Nanosystems and Technologies GmbH
nanoplus

TOP Wavelengths
DFB: 760.8 nm

TOP WAVELENGTH

- **760.8 nm**
- 1278.8 nm
- 1392.0 nm
- 1512.2 nm
- 1560 - 1590 nm
- 1651 & 1654 nm
- 1742.0 nm
- 1854 & 1877 nm
- 2004.0 nm
- 2330 & 2334 nm
- 3240 & 3270 nm
- 3345 & 3375 nm
- 4524 & 4534 nm
- 5184 & 5263 nm

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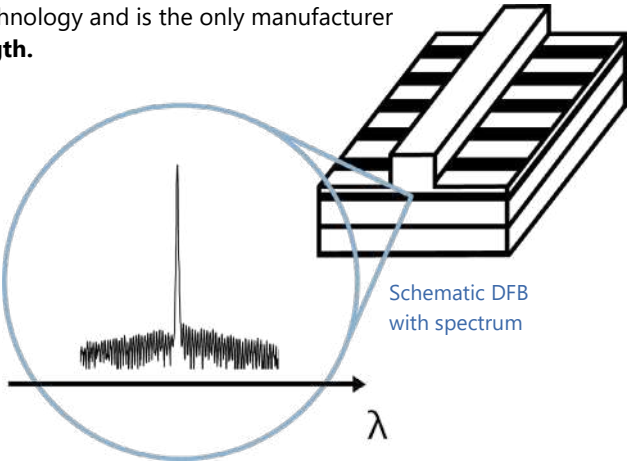
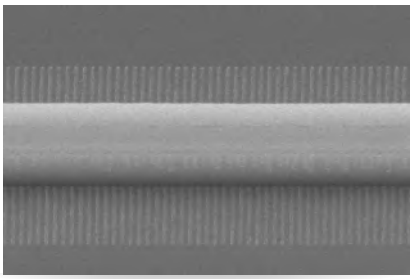
Key features:

- MONOMODE
- CONTINUOUS WAVE
- ROOM TEMPERATURE
- MODE HOP FREE TUNING



Schematic DFB with spectrum


Overgrowth-free DFB device processing

Any **custom wavelength** is possible: You tell us what you need and we deliver it. With our patented DFB technology we design any wavelength **between 760 nm and 14 µm.**

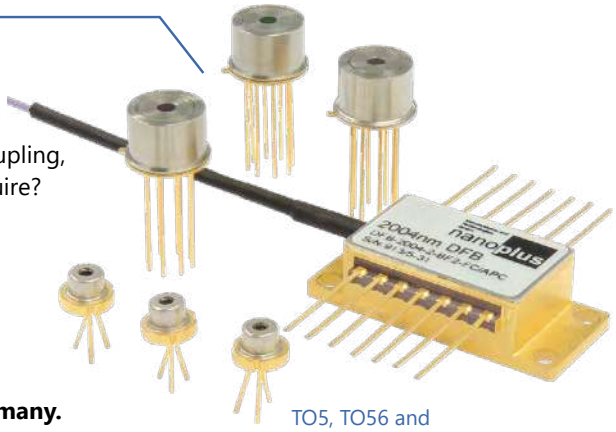
Our excellent **spectral purity** is characterized by a large side mode suppression ratio **(SMSR)** of **> 35 dB,** giving your system a low signal to noise ratio against crossinterference.

A **narrow linewidth** **below 3 MHz** guarantees ultra-precise scanning of the absorption line feature. The **high output power** of **several mW** yields a stronger signal and increases your measurement precision.

Fast and wide wavelength tuning is required for in situ systems. Most customers use a scan rate of 10 kHz and benefit from our very **large tuning coefficient.**

"Do not change your ideas, let us deliver a laser that fits your application."

We offer **various** **packaging options,** e.g. several free space housings including TEC and NTC, fiber coupling, **collimation** and **custom designs.** What do you require?



TO5, TO56 and fiber coupled butterfly package

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REGISTERED COMPANY ISO 9001 14001

CLASS 3B LASER PRODUCT (DIN EN 60825-1:2015-07) DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS

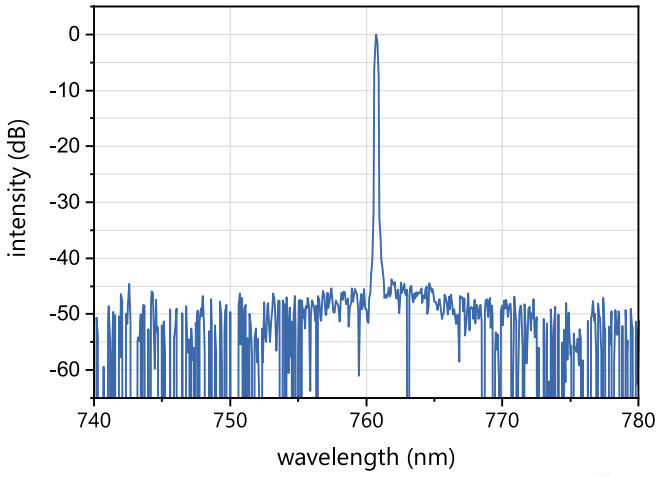
ATTENTION OBSERVE PRECAUTION FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

DANGER LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM CLASS 3B LASER PRODUCT

