

## User Guide

# Odyssey Series

UHPLC packed emitter column

Recommended guidelines for optimal setup and operation of Odyssey Series columns:

ODY-25075C18A

ODY-15075C18A

For more information, visit [www.ionopticks.com](http://www.ionopticks.com)

*ionopticks*



---

<b>Product Features</b>	<b>3</b>
<b>Compatibility</b>	<b>3</b>
<b>Installation of Odyssey Series columns to UHPLC</b>	<b>4</b>
<b>Fitting Odyssey Series columns to your instrument</b>	<b>5</b>

---

<b>Operation of Odyssey Series columns</b>	<b>6</b>
Initial operation	6
Standby and idle conditions	6
Removal from a UHPLC	6
Recommended buffer compositions	6
Column volumes	6
Column temperature	6
Column equilibration	6
Sample loading	6
Example gradients	6

---

<b>Example Data</b>	<b>7</b>
---------------------	----------

**DISCLAIMER:** The use of “we” “us” or “our” in this User Guide are references to IonOpticks Pty Ltd ACN 621 674 459. The information in this User Guide including (without limitation) the recommendations, safety guidelines and product warnings with respect to the use of our products are to be read strictly subject to our terms and conditions which can be located at [www.ionopticks.com](http://www.ionopticks.com) and the limitations and exclusions of our liability found within those terms. We accept no liability for any loss or damage howsoever or wherever arising (including death and/or personal injury) which results from or is connected with the failure by the customer to use our products strictly in accordance with the directions in this User Guide.

# Innovative Design. Transforming Proteomics.

to UHPLC

VHP MicroTight® Adapter



Our columns are differentiated by a key technological advance: a unique packed emitter design that enables maximum mobile phase velocity with no post-column dead volume. This feature maximises chromatographic efficiency and dramatically enhances performance, providing a best in class solution for peptide and metabolite LC-MS separations.

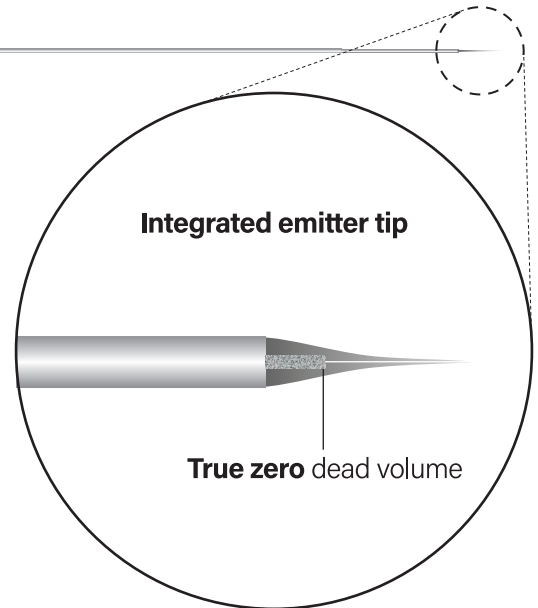
## Product Features

- ✔ Integrated emitter with zero post-column dead volume.
- ✔ Designed to withstand ultra-high-performance LC (UHPLC) backpressures of up to 1000 bar.

## Performance guarantee

Our columns are subjected to rigorous quality control procedures under the direct eye of our Senior Scientists. All IonOpticks products are covered by our 100% performance guarantee. Any item not meeting our high-performance expectations due to manufacturing defects will be replaced without charge to the customer.

Please contact us at [support@ionopticks.com](mailto:support@ionopticks.com) if you have any concerns relating to your column. Our terms and conditions are provided with every quote, but we want to make sure you are receiving a quality product every time so please do not hesitate to get in touch with any feedback or concerns.



## Compatibility.

Odyssey columns are compatible with a wide range of LC-MS systems. Compatibility is not limited to equipment presented in this guide. Please contact [support@ionopticks.com](mailto:support@ionopticks.com) for enquiries regarding instrument compatibility.

