Volarent

AUGUST 2026

Tecnam P-Mentor Professional Flight Trainer

PRODUCT PROFILE & TECHNICAL SPECIFICATIONS

Multi-Crew Flight Simulator

This Product Profile and Technical Specifications document is intended for general informational purposes only. It provides an overview of standard features and capabilities, but exact specifications, included features, and system configurations may vary depending on your selected options, requested modifications, and finalized purchase agreement.

For authoritative and up-to-date information, including compliance documentation, training allowances, and approved configurations, please refer to your simulator's Qualification & Approval Guide (QAG), Qualification Test Guide (QTG), final quote, and delivery documentation.

This product has not yet attained FAA-approval to achieve AATD status. FAA-approval is expected within 6 months as of August 2026

If you have any questions regarding specifications or regulatory use, please contact Volarent Aerospace directly.

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Introduction

The **SoftekSim Aerospace Tecnam P-Mentor Professional Trainer** is a premium, **AATD-capable** two-pilot simulator meticulously engineered to replicate the precise aerodynamic profiles, cockpit architecture, and integrated avionics of the two-seat **Tecnam P-Mentor** aircraft. Synthesizing technical authenticity with potential for **FAA-certified compliance**, this high-fidelity platform delivers a sophisticated, fiscally efficient training solution tailored for premier flight academies, university aviation programs, and forward-thinking flight schools.

FAA-approved Loggable Credits

- Up to 2.5 hours toward Private Pilot Certificate
- Up to 20 hours toward an Instrument Rating
- Up to 50 hours toward a Commercial Pilot Certificate
- Additional credit toward ATP and Flight Instructor certificates
- Instrument currency and IPC checks

***Following FAA AATD Certification**

This simulator includes a full-scale replica of the Tecnam P-Mentor cockpit, with features such as:

- Dual control-loaded side-stick replicas and rudder pedals
- Garmin G-3X avionics suite
- Functional Garmin GFC500 autopilot replica
- SEP Throttle Quadrant
- High-resolution 180-degree visual projection system for IFR/VFR scenarios
- Adjustable pilot seating, circuit breaker panels, and replicated trim modules

Aircraft Model Overview

About the Tecnam P-Mentor

The **Tecnam P-Mentor** is a modern, ultra-efficient training aircraft engineered by Italian manufacturer **Costruzioni Aeronautiche Tecnam.** Celebrated for its operational simplicity, exceptional fuel economy, and mission versatility, this platform has emerged as a premier global standard for foundational flight instruction.

Fully certified under **EASA CS-23** and **FAA Part 23** standards, the aircraft streamlines pilot operations while delivering the performance thresholds critical for advanced training. Its minimized operating costs, panoramic visibility, and highly forgiving flight dynamics ensure an optimal environment for students advancing to complex, cross-country maneuvers.

Key Features of the Tecnam P-Mentor

Configuration
Low-wing, two-seat, single-engine aircraft

Propellers
2-Blade, Constant-speed, variable-pitch

Engine
Rotax 912iSc3
(98 hp @ 5500 rpm)

Avionics
Garmin G3X Touch glass cockpit
(standard on training variants)

Simulator Overview

The **Tecnam P-Mentor Professional Trainer** is an AATD-capable, purpose-built simulation platform engineered to support **FAA-compliant**, curriculum-integrated pilot training. Developed in strict alignment with Advisory Circular **AC 61-136B** and approved under **14 CFR §61.4(c)**, this device provides creditable aeronautical experience for private, commercial, instrument, and flight instructor certificates and ratings.

This platform is a comprehensive training ecosystem designed to reinforce critical skills, bridge theory with practice, and reduce real-aircraft dependency. The **P-Mentor Professional Trainer** enables instructors to execute complex systems management, abnormal and emergency checklists, and precision maneuvers within a safe, repeatable, and fully controlled environment.

While standard simulators provide basic procedural training, this device offers a full-spectrum flight training solution from foundational cockpit familiarization to advanced cross-country decision-making. It excels in teaching single-engine management, **IFR navigation**, autopilot integration, and scenario-based management, making it a cornerstone asset for premier aviation academies.