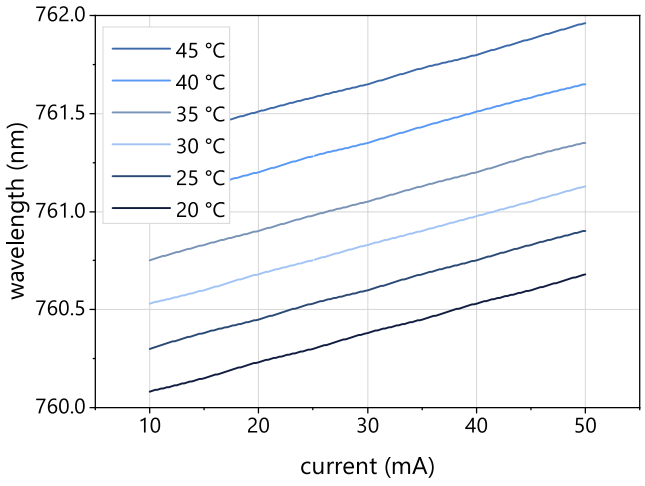
Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 760.8 nm

This data sheet reports performance data of a **sample nanoplus DFB laser at 760.8 nm with enhanced specifications.** Standard specifications are available at: https://nanoplus.com/DFB/760-830-nm.



Typical room temperature cw spectrum of a nanoplus DFB laser at 760.8 nm



Typical mode hop free tuning of a nanoplus DFB laser at 760.8 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		760.8	
optical output power (at λ_{op})	P_{op}	mW		6	
operating current	I_{op}	mA		30	
operating voltage	V_{op}	V		3	
threshold current	I_{th}	mA	5	10	18
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA	0.010	0.018	0.025
temperature tuning coefficient	C_T	nm / K	0.045	0.054	0.060
operating chip temperature	T_{op}	°C	+20	+25	+40
operating case temperature*	T_c	°C	-20	+25	+55
storage temperature*	T_S	°C	-40	+20	+80

* non-condensing

laser packaging options

TO5 with TEC and NTC, black cap, AR coated window

TO56 without TEC or NTC, sealed, window

c-mount without TEC or NTC

butterfly package with TEC and NTC, SM fiber, FC/APC connector

chip on carrier without TEC, with NTC

Technical drawings & accessories are available at: https://nanoplus.com/packaging-options

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Nanosystems and Technologies GmbH
nanoplus

TOP Wavelengths
DFB: 1278.8 nm

TOP WAVELENGTH

- 760.8 nm
- **1278.8 nm**
- 1392.0 nm
- 1512.2 nm
- 1560 - 1590 nm
- 1651 & 1654 nm
- 1742.0 nm
- 1854 & 1877 nm
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Key features:

- MONOMODE
- CONTINUOUS WAVE
- ROOM TEMPERATURE
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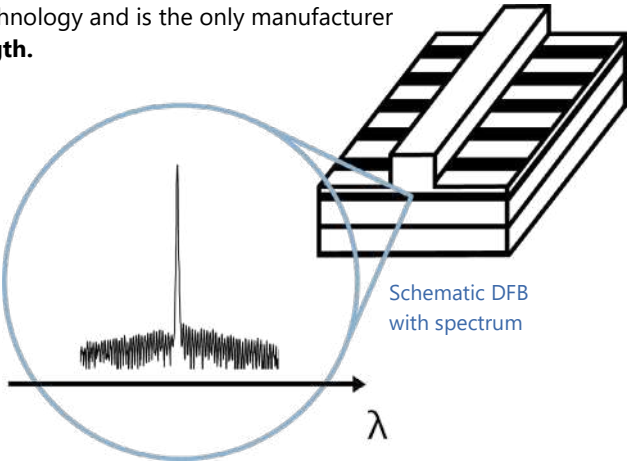
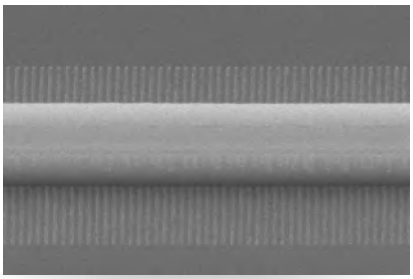


Schematic DFB with spectrum


Overgrowth-free DFB device processing

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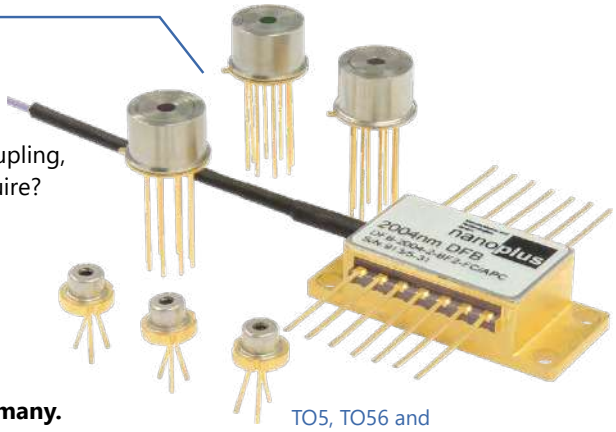

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DANGER LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM CLASS 3B LASER PRODUCT

Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 1278.8 nm

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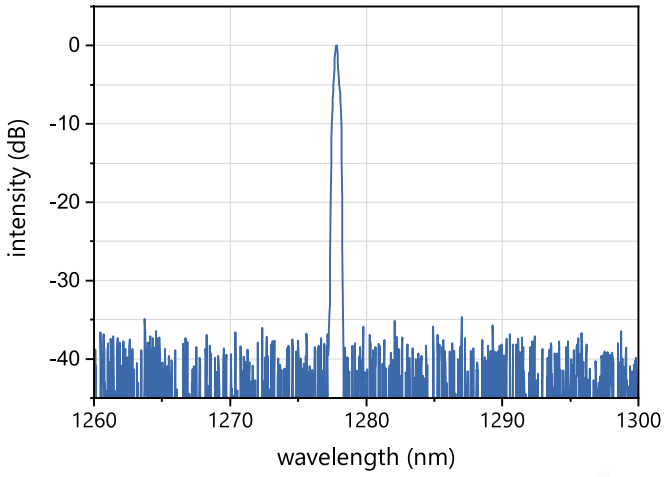
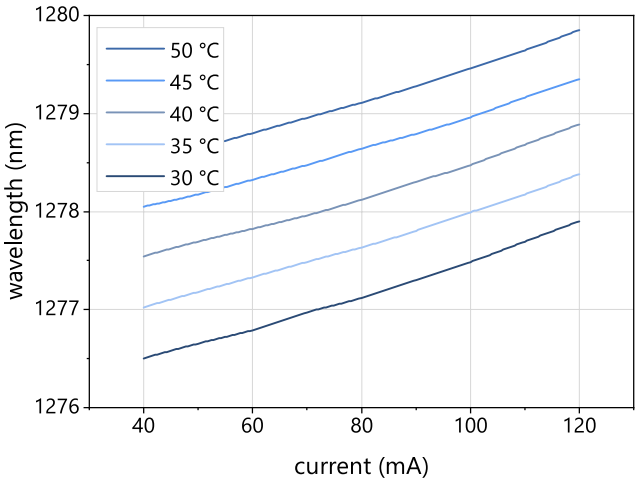


Typical room temperature cw spectrum of a nanoplus DFB laser at 1278.8 nm



Typical mode hop free tuning of a nanoplus DFB laser at 1278.8 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		1278.8	
optical output power (at λ_{op})	P_{op}	mW		20	
operating current	I_{op}	mA		70	
operating voltage	V_{op}	V		2	
threshold current	I_{th}	mA	12	15	25
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA	0.007	0.01	0.02
temperature tuning coefficient	C_T	nm / K	0.07	0.09	0.1
operating chip temperature	T_{op}	°C	+20	+25	+50
operating case temperature*	T_c	°C	-20	+25	+50
storage temperature*	T_S	°C	-40	+20	+80

* non-condensing

laser packaging options

TO5 with TEC and NTC, black cap, AR coated window

TO56 without TEC or NTC, sealed, window

c-mount without TEC or NTC

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Nanosystems and Technologies GmbH
nanoplus

TOP Wavelengths
DFB: 1392.0 nm

TOP WAVELENGTH

- 760.8 nm
- 1278.8 nm
- **1392.0 nm**
- 1512.2 nm
- 1560 - 1590 nm
- 1651 & 1654 nm
- 1742.0 nm
- 1854 & 1877 nm
- 2004.0 nm
- 2330 & 2334 nm
- 3240 & 3270 nm
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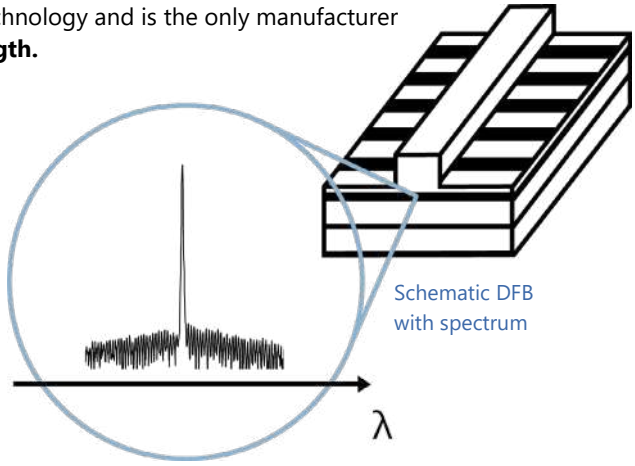
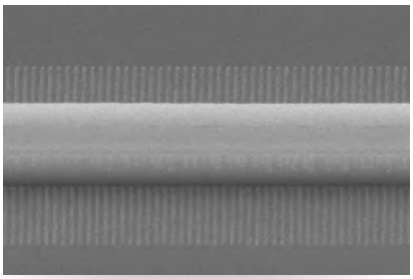


Schematic DFB with spectrum

Key features:

