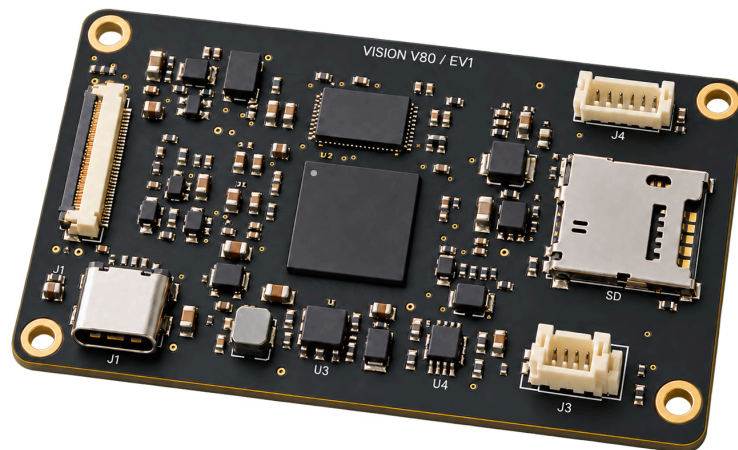


NODERIQ Vision V80

Camera-local intelligence



Process the view near the lens.

A low-profile camera-processing board architecture for inspection heads, fixed observation nodes and lightweight robotic perception modules.

PCB outline

80 × 50 mm

Assembled height allocation

18 mm

Nominal bench input

5 V

Steady power allocation

10 W

Defined evaluation specification. Imagery illustrates the specified architecture; physical measurements, electrical release and completed system integration are not asserted.

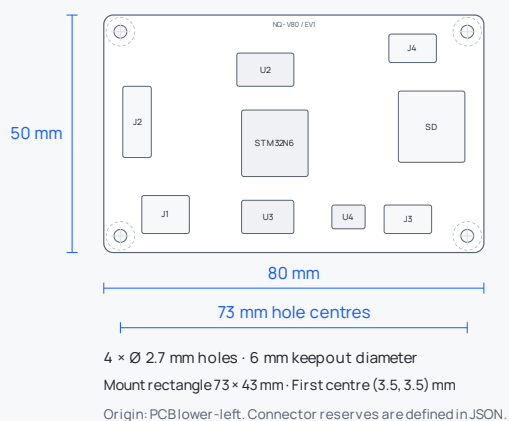
Dimensions and mounting

NODERIQ / HARDWARE ENGINEERING

NODERIQ Vision V80

EV1 · Mechanical and installation allocation · 23 October 2026

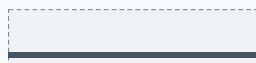
TOPVIEW / MILLIMETRES



ASSEMBLY / CLEARANCE

80 × 50 × 18 mm

Allocated assembly box, including PCB and both sides.



Installation reserve

100 × 80 × 35 mm

Includes initial access and cable space. Validate the actual harness.

PCB 1.6 ± 0.15 mm

Outline ± 0.2 mm · Hole centres ± 0.15 mm

Placement envelopes do not define copper, pad stacks, pin multiplexing, isolation ratings or an electrical release.

Use stated dimensions. Preview is not a measuring tool. Separate 1:1 SVG and millimetre DXF supplied.

Evaluation specification · Physical acceptance requires recorded bench measurements. No manufacturing or certification claim.

NQ-V80 / M-01 / EV1

Mounting coordinates

(3.5, 3.5) · (76.5, 3.5) · (76.5, 46.5) · (3.5, 46.5)
mm

Lower-left PCB origin, top view. Four Ø 2.7 mm holes. Centre tolerance ± 0.15 mm.

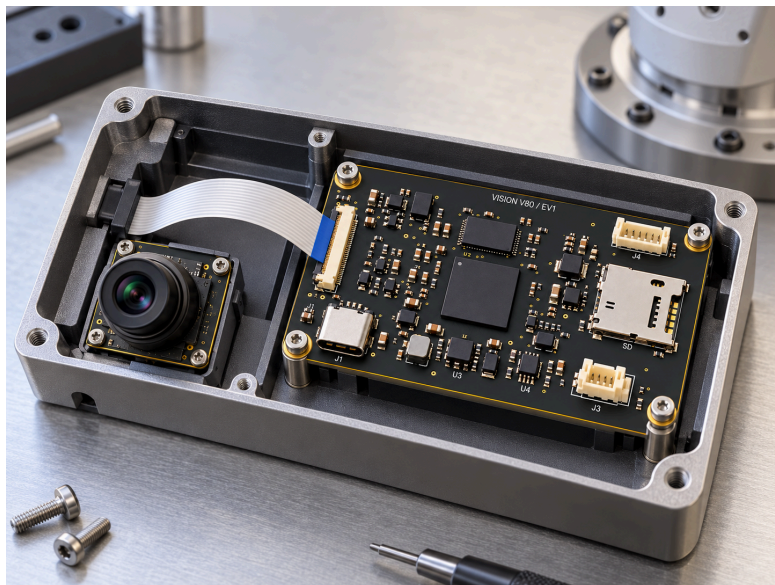
Installation reserve

100 × 80 × 35 mm

Allow access to mating parts, service screws and the actual cable bend. The final enclosure still needs a physical fit check.