Mirroring one of the industry's premier modern trainers, the simulator precisely replicates the flight envelope and human-machine interface of the **Tecnam P-Mentor**. The result is an **AATD-ready** platform that is deeply instructional and operationally relevant, serving as a direct conduit to real-aircraft proficiency.

Ultimately, this simulator elevates the quality, accessibility, and consistency of flight training while lowering operating costs and mitigating risk. Whether integrated into a collegiate program or a commercial flight academy, this platform delivers scalable value without compromise.

Key Highlights:

- **AATD eligible:** Fully qualified for AATD licensure under 14 CFR §61.4(c) and AC 61-136B
- **Multi-Certificate Ready:** Supports training credit for Private, Instrument, Commercial, ATP, and CFI certificates
- **Built for Instruction:** Real-time instructor control station for scenario management and performance tracking
- **High-Utility Design:** Enables complex single-engine procedures, IFR operations, and emergency drills
- **Cost-Efficient Training:** Reduces dependency on aircraft hours while maintaining curriculum fidelity
- **Full Cockpit Realism:** G3X Touch integration, control-loaded systems, and a true-to-scale cabin environment

***Following FAA AATD Certification**

System Components & Hardware Config.

The Tecnam P-Mentor Professional Trainer is engineered to deliver a **fully immersive**, **hardware-accurate simulation environment**, closely mirroring the real-world cockpit experience. Each simulator is built around a full-scale replica of the P-Mentor instrument panel and flight controls, enabling both procedural and operational training for students at all experience levels. The system integrates tactile realism with durable components, ensuring **long-term functionality** and **training continuity**.

Cockpit Enclosure & Structure

- Full fiberglass cockpit enclosure, modeled to the actual dimensions of the Tecnam P-Mentor cabin
- Side-by-side dual seating with adjustable pilot and copilot seats
- Realistic window placement and field of view to mimic aircraft sightlines
- Center floor console including rudder trim control, headset ports, and trim wheel

Flight Controls

Dual Control-Loaded Side-Stick Replicas
Constructed to dimensionally match side-stick controls and recreate sensations from mechanical linkages

Control-loaded Dual Pedal Assembly
Featuring differential braking and precision linear potentiometers

System Components & Hardware Config.

continued

SEP Throttle Quadrant

SEP (Single-Engine Piston) quadrant fitted with Prop and Throttle controls

Manual and Electric Pitch Trim Functionality

Avionics & Instrumentation

- Garmin G-3X Touch glass cockpit replica with PFD and MFD displays
- Garmin GFC500 autopilot emulation, fully integrated with G-3X suite
- Backup analog instruments modeled after the MD203 standby attitude module
- Magnetic compass with built-in LCD display and heading lag replication
- Set of active circuit breakers for hands-on systems training

Visual & Audio Systems

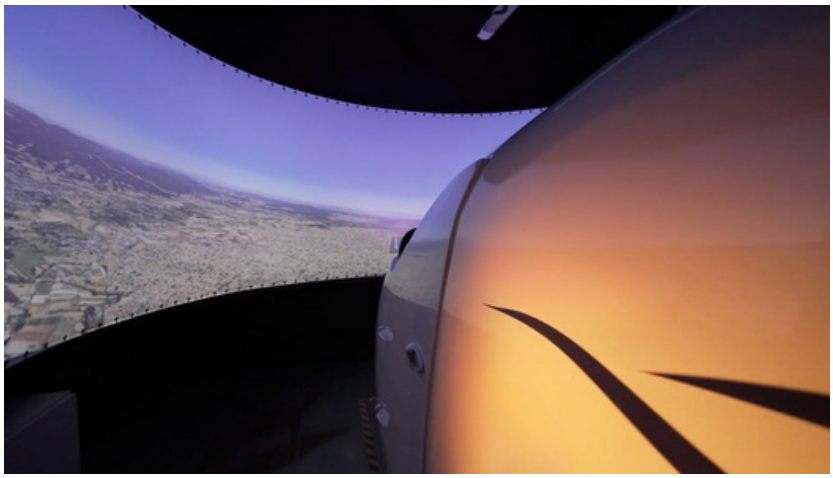
- High-resolution 180-degree projection screen or wraparound display system
- Visual database supporting VFR and IFR weather conditions, adjustable ceiling, visibility, and time of day
- Realistic engine and environmental sounds synced with power settings and external visuals
- Independent audio panel with stereo sound and communication simulation