UHPLC	BRUKER	THERMO SCIENTIFIC	WATERS
	nanoElute	Dionex UHPLC systems	nanoAcquity
		Easy-nLC 1000/1200	M-Class
Mass Spectrometers	BRUKER	THERMO SCIENTIFIC	
	timsTOF Pro	Fusion Eclipse (+/- FAIMS)	
	timsTOF fleX	Exploris 480 / 240 / 120 (+/- FAIMS)	
FITTINGS	BRUKER	THERMO SCIENTIFIC	
nanoViper	maXis II ETD	Orbitrap Fusion	
	Impact II	Orbitrap Fusion Lumos	
	Compact	Orbitrap Elite	
COLUMN OVENS	Amazon	THERMO SCIENTIFIC	
Sonation		LTQ Orbitrap XL	
Bruker Column Toaster		Q-Exactive	
		Q-Exactive HF	
		Q-Exactive Plus	

## Product Specifications.

<b>Column format:</b>	Analytical column	<b>Pore size</b>	120Å	<b>Particle size</b>	1.6µm
<b>Column type:</b>	Reversed-phase	<b>Max pressure</b>	1000 bar	<b>pH stability</b>	1-8
<b>For use with:</b>	UHPLC	<b>Temp limits</b>	60°C (low pH)	<b>Stationary phase</b>	C18

# Installation of Odyssey Series columns.

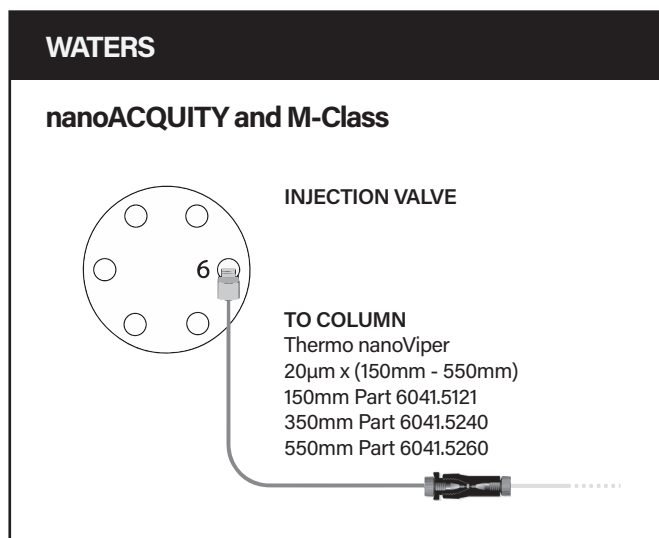
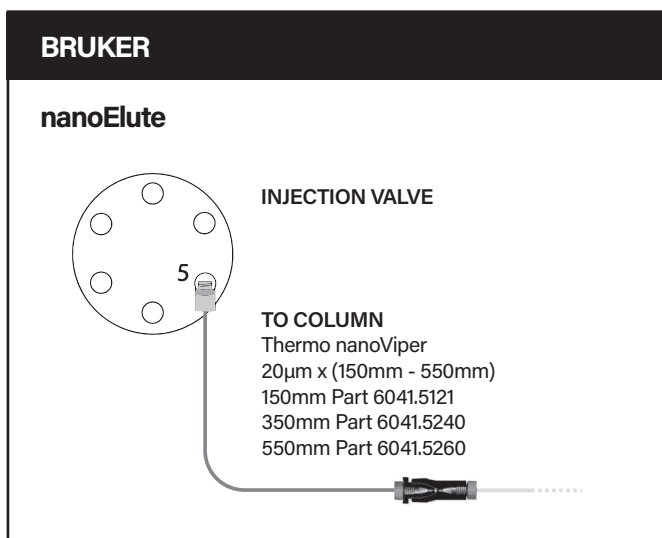
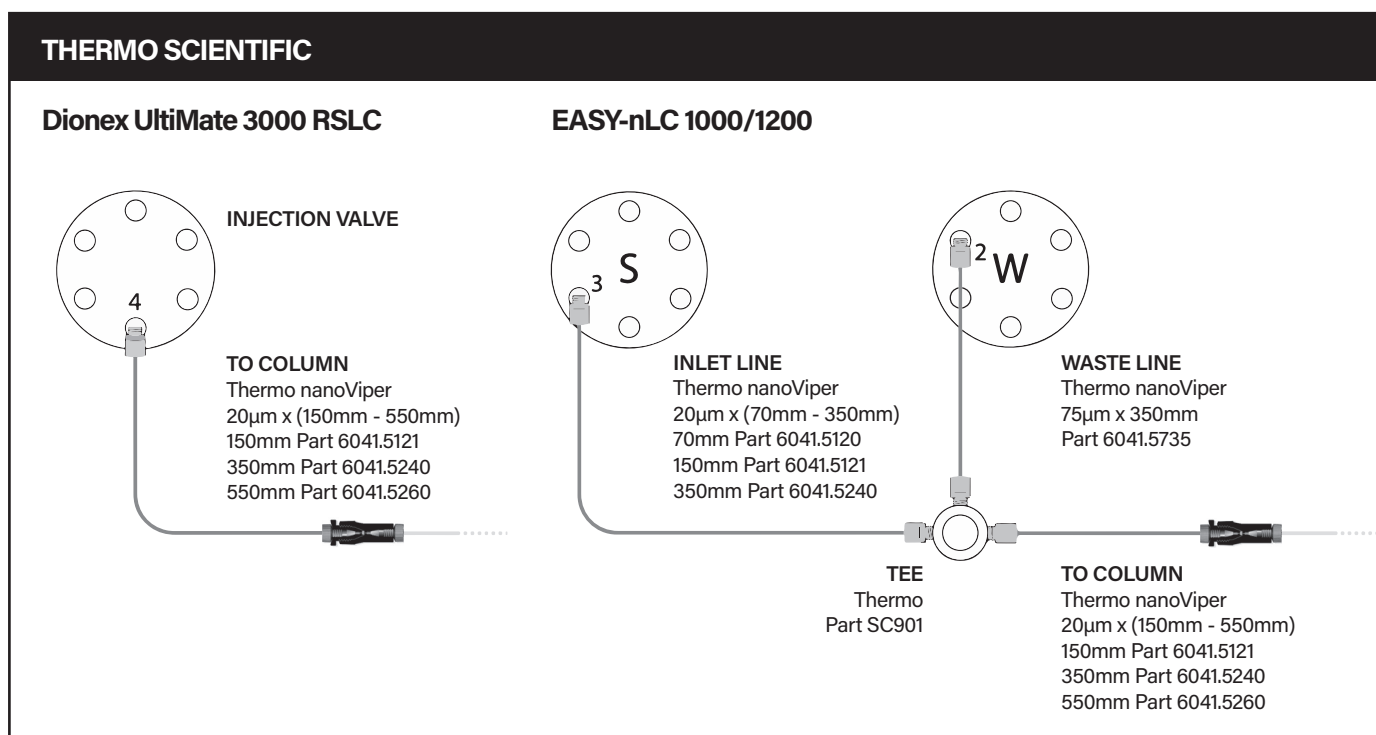
## Setup of UHPLC systems