- MONOMODE
- CONTINUOUS WAVE
- ROOM TEMPERATURE
- MODE HOP FREE TUNING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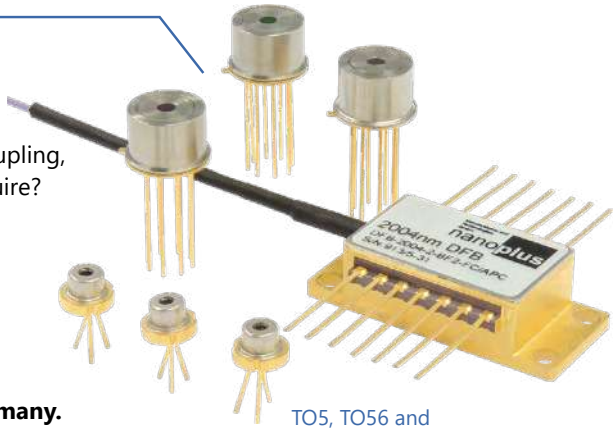

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ATTENTION OBSERVE PRECAUTION FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

DANGER LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM CLASS 3B LASER PRODUCT

Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 1392.0 nm

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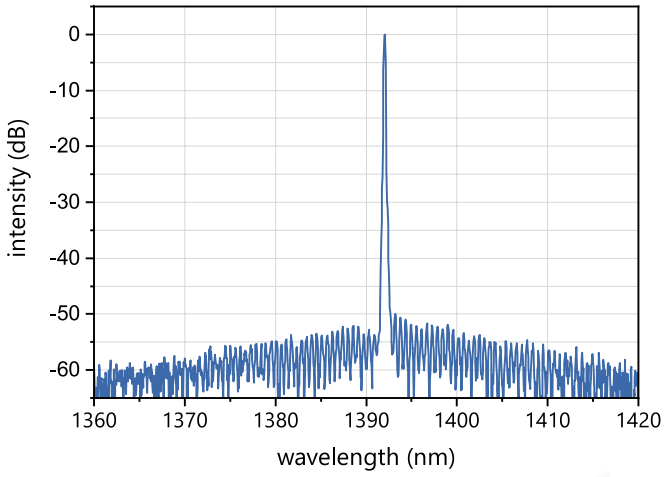
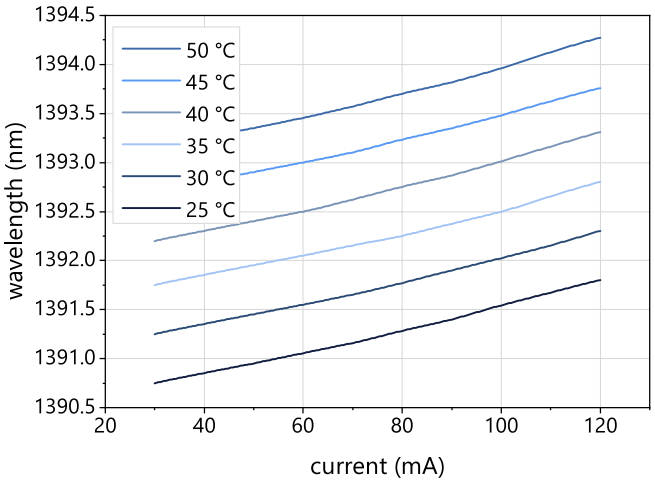


Typical room temperature cw spectrum of a nanoplus DFB laser at 1392.0 nm



Typical mode hop free tuning of a nanoplus DFB laser at 1392.0 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		1392.0	
optical output power (at λ_{op})	P_{op}	mW		8	
operating current	I_{op}	mA		70	
operating voltage	V_{op}	V		2	
threshold current	I_{th}	mA	10	25	30
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA	0.01	0.02	0.03
temperature tuning coefficient	C_T	nm / K	0.07	0.10	0.14
operating chip temperature	T_{op}	°C	+20	+25	+50
operating case temperature*	T_c	°C	-20	+25	+50
storage temperature*	T_S	°C	-40	+20	+80

* non-condensing

laser packaging options

TO5 with TEC and NTC, black cap, AR coated window

TO56 without TEC or NTC, sealed, window

c-mount without TEC or NTC

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Nanosystems and Technologies GmbH
nanoplus

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DFB: 1512.2 nm

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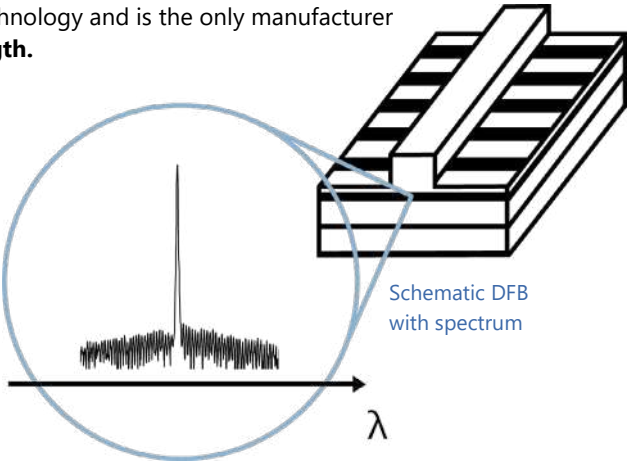
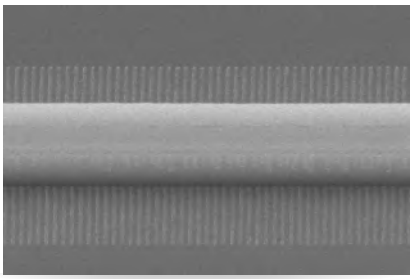


