

# Innovative Vacuum Solutions

for Flat Panel Display



# Vacuum Solutions for

## **DRYVAC SYSTEMS – THE LEYBOLD STANDARD** for Flat Panel Display



With our DRYVAC SYSTEM platform we offer innovative solutions based on our DRYVAC dry screw pumps in combination with RUVAC WH booster pumps. These systems cover a large variety of Flat Panel Display application in the production of LCD and OLED displays.



We offer standardised ergonomics –  
easy to install, easy to use.

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### Quality

Our product quality and knowhow ensures your sustainable success in vacuum

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### Performance

High capacity dry pumps and dry booster pumps are our focus

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### Total cost of ownership

We offer the best total cost of ownership package for your projects

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# Challenging Requirements

## DRYVAC SYSTEM 2500



### DS 2545 U / DS 2565 U

#### Trust a pump with experience

These systems are designed for load lock and transfer applications. Their performance and reliability is proven by a large installed base in the flat panel display market.



### DS 2545 F / DS 2565 F

Dry fore-vacuum pump systems for transfer chambers, VCD (DS 2565) and process applications such as thin film encapsulation ALD and PECVD (DS 2565C-F).

## DRYVAC SYSTEM 4400



### DS 4465 U

#### Get the number one in load lock

This system is especially designed for load lock. By combining large capacity, high performance dry pump technologies we offer the fastest load lock package.



### DS 4465C-F

Dry pump systems for high throughput process applications such as thin film encapsulation ALD and PECVD (DS 4465).

## DRYVAC SYSTEM 7000



### DS 7065C-F / DS 70120 F

#### Boost your process performance

Dry pump systems for maximum throughput process applications such as thin film encapsulation ALD / PECVD (DS 7065) and VCD (DS 70120).



### DS 7050C-F

#### The new generation of PECVD

PECVD processes are key in the manufacturing of thin film transistors. The share of PECVD pumps in the Display production processes is high and these processes are considered to be harsh. Leybold now qualified a new generation of temperature-controlled PECVD process pumps which offer maximum throughput giving you the benefit of ONE SET LESS per chamber.

# No matter what the display market future holds ...

... you can rest assured that we will face all upcoming market challenges, always continue to be a key enabler in display manufacturing processes.







Load Lock  
 Transfer  
 Cryo regen.  
 OLED Evaporation / Aging  
 Baking / Encapsulation  
 TFPT Transistor Sputter  
 FSPT Colour Filter Sputter  
 Cell  
 PECVD OLED TFE  
 PECVD TFT

