

# Acceptance Criteria

## Introduction

This document defines the acceptance criteria for the Illumination Chip and Harmonic Nexus Core (HNC). The criteria ensure that functional, performance, safety, and reliability benchmarks are achieved before system deployment.

## Functional Acceptance Criteria

- Illumination Chip outputs stable DC power between 350–400 V.
- Harmonic Nexus Core maintains  $\Gamma \geq 0.95$  coherence across operational cycles.
- Subsystems integrate seamlessly across energy, propulsion, and shielding domains.

## Performance Acceptance Criteria

- Efficiency  $\geq 95\%$  under nominal load.
- MTBF  $\geq 100,000$  hours.
- Surges up to 100 kW handled without catastrophic failure.

## Safety Acceptance Criteria

- Auto-shutdown triggered at  $\Delta T \geq 110^{\circ}\text{C}$ .
- Plasma containment stable up to  $1 \times 10^1 \text{ m}^3$ .
- All operating voltages and currents remain within design tolerances.

## Reliability & Stress Criteria

- Stress test deviation  $< \pm 5\%$  from theoretical limits.
- Redundant instrumentation cross-check results within tolerance.
- Recovery from overload within  $< 1$  second.

## Documentation & Validation

- Full subsystem documentation provided (CAD, protocols, data, IP).
- Multi-lab replication confirmed with consistent results.
- Independent review board sign-off completed.

## Results Checklist

Criteria	Requirement	Result
Power Output	350–400 V	PASS

Coherence Factor	$\Gamma \geq 0.95$	PASS
Efficiency	$\geq 95\%$	PASS
MTBF	$\geq 100,000$ hours	PASS
Thermal Safety	Auto-shutdown $\geq 110^{\circ}\text{C}$	PASS
Plasma Containment	Stable $\leq 1 \times 10^1 \text{ m}^3$	PASS
Overload Recovery	$< 1$ second	PASS
Replication	Multi-lab consistency	PASS
Independent Review	Sign-off required	PASS

## Conclusion

All acceptance criteria have been defined and verified. Meeting these ensures that the Illumination Chip and HNC are ready for safe deployment, large-scale replication, and commercialization.