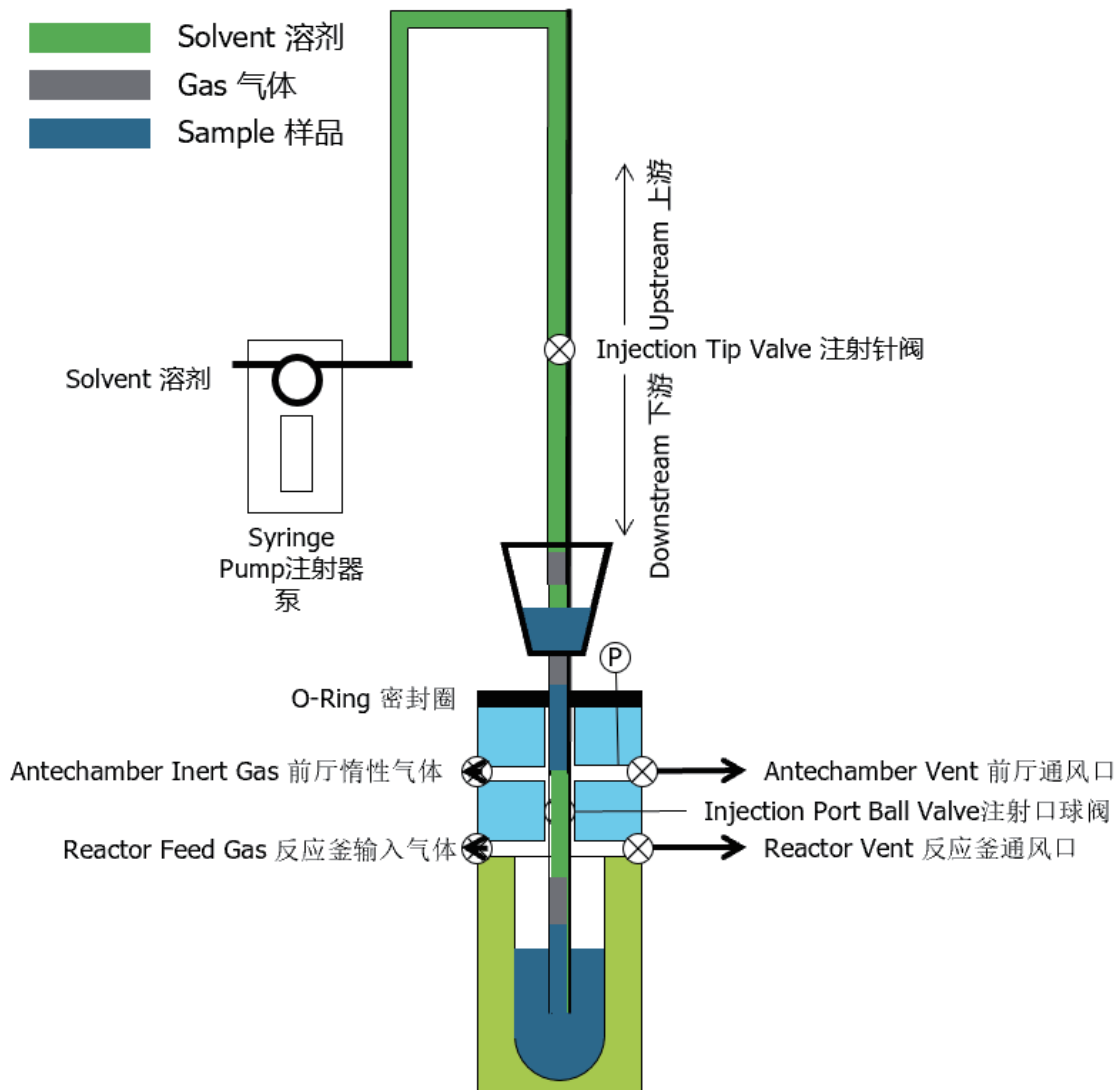
- 1 Stir paddle 搅拌桨
- 2 Gas inlets 气体入口
- 3 Vial insert 反应瓶孔
- 4 Burst disk vent 爆裂盘通风口
- 5 Slot for dispense tip access 分液头入口
- 6 O-ring seal O 形圈密封

