

## PCB / PCM

**Höllmüller** EVOLUTION  
Electroplating

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## Uniform metal deposition in holes and on surfaces

Decades of experience with Cu, Ni, Au, Sn, Ga and In plating results in homogeneous depositions with our stable, low maintenance plater technology.

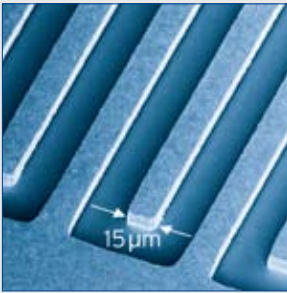
### Areas of application

- Plating of PCBs, metal, glass, semiconductives
- For flexible materials or reel to reel
- Panel & Pattern Plating (< 15 µm lines & spaces)
- Reverse Pulse Plating technology (RPP)
- DC-plating and RPP in one machine
- Single side and double side plating

### Features and benefits

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| <ul style="list-style-type: none"> <li>• Current feed by single or double contact rings (life time ~ 1 year)</li> <li>• Small contact area &lt; 12,7 mm</li> <li>• Unique de-plating concept; cathode outside process zone</li> <li>• Maintenance free interconnection to contact roller</li> <li>• Segmented insoluble anodes</li> <li>• Current characteristic individually set for each anode</li> <li>• Tsunami forced flow system with HDF technology</li> <li>• Rectifiers below sump (short wiring for best pulse shape)</li> </ul> | <ul style="list-style-type: none"> <li>• Copper distribution &lt; 5%</li> <li>• Up to 100% throwing power</li> <li>• Treatment of microvias &amp; through-holes with high aspect ratio</li> <li>• Small footprint</li> <li>• Maintenance friendly concept</li> <li>• Catwalk between modules &amp; sump for optimal access</li> <li>• Long tool lifetime</li> <li>• Reduced chemical consumption</li> </ul> |
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15 µm plating



plating on glass



## Technical Data Höllmüller EVOLUTION - Electroplating

Plating Application	Hole Plating Copper			
	AC-Low Aspect Ratio Holes 10 ASD FWD / 20 ASD REV 20 ms FWD / 1 ms REV	AC-High Aspect Ratio Holes 5 ASD FWD / 12 ASD REV 20 ms FWD / 1 ms REV	DC-Low Aspect Ratio Holes 10 ASD	DC-High Aspect Ratio Holes 5 ASD
<b>Transport</b>				
0,25 m/min	26 µm	13 µm	30 µm	15 µm
0,5 m/min	13 µm	6.4 µm	15 µm	7.6 µm
1.0 m/min	6.5 µm	3.2 µm	7.6 µm	3.8 µm
1.5 m/min	4.3 µm	2.1 µm	5.0 µm	2.5 µm
<b>Rectifier</b>	<ul style="list-style-type: none"> <li>• DC or Reverse Pulse Plating technology</li> <li>• 6 outputs, each output is connected to 1 anode</li> <li>• Each output max. 100 Amps forward and 250 Amps reverse; 100 Amps DC</li> <li>• Forward pulse 10 - 250 ms, reverse pulse 1 - 20 ms</li> </ul>			
<b>Cascade Rinsing</b>	• 3 step for up to 0.5 m/min, 4 step for 1.0 m/min, 5 step for 1.5 m/min			
<b>Dimensions</b>	Width: 2100 mm (83 inch), Length: 9708 mm (383 inch)			