

LABORATORY ROLL-TO-ROLL COATER





The Laboratory R2R Coater

The *Laboratory R2R Coater (LR2RC)* is a compact high precision laboratory roll-to-roll coating machine that transforms the way thin functional films are printed and coated.

With the *Laboratory Roll-To-Roll Coater* platform, it is possible to create/build a system according to your needs. You can choose the length and width of the unit and have a wide selection of accessories that can be added.

These count many different printing and coating units, several drying and curing systems, laminators, trimming and slitting knives, splicing table, foil strippers, laminators, pumps, spindles, inspection systems, camera systems, testing systems, LBIC, solar simulator, barcode writers/readers, laser patterning and more.

The fully equipped *Laboratory Roll-To-Roll Coater* unit gives you a complete and turnkey system covering the range from laboratory to small pilot scale. Hundreds of meters of foil can be processed on these powerful machines offering you the ability to scale with economy in

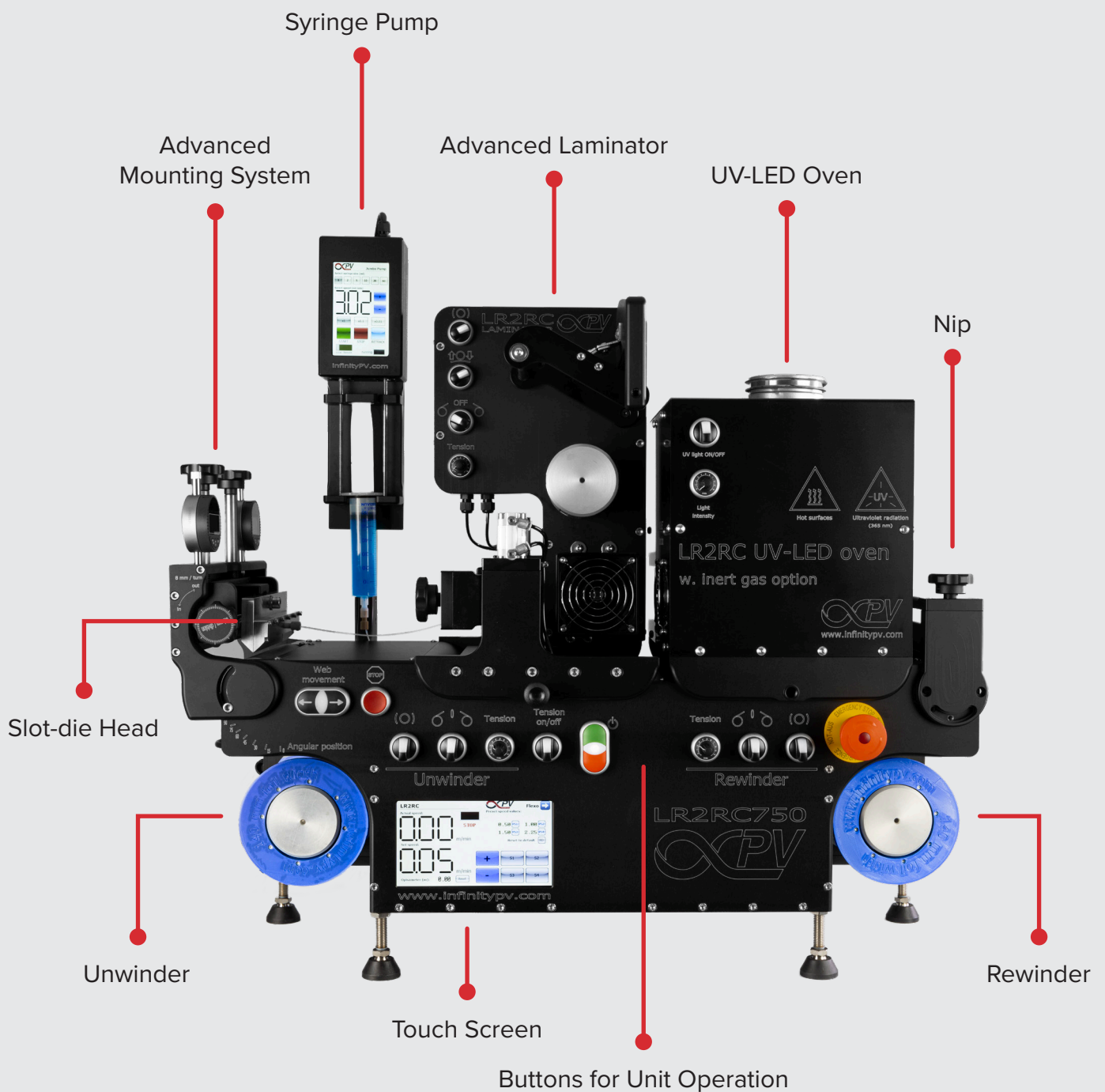
mind. The compact size allows you to fit these machines in existing laboratories, in gloveboxes or fume hoods you already have. In a standard laboratory you will not need additional infrastructure to install and run these machines that work straight out of the box.