OSR Reactor Design OSR 反应釜设计

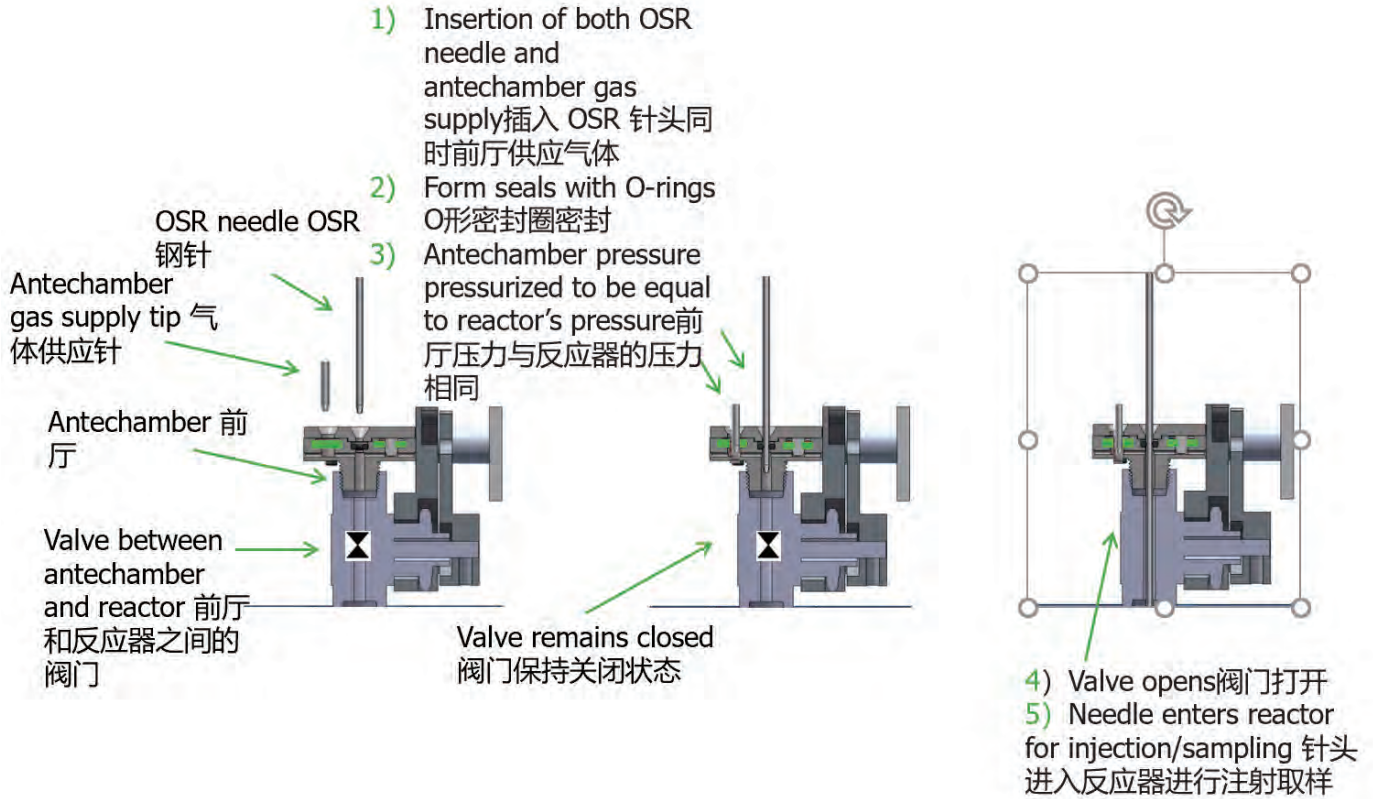


- 1 Stir top motor coupling 搅拌顶部电机联轴器
- 2 Reactor 1 反应器1
- 3 Stir top 搅拌顶部
- 4 Stir-top mounting screw 搅拌顶安装螺丝
- 5 Reactor 8 反应器8
- 6 Injection port ball valve 注塑口球阀
- 7 Stir-top mounting screw hole 搅拌顶安装螺丝孔
- 8 Stir top heater power & TC connectors 搅拌顶部加热器电源和 TC 连接器
- 9 Burst disk vent line connection 通风口线连接
- 10 Process (L) & quench (R) gas line connections 燃气线路连接

OSR In-situ Sampling Illustration OSR 高压取样图解



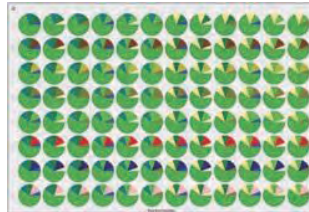
OSR In-situ Sampling Illustration OSR高压取样图解



