



# Galaxium Orbital Hotel Shuttle - Technical Specifications

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Galaxium Travels

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## Overview

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The Galaxium Orbital Hotel Shuttle is a specialized spacecraft designed to ferry guests to and from the orbital space hotel. It combines efficient propulsion, robust life support systems, and luxury amenities to provide a safe and comfortable experience for passengers during their journey to and from the hotel.

## General Specifications

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- **Manufacturer:** Galaxium Aerospace
- **Model:** OHS-1
- **First Flight:** 2028
- **Status:** Active Service
- **Fleet Size:** 3 vessels

## Dimensions and Capacity

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- **Length:** 30 meters
- **Width:** 8 meters
- **Height:** 6 meters
- **Passenger Capacity:** 10
- **Crew Capacity:** 2
- **Cargo Capacity:** 1,000 kg

## Propulsion System

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### Primary Engines

- **Type:** Hybrid Chemical-Electric Propulsion

- **Thrust:** 300 kN
- **Specific Impulse:** 3,500 seconds
- **Fuel:** LOX/LH2
- **Efficiency:** 90%

## Secondary Engines

- **Type:** Ion Thrusters
- **Thrust:** 40 kN
- **Fuel:** Xenon
- **Purpose:** Orbital adjustments and fine maneuvering

## Power Systems

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### Primary Power

- **Type:** Advanced Solar Arrays
- **Output:** 20 MW
- **Efficiency:** 85%
- **Lifespan:** 10 years

### Backup Power

- **Type:** Lithium-Ion Batteries
- **Capacity:** 300 kWh
- **Purpose:** Emergency power and night operations

## Life Support Systems

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### Air Management

- **Oxygen Generation:** Electrolysis
- **CO2 Removal:** Molecular Sieve
- **Air Filtration:** HEPA + UV
- **Air Exchange Rate:** Every 4 minutes

### Water Management

- **Water Recovery:** 90%
- **Storage Capacity:** 2,000 liters
- **Purification:** Multi-stage filtration
- **Recycling System:** Closed-loop

## Temperature Control

- **Range:** 18-24°C
- **Humidity Control:** 40-60%
- **Thermal Protection:** Multi-layer insulation

## Safety Features

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### Emergency Systems

- **Escape Pods:** 1 (10 passengers)
- **Life Support Duration:** 24 hours
- **Emergency Power:** 24 hours
- **Radiation Shielding:** 3 cm lead equivalent

### Navigation

- **Primary:** GPS + Orbital Navigation
- **Backup:** Stellar Navigation
- **Autonomous Capability:** Level 3
- **Collision Avoidance:** AI-powered

## Luxury Amenities

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### Accommodations

- **Suite Types:** 5 (2 passengers each)
- **Bed Size:** Queen
- **Window Size:** 1.2m x 1m
- **Privacy Features:** Smart glass

### Common Areas

- **Observation Deck:** 60 m<sup>2</sup>
- **Dining Area:** 30 m<sup>2</sup>
- **Recreation Room:** 40 m<sup>2</sup>
- **Exercise Facility:** 20 m<sup>2</sup>

### Entertainment

- **Virtual Reality Suite:** Yes
- **Zero-G Pool:** 1.5m x 1m

- **Holographic Theater:** Yes
- **High-Speed Internet:** 300 Mbps

## Performance Metrics

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### Flight Characteristics

- **Maximum Speed:** 20,000 km/h
- **Orbital Capability:** Earth to Orbital Hotel
- **Maximum G-Force:** 2G
- **Maneuverability:** 4 degrees of freedom

### Mission Capabilities

- **Maximum Duration:** 5 days
- **Range:** Earth to Orbital Hotel
- **Payload Capacity:** 1,000 kg
- **Docking Capability:** Orbital Hotel compatible

## Maintenance

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### Inspection Intervals

- **Daily:** Visual inspection
- **Weekly:** System diagnostics
- **Monthly:** Deep maintenance
- **Annual:** Complete overhaul

### Service Life

- **Design Life:** 10 years
- **Major Refit:** Every 3 years
- **Component Replacement:** As needed
- **Software Updates:** OTA

## Environmental Impact

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### Emissions

- **CO2 Equivalent:** 0.2 tons per flight

- **Particulate Matter:** Negligible
- **Noise Pollution:** Below regulatory limits
- **Space Debris:** Zero

## Sustainability Features

- **Recycled Materials:** 75%
- **Energy Efficiency:** 85%
- **Waste Management:** Zero waste
- **Carbon Offset:** 100%

## Certification

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- **Space Safety:** ISO 14620
- **Environmental:** ISO 14001
- **Quality Management:** ISO 9001
- **Occupational Health:** OHSAS 18001