We recommend operation of Odyssey series columns in a one column mode (direct injection). Please refer to manufacturers guidelines for operating your UHPLC in a one column mode.



Handling of fused-silica or glass tubing and tips can result in serious personal injury, including eye and skin injury. Use safety goggles meeting AS/NZS 1336 requirements or equivalent. Puncture and chemical-resistant gloves should also be worn at all times.

## Fitting the column to your UHPLC system.



# Fitting Odyssey Series columns to your instrument

## Recommended parts for optimal fitting:

Parts can be found at [www.idex-hs.com](http://www.idex-hs.com)



UH-750  
VHP MicroTee® Assembly

OR



UH-634  
VHP MicroTight® Adapter

Odyssey Series columns are manufactured using 360µm outer diameter (OD) fused silica. Please ensure that any fittings used to connect the column are specifically designed for fused silica 360µm tubing. Note that the recommended parts included in this Guide have been proven to provide reproducible and reliable results.



**WARNING** Electrospray ionisation involves the use of potentially lethal high-voltage electrical current. Installation of equipment should be performed by qualified personnel in accordance with all applicable electrical codes or standards.

## For optimal usage, please adhere to the following instructions:

- 1 Remove the nuts/ferrules from the tee assembly or adaptor union.
- 2 Slide a nut/ferrule onto the rear of the column, exposing the column beyond the ferrule by at least 1mm.
- 3 Screw the nut/ferrule/column assembly into the fitting until just finger tight (it's important not to overtighten at this point).
- 4 To determine that the ferrule has contacted the column, grip the column and gently slide it in and out and ensure that you feel a very slight resistance.



