

Over Cutter Camera – OCC

The Over Cutter Camera – OCC captures all register marks and barcodes across the cutter's work surface with a single shot. In short, it delivers fully automatic job identification and print registration in seconds. Seamless integration in Zünd Cut Center in combination with the ICC ensure optimum speed and accuracy for every application. The OCC enables maximum productivity and process stability.

The OCC is a smart optical system for digitally capturing register marks and barcodes completely automatically. It is mounted centrally above the cutter, either on the support frame or the ceiling, capturing the entire work surface from that position.

In conjunction with ICC technology, the OCC offers one advantage above all else: unprecedented registration speed that significantly boosts productivity and profitability.

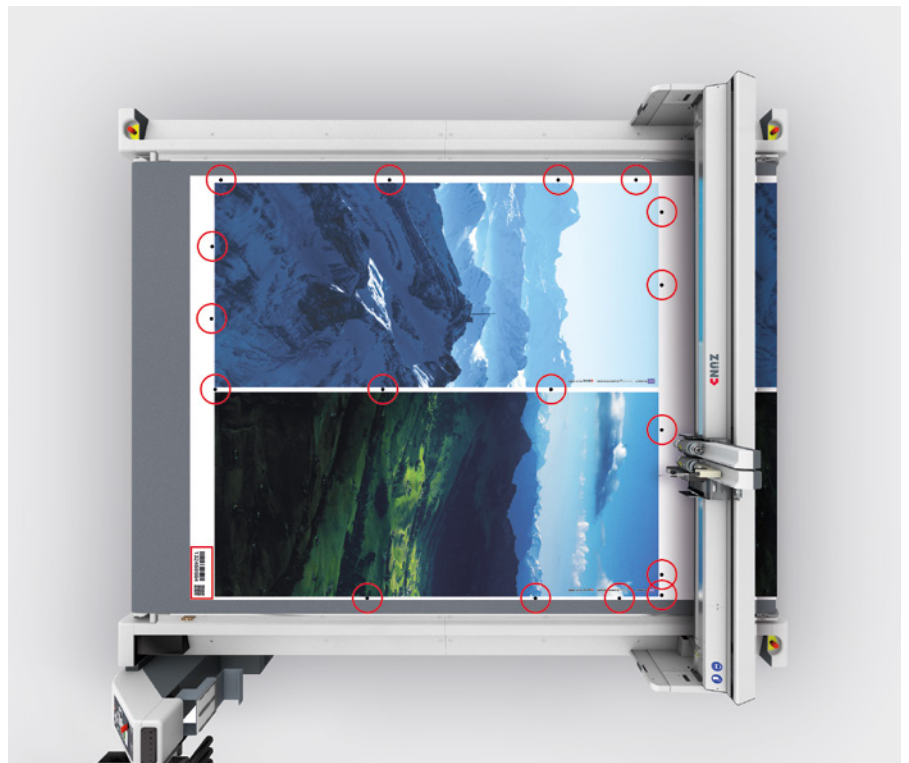
Regardless of the thickness of the printed materials, high-end optics reliably capture all register marks, QR codes, and Zünd barcodes with lightning speed in a single shot.

Camera controls and image processing are fully integrated in the ZCC software. Powerful algorithms interpret the camera image in seconds. In ZCC barcode production, the relevant job files are automatically loaded based on their identification through QR codes and Zünd barcodes. The system adjusts processing paths based on the detected register marks and compensates for any material distortions. Each time the material advances, the OCC automatically captures a new image and the cutter begins processing immediately upon registration.

Board and sheeted materials can be placed anywhere on the work surface since the OCC

determines the exact position and orientation in a single shot. Careful placement is therefore no longer necessary.

When a job requires maximum accuracy or greater process stability, OCC registration can be combined anytime with that of the ICC camera. The ICC camera, which is higher resolution and has better lighting, either scans all the register marks or specifically targets the ones not found in the OCC image. The two systems complement one another perfectly, providing the operator with a tailor-made solution designed to meet every requirement.



○ Register marks □ QR codes and barcodes

Details and value proposition

Details

Compatibility	<ul style="list-style-type: none">• G3/D3/S3 cutter, incl. tandem cutter• Zünd modules/tools, including any existing dust-extraction systems or hose guides (see following pages for details)
Prerequisites	<ul style="list-style-type: none">• ZCC Zünd Cut Center<ul style="list-style-type: none">• ZCC Basic, ZCC Advanced for barcode production• Minimum versions: G3 ≥3.0.2, D3 ≥3.2.0, S3 ≥3.1.2• Recommended for all ≥4.6 (functionality and bug fixes)• ZCC Zünd Cut Center Camera Option• Integrated Compact Color Camera – ICC
Capture of	<ul style="list-style-type: none">• Register marks for print registration, recommended size 6–12 mm *• QR code: job identification, recommended minimum size 50 mm *• Zünd barcode: job identification <p>* Depending on substrate and print quality</p>
Lighting	<ul style="list-style-type: none">• The lighting in the work area affects the image quality and thus ZCC's ability to interpret image data. Sunlight and shadows can impact process stability.

