



GE Aerospace

# Catalyst

Advanced turboprop engine

## The power to explore

The Catalyst engine, a product of Avio Aero - part of GE Aerospace, is the first all-new, clean-sheet engine for the turboprop market in more than 50 years, heralding a new era in business and general aviation. By utilizing technologies proven on GE Aerospace's larger commercial engines over millions of flight hours, it is balancing "all new" with "low risk and high value," thus advancing airframer, operator, passenger, and pilot experience.

The Catalyst engine family, aimed to the 850-1600 SHP power range, includes pilot-friendly, integrated digital engine and propeller control, automatically optimizes fuel flow, prop pitch and speed, bleed valves and variable stators for maximum efficiency in all conditions. Engineers incorporated customer feedback into the engine's design and development. Innovation, advanced manufacturing, and digital capabilities allow a truly flexible design for aircraft design engineers, as well as with a more pleasant, and sustainable journey for pilots and passengers.

## A game changer

Catalyst engine is the culmination of our commitment to extensive research and development, and advanced engineering with state-of-the-art technology and additive manufacturing componentry. Catalyst is the world's first turboprop featuring these 3-D printed components, which are both lighter and more durable and ultimately deliver the best power-to-weight ratio in this engine class. This capability also provides freedom with increased range, added payload, and in creating a larger, cabin that enables a more luxurious passenger experience.

An enjoyable and simplified flight experience sets new standards for aircraft availability and grants new possibilities for pilots and passengers.



## The Turboprop of the 21<sup>st</sup> century

A more fuel efficient, digitally-controlled engine opens a world of opportunity. The Catalyst engine family benefits from GE Aerospace's engineering expertise and from the largest European R&D programs devoted to decarbonization. The result is a significant reduction of CO<sub>2</sub> emissions as well as lower fuel consumption of up to 20%. Additive technology has been used in combination with advanced alloys to enable more advanced component designs that allows more geometrical freedom in the engine design, while reducing fuel burn and weight and increasing durability and efficiency. Like every GE Aerospace and GE Aerospace partnership engines, the Catalyst is capable of using the Sustainable Aviation Fuels (SAF).

### Pilot

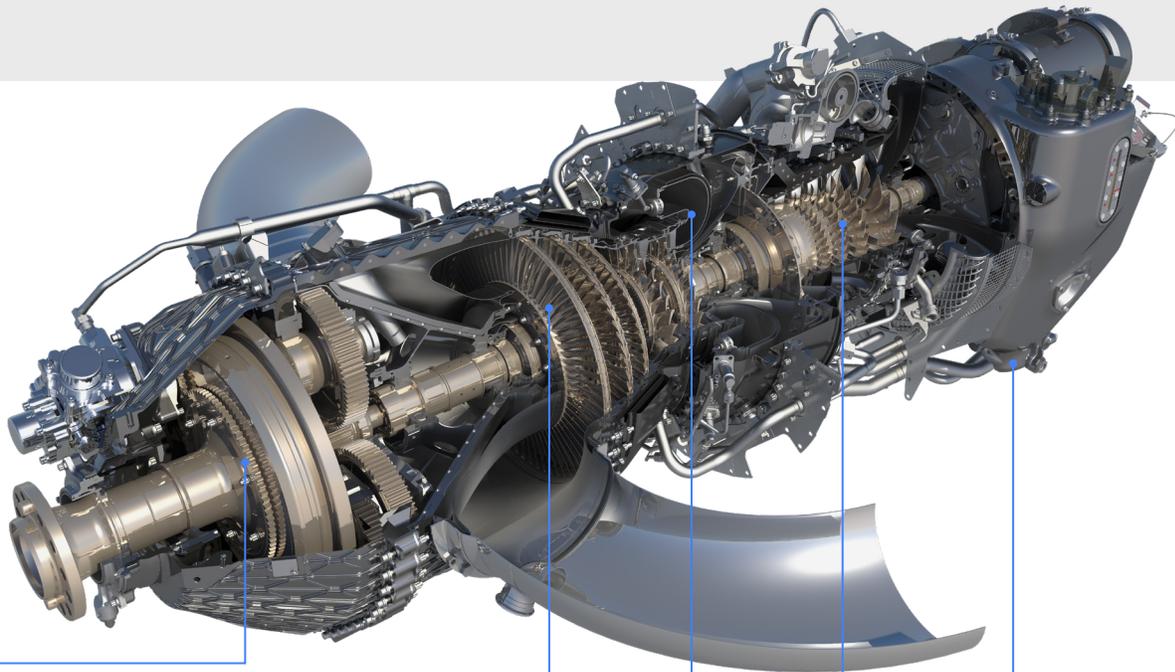
Improving the pilot experience starts by streamlining operations and reducing distractions. Digitally-enabled features begin with engine auto start and continue with automated exceedance protection and integrated propeller control. The result is a simplified cockpit that includes a single-lever power control, fewer instruments to monitor and more precise engine control.

### Owner

Reliability is the benchmark of proven technology. This engine's integrated digital features and GE Aerospace's analytics act as a technology liaison for maintenance prediction, prevention, and planning. The result is longer time between overhauls, greater availability, and ultimately lower cost of ownership for the life of the engine.

### Passenger

A better passenger journey starts with a more comfortable cabin experience. This engine's integrated propulsion control aids in cabin noise reduction and its improved performance can enable a lower effective cabin altitude. This results in a more enjoyable flight experience.



#### Propeller Gearbox

Utilizes a planetary gear arrangement to transfer power generated by the power turbine to the propeller.

#### Power Turbine

Featuring three stages and a 3D aerodynamic design to maximize the power extraction and efficiency across the entire flight envelope.

#### Combustor

Compact, reverse flow design and advanced fuel nozzles enable more complete combustion to reduce emissions and visible soot.

#### Compressor

The compact, four-stage, axial, single centrifugal design provides a class-leading 16:1 pressure ratio yielding unrivaled efficiency and power.

#### Control System

The integrated propulsion control commands engine and propeller operations, enabling single lever power and significantly reducing pilot workload.

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