Schematic DFB with spectrum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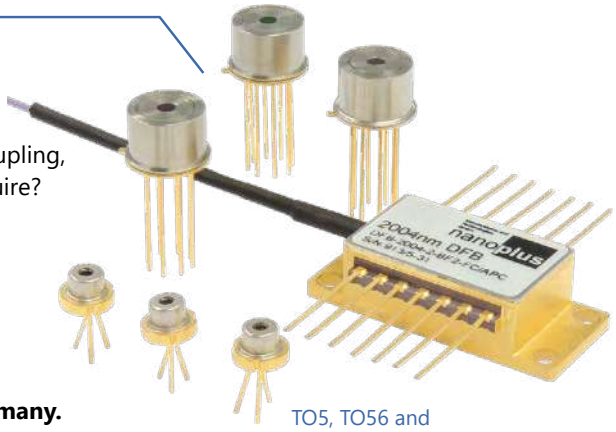

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Nanosystems and Technologies GmbH
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Superior Specifications: 1512.2 nm

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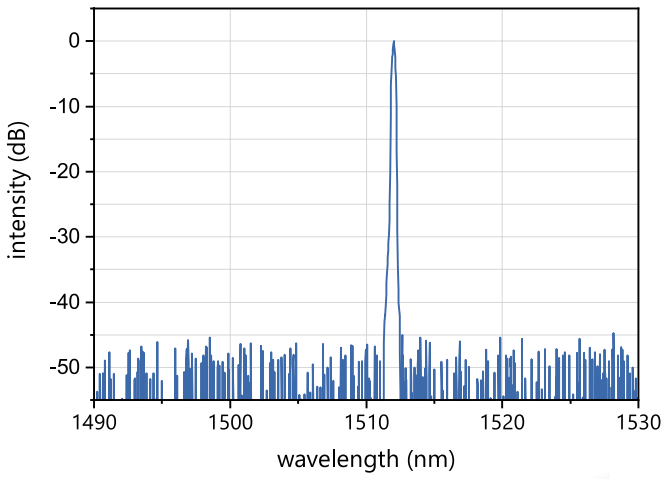
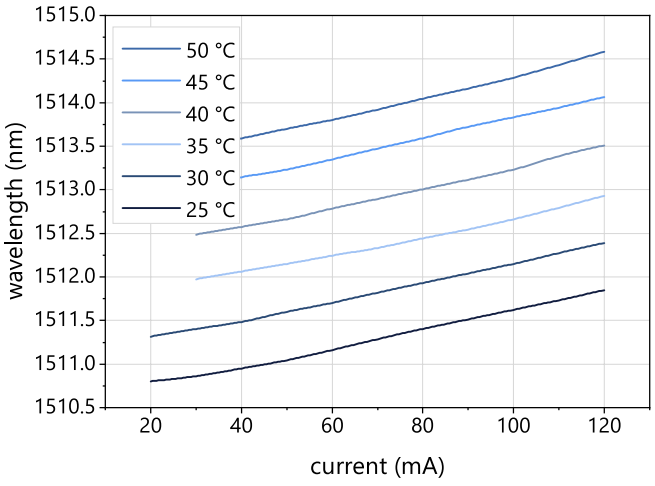


Typical room temperature cw spectrum of a nanoplus DFB laser at 1512.2 nm



Typical mode hop free tuning of a nanoplus DFB laser at 1512.2 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		1512.2	
optical output power (at λ_{op})	P_{op}	mW		8	
operating current	I_{op}	mA		70	
operating voltage	V_{op}	V		2	
threshold current	I_{th}	mA	10	25	30
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA	0.008	0.015	0.02
temperature tuning coefficient	C_T	nm / K	0.07	0.10	0.14
operating chip temperature	T_{op}	°C	+20	+25	+50
operating case temperature*	T_c	°C	-20	+25	+50
storage temperature*	T_S	°C	-40	+20	+80

* non-condensing

laser packaging options

TO5 with TEC and NTC, black cap, AR coated window

TO56 without TEC or NTC, sealed, window

c-mount without TEC or NTC

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Nanosystems and Technologies GmbH
nanoplus

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DFB: 1560/1570/1580/1590 nm

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- 1278.8 nm
- 1392.0 nm
- 1512.2 nm
- **1560 - 1590 nm**
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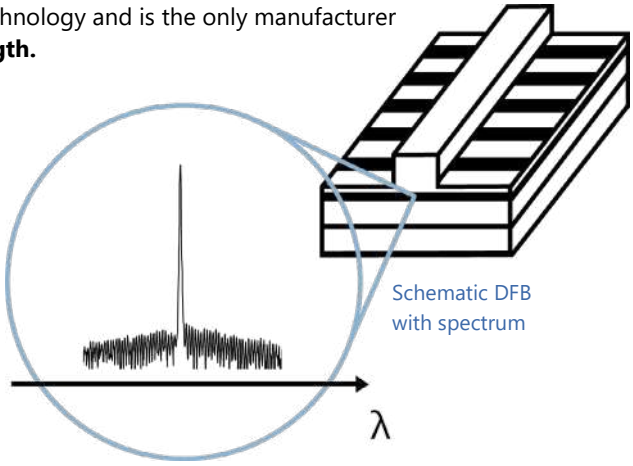
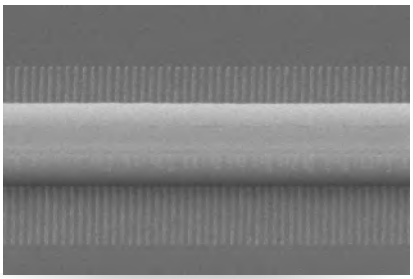


Schematic DFB with spectrum

Key features:

- MONOMODE
- CONTINUOUS WAVE
- ROOM TEMPERATURE
- MODE HOP FREE TUNING


Overgrowth-free DFB device processing

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A **narrow linewidth** **below 3 MHz** guarantees ultra-precise scanning of the absorption line feature. The **high output power** of **several mW** yields a stronger signal and increases your measurement precision.

