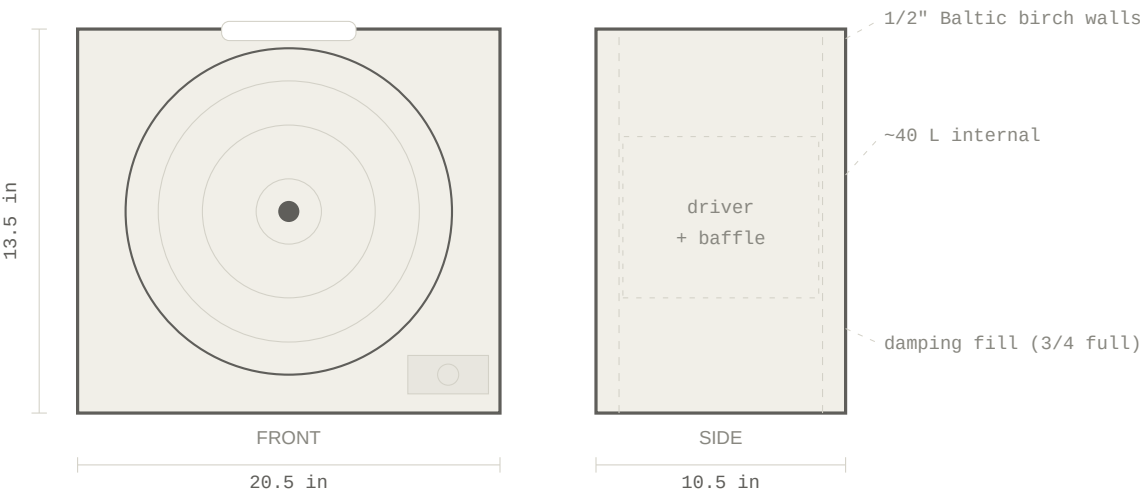


J10 Carry-On

Sealed 10" neo · airline overhead bin compliant · 55–3500 Hz · ~12 lb

CABINET SCHEMATIC



EXTERNAL DIMENSIONS

Width	20.5 in (521 mm)
Height	13.5 in (343 mm)
Depth	10.5 in (267 mm) — max practical
Airline carry-on fit	Yes — horizontal, ~1/2" door clearance
Wall stock	1/2" Baltic birch (13 mm)
Internal volume	~40 L
Baffle cutout dia.	9.75 in (248 mm)
Estimated weight	~11–12 lb (~5.2 kg)

The half-inch clearance at a standard 11" bin door opening is workable but tight. Confirm on regional jets before travel. Mainline narrowbodies (737, A320) are fine.

ACOUSTIC SPECIFICATION

Alignment	Sealed (slightly overdamped)
Qtc	~0.65
-3 dB point	~58 Hz native / 55 Hz EQ-assisted
Upper limit	3,500 Hz
Sensitivity	~96 dB / 1W / 1m
Peak SPL (200W)	~118 dB @ 1m
Nominal impedance	8 ohm
Power handling	250W RMS
Damping fill	Long-fiber wool or Acousta-Stuf, 3/4 fill

At 40 L the driver is well loaded and the alignment is gently overdamped — transient response is fast, low end is tight rather than bloated. The native rolloff is shallow enough that a modest shelf boost hits 55 Hz without audible strain. The HP filter from v1.0 is redundant at this volume and can be omitted.

CROSSOVER / FILTER

Woofer-only build: **no passive crossover needed**
 HP filter: **not required at 40 L – omit**
 Optional tweeter (upper cab only):
 Driver: **Faital HF10AK on 1/2" throat adapter**
 Hi-pass: **3.3 uF in series -> -3 dB @ 3.0 kHz, 1st order**

CONSTRUCTION NOTES

Joinery	Rabbet + glue + 1-1/4" pneumatic brad nails
Adhesive	Polyurethane construction glue (expanding)
Bracing	1x center brace, top-to-bottom, 1" wide, notched
Sealing	Silicone caulk bead on all interior seams
Baffle	3/4" Baltic birch, glued behind 1/2" front panel
Finish	Shellac sealer -> Duratex roller coat
Grille	None — exposed driver
Hardware	Recessed strap handle, rubber feet x4, NL4 jack

PARTS LIST

Item	Spec	Qty	Est. USD
Faital Pro 10FE200-8	10" neo driver, 8 ohm	1	\$165
Baltic birch 1/2"	5-ply, 24x48" sheet	2	\$70
Baltic birch 3/4"	Baffle offcut, 12x12"	1 pc	\$12
Polyurethane glue	8 oz	1	\$9
Acousta-Stuf	Parts Express #260-317	1 bag	\$14
Neutrik NL4 jack	Speakon chassis, side entry	1	\$8
Recessed strap handle	Penn Elcom R0845Z	1	\$9
Rubber feet	Large dome, adhesive	4	\$4
Shellac sealer	Shellac-based primer, 1 qt	1	\$16
Duratex black	Roller coat finish, 1 qt	1	\$22
Speaker wire	16 AWG, 18"	—	\$3
Silicone caulk	Interior seam sealing	1 tube	\$5
Total (woofer-only build)			~\$337

HP filter components removed versus v1.0 — not needed at this volume. Add ~\$65 for the Faital HF10AK tweeter if the optional high-end extension is built out. Driver available from Parts Express (3–7 day lead) or B&C; Speakers USA direct.

USE CASE SUMMARY

Primary application	Fly dates, rehearsal, IEM-supplemented stage rig
Unassisted headroom	Small to medium room, up to ~150 people
Amp requirement	Class D head with shelving EQ, 200W+ @ 8 ohm
vs v1.0 (28 L)	+12 L, -10 Hz native, -1 dB EQ needed, +1 lb
Airline note	Mainline OK — confirm dimensions on regional jets