Piano

One-box narrow-linewidth tunable laser system

Compact design
with integrated pump and controller

Broadly tunable
1.42 - 4.3 µm with additional VIS, NIR, or MIR unit

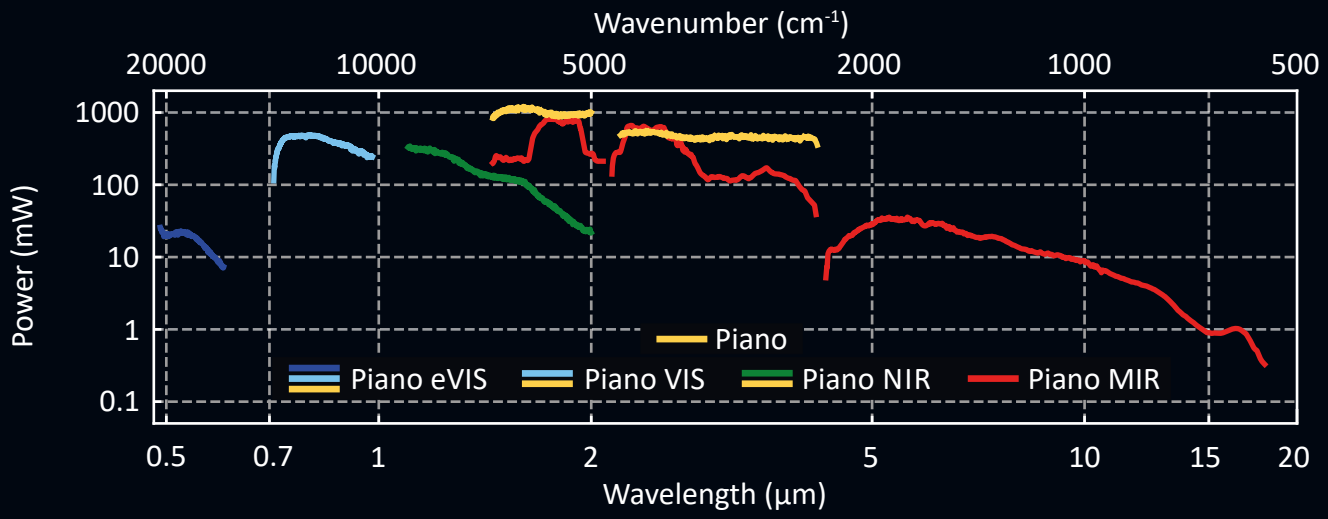
Narrow linewidth
< 4 cm^{-1}

Gap-free sweeping
at up to 100 cm^{-1}/s

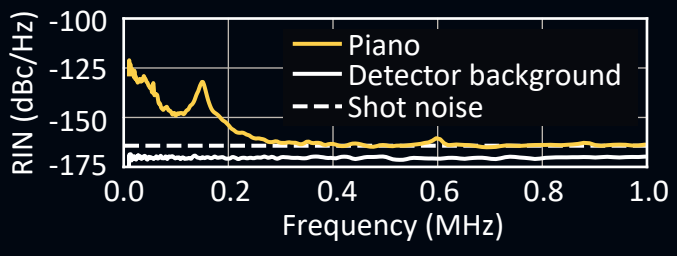
Integrated modulator
from 0 to 3 MHz

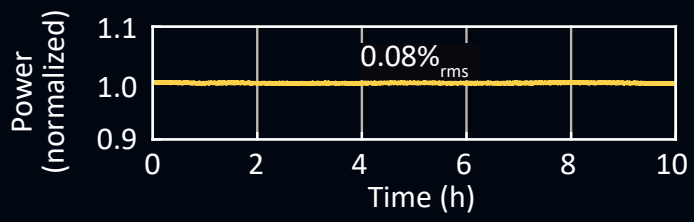
Plug-and-play
for lab setups or OEM integration

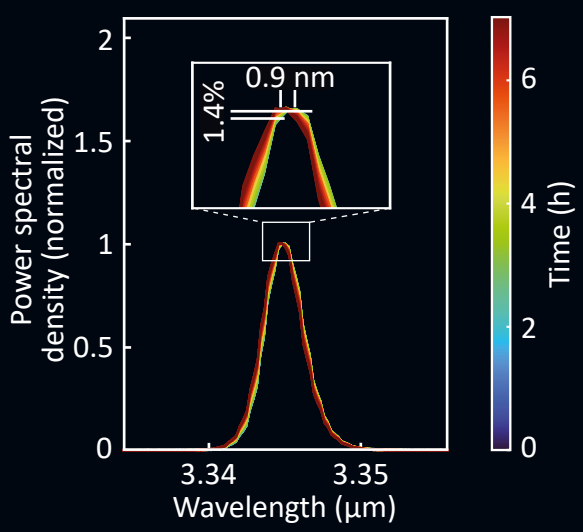
Five versions covering a broad wavelength range