clean

medium

harsh

**DRYVAC  
 SYSTEM 2500**



**DRYVAC  
 SYSTEM 4400**

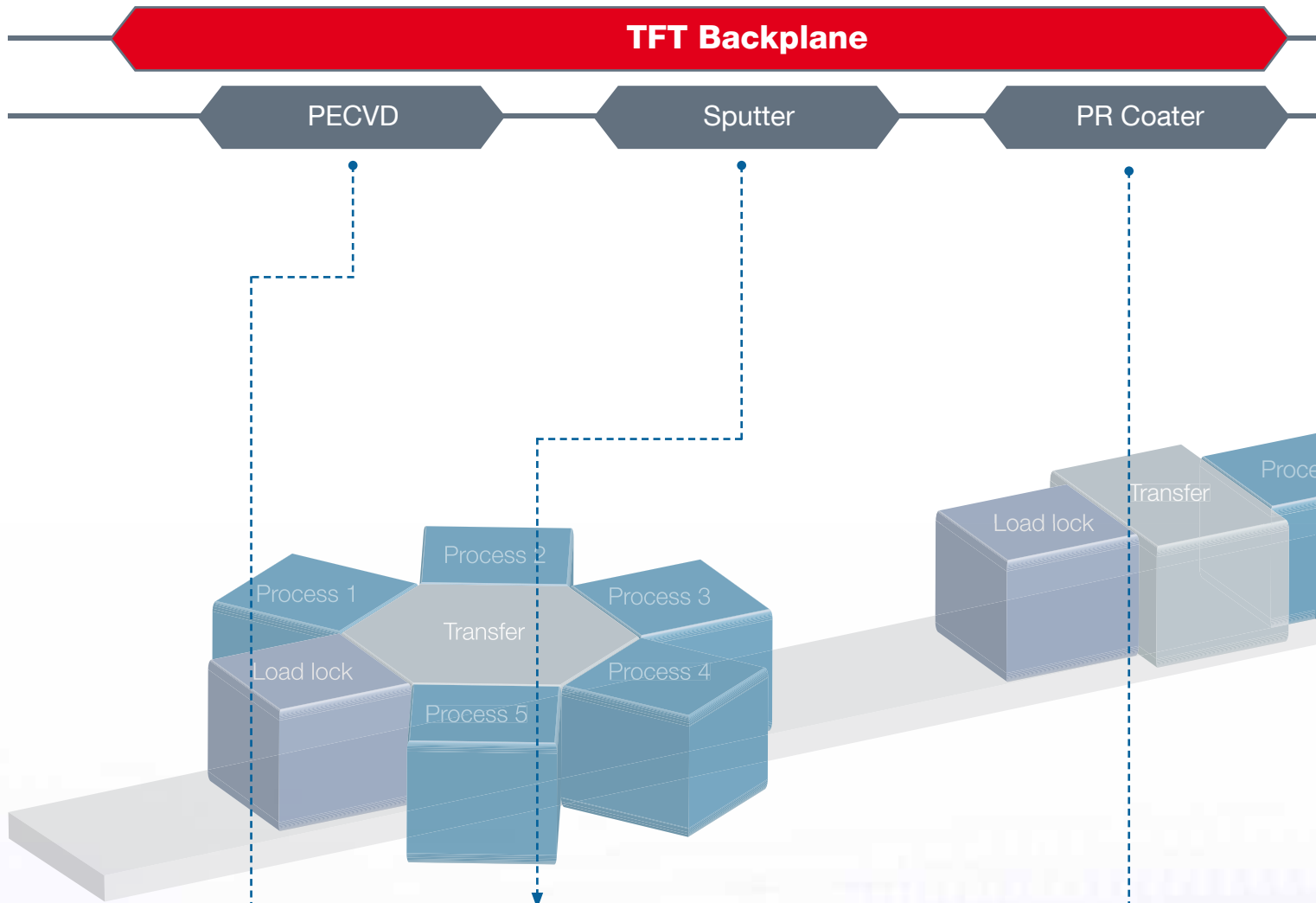


**DRYVAC  
 SYSTEM 7000**



Leybold offers a broad line of vacuum pumps and accessories, enabling the selection of optimum pump systems for flat panel display applications.

