

## Transient Grating Spectrometer

Carrier diffusion coefficient  
in a matter of minutes

Non-invasive measurement technique

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

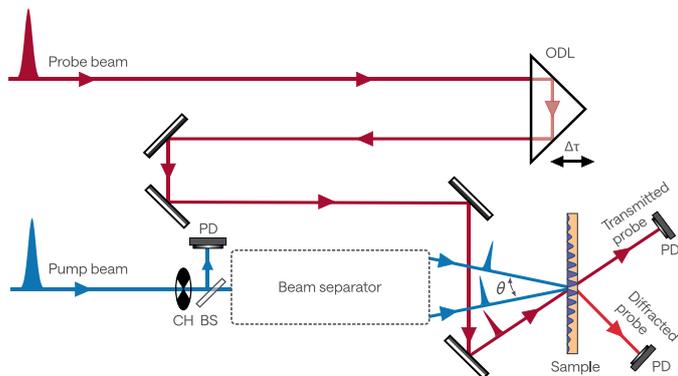
Advanced measurement and  
analysis software

Photoluminescence measurement option



Layout example

### HARPIA-TA optical layout for pump-probe experiments



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

### Specifications

Measurement mode	Transmission	Reflection
Grating recording wavelength <sup>1)</sup>	340 – 560 nm	
Probe wavelength <sup>2)</sup>	1030 nm	
Grating period <sup>3)</sup>	1.05 – 12.5 $\mu\text{m}$	1.5 – 4.5 $\mu\text{m}$
Pulse duration	< 290 fs	
Delay range	Up to 8 ns	
<b>MEASUREMENT RANGES</b>		
Diffusion coefficient	$\geq 0.1 \text{ cm}^2/\text{s}$	
Carrier lifetime	3 ps – 8 ns	

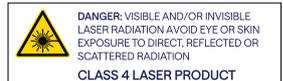
### DIMENSIONS

Physical dimensions (L x W x H)	730 x 420 x 188 mm
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<sup>1)</sup> Extendable to 750 nm by applying different physical gratings. Contact [sales@lightcon.com](mailto:sales@lightcon.com) for more details.

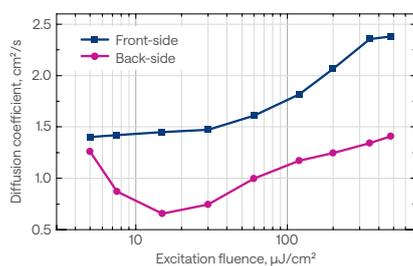
<sup>2)</sup> OPA-based probe is available upon request. Contact [sales@lightcon.com](mailto:sales@lightcon.com) for more details.

<sup>3)</sup> Depends on the pump wavelength.

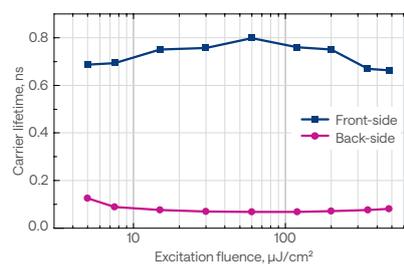


### Performance

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