Popular Customer Use Cases

- Batteries
- Fuel Cells
- Printed Solar
- Transistors
- LEDs
- Sensors
- Much More

Turn Your LR2RC750 Into an Advanced R2R Lamination Unit

The design of the *Laboratory Roll-To-Roll Coater* platform makes it possible to quickly transform the *Laboratory Roll-To-Roll Coater* from a coater into a powerful R2R lamination system, offering enhanced functionality and versatility for a wide range of applications. With the lamination unit, you can work with several different adhesives for encapsulation including PSA and UV-curable adhesives. The flexibility of the *Laboratory Roll-To-Roll Coater* platform opens new possibilities for the processing of printed electronics.



Platform Size Comparison

With the *Laboratory Roll-To-Roll Coater* platform, it is possible to create a system according to your needs. Choose the length of the platform and select from the extensive selection of components. The fully equipped *Laboratory Roll-To-Roll Coater* gives you a turnkey system covering the range from laboratory to pilot scale processing. The compact size of the *Laboratory Roll-To-Roll Coater* allows you to fit it in existing laboratories, gloveboxes or fume hoods with no need for additional infrastructure.

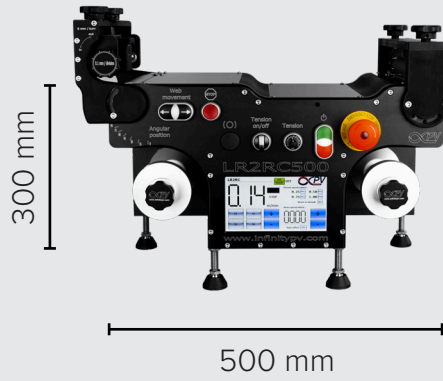
Two Different Widths

The *Laboratory Roll-To-Roll Coater Wide* coating and printing platform enables full 12" width coating and printing with precision and efficiency. The *Laboratory Roll-To-Roll Coater Wide* represents a significant advancement in roll-to-roll coating technology, providing an essential platform for exploring and scaling next-generation materials and accelerating innovation in the field of flexible printed electronics.