# Innovative Vacuum



## TFT Sputter vacuum equipment

Load lock / Transfer	Process
DS 2565-U	DS 2565-U
DS 4465-U	MAG i 2200



## PECVD vacuum equipment

Load lock / Transfer	Process
DS 2565-U	DS 7050C-F
DS 4465-U	

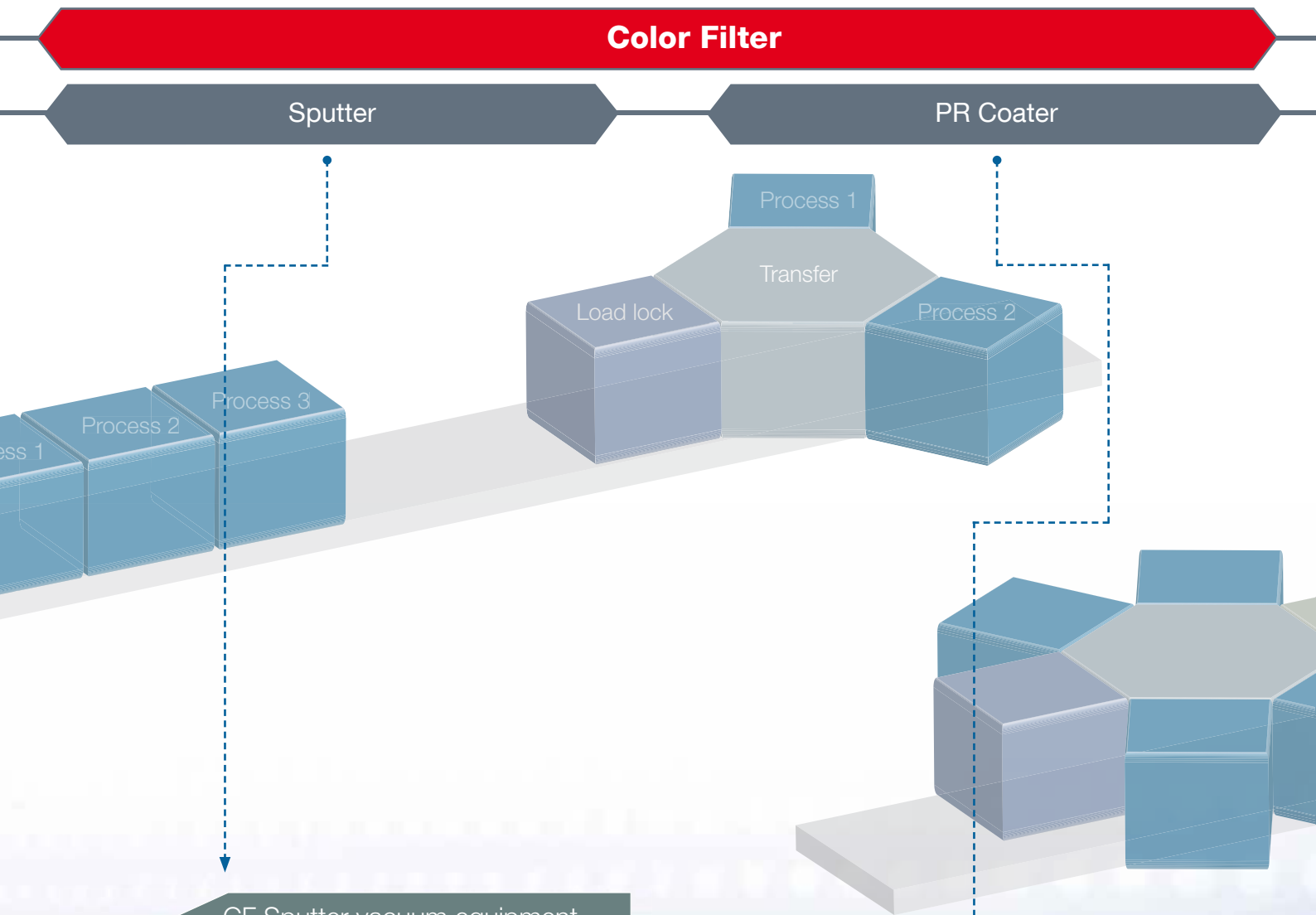