Free-running design
ultra-low noise and long-term stability







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Piano

STUTTGART INSTRUMENTS
INFRARED LASERS

Available in selected configurations to match your application

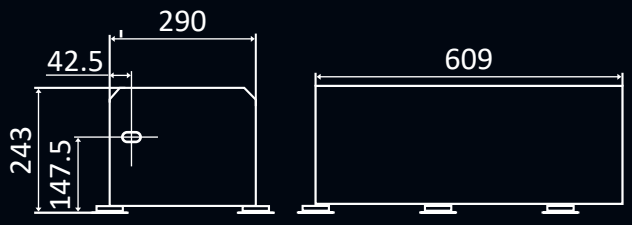
Piano (+) MIR or NIR or VIS or eVIS

Variants	Piano	Piano MIR	Piano NIR	Piano VIS	Piano eVIS
Wavelength (µm)	1.42 – 4.3	1.42 – 18	1.1 – 4.3	0.71 – 0.98 1.42 – 4.3	0.48 – 0.63 0.71 – 0.98 1.42 – 4.3
Power (mW)	> 600	> 10	> 200	> 400	> 20

Piano specifications	
Repetition rate	50 MHz
Pulse duration	10 ps
Linewidth	< 4 cm^{-1}
Time-bandwidth product	< 0.6
Beam pointing within range	< 30 µrad
Beam pointing between ranges	< 1 mrad
Spectral stability	< 0.02 %
Power stability	< 1 %
Shot noise limited	> 250 kHz

Scale: 1:15

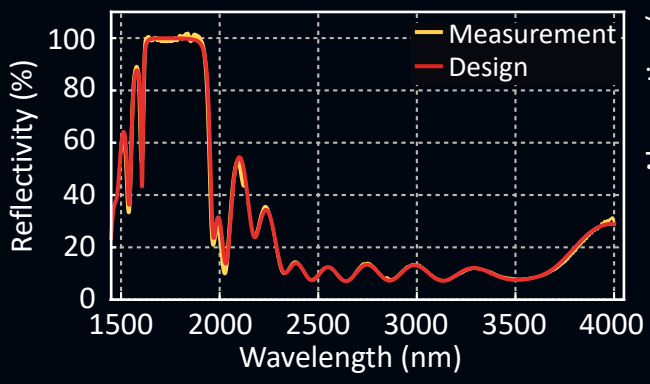
Units in mm



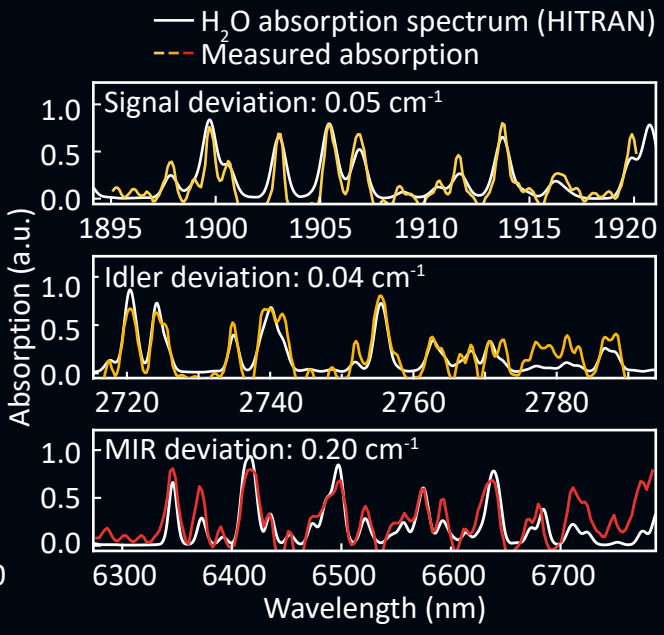
Example applications

- **Piano** → SPDC; C + L-band telecom
- **Piano MIR** → Near-field imaging; Trace gas sensing; Material characterization; FTIR replacement
- **Piano NIR** → O-band telecom; Semiconductor imaging
- **Piano VIS** → SPDC; Test & measurement; Quantum dot excitation

Optics characterization



Spectral accuracy (gas sensing)



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