Software break through bottlenecks 软件优势

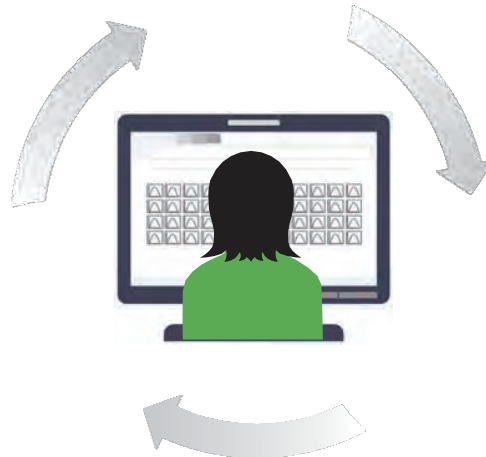
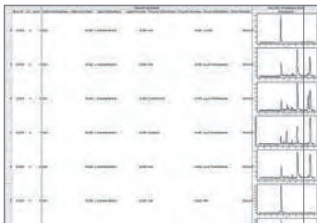
LEA doesn't move the bottleneck, it totally unclogs it. You get intuitive experimental design that makes sense on the front end and full integration with analytical tools on the back end. LEA also links your conditions, steps and analytical data together, so your final report doesn't just have numbers, it's got all the information you need to make real decisions.

我们强大的LEA软件包，能帮助您做出最有效的试验设计，既能让前端的用户操作界面更简便高效，又能将后续的分析仪器数据整合到中央数据库。LEA能把实验条件、步骤和数据分析有效结合，所以您的实验报告不仅包含实验结果的数据，而是涵盖整个实验过程的全面信息，以协助您做出最有效的判断。



Library Studio
Design complex, high-throughput experiments in an array-based format
设计复杂高通量实验

PolyView
Review and report all info from experimental design, execution and analytics
查阅实验执行和结果的报告



Automation Studio
Execution of designed experiments and integrated analytics
执行实验和分析工具

Junior Reaction Screening OSR Specifications Junior 反应筛选仪参数

Heated tip liquid dispenser—extended tip

可加热针头分液器

Heated reservoir volume per tip: 1mL

可加热针头容积: 1mL

Reservoir temperature: Up to 120°C

可加热温度: 达 120°C

Temperature uniformity: $\pm 2^\circ\text{C}$ (across tips)

温度均匀性: $\pm 2^\circ\text{C}$

Tip pitch: 9mm

针头大小: 9mm

Extendible tip: 1

扩展针头

Syringe sizes: 50 μL –2.5 mL (standard supplied)

注射器容量: 50 μL –2.5 mL(标配)

Heated single-tip liquid dispenser

独立可加热针头分液器

Heated reservoir volume: 1mL

容积: 1mL

Reservoir temperature: Up to 120°C

温度: 达 120°C

Syringe sizes: 1–2.5mL(standard)

注射器容量: 1–2.5mL(标配)

Needle size: 16-gauge, non-piercing

钢针尺寸: 16 标准, 非穿孔

Vortexing station—3positions 涡旋混匀器

Orbital: 60–3570rpm 转速

Maximum vortexing mass: 2268g(5lb/plate) 涡旋器能承受最大重量

Optimization sampling reactor and sampling arm 优化反应取样器和取样臂

Temperature rating: -20–200°C 温度范围

Reactors: 8 independent reactors 反应釜: 8 个独立反应釜

Possible delta between adjacent reactors: 50°C 相邻反应釜之间的可能温差: 50°C

Heating rate: Up to 5°C/min

加热速率: 可达 5°C/分钟

Cooling rate: Up to 2°C/min

冷却速率: 可达 2°C/分钟

Reactor total volume: 40mL

反应釜总体积: 40mL

Reactor working volume: 5–25mL

Junior Reaction Screening OSR Specifications Junior 反应筛选仪参数

反应釜工作体积: 5–25mL

Maximum overhead stirringspeed:750rpm

最大搅拌速度: 750rpm

Pressure rating:30–400psi

压力范围: 30–400psi

Off-deck third-party instrument integration option

集成第三方仪器

- HPLC 高效液相色谱
- GC 气相色谱

Other systems available for virtual integration.

软件可虚拟整合其他设备

Please contact Unchained Labs for a full list of systems.

请联系 Unchained Labs 以获取完整系统信息

Facilities requirements 安装要求

Physical: 空间

With integrated enclosure: 外壳尺寸

105cmWx90.4cmDx140cmH, ~150kg

With integrated table option: 工作台尺寸

167cm Wx 90,4 cm D x 200cm H, ~240 kg

Electrical:

电源

Junior:

120–220V±10%,50–60Hz,16A

Computer: 电脑

US:115V±10%,60Hz

EU:220V±10%,50Hz

Compressed dry air: 0.5MPa to 0.9MPa (70–130psi), 4L/min (8mm hose)

干燥压缩空气: 0.5MPa 到 0.9MPa (70–130psi), 4L/min (8mm 软管)



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