

Concept 5.2

Rubber Bumper + Rigid Core

R6 | Rapid Product Solutions | Supplier brief

WIDTH (mm)	HEIGHT (mm)	DEPTH (mm)
88	136	27.2

Modeled size dimensions.

Inspiration photo

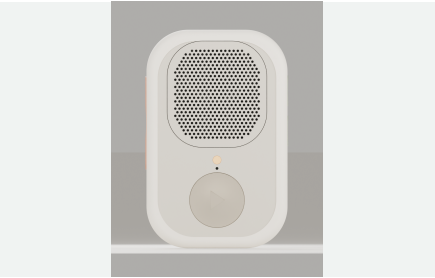


CAD assembly / R6



Appearance intent; CAD shows the current engineering proposal. Views are not to scale.

CAD front



CAD rear



CAD exploded



02 Quote and materials / 03 Build and inspect / 04 Inputs and delivery

Quote and materials

R6 | Rapid Product Solutions | Painted nylon body with cast urethane bumpers, an aluminum play key and a supported PMMA light guide.

Please review manufacturability and quote a staged enclosure prototype for Walkie One, a handheld push-to-talk voice device. We need to evaluate grip, button operation, speaker/microphone openings, status light, charging access and serviceability.

What to quote first

One rigid fit set and F01/F04 grille, F02 optical, F03 gasket and F05 fastening samples; use F06 only as a cable gauge. Then one finished A01 front assembly and rear marking sample. Optical qualification uses at least three guides.

Materials and processes

Nylon body and grille	SLS nylon, exact powder to confirm; PA2200 is a requested candidate. Retain the nylon grille and its existing 473-aperture field. Use the part-by-part finish schedule.
Urethane bumpers	RPS Elastomer cast polyurethane, 40 +/-5 Shore A, matches Rapid's published material family. Confirm current formulation, pigmentation, thin-part cure and bond recipe before samples.
Key and optics	6061-T6 key with proposed light-champagne anodize. Optical-clear PMMA guide with polished transport faces and diffused output only; supported machining and captive retention per drawing.
Cut materials	Real acoustic mesh, PET shims and silicone foam. Mic stack is 1.43 mm installed foam plus 0.14 mm tape. Use specified free stock and cut outlines; do not print these solid envelopes.

Published capability is not acceptance of this specific geometry. Exact grades, fine tolerances, thin-section casting, specialty coatings/cutting and test services need Rapid confirmation. General website tolerances do not replace the finished drawing tolerances.

Build and inspect

Envelope and finish	88 x 136 x 27.2 mm body; side keys extend width. P1 paint build 40-60 microns, key anodize 8-12 microns are proposed process limits. Approve champagne/ivory/metal together; keep running faces masked.
Guide and gasket	LED-to-guide measured air gap 0.05-0.20 mm; reject contact. Install mic seal with F03 before optic/mic. Never use the fixture against an installed MEMS element.
Play and closure	Play rest gap 0.10-0.14 mm; select actual seat/stop shims. Post-contact 0.02-0.04 mm is provisional pending load approval. Rear seam target 0.22-0.38 mm; establish screw torque with F05.
Battery and USB	The 0.50 mm speaker-to-cell nominal gap is fully consumed by the proposed tolerance budget. Route no wires there. The approximately 14.17 mm recessed socket needs a real cable reach/seating test.

Assembly order

1. Dry-fit and inspect nylon, grille and fastener coupons. Install mic seal with F03, remove fixture, then insert PMMA guide, pads, LED support and mic. Fit play key before its calibrated holder and all side controls before PCB/battery.
2. Fit actual speaker, porous backing and gasket; route the approved harness away from the cell gap and moving parts. Measure controls, guide light and cable seating before closure.
3. Approve full A01 front and rear print samples, then complete finishing. Check clear grille holes, seams, return and optical leakage; record resin/paint lots, shims and hand fitting.

Keep separate

ALT1 direct-emitter optics is excluded. It requires a custom flex circuit and another electrical/optical review; it is not installed in the R6 base assembly.

Use the supplied artwork at its specified size and position. Approve physical color, texture and marking samples together; screen colors are visual intent. Keep finish and adhesive off guides, stops, acoustic openings, optical faces and service seams unless the drawing explicitly calls for them. Record any proposed substitution before using it.

Inputs and delivery

Rapid is asked to make, finish, inspect and optionally assemble agreed parts using Walkie One-supplied hardware. Walkie One owns electrical design, firmware, battery/charging, RF and acoustic validation. Rapid may quote specialist support separately; these services are not assumed from its website.

Before optical/finish samples	Rapid proposes; Walkie One approves	Current RPS Elastomer/powder grades, matched finish samples, mesh and the supported PMMA machining route.
Before functional acceptance	Walkie One electrical/mechanical	Actual LED/circuit and optical targets, switch loading, mic/speaker test setup and real cable.
Before powered assembly	Walkie One electrical	Final battery expansion/retention limits, populated PCB and complete harness, charging/thermal and RF review.

Quote and return

Quote each concept separately: one unpowered fit set and the priority samples on page 2, followed by one finished appearance article after sample approval. This is a comparison basis, not an order for all concepts. Show any minimum quantity; confirm the selected concept, quantity, delivery date and ship-to with Walkie One before work starts.

Please itemize parts, fixtures/coupons, tooling, finishing, assembly, inspection and shipping; state lead time from receipt of approved inputs. Identify partner-made work, exclusions and tolerances you cannot hold. Quote a feasible alternative with its effect on fit/appearance rather than silently changing the design.

Return identified parts/samples, the material and finish selections, measured critical dimensions, assembly photos and the completed applicable inspection record. List hand fitting, deviations and unresolved items. Leave unperformed tests blank or NOT TESTED. Walkie One approves samples and engineering changes before repeat finished units.

Use these files

This brief controls supplier scope and responsibilities. The current per-part STEP, BOM and finished-interface drawings retain the technical requirements. Stop and return a marked question if they disagree. Millimetres throughout. Assembly STEP is a reference, not a single part to print. Purchased hardware, foam, cloth and adhesive solids are not rigid-print instructions.

BOM: docs/BOM_R6.csv

Records: docs/Physical_Test_Record_Blank.csv; docs/Rapid_Open_Items.csv.

Use Material_Finish_Schedule_R6.csv, five critical drawing sheets and original detail pages 6-11 for grille, optics, mic, calibration and seams.

Supplier capabilities checked 06 Sep 2026. Source links and confirmation limits: docs/Rapid_Capabilities.md.
<https://www.rapid-products.com/>