

Transient Grating Spectrometers

Carrier diffusion coefficient
in a matter of minutes

Non-invasive measurement technique

Sensitivity down to $\mu\text{J}/\text{cm}^2$
excitation level

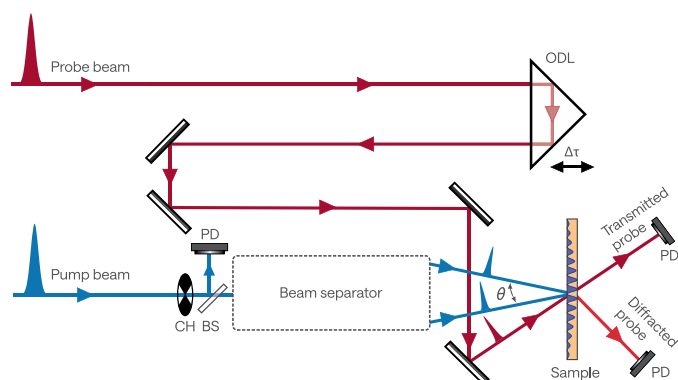
Advanced measurement and
analysis software

Photoluminescence measurement option



Layout example

HARPIA-TG optical layout for pump-probe experiments



BS – beam splitter
CH – chopper
ODL – optical delay line
PD – photodiode
PM – parabolic mirror
 θ – intersection angle
 $\Delta\tau$ – delay

Specifications

Measurement mode	Transmission	Reflection
Grating recording wavelength ¹⁾	340 – 560 nm	
Probe wavelength ²⁾	1030 nm	
Grating period ³⁾	1.05 – 12.5 μm	1.5 – 4.5 μm
Pulse duration	< 290 fs	
Delay range	Up to 8 ns	

MEASUREMENT RANGES

Diffusion coefficient	$\geq 0.1 \text{ cm}^2/\text{s}$
Carrier lifetime	3 ps – 8 ns

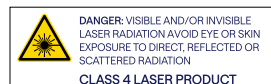
DIMENSIONS

Physical dimensions (L × W × H)	730 × 420 × 188 mm
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¹⁾ Extendable to 750 nm by applying different physical gratings. Contact sales@lightcon.com for more details.

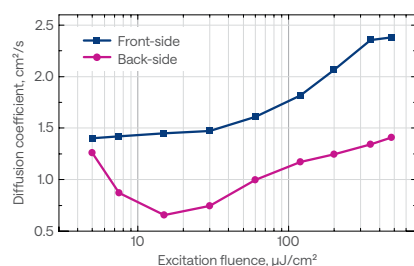
²⁾ OPA-based probe is available upon request. Contact sales@lightcon.com for more details.

³⁾ Depends on the pump wavelength.

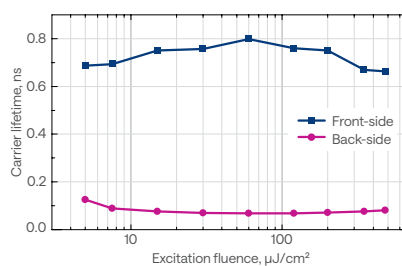


Performance

Diffusion coefficient of GaN
as a function of fluence



Carrier lifetime of GaN
as a function of fluence



Diffusion length of GaN
as a function of fluence

