

TERAHERTZ SOURCE · AVAILABLE NOW

THz QCL in HHL packaging

A terahertz quantum cascade laser in the standard high-heat-load (HHL) housing.
No cryostat, no liquid helium, no nitrogen.



Unsealed HHL housings, $44.5 \times 31.7 \times 19$ mm, each carrying a surface-emitting THz QCL.

No cryogenic cooling

4-stage Peltier (TEC)

~ 2 mW

Peak power

~ 5 μ W

Average power

HHL packaging

Sealed housing

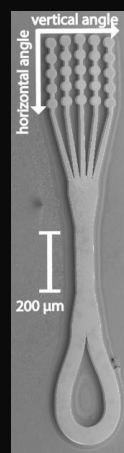
KEY FEATURES

- Thermoelectrically and water cooled
- Surface emission through a patch-array antenna
- Single-lobe, low-divergence ($\sim 20^\circ$) beam profile
- Hermetic housing, sealed under nitrogen
- Industry-standard HHL footprint, as used for our mid-IR QCLs

READ THE PAPER



S. Gloor et al.,
"Compact, thermoelectrically cooled surface emitting THz QCLs
operating in an HHL housing"
Nanophotonics 14 (21), 3415–3421, 2025.
doi.org/10.1515/nanoph-2025-0185
Developed with the Institute for Quantum Electronics, ETH Zürich.



Patch-array antenna
and loop mirror (SEM).