Fast and wide wavelength tuning is required for in situ systems. Most customers use a scan rate of 10 kHz and benefit from our very **large tuning coefficient.**

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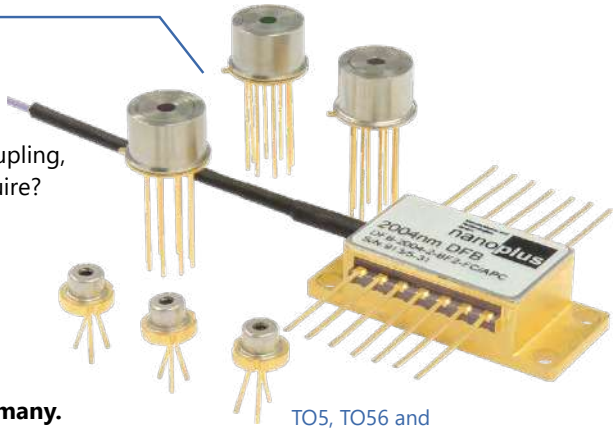
We offer **various** **packaging options,** e.g. several free space housings including TEC and NTC, fiber coupling, **collimation** and **custom designs.** What do you require?



TO5, TO56 and fiber coupled butterfly package

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REGISTERED COMPANY ISO 9001 14001

CLASS 3B LASER PRODUCT (DIN EN 60825-1:2015-07) DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS

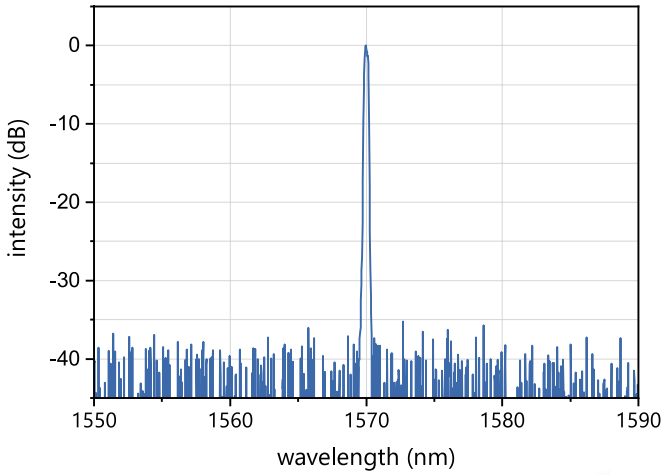
ATTENTION OBSERVE PRECAUTION FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

DANGER LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM CLASS 3B LASER PRODUCT

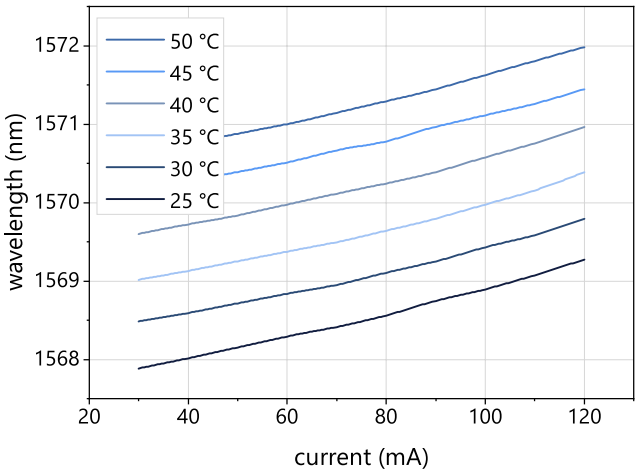
Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 1560/1570/1580/1590 nm

This data sheet reports performance data of a **sample nanoplus DFB laser at 1570 nm with enhanced specifications.** They are equally valid for 1560 nm, 1580 nm and 1590 nm. Standard specifications are available at: https://nanoplus.com/DFB/1300-1650-nm.



