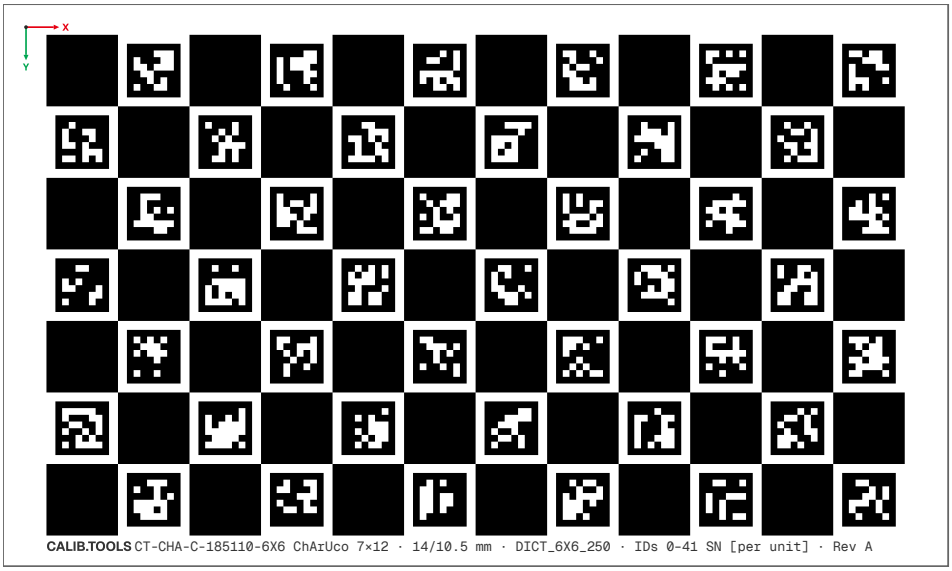
DATASHEET

ChArUco Calibration Target, Alumina Ceramic

A rigid technical-ceramic ChArUco target for precise camera calibration where dimensional stability, sharp features and durable handling matter.



Rendering · 185 × 110 mm variant

COORDINATE SYSTEM



(0, 0) · pattern outer corner

X right · Y down
OpenCV pattern frame

1 Ordering

PRINT VERSION · prices online

Part number	Size W × H (mm)	Squares (r × c)	Square / marker (mm)	Dictionary options	Corners	Markers	Weight (kg)
CT-CHA-C-110085-6X6	110 × 85	7 × 10	10 / 7.5	DICT_6X6_250, DICT_6X6_1000	54	35	0.10
CT-CHA-C-150100-6X6	150 × 100	7 × 11	12.5 / 9.5	DICT_6X6_250, DICT_6X6_1000	60	38	0.17
CT-CHA-C-185110-6X6	185 × 110	7 × 12	14 / 10.5	DICT_6X6_250, DICT_6X6_1000	66	42	0.22
CT-CHA-C-230140-6X6	230 × 140	8 × 14	15 / 11	DICT_6X6_250, DICT_6X6_1000	91	56	0.35

All variants: white margin · alumina ceramic, 3 mm. See ordering table for per-size marker dimensions.

Prices: calib.tools/targets

2 Key specifications

ACCURACY
±2 µm
feature position · 20 °C

SUBSTRATE
Technical ceramic
alumina, 3 mm

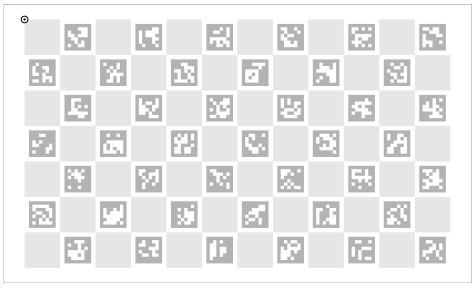
SIZES
110 × 85 to 230 × 140 mm

FLATNESS
≤ 20 µm
over pattern area

Unless stated otherwise, dimensions are nominal at 20 °C. Specifications apply to the product family; per-unit results are issued in the inspection report.

1 Specifications · geometry

FEATURE	SPECIFICATION	CONDITION / NOTE
Feature position accuracy	±2 µm	At 20 °C; ChArUco corner positions.
Edge definition	Sharp black / white transition	≤ 1 µm lithographic edge.
Orthogonality	90° ± 0.002°	Pattern axes.
Start ID / placement	0 · row-major	Black square top-left; marker IDs advance through white squares.
OpenCV pattern convention	OpenCV ≥ 4.6 layout	Odd-row board: no legacy-pattern issue with OpenCV ≥ 4.6 or older versions.



Geometry reference · pattern envelope shown.

PATTERN CONVENTION

Reference pattern	7 × 12 squares · 14 / 10.5 mm.
Marker IDs	0–41, row-major through white squares.
Coordinate frame	Origin at the top-left outer pattern corner; X right, Y down.
Version control	Odd-row board: no legacy-pattern issue with OpenCV ≥ 4.6 or older versions.