Top View

LR2RC500



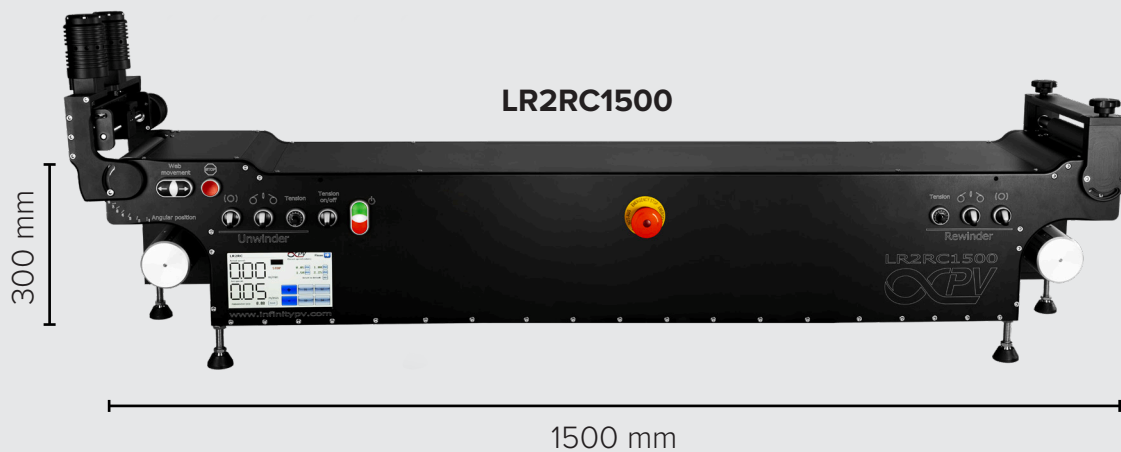
LR2RC750



LR2RC1000



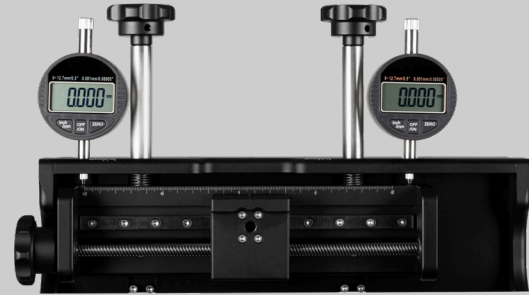
LR2RC1500



Components

Advanced Mounting Systems

The high precision angular mounting system is ideal for mounting a slot-die head, a knife coating set-up, a gravure or flexographic printing unit. The angle can be varied from 0 to 90 degrees (9 o'clock to 12 o'clock) which is very helpful during setup but also while coating. The simplest version has manual control over tilt and cross-web adjustments. Advanced versions include digital micrometer units and motorized cross-web axis and height adjustment.



Slot-die Heads

The infinityPV slot-die heads are engineered with precision and composition in mind, allowing for consistent and uniform coating thickness, resulting in high-quality end products. Whether you are working with batteries, printed solar cells, OLEDs, sensors, or other thin-film technology, our slot-die heads are versatile and can accommodate a wide range of materials and processes. We offer slot-die heads from the very small to the very large. The slot-die heads are available in stainless steel, titanium, and PEEK, suiting the different needs of chemistry, weight, and thermal latency.

Manual Nip and Simple Laminator

Just before the rewinder, the *Laboratory Roll-To-Roll Coater* has the possibility for a very flexible nip that is available in numerous configurations. The simplest has a full rubber roller with manual control of both nip pressure and tilt. Advanced versions include adjustable nip rollers, automation of nip engagement, nip pressure and pressure points. It can easily be used for very simple manual packaging of many devices with little work.



Components

Oven Systems

Several oven systems for curing and drying your coated thin films can be added to the *Laboratory Roll-To-Roll Coater* platforms. With an oven length down to 23 cm, the oven systems are very compact and very simple to add, remove or replace in no time. This allows you to simply mount the desired oven system for the experiment or pilot run that you are about to carry out. We have oven systems for hot-air, inert gas, UV-curing, or infrared (IR) curing. We also offer a combo oven which is a combination of inert gas and IR.



Stripper Unit

The *Laboratory Roll-To-Roll Coater* stripper unit allows for the removal of protective liner or other foil just before the coating or printing station. The stripper unit comes with compressed air spindles, tension control and automation of nip engagement.

Advanced Lamination Unit

With the advanced lamination unit for the *Laboratory Roll-To-Roll Coater* platform, encapsulation or addition of a protecting liner becomes possible and readily scalable in R2R processing. Works with PSA, hotmelt and UV-curable adhesives.