Typical room temperature cw spectrum of a nanoplus DFB laser at 1570 nm



Typical mode hop free tuning of a nanoplus DFB laser at 1570 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		1570	
optical output power (at λ_{op})	P_{op}	mW		8	
operating current	I_{op}	mA		70	
operating voltage	V_{op}	V		2	
threshold current	I_{th}	mA	10	15	25
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA	0.008	0.012	0.020
temperature tuning coefficient	C_T	nm / K	0.08	0.11	0.13
operating chip temperature	T_{op}	°C	+20	+30	+45
operating case temperature*	T_c	°C	-20	+25	+55
storage temperature*	T_S	°C	-40	+20	+80

* non-condensing

laser packaging options

TO5 with TEC and NTC, black cap, AR coated window

TO56 without TEC or NTC, sealed, window

c-mount without TEC or NTC

butterfly package with TEC and NTC, SM or PM fiber, FC/APC connector

chip on carrier without TEC, with NTC

Technical drawings & accessories are available at: https://nanoplus.com/packaging-options

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Rev.TOP1570.00

Nanosystems and Technologies GmbH
nanoplus

TOP Wavelengths
DFB: 1651 nm & 1654 nm

TOP WAVELENGTH

- 760.8 nm
- 1278.8 nm
- 1392.0 nm
- 1512.2 nm
- 1560 - 1590 nm
- **1651 & 1654 nm**
- 1742.0 nm
- 1854 & 1877 nm
- 2004.0 nm
- 2330 & 2334 nm
- 3240 & 3270 nm
- 3345 & 3375 nm
- 4524 & 4534 nm
- 5184 & 5263 nm

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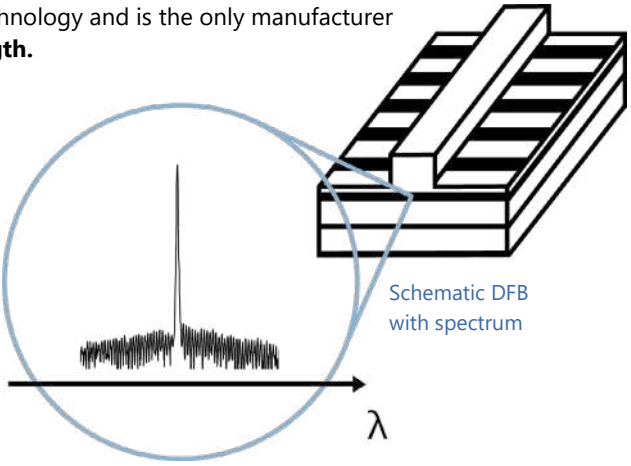
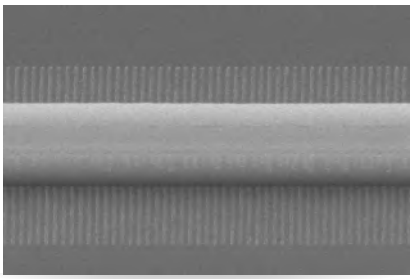
Key features:

- MONOMODE
- CONTINUOUS WAVE
- ROOM TEMPERATURE
- MODE HOP FREE TUNING



Schematic DFB with spectrum


Overgrowth-free DFB device processing

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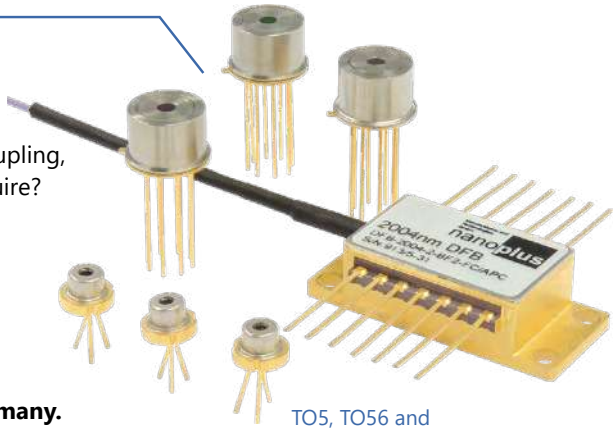

TO5, TO56 and fiber coupled butterfly package

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ATTENTION OBSERVE PRECAUTION FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

DANGER LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM CLASS 3B LASER PRODUCT

Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 1651 nm & 1654 nm

This data sheet reports performance data of a **sample nanoplus DFB laser at 1651 nm with enhanced specifications.** They are equally valid for 1654 nm.
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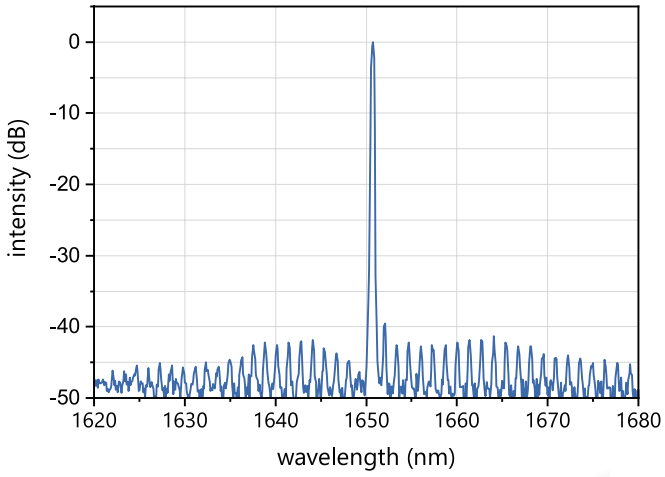
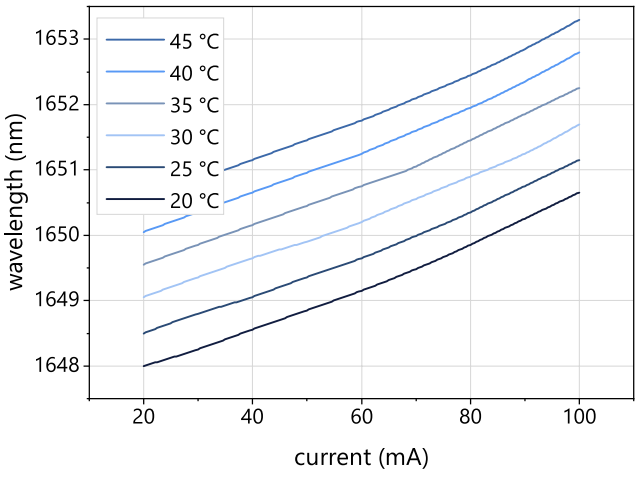