2 Specifications · physical

FEATURE	SPECIFICATION
Substrate	Alumina ceramic (Al_2O_3 ≥ 96 %), white, 3 mm.
Pattern process	Lithographed chrome; blue-black, low gloss.
Flatness	≤ 20 µm over the pattern area.
Surface	Ra ≤ 0.4 µm; lapped, non-glare.
Edges	0.5 mm chamfer, ground.
Weight	≈ 11 kg/m²; 150 × 100: 0.17 kg.
Mounting	No holes. Use ACC-A-FIX-14 fixture, vacuum chuck or kinematic mount.

3 Specifications · environment

FEATURE	SPECIFICATION
Operating temperature	−50 to +200 °C.
Thermal expansion	Approx. 7.2 µm/(m·°C) (alumina).
Chemical resistance	Inert to water, alcohols, common solvents.
Cleaning	Lens tissue + isopropyl alcohol; no abrasives.

3 Deliverables

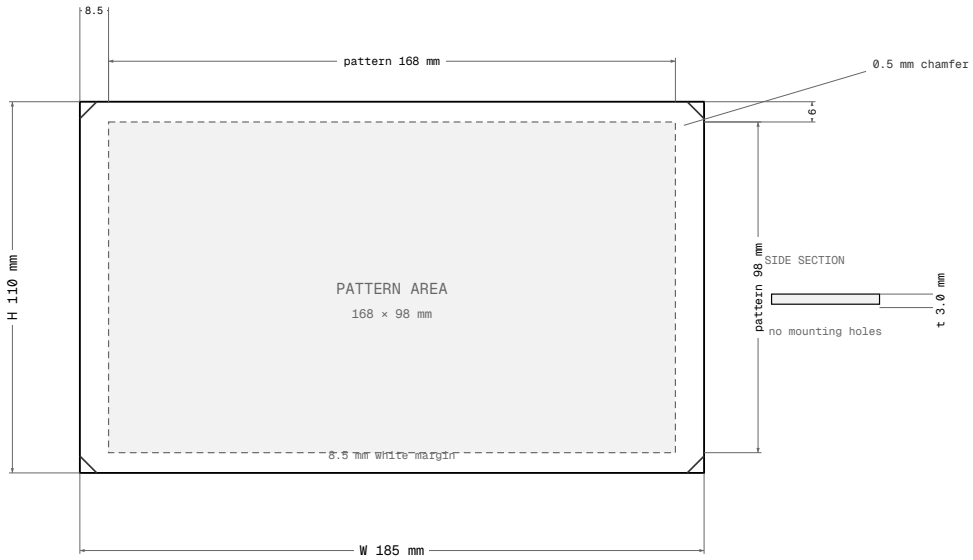
IN THE BOX		CONFIGURATION & SERVICE	
Board	ChArUco ceramic target, selected part number.	Marking on board	Label line with part / pattern / SN / Rev; printed X / Y arrows.
Packaging	Padded case and handling information.	Lead time	Made to order · ships in 2–3 weeks.
Report	Inspection report and measured CSV for each serialised unit.	Options	Fixture · custom NRE.
Files	`.opencv.json` · `.kalibr.yaml` · `.ros2.yaml` `.halcon.descr` · `.dxf` · measured CSV		

4 Compatibility

SOFTWARE	USE / CAUTION
OpenCV	ChArUco board with `DICT_6X6_250`; this board follows the OpenCV ≥ `4.6` convention. Do not enable legacy pattern for this board.
Kalibr	No native ChArUco target model. The supplied `.kalibr.yaml` is a geometry reference and needs integration-specific adaptation.
HALCON	Use the supplied descriptor as setup data for the applicable calibration workflow; confirm operator and release compatibility before deployment.
MATLAB	Intended for the Computer Vision Toolbox ChArUco workflow (R2024a or later—confirm release support before use).
ROS 2	Use a `charuco` pattern configuration where supported by the selected `camera_calibration` package; confirm package parameters first.

5 Drawing

185 × 110 mm reference variant



DXF DOWNLOAD

`calib.tools/files/CT-DWG-CHA-C-185110.dxf`

Drawing reference only; use the released DXF for fixture design.

CT-DWG-CHA-C-185110 · Rev A · dimensions nominal unless stated.

6 Compliance & customs

TOPIC	STATEMENT
RoHS	RoHS-compliant materials.
HS code	9031 80
Packaging	Padded case inside a carton; FRAGILE.
Handling	FRAGILE · handle by edges; protect the patterned surface from impact and abrasion.

7 Revision history

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

8 Disclaimer

Values are nominal unless stated as measured; per-unit values are in the inspection report CT-IR-<SN>.