

Sparrow Nest

Plug-and-play deterministic single-photon source

Integrated cryostat, laser and optics in a 19-inch rack, 920–960 nm

Sparrow Nest is a complete single-photon source in a 19-inch rack, with cryostat, excitation laser, alignment optics and control software integrated. It delivers single photons on demand through a single-mode fiber and needs only power, a stable room and airflow. At its heart is the Sparrow Core chip. The values below are typical of shipped systems measured at the fiber output:



90–97%	99–99.9%	30–50%	920–960 nm	80 MHz
Indistinguishability (raw HOM, 12.5 ns)	Single-photon purity	Fiber efficiency at system fiber output	Output wavelength	Repetition rate (pulse picker ready)

Who Sparrow Nest is for

Sparrow Nest is for teams that need a reliable stream of single photons in fiber without building and maintaining a cryogenic optical setup themselves. Startup, alignment and calibration run automatically. Intended end-users include, but are not limited to: quantum computing teams, quantum network testbeds, research facilities, and system integrators.

Optical output performance

Parameter	Description	Typical values
Indistinguishability	Hong-Ou-Mandel interference, 12.5 ns photon separation. Raw values, no correction.	90–97%
Single-photon purity	Probability that a pulse contains one photon, and only one	99–99.9%
Fiber efficiency	Probability that one excitation pulse yields a photon at the fiber output	30–50%
Operational stability	Fiber count variation after automated calibration, std. deviation over mean	<3% over 5 min <5% over 12 h
Output wavelength	Fixed per chip within the range. Linewidth of the optical output	920–960 nm <3 GHz
Repetition rate	Excitation laser rate. Lower rates via the external pulse picker interface	80 ± 0.5 MHz

System and site requirements

Optical output	PM780 fiber, FC/APC (PM980 optional)	Rack	42U
Pulse picker interface	PM780 in and out, 80 MHz BNC sync	Power	230 V AC, 16 A, up to 3 kW heat
Control	Ethernet, remote desktop, 1 Gb/s	Room	10–25 °C, 40–80% RH, low vibration

Test conditions. Typical values measured at the systems fiber output with resonant pulsed excitation at 80 MHz. Indistinguishability, purity, fiber efficiency, stability, and wavelength are documented per system in its test report. Full datasheet, system architecture and terms of sale available on request.

Get in touch

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