Computing & Integration

- High-performance simulation-optimized computer hardware preloaded with Lockheed-Martin developed Prepar3D software
- Preconfigured with aircraft-specific performance modeling for the Tecnam P-Mentor
- Networked IOS integration and simulator firmware support
- Fully configured flight controls
- Turnkey plug-and-play system with on-site installation included

Visual System

Hardware Integrations



180˚ Display Environment for Enhanced Training Realism

The P-Mentor Professional Trainer is equipped with a dedicated **180-degree visual projection system**, purpose-built to support both VFR and IFR training environments. The visual system is designed to immerse the trainee in **realistic flight conditions**, replicating the in-cockpit perspective of a Tecnam P-Mentor aircraft while enhancing spatial awareness, depth perception, and environmental responsiveness.

System Architecture

01

Three-Projector Wraparound System

The P-Mentor simulator utilizes a triple-projector arrangement for a 180˚ horizontal field of view, enabling panoramic immersion. This setup simulates side-window visibility for realistic visual cues during pattern work, instrument approaches, and crosswind landings.

02

High-Gain Projection Surface

The wraparound display uses a matte curved projection screen with anti-glare and color-true surface finishes, ensuring brightness and color fidelity in varying light conditions. The screen curvature is engineered for optimal focal consistency from the pilot's seated position.

03

Resolution and Detail

The visual system supports Full HD (1920x1080) resolution per projector, creating a crisp, distortion-free image across the arc. Airports, terrain, runway markings, and lighting systems are rendered with high fidelity to reinforce procedural visual references and pilot orientation.

Visual System

Software Integrations

Prepar3D-Based Environment
Powered by Lockheed Martin's Prepar3D simulation engine, the visual system provides a professional-grade flight scenario platform. The software includes a global terrain and airport database, weather injection tools, and compatibility with add-on visual content (e.g., photoreal scenery, custom airports).

Dynamic Weather Simulation
Supports variable meteorological conditions including adjustable:

- Visibility (e.g., <1SM to unrestricted)
- Ceiling (overcast layers, broken layers)
- Day/Night Transitions
- Precipitation, turbulence, and wind layers

Runway Environment Accuracy
Runway lighting systems, approach path indicators (PAPI/VASI), and terrain contours are rendered in real-time, enabling precise simulation of instrument and visual approaches.

Training Use Case

The 180˚ visual system is optimized for:

- Instrument Approaches (ILS, LPV, VOR, RNAV)
- Traffic Pattern Work with realistic turn and sight cues
- Engine-Out Procedures during VFR or simulated IMC
- Crosswind Takeoffs and Landings
- Emergency Training including visual disorientation and weather degradation scenarios

FAA AATD Visual Compliance

In alignment with FAA AC 61-136B, the visual system exceeds the minimum AATD requirements, including:

- Independent screen delivering realistic day/night VFR and IFR cues
- Adjustable visibility and ceiling parameters
- Full-field visual movement for accurate representation of approach profiles and aircraft maneuvering

These features ensure the simulator not only meets compliance thresholds but delivers instructionally meaningful realism, reinforcing muscle memory and visual scanning habits.

The 180˚ visual display system effectively transforms any given flight scenario—ranging from routine VFR traffic patterns to high-workload, low-visibility IFR approaches—into an exceptionally safe, highly repeatable, and operationally rigorous pilot training experience that maximizes student proficiency.