## PR Coater

Process
DS 2565 F DS 70120 F



# Solutions for Flat Panel Display



**CF Sputter vacuum equipment**

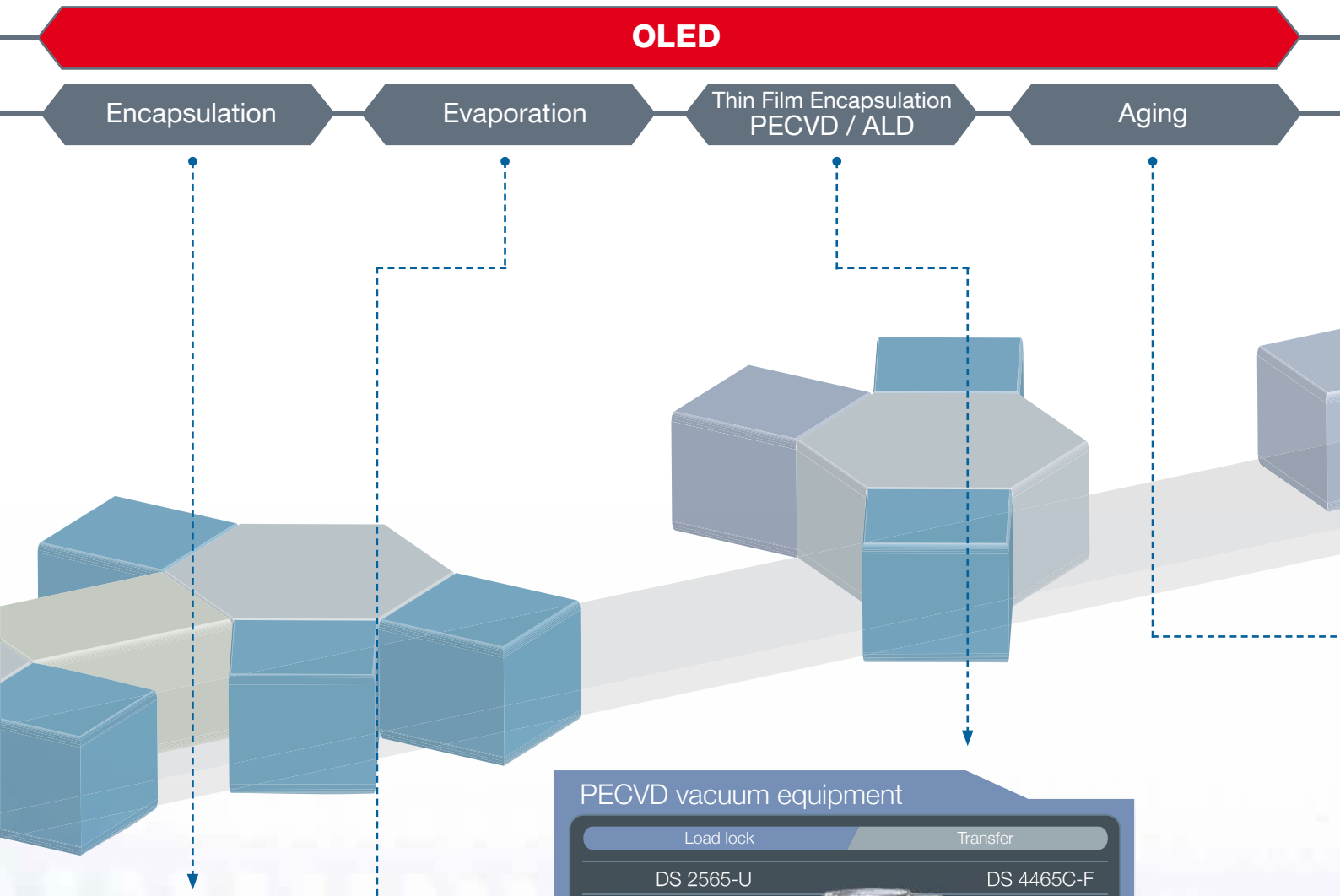
Load lock / Transfer	Process
DS 2565-U	DS 2565-U
DS 4465-U	MAG i 2200

