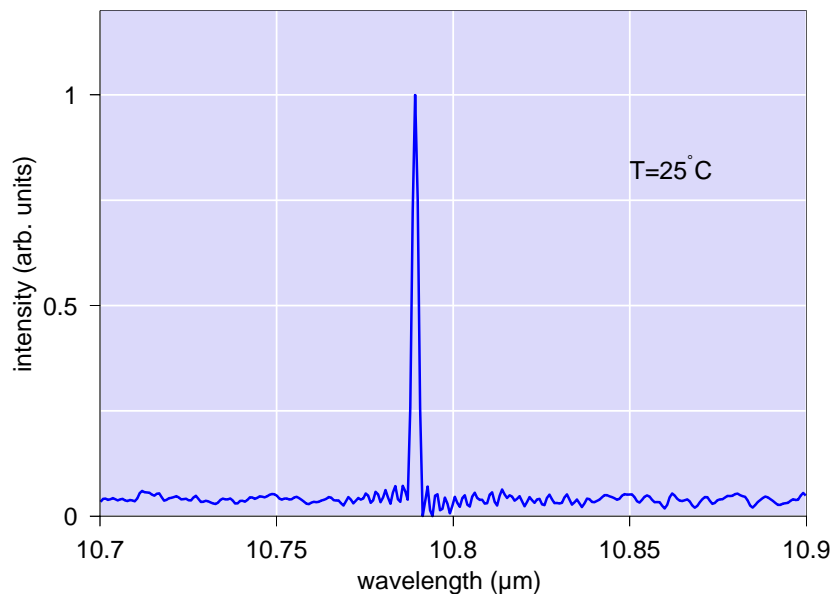


# DFB Quantum Cascade Lasers in the 10.7 $\mu\text{m}$ region

datasheet

## description

nanoplus 10.7  $\mu\text{m}$  DFB quantum cascade lasers show unique device performance to meet the requirements of our customers. Their high side mode suppression ratio (SMSR) and high spectral purity make them perfectly suited for applications like e.g.  $\text{NH}_3$  sensing. The devices work in pulsed mode at operation temperatures up to 270 K.



## specifications \*

Parameter	Symbol	Unit	min	typical	max
Wavelength		$\mu\text{m}$		10.80	
Optical output power	$P_{\text{opt}}$	mW	1	3	5
Forward current	$I_f$	A	4.5	6	6.5
Threshold current	$I_{\text{th}}$	A	5	5.5	6
Beam divergence parallel		deg.	35	40	45
Beam divergence perpendicular		deg.	55	60	65
Emitting area	$W \times H$	$\mu\text{m}$		8x20	
Slope efficiency	$e$	mW/A	1.5	2	2.5
Temperature tuning rate	$C_T$	nm/K	0.4	0.5	0.6
Pulswidth	$Dt$	ns		100	150
Rep. Rate	$f$	kHz		3	10

\*) preliminary data

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## ■ absolute maximum ratings

Parameter	Symbol	Unit	Rating
LD forward current	$I_f$	A	7
Operating temperature	$T_{op}$	K	<260
Storage temperature	$T_{store}$	K	0 to 370

## ■ applications

- trace gas sensing of  $NH_3$

## ■ packaging

nanoplus offers a wide variety of different packaging options for their FP and DFB laser diodes in the entire wavelength range, including C-mount or TO 8 header with or without Peltier cooler. Please refer to our *packaging datasheet* for more information.

Other customized packages (e.g. mounting on customer specific submounts) are available upon request. Please do not hesitate to contact us for further details.