Regulatory & Training Compliance

FAA Authorization & Approved Training Usages

The **P-Mentor AATD** is capable of achieving FAA certification as an **Advanced Aviation Training Device (AATD)** under 14 CFR §61.4(c).

This approval confirms that the simulator meets or exceeds the standards outlined in **Advisory Circular (AC) 61-136B**, which governs the use, design, and allowable credit of aviation training devices in both **Part 61 and Part 141 training environments**.

Please Note: While the simulator is AATD-ready, it has not yet received FAA approval. Volarent Aerospace observes an early-adopter policy, offering a significant discount off of list price for clients who purchase a system prior to FAA approval. Following approval, the official **Letter of Authorization (LOA)** is issued only after installation and successful completion of an FAA on-site inspection at the end-user location.

Official FAA Designations

Device Type:

- Advanced Aviation Training Device (AATD)-ready Flight Simulator

Authorization Pathway:

- FAA AC 61-136B + 14 CFR §61.4(c)

Documentation Included Upon Purchase:

- FAA-prepared Qualification & Approval Guide
- (QAG) Aircraft Configuration & Performance Data
- Application-ready LOA package (pending approval, site visit and inspector sign-off)

Loggable Time & Training Allowances

Allowances Under 14 CFR		BATD	AATD	F	FFS
Private Pilot Certificate	Part 61	2.5 hrs	2.5 hrs	2	2.5 hrs
	Part 141	5.25 hr	5.25 hrs	7	7 hrs
Instrument Rating	Part 61	10 hrs	20 hrs	2	20 hrs
	Part 141	8.75 hr	14 hrs	1	17.5 hrs
Combined Private Pilot Certificate & Instrument Rating	Part 61	20 hrs	20 hrs	2	20 hrs
	Part 141	17.5 hr	17.5 hrs	1	24.5 hrs
Commercial Pilot Certificate	Part 61	n/a	50 hrs	5	50 hrs
	Part 141	n/a	24 hrs	2	36 hrs
Flight Instructor Certificate	Part 61	n/a	n/a	n	n/a
	Part 141	n/a	1.25 hrs	1	1.25 hrs
Instrument Flight Instructor Certificate	Part 61	n/a	n/a	n	n/a
	Part 141	n/a	0.75 hrs	0	1.5 hrs
Airline Transport Pilot Certificate	Part 61	n/a	25 hrs	2	25 hrs
	Part 141	n/a	6.25 hrs	6	12.5 hrs

P-Mentor Professional Trainer →

Regulatory & Training Compliance

Potential Maximum Credit Approval

The P-Mentor Professional Trainer has not yet achieved FAA-approval to attain AATD status. However, upon approval, the following are for the following maximum training credits achievable when used in accordance with its LOA.

PRIVATE PILOT CERTIFICATE
2.5 HOURS

INSTRUMENT RATING
UP TO 20 HOURS

COMMERCIAL PILOT CERTIFICATE
UP TO 50 HOURS

AIRLINE TRANSPORT PILOT (ATP)
UP TO 25 HOURS

INSTRUMENT CURRENCY (PART 61.57)
FULLY SUPPORTED (NO INSTRUCTOR REQUIRED)

INSTRUMENT PROFICIENCY CHECK (IPC)
MAY BE CONDUCTED PER INSTRUMENT ACS

CFI
UP TO 5% OF TOTAL TRAINING UNDER PART 141

CFII
UP TO 5% OF TOTAL TRAINING UNDER PART 141

Additional loggable time is allowed when adding category/class ratings (e.g., multi-engine):

PRIVATE PILOT ADD-ON
UP TO 3 HOURS

COMMERCIAL PILOT ADD-ON
UP TO 11 HOURS

ADDITIONAL ATP ADD-ON
UP TO 6.5 HOURS

Regulatory & Training Compliance

Allowances & Restrictions

Part 141 Allowances by Curriculum Appendix

When approved as part of a Part 141 curriculum, the simulator may count for:

- Appendix B (Private): Up to 15% of total training time
- Appendix C (Instrument): Up to 40%
- Appendix D (Commercial): Up to 20%
- Appendix E (ATP): Up to 25%
- Appendix F (CFI): Up to 5%
- Appendix G (CFII): Up to 5%
- Appendix M (Private + Instrument combined): Up to 25%

Compliance Notes & Restrictions

- ATDs cannot be used for practical tests, flight reviews, or type-specific training credit.
- ATDs must not be used for aircraft type ratings or for Part 121/135 program credits.
- Minimum requirements for night, solo, and cross-country flight time must be completed in an actual aircraft as required by 14 CFR.

