DATASHEET

Circle Grid Calibration Target, Aluminium Composite

Circle grids use filled dot centroids rather than corner intersections. Centroid detection is more robust under defocus, low contrast and oblique viewing angles. Available in symmetric layout (grid of evenly spaced dots) and asymmetric layout (staggered rows for unambiguous orientation without additional markers). Both variants are supported by OpenCV (`cv::findCirclesGrid`) and HALCON.

1 Ordering

Part number	Size (W × H)	Circles (rows × cols)	Circle ⌀ / spacing	Total circles
CT-CIR-P-200150-SYM	200 × 150 mm	7 × 10	12 / 20 mm	70
CT-CIR-P-300200-SYM	300 × 200 mm	9 × 14	14 / 22 mm	126
CT-CIR-P-400300-SYM	400 × 300 mm	11 × 16	17 / 25 mm	176
CT-CIR-P-600400-SYM	600 × 400 mm	13 × 20	20 / 30 mm	260
CT-CIR-P-800600-SYM	800 × 600 mm	16 × 24	22 / 33 mm	384
Part number	Size (W × H)	Circles (rows × cols)	Circle ⌀ / spacing	Total circles
CT-CIR-P-200150-ASYM	200 × 150 mm	7 × 5	12 / 20 mm	35
CT-CIR-P-300200-ASYM	300 × 200 mm	9 × 7	14 / 22 mm	63
CT-CIR-P-400300-ASYM	400 × 300 mm	11 × 8	17 / 25 mm	88
CT-CIR-P-600400-ASYM	600 × 400 mm	13 × 10	20 / 30 mm	130
CT-CIR-P-800600-ASYM	800 × 600 mm	16 × 12	22 / 33 mm	192

2 Key specifications

ACCURACY
±0.3 mm + 0.2 mm/m (any circle centre to nominal grid, at 20 °C)

SUBSTRATE
Aluminium / LDPE / aluminium composite, 6 mm

FLATNESS
≤ 0.5 mm per metre, board supported on three points

Unless stated otherwise, dimensions are nominal at 20 °C.

1 Specifications · geometry

FEATURE	SPECIFICATION
Feature position tolerance	±0.3 mm + 0.2 mm/m (any circle centre to nominal grid, at 20 °C)
Circle pitch, mean	±0.05 mm
Circularity	≤ 0.05 mm radial deviation
Edge radius	R6 mm

2 Specifications · physical

FEATURE	SPECIFICATION
Substrate	Aluminium / LDPE / aluminium composite, 6 mm
Weight	6.6 kg/m² (300 × 200: ≈ 0.4 kg · 800 × 600: ≈ 3.2 kg)
Pattern	Direct UV print, matte, black on white; optical density ≥ 1.6
Flatness	≤ 0.5 mm per metre, board supported on three points
Mounting	4 × M4 threaded inserts on the rear (300 × 200 and larger); ¼″ fixture ACC-A-FIX-14 clamps any size

3 Specifications · environment

FEATURE	SPECIFICATION
Operating temperature	–50 to +80 °C
Thermal expansion	≈ 24 µm/(m·°C)
Storage	–20 to +60 °C, dry
Outdoor lifetime	up to 3 years (UV-stable print)
Cleaning	water or ≤ 70 % isopropyl alcohol, soft cloth

4 Deliverables

INCLUDED		SERVICE	
Inspection report	CT-IR-, per board, dimensional + flatness + visual	Lead time	Made to order · ships in 2–3 weeks
Files	`.opencv.json`, `.halcon.descr`, `.dxf`	Options	Logo print (-L) · hard case (ACC-A-CSE) · custom NRE
Documents	this datasheet, CT-UM-GEN user manual		

5 Compliance & customs

TOPIC	STATEMENT
RoHS	RoHS-compliant materials.
HS code	`9031 80` Not a toy. not for food contact.

6 Revision history

REV	DATE	CHANGE
A	2026-10	First issue, planning values

7 Disclaimer

Values are nominal unless stated as measured; per-unit values are in the inspection report.