

APEX ENCLOSURES

75" Outdoor TV Enclosure - Prototype RFQ

Model: ATE-75 | Version: 5.3.0 | January 2026

1. Project Overview

We require a **prototype manufacturer** to build 2-3 sample units of our outdoor TV enclosure. This is a weatherproof aluminum housing designed to protect consumer TVs in Gulf climate conditions (55°C ambient).

Product	Outdoor TV Enclosure (75" model)
Initial Order	2-3 prototype units for validation
Target Market	UAE / Saudi Arabia (Gulf Region)
IP Rating Target	IP55 (dust protected, low-pressure water jets)

2. External Dimensions (ATE-75)

Dimension	Value	Notes
Overall Width	1760 mm	Frame outer edge to outer edge
Overall Height	1120 mm	Flush front - no protruding deflector
Overall Depth	160 mm	Recess-compatible depth
Top/Bottom Bezels	80 mm each	Integrated ventilation slots (recessed)
Side Bezels	40 mm each	Standard frame profile
Estimated Weight	~38 kg	Enclosure only (excludes TV)

3. Materials Specification

3.1 Frame & Panels

Component	Material	Specification
Main Frame	5052-H32 Aluminum	3mm thickness, marine grade
Rear Panel	5052-H32 Aluminum	2mm thickness

VESA Reinforcement	5052-H32 Aluminum	6mm plate, through-bolted
Finish	Powder Coat	60-80 microns, Matte Black (RAL 9005)

Critical: Why 5052-H32?

Do NOT substitute 6063 aluminum. 5052-H32 is required for:

- Superior corrosion resistance (Gulf coastal salt air)
- Better weldability for sealed joints
- Higher fatigue strength for thermal cycling

3.2 Glass Panel

Type	Laminated safety glass (3mm + 3mm = 6mm total)
Opening Size	1680 × 960 mm (visible area)
Retention	Continuous aluminum channel with EPDM gasket
Option	Low-iron glass available (reduced green tint)

3.3 Sealing & Gaskets

Location	Material	Profile
Glass Channel	EPDM (70 Shore A)	Continuous U-channel
Service Door	EPDM (higher durometer)	D-profile, compression seal
Cable Entry	Silicone	IP55 cable glands (×3)

4. Key Fabrication Details

4.1 Thermal System

Fans	3× Delta AFB1412HH-A (140mm, 12V DC)
Airflow Target	165-195 CFM total
Control	PWM speed control (we supply controller)
Rear Plenum	30mm air gap with perforated diffuser plate
Diffuser Holes	8mm diameter, 40% open area

Note: We will supply the PWM controller, temperature sensors, and wiring harness. Manufacturer provides fan mounting positions and cutouts only.

4.2 Ventilation Openings (Integrated Bezel Design)

Location	Design	Purpose
Bottom Bezel (80mm)	Multiple horizontal slots (3-4mm wide) recessed 30-40mm behind bezel face	IP55 intake - bezel edge shields from water jets
Top Bezel (80mm)	Multiple horizontal slots (3-4mm wide) recessed 30-40mm behind bezel face	IP55 exhaust - bezel edge shields from rain
Filter Access	Gasketed drawer in bottom bezel	MERV 8 filter (replaceable)

Design Benefit: No protruding deflector - clean "picture frame" appearance with flush front face. Ventilation integrated into wider top/bottom bezels.

4.3 Service Door

Location	Bottom bezel (hinged)
Size	1650 × 80 mm
Hinges	316 stainless steel piano hinge
Latches	4× compression latches with compression stops
Support	Gas struts (hold door open for service)

4.4 Mounting System

VESA Pattern	400×400 or 600×400 (adjustable)
Reinforcement	6mm aluminum plate, through-bolted to frame
Load Rating	75 kg TV at 3× safety factor
Wall Mount	Standard VESA compatible (included)

5. Hardware (All 316 Stainless Steel)

- M6 socket head cap screws for frame assembly
- M4 pan head screws for panels
- M8 bolts for VESA mount
- 4× compression draw latches
- 1× piano hinge (service door)
- 2× gas struts (100N each)
- 3× IP55 cable glands

6. What We Need From You

6.1 For This Meeting

1. Confirm you can work with 5052-H32 aluminum (not just 6063)
2. Review dimensions and identify any fabrication concerns
3. Discuss prototype timeline and pricing approach
4. Clarify what drawings/files you need from us

6.2 Deliverables Required

Item	Details
Prototype Quote	2-3 units, itemized by component
Lead Time	Prototype delivery estimate
Production Pricing	Indicative pricing at 10, 25, 50 units
CAD Files	Production drawings become Apex property

6.3 What We Supply

- PWM controller and temperature sensors
- Wiring harness
- Delta fans (or you can source)
- IR extender system
- Packaging design

Confidentiality

This design is proprietary to Apex Enclosures. We will require an NDA before sharing detailed production drawings. All CAD files created for this project become Apex property.

7. Contact

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