**CAUTION** Do not pull the column out beyond the ferrule nose during this procedure.

- 5 Push the column in until it butts firmly into the bottom of the fitting.
- 6 Carefully tighten the nut an additional amount. Use a tightening tool to achieve consistent results.



**DO NOT OVER-TIGHTEN.** The amount of tightening required is dependent on the type of fitting that you are using. Consult the fitting manufacturer for specific instructions relating to your set up.

# Operation of Odyssey Series columns.

## Odyssey series columns initial operation

Once the column is connected to your UHPLC system and is placed inside the source heater or housing, begin operation using 70% buffer B at a flow rate of 400nl/min for around 10 minutes or until the pressure is stable for several minutes. Voltage should be applied once the mobile phase reaches the emitter tip. It is recommended that at least one gradient is run without sample injection before assessment of column performance using standards.

## Standby and Idle conditions

To optimise column lifetime and performance, it is recommended that the instrument continues to run at the desired operating pressure and ideally continues to run blank samples using mobile phase gradients typical of normal operation. Spray voltages should be maintained during these operations.



Extended periods of time at isocratic flow will reduce column performance. Column performance can be recovered by running a blank gradient without sample injection.

## Removal from a UHPLC

If possible, do not remove the column from a UHPLC system, however, removal is sometimes required. For the removal procedure, run 80% B for 5min at operating flow rates before reducing flow to 0.002µl/min for 10min or until the back pressure has stabilised below 10 bar. Set MS system into standby mode. The column can now be removed from the UHPLC. It is not recommended that the column is removed from the UHPLC for an extended period of time. It is recommended that a new cut with an appropriate tool is made to the entrance of the column before refitting to the UHPLC to ensure a reliable connection.



Removal of the column under high back pressure conditions can damage the stationary phase bed and lead to blockages and poor chromatographic performance.



The removal procedure can lead to fouling of the emitter tip and poor column performance. The IonOpticks replacement guarantee is not valid if a column has been removed from a UHPLC once in operation.

## Recommended Buffer compositions:

Buffer A 99.9% MilliQ Water, 0.1% formic acid

Buffer B 99.9% Acetonitrile, 0.1% formic acid

## Column Volumes

25cm X 75µm 1.1µl

15cm X 75µm 0.66µl

## Column Temperature

The recommended operating temperature for Odyssey Series columns is 40°C. The maximum operating temperature is 60°C.

## Column equilibration

Before each run the column should be reequilibrated using a minimum of 4 column volumes of 100% buffer A. Column equilibration should be performed below 1000bar.

## Sample Loading

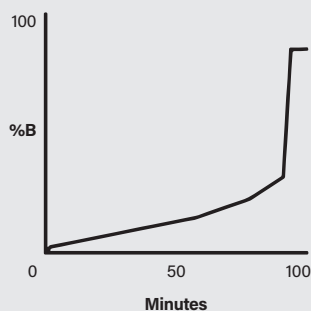
Samples should be loaded onto the column in 100% Buffer A. Samples loaded on to the column should be de-salted and should not contain any contaminants (salts, detergents, solid particles, etc). Loading contaminated samples onto the column may disrupt solvent flow or foul the emitter tip leading to a loss of performance.

### 25cm Column

90min gradient

Time (min)	Composition (% Buffer B)	Flow Rate (µl/min)
0	0	0.400
1	2	0.400
2	5	0.400
57	17	0.400
78	25	0.400
91	35	0.400
94	85	0.400
101	85	0.400

Example gradient:

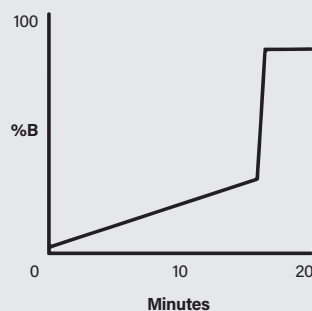


### 15cm Column

17min gradient

Time (min)	Composition (% Buffer B)	Flow Rate (µl/min)
0	5	0.400
17	30	0.400
17.5	85	0.400
20	85	0.400

Example gradient:

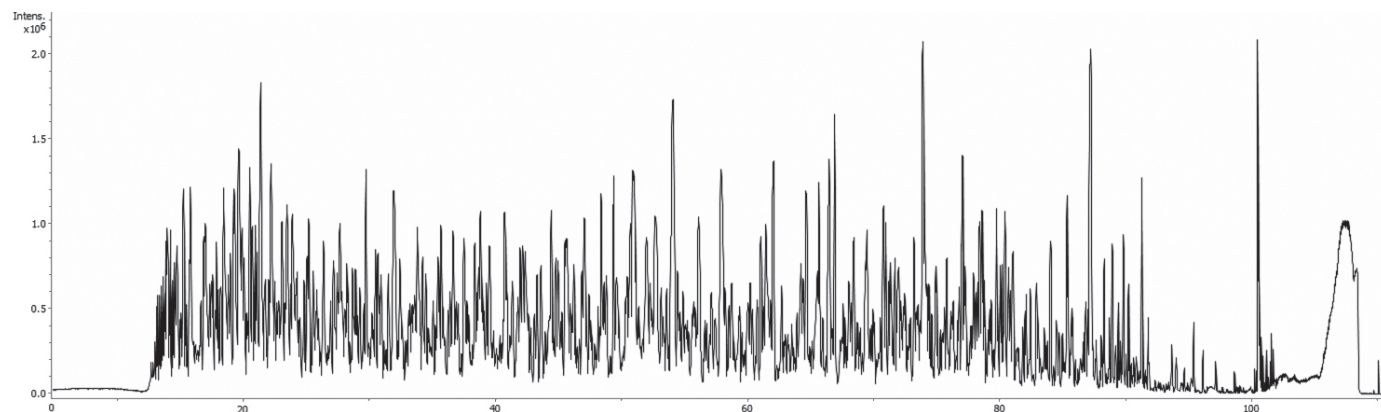


# Example data.

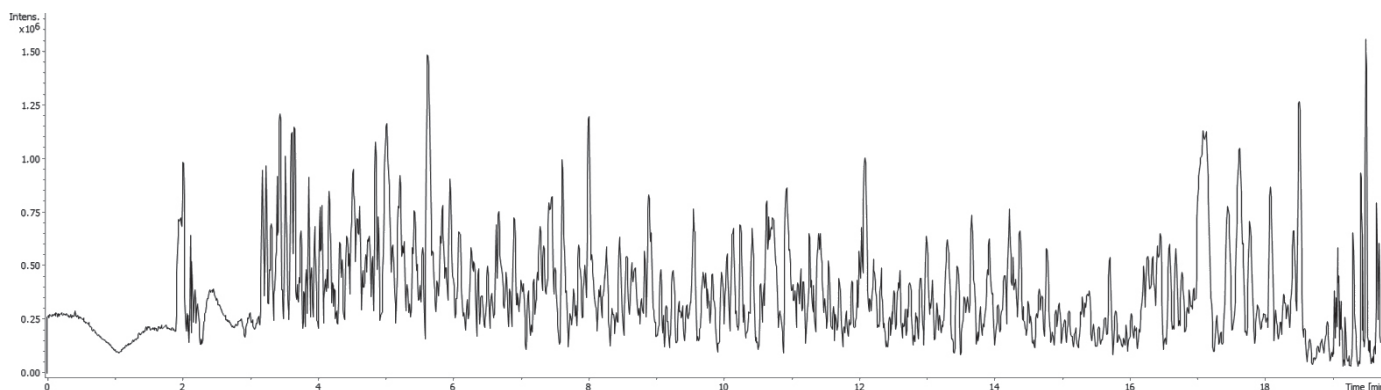
---

The BPC plots shown represent typical results (shown for HeLa tryptic digest).

## 25cm Column, 90min Gradient (200ng injection)



## 15cm Column, 17min Gradient (200ng injection)





For further information and support  
visit our website [www.ionopticks.com](http://www.ionopticks.com)

***ionopticks***

68-70 Hanover Street  
Fitzroy VIC 3065  
Australia

[www.ionopticks.com](http://www.ionopticks.com)

© Copyright 2020  
All rights reserved.

For sales enquiries and orders  
[sales@ionopticks.com](mailto:sales@ionopticks.com)

For technical support  
[support@ionopticks.com](mailto:support@ionopticks.com)

For general enquiries  
[info@ionopticks.com](mailto:info@ionopticks.com)

Odyssey Series