ATD time can only be logged as:

- Total Time
- Instruction Received
- Instrument Time (when applicable)

NOTE ON CERTIFICATION

The P-Mentor Professional Trainer is designed to exceed minimum FAA-established AATD requirements. Due to the recent release of this simulator, it is not yet FAA-approved for AATD-certification

Warranty & Terms of Service

At Volarent Aerospace, we believe that investing in a flight simulator is a long-term commitment — and our support doesn't end at delivery. Every P-Mentor Professional Trainer is backed by a **comprehensive warranty** and clearly defined terms of service to ensure your organization can operate with **confidence** and **peace of mind**.

Standard Warranty

Coverage Period: 24 months from the date of on-site installation

Scope of Coverage:

- All manufacturing defects in materials and workmanship
- Avionics hardware, computer systems, control components, and display units
- Software updates and firmware patches required to maintain FAA compliance

Response Time:

- Remote support: Within 1 business day
- On-site support (if required): Within 5–7 business days (U.S. mainland)

NOTE: CONSUMABLES SUCH AS PROJECTOR LAMPS AND PILOT SEAT CUSHIONS ARE COVERED FOR 90 DAYS UNDER STANDARD WEAR TERMS.

Extended Warranty Options

3-Year Extension: Available at time of purchase

Coverage Includes:

- Continued hardware replacement and labor
- Remote diagnostics and software tuning
- Upon certification: FAA reauthorization support for LOA renewals (required every 60 months)

Cost:

- Quoted at time of sale; based on region and support tier

Support & Maintenance

Support Portal: 24/7 ticket system and documentation access

Phone & Email Support: Available Monday–Friday, 9 AM–6 PM CST

Annual Maintenance Option (Optional):

- Preventive system checks
- Software validation and simulator health report
- Upon certification: FAA LOA renewal support consultation

Installation & Support

From day one, Volarent Aerospace ensures that your **P-Mentor Professional Trainer** is installed correctly, configured to FAA standards, and **fully supported throughout its operational lifecycle.** We manage every detail so your team can focus on what matters most — training **safe, proficient pilots.**

On-Site Installation

Every P-Mentor simulator includes a comprehensive, white-glove installation service performed on-site by our factory-trained technicians. Our team coordinates directly with your facility to ensure a seamless setup, minimal disruption, and full operational readiness from day one.

Standard Installation Notes

- Physical delivery and assembly of all simulator hardware
- Full calibration of avionics, flight controls, and visual projection system
- System validation and functional testing
- Instructor/staff onboarding session

TYPICAL DURATION: 1–2 BUSINESS DAYS, DEPENDING ON SITE CONDITIONS

Facility Requirements

To ensure a smooth installation process, your site must meet the following specifications:

- **Space**: Minimum 10' x 12' open area with a 7' ceiling clearance
- **Electrical**: Standard 120V/15A power (U.S.), surge protection recommended
- **Network (Optional):** Internet access for remote support and software updates
- **Environment**: Indoor, climate-controlled setting (55–85˚F recommended)

Detailed prep instructions will be provided prior to shipment.

Post-Installation Training & Support

After installation, Volarent provides immediate onboarding and access to our full suite of support services.

- Instructor Orientation:
  - Overview of simulator components
  - Upon certification: LOA best practices and compliance reminders
- Support Access:
  - Live remote troubleshooting (Mon–Fri, 9 AM–6 PM CST)
  - 24/7 access to technical documentation and support portal
  - Optional annual maintenance visits (U.S. only)

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