The separate 1:1 SVG and millimetre DXF preserve the outline and mounting geometry. Placement rectangles are not land patterns, routed copper or a fabrication release.

Connectors and service access



Benchtop integration visualisation; use the electrical release and approved harness for wiring.

J1 / USB-C USB-C envelope	5 V input and USB data; no higher-voltage USB PD input.
J2 / CAM 22-position FFC envelope	Two-lane CSI camera assembly, with a qualified sensor/ribbon combination.
J3 / CAN 4-position locking header	Supervised observation link to an existing controller.
J4 / UART 6-position locking header	3.3V service signals; no RS-232 voltages.
J5 / SD microSD envelope	Removable local recording reserve.

Define the complete test configuration

The local camera pipeline returns observations. An inference output alone cannot authorise machine motion or bypass the host review path.

A fixed 640 × 480 camera capture fixture; record sensor, pixel format, exposure and compiled firmware. Evaluate any neural model in a separate named workload.

EV1 screening values

Input range	4.75–5.25 V
Regulated rail	3.135–3.465 V
Maximum steady input	10 W
Minimum workload duration	30 min
Bench ambient	20–25 °C
Maximum measured surface	65 °C

Bench numbers are EV1 engineering screening criteria, not achieved measurements, accuracy ratings or qualified operating limits. Record configuration, equipment and raw evidence for engineer review.

USB cold-start enumeration
Minimum cold starts: 3
Maximum enumeration failures: 0
Camera acquisition
Image width / pixels: 640
Image height / pixels: 480
Minimum captured frames: 1000
Maximum missing frames: 0
Minimum capture rate / frames/s: 10

Keep actuator power disconnected during the bench fixture. The independent machine controller and interlock remain separate from observation and mission software.

Fit, power and sustained load

Use the matching EV1 configuration and retain a raw record for every performed check.

MECHANICAL-FIT

Mechanical fit

Use callipers and the 1:1 outline or millimetre DXF. Record width, height, thickness, maximum hole-centre error and total assembled height. Inspect every fastener and mating connector with the intended enclosure and harness.

Retain: Measured dimensions, mounting photograph and enclosure/harness revision.

RAIL-STABILITY

Power rails and backfeed

With the approved assembly and supply, measure input and regulated-rail minimum/maximum values during start-up and the named workload. Record steady input power and test disconnected host/peripheral supply paths for unintended backfeed.

Retain: Power trace, instrument range, probe points, supply limit and fitted configuration.

THERMAL-LOAD

Sustained thermal load

Run the exact workload for the specified interval in the stated bench ambient range. Record the hottest measured surface, configured compute mode, cooling arrangement, resets and thermal-throttle flags. These screening conditions do not define an outdoor operating rating.

Retain: Timestamped thermal trace, ambient measurement, surface location and workload version.

Exercise the named interfaces

Use the matching EV1 configuration and retain a raw record for every performed check.

CAMERA-CAPTURE

Camera acquisition

Use one approved sensor, ribbon and firmware pipeline. Fix image size, pixel format and exposure, then count received and missing frames over the named capture. Evaluate a neural model separately with its model version, quantisation and dataset.

Retain: Camera part, ribbon, exposure, pixel format, frame count and capture timing.

USB-ENUMERATION

USB cold-start enumeration

Repeat cold starts with the approved cable and host. Record the enumerated device and the actual firmware-provided identifiers; do not assume that an unreleased image implements a USB interface. Count enumeration failures explicitly.

Retain: Host USB log, firmware image identifier, cable and cold-start count.

AUTHORITY-BOUNDARY

Physical authority boundary

Keep actuator power disconnected during the fixture and retain the machine's independent interlock. Confirm that reconnecting a data link cannot automatically resume physical action. Identify the separate controller and review record that govern any later machine test.

Retain: Fixture boundary record, controller/interlock identity and supervised sign-off path.

Keep the measurements inspectable

The STM32N6 source establishes component capabilities. Camera compatibility, external memory, firmware, model accuracy and board throughput require the named bench fixture; the chip maximum is not an achieved V80 result.

Measurement record and offline checker

Fill the matching blank JSON template with measured values, configuration, current instrument records and the identifier/SHA-256 hash of each raw record. Empty values remain missing; synthetic examples stay example-only.

```
node validate-evidence.mjs vision-v80-specification.json measurements.json
```

Requires Node.js 20 or later. Exit 0 means the checklist is ready for engineer review; it does not certify hardware or authorise physical operation. Incomplete, out-of-criteria and example-only records return exit 2.

Relevant component sources

[STMicroelectronics / STM32N657X0](#)

V80 basis: 14 × 14 mm VFBGA264 package, Cortex-M55, on-chip SRAM, camera pipeline and NPU. Board performance requires workload measurements.

[JST / GH locking wire-to-board family](#)

1.25 mm connector-pitch reference. Public connector envelopes are reserved integration space, not an approved land pattern.

Product record: neuraparse.com/products/noderiq/cards/vision-v80/

Original PNGs, dimensional files, specification, blank record and checker accompany the evaluation pack. No proprietary firmware, routed board data or private NODERIQ endpoint is included.