

Slot-die heads

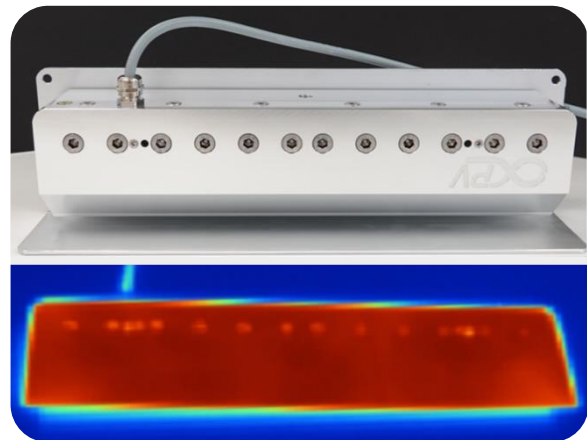
infinityPV offers slot-die heads from the very small to the very large. The smallest are useful in the laboratory allowing you to coat as little as a single stripe while studying drying, coating or simply just learning the technique. The largest enabling you to manufacture the different layers of solar cells on a large scale. We offer the slot-die heads in different materials from composite, through alloy to stainless steel, suiting the different needs of chemistry, weight and thermal latency. They are available in gasket-less forms with very few parts that are easy to assemble and easy to clean and also in forms suitable for pressurized operation. We have quite a number of standard heads and shim kits in stock and we can of course always make the slot-die head and shim kits according to your needs. Common to the infinityPV slot-die heads, is that they offer reliable operation with minimum maintenance at low cost. They also fit all our coating and printing platforms. We now offer heated alloy slot-die heads, even for the smallest version, for hot solution processing of your inks.



Key highlights:

infinityPV slot-die heads are unique on several fronts:

- Available in composite, alloy and stainless steel
- Light weight
- Very simple to assemble and disassemble
- Easy to clean and maintain
- No gaskets
- Few parts
- Low cost
- Can be heated
- Fits all our coating and printing platforms
- From single stripes to many
- From narrow to wide width
- Easy design of shims and meniscus guides
- Very low dead volume is possible
- Temperature controller for heated alloy slot-die head for standalone operation



All slot-die heads require fitting kits and shim kits to operate. The small laboratory scaled heads are available in standard widths of 50 mm, 65 mm and 115 mm allowing for working widths of a single 10 mm or 13 mm stripe, 50 mm working width or 100 mm working width respectively. We have a number of standard heads and shim kits in stock and we can of course always make the slot-die head and shim kits according to your needs.

The dead volume for the laboratory slot-die coating heads ranges from hundreds of microliters to a few milliliters. Our larger pilot and industrial scale slot-die heads have a large dead volume starting from

around 2 mL pr cm of coating width. This implies that our range of coating heads for coating in a full width of 304.8 mm have a dead volume of approx. 60 mL.

The slot-die heads intended for operation at low pressure with low viscosity inks are comprised of only two parts which greatly simplifies assembly, disassembly and cleaning. They can be operated with a single shim or with a shim kit comprising shim and meniscus guide for coating stripes at low web speeds ($0.1-5 \text{ m min}^{-1}$). The light weight alloy and composite heads allow for ultrafast positioning on automated coating platforms.

Slot-die Selection Guide

We cover three standard materials: Stainless steel (heavy), alloy (light weight) and composite/polymer (ultra-light weight). The table below is a selection guide for our range of slot-die heads.

	Composite	Alloy	Stainless
40 mm head (10 mm working width)	✓	✓	✓
65 mm head (50 mm working width)	✓	✓	✓
115 mm head (100 mm working width)	✓	✓	✓
Industrial head (304.8 mm working width)	✓	✓	✓
Heated 50 mm head (10 mm single slot)			✓
Heated 65 mm head (50 mm working width)			✓
Heated 115 mm head (100 mm working width)			✓
Heated 165 mm head (150 mm working width)			✓
Ultra-light weight	✓		
Light weight		✓	
Heat conducting		✓	✓
Thermally insulating	✓		
Low heat capacity	✓	✓	
Corrosion resistant	✓		✓
Pressurized head			✓
Cost (€)	High	Middle	Low