**PR Coater**

Process
DS 2565 F      DS 70120 F



# Production Processes



## Encapsulation vacuum equipment

Load lock

Transfer

DS 2565-U

DS 4465-U



## PECVD vacuum equipment

Load lock

Transfer

DS 2565-U

DS 4465C-F

DS 7065C-F



## Evaporation vacuum equipment

Load lock

Transfer

DS 2565-U

DS 4465-U



## Aging vacuum equipment

Load lock

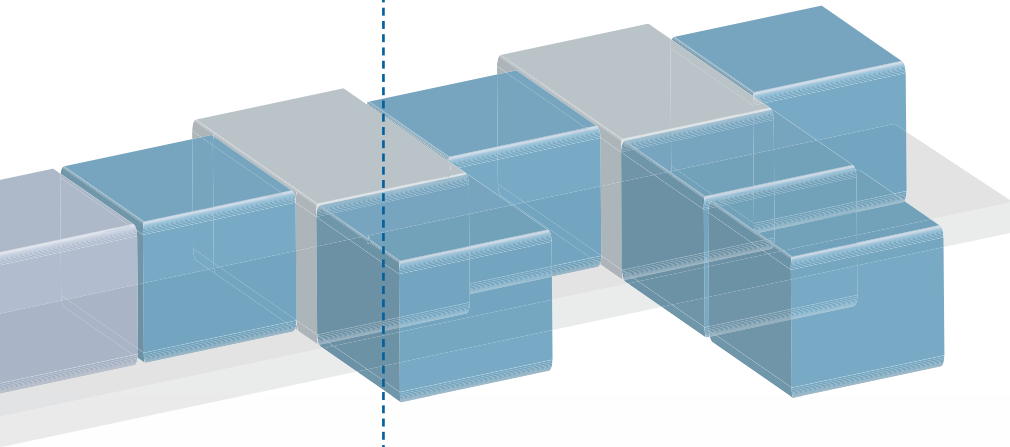
DS 2565-U





# Cell

## Lamination



### Lamination vacuum equipment

#### Process

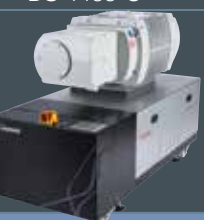
DS 2565-U

DS 4465-U



#### Transfer

DS 4465-U





# Flat panel displays for TVs,

Numerous production steps under vacuum conditions require vacuum systems with highest reliability, quality and optimized cost of ownership.

## Efficient solutions

The Leybold team of vacuum specialists developed pumping simulation and designing programs to provide the optimized vacuum solution for your project and processes. Continuous improvement drives our innovation program in order to enhance pumping performance and minimize utility costs.

For choosing the optimal pump design, parameter such as demanding engineering requirements, safety aspects, reliability, capital investments and cost of ownership need to be taken into account.

Vacuum systems are designed and qualified generally in close cooperation with the manufacturers of coating systems, drawing on the experience gained from long-term relationship and cooperation with leading customers.

Leybold convinces with technological leadership offering products which provide clean vacuum, high quality and excellent performance. Our consultancy expertise in analyzing operating costs based on our products allows us to clearly show financial and technological advantages over competitive solutions.







# Full line vacuum solutions

## Vacuum and pressure gauges

Reliable monitoring and control for all vacuum processes.



## Helium leak detectors

Designed for the requirements of industrial series production. Well-proven and easy to use in production and quality control programs.



## Turbomolecular pumps

TURBOVAC line with mechanical rotor suspension, TURBOVAC MAG line with magnetic rotor suspension and the TUBOVAC i series with hybrid rotor suspension.



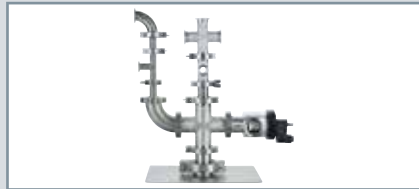
## Refrigerator cryo pumps

Hydrocarbon-free high-vacuum generation with highest water-vapor pumping capability, long maintenance intervals, installation in any orientation.



## Flange systems

Small flanges from DN 10 to DN 50  
Clamped flanges from DN 63 to DN 630  
CF flanges from DN 16 to DN 250



We are the leading supplier for vacuum products. For 165 years, customers all over the world rely on our experience and expertise as partner in vacuum technology.

All products must pass an extended qualification program with strict toll gates before they are released into the market. For all serial products we have a continuous improvement program in place.

- Worldwide service network - we are where you need us
- On-site support by our field service team
- 24 hours / 7 days a week
- Exchange program with back-up pool management
- Customized service contracts
- Remote service
- Extended warranty program
- Genuine spare parts

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