Value proposition

OCC: Job identification and print registration, automatic and completed in seconds	<ul style="list-style-type: none">• Roll or board materials• Multiple jobs per work area, or jobs longer than the work area• Detection of distortions• Disregards unrecognized, superfluous register marks
OCC and ICC: flexible use thanks to seamless integration in ZCC Zünd Cut Center	<ul style="list-style-type: none">• Maximum speed with OCC• Maximum accuracy with ICC• Optimum speed and accuracy: maximum productivity and process stability through combining OCC and ICC
ZCC: Configuration options for maximum flexibility and automation	<ul style="list-style-type: none">• Simple to train for up to ten register-mark templates• Adjustable percentage of unrecognized register marks to disregard• Adjustable number of automatic skipping (unprocessed job pass-through) and manual input option for unrecognized codes• Confirmation mode for manual confirmation of registration before processing begins• ICC as optional backup for capturing marks the OCC does not recognize; this minimizes downtime and the need for manual intervention.• ICC as optional secondary registration tool for maximum accuracy

Even greater benefits and improved functions, from version ZCC 4.6

Better recognition of register marks with:

- Distorted or unevenly arranged material
- Lighting issues
- Elements in the printed image that look similar to register marks and could disrupt the capture process
- Unfavorably arranged register marks after irrelevant or unnecessary register marks were discarded automatically

Greater process stability
Fewer interruptions
Fewer manual interventions

Alternative capture of register marks using ICC:

Automatic switchover to ICC if OCC cannot complete the register-mark capture.

Greater process stability

Order entry via QR code

Order entry via Zünd barcode

Additional automation

Feeding/advancing jobs longer than the work surface

Fewer interruptions
Additional automation

Barcode production in tandem mode

Recognition of register marks in tandem mode

Additional automation

Mounting guide, configurations without hose support

For configurations without modules or tools that require hose support, the following options are available for mounting the OCC:



Series	Size	Ceiling mount	Mounting on support frame
G3	M-1600	✓	–
	M-2500	✓	✓
	L-2500	✓	✓
	L-3200	✓	✓
	XL-1600	✓	–
	XL-3200	✓	✓
	2XL-1600	✓	–
	2XL-3200	✓	✓
	3XL-1600	✓	–
	3XL-2500	✓	✓
	3XL-3200	✓	✓
D3	L-3200	✓	✓
	XL-3200	✓	✓
	2XL-3200	✓	✓
	3XL-3200	✓	✓
S3	M-800	✓	✓
	M-1200	✓	✓
	M-1600	✓	✓
	L-1200	✓	✓
	L-1600	✓	✓
	XL-1200	✓	✓

Legend:

- ✓ Mounting possible
- Mounting impossible

Ceiling height requirements G3/D3:

Support frame: min. 3.2 m / 10.5 ft
Ceiling mount: 3.2–4.4 m / 10.5–14.5 ft

Ceiling height requirements S3:

Support frame: min. 2.9 m / 9.5 ft
Ceiling mount M-800, M-1200, L-1200: 2.43–3.73 m / 8–12.2 ft
Ceiling mount M-1600, L-1600, XL-1200: 2.77–4.07 m / 9.1–13.4 ft

Ground anchoring recommended:

Anchor the support frame into the ground for better performance: 8 holes, 10x65 mm

Mounting guide, configurations with hose support

Generally speaking, the OCC is compatible with all modules and tools; however, depending on the specific cutting system configuration, certain limitations may apply:

Series	Size	RM-A / RM-L / RM-S / URT / PRT			LM	Ink-Jet
		On gantry	On support frame	Mounted to ceiling	On support frame	On gantry
G3	M-1600	B ^{*)}	–	–	–	B ^{*)}
	M-2500	B ^{*)}	A	–	A	B ^{*)}
	L-2500	B ^{*)}	A	–	A	B ^{*)}
	L-3200	B	A	–	A	B
	XL-1600	B	–	–	–	B
	XL-3200	B	A	–	A	–
	2XL-1600	–	–	–	–	–
	2XL-3200	–	A	–	A	–
	3XL-1600	–	–	–	–	–
	3XL-2500	–	A	–	A	–
	3XL-3200	–	A	–	A	–
D3	L-3200	–	A	–		
	XL-3200	–	A	–		
	2XL-3200	–	A	–		
	3XL-3200	–	A	–		
S3	M-800	–	A	–		
	M-1200	–	A	–		
	M-1600	–	A	–		
	L-1200	–	A	–		
	L-1600	–	A	–		
	XL-1200	–	A	–		

Legend:

- A Mounting on support frame possible
- B Ceiling mount possible
- Mounting impossible

^{*)} Note:

Hoses and cables must be tied back when modules/tools are stored in module holder.

Ceiling height requirements G3/D3:

Support frame: min. 3.2 m / 10.5 ft
Ceiling mount: 3.2–4.4 m / 10.5–14.5 ft

Exceptions for ceiling mount in combination with gantry:

M-line: 3.2–4.0 m / 10.5–13.1 ft
L-line: 3.2–4.2 m / 10.5–13.8 ft

Ceiling height requirements S3:

Support frame: min. 2.9 m / 9.5 ft
Ceiling mount M-800, M-1200, L-1200: 2.43–3.73 m / 8–12.2 ft
Ceiling mount M-1600, L-1600, XL-1200: 2.77–4.07 m / 9.1–13.4 ft