Components

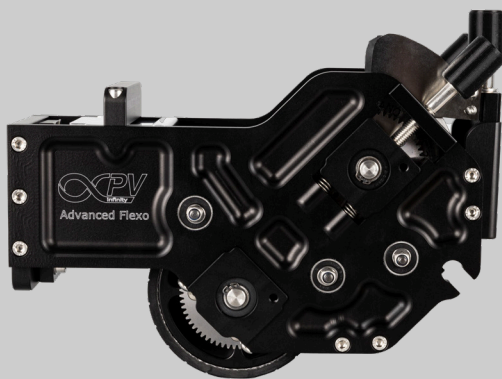
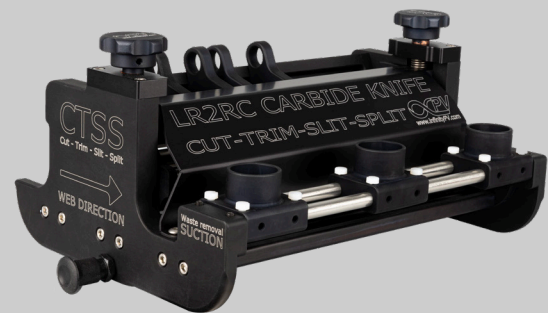


Air Knife

The air knife for the *Laboratory Roll-To-Roll Coater* platform is a very powerful tool for rapid quenching of slot-die coated films with inert gas (important for e.g. perovskites). With the special air knife mount system, the angle and distance between the air knife and substrate can be changed very easily. Combine the LR2RC air knife with an inert gas oven system to quench and anneal your roll-to-roll coated thin films in one go.

Cut - Trim - Slit - Split

Cut, Trim, Slit and Split with the CTSS unit for the *Laboratory Roll-To-Roll Coater* platform. With the CTSS unit, foil handling is now simple and easy. Safe operation with ultra durable carbide cutters and cutting position easily and accurately adjusted. The precision ground and hardened stainless steel rollers ensure gentle handling of substrate and endure tough chemistry.



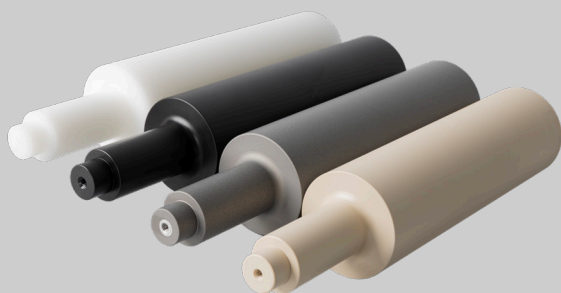
Flexographic Printing

With the *Laboratory Roll-To-Roll Coater* platform you get the option of both a simple and an advanced flexographic printing system. The flexographic printing systems can be used for printing many types of materials on a wide variety of substrates. The simple flexo unit is for short and narrow test runs and the advanced flexographic system is specifically designed for scaled R2R printing.

Components

Pump Systems

The syringe, gear and screw pumps from infinityPV are designed to be an integrated part of the *Laboratory Roll-To-Roll Coater* platform. All pumps come with touch screens for easy use and ink flow configuration. They all offer accurate and smooth ink delivery for your research or production. You can combine several pumps to perform automated gradient and/or dilution experiments. With our free infinityPV software, you can rapidly set up the very simple or the very complex experiments.

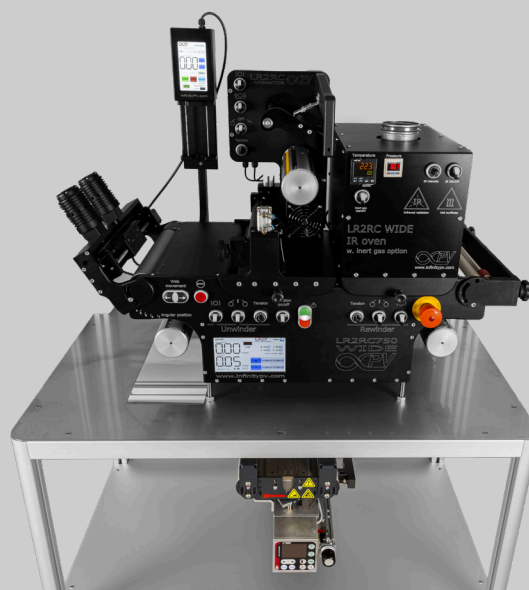


Rollers

Rollers are a very essential part of any R2R system, and their mechanical and material properties often define the outcome of your experiment or production. We therefore care about rollers and all our rollers have super low runout. Our standard anodized aluminum rollers are durable and cost efficient and will be the best choice for 95% of all applications. Some applications do require plastic rollers and we do offer rollers in PEEK and POM (black or white, for contrast). We, of course, also offer rollers in stainless steel for extreme corrosion resistance.

