

Transient Grating Spectrometer



Carrier diffusion coefficient in a matter of minutes

Non-invasive measurement technique

Fully automated and computer controlled

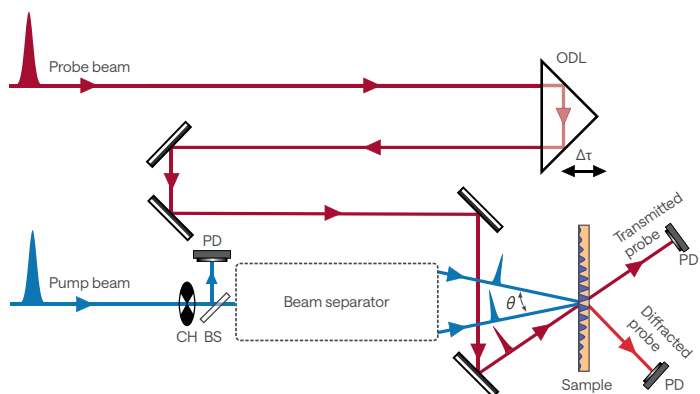
Continuous setting of grating period

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

Advanced measurement and analysis software

Photoluminescence (PL) measurement option

HARPIA-TG principal scheme



BS – beam splitter
CH – chopper
PD – photodiode

ODL – optical delay line
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

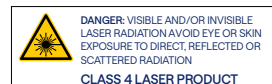
DIMENSIONS

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

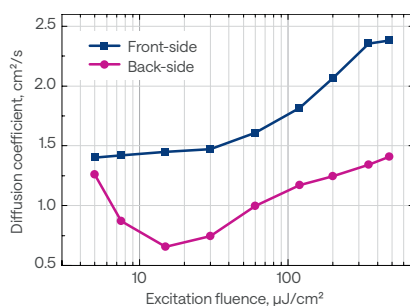
²⁾ OPA-based probe is available upon request. Contact sales@lightcon.com for more details.

³⁾ Depends on the pump wavelength.

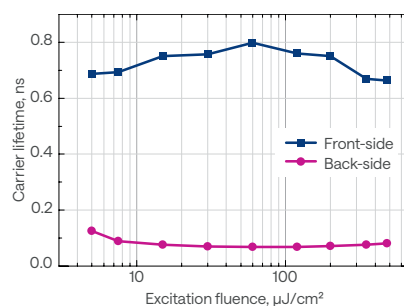


Performance

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