Web Handling Platforms

Work on the *Laboratory Roll-To-Roll Coater* platform does often not require web-guiding or pretreatments. In cases where those are needed, we offer web guiding systems and corona pretreatment systems. We also offer customized cabinets that enable work in your environment and glovebox systems in cases where inert atmospheres are required.



Technical Specifications

Item	Technical Parameter	Remarks
Dimension in cm (WxDxH) and Weight in kg	LR2RC500: 50 x 35 x 30 (30 kg) LR2RC750: 75 x 35 x 30 (40 kg) LR2RC750 Wide: 75 x 46 x 30 (50 kg) LR2RC1000: 100 x 35 x 30 (50 kg) LR2RC1000 Wide: 100 x 46 x 30 (60 kg) LR2RC1500: 150 x 35 x 30 (80 kg)	Total weight and dimension of the <i>Laboratory Roll-to-Roll Coater</i> platform depends on the final configuration
Operates From	LR2RC500: Single phase (240VAC) LR2RC750: Single phase (240VAC) LR2RC750 Wide: Single phase (240VAC) LR2RC1000: 3 -phases (400 VAC) LR2RC1000 Wide: 3 -phases (400 VAC) LR2RC1500: 3 -phases (400 VAC)	
Drying or Curing Section Length (cm)	LR2RC500: 25 cm LR2RC750: 50 cm LR2RC750 Wide: 50 cm LR2RC1000: 75 cm LR2RC1000 Wide: 75 cm LR2RC1500: 125 cm	The drying or curing length depends on the selected oven systems
LR2RC System Control	Touch Screen Manual Adjustment Buttons PC Control	
Web Width	Up to 200 mm Up to 310 mm (Wide)	
Foil Length	Up to 100 m	Depending on thickness of substrate
Web Speed	0.05-2.8 m/min (Forward and Reverse)	Other web speeds are available on request
Tension Control	Manually	Same for unwinder/rewinder or individual control of unwinder/rewinder (depends on configuration)
Coating Width	Up to 180 mm Up to 280 mm (Wide)	
Spindles	Automatic Compressed Air Spindles 3-inch Core Inner Diameters. (The LR2R500 comes with adjustable cones that accept core inner diameters from 35 mm up to 90 mm)	



Our History

Established in 2014 by CEO Frederik C. Krebs, infinityPV is a Danish company that has been steadfastly committed to printed electronics since its inception. Over time, our focus has naturally expanded to cover all aspects of advanced modern manufacture based on roll-to-roll processing that grants access to a large scaling potential for any given fixed size production platform. Our success is underpinned by a dedicated effort to maintain a low environmental footprint in both product development and manufacturing processes.

Our Knowledge

infinityPV is a high-tech company that centers on green transitioning and our in-depth knowledge base is centered on energy, chemistry, physics, mechanics, electronics, and software. We are extremely apt when it comes to inventiveness and development, which is what unifies the diverse workforce. We have applied our knowledge to make it a business to serve a market where there is typically only one customer – you. There is only one customer because the intricacy of your needs comes from your advanced research and our knowledge can help you run the extra mile to reach that extra goal.

Our Commitment

Your needs are unique, and we almost certainly have material in stock that will grant you the fastest access to exactly what you need. We invite you to come to our production site and see for yourself before you engage in business with us. We guarantee customer satisfaction, and we are proud to say that we offer everlasting support to our existing clients and the products we make for them. We always have spare parts in stock or can make them quickly. We leave nobody behind.



infinityPV ApS
Møllehaven 12A
DK-4040 Jyllinge
Denmark

www.infinityPV.com
info@infinityPV.com
(+45) 65 74 78 82
CRN: 36420367