Typical room temperature cw spectrum of a nanoplus DFB laser at 1651 nm



Typical mode hop free tuning of a nanoplus DFB laser at 1651 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		1651	
optical output power (at λ_{op})	P_{op}	mW		8	
operating current	I_{op}	mA		70	
operating voltage	V_{op}	V		2	
threshold current	I_{th}	mA	10	20	30
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA	0.008	0.012	0.015
temperature tuning coefficient	C_T	nm / K	0.10	0.11	0.14
operating chip temperature	T_{op}	°C	+20	+25	+45
operating case temperature*	T_c	°C	-20	+25	+55
storage temperature*	T_S	°C	-40	+20	+80

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laser packaging options

TO5 with TEC and NTC, black cap, AR coated window

TO56 without TEC or NTC, sealed, window

c-mount without TEC or NTC

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Nanosystems and Technologies GmbH
nanoplus

TOP Wavelengths
DFB: 1742.0 nm

TOP WAVELENGTH

- 760.8 nm
- 1278.8 nm
- 1392.0 nm
- 1512.2 nm
- 1560 - 1590 nm
- 1651 & 1654 nm
- **1742.0 nm**
- 1854 & 1877 nm
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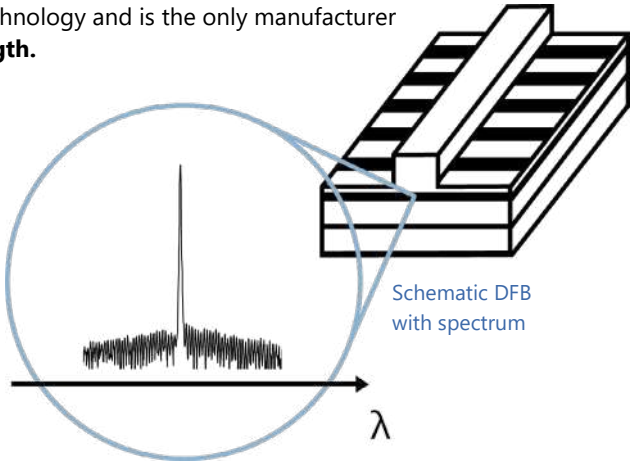
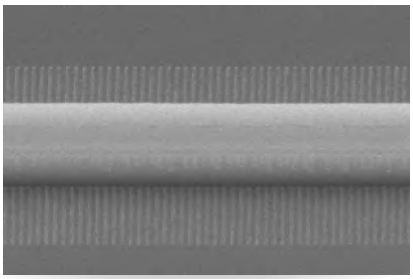


Schematic DFB with spectrum

Key features:

- MONOMODE
- CONTINUOUS WAVE
- ROOM TEMPERATURE
- MODE HOP FREE TUNING


Overgrowth-free DFB device processing

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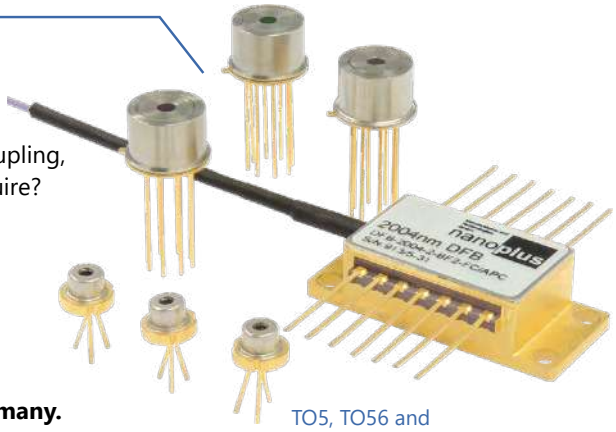

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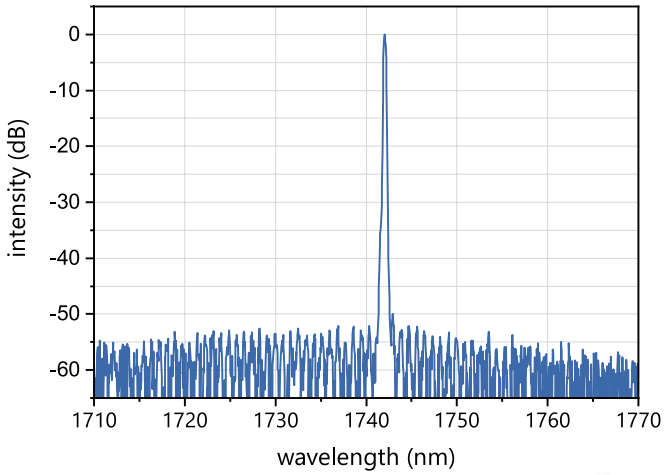
DANGER LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM CLASS 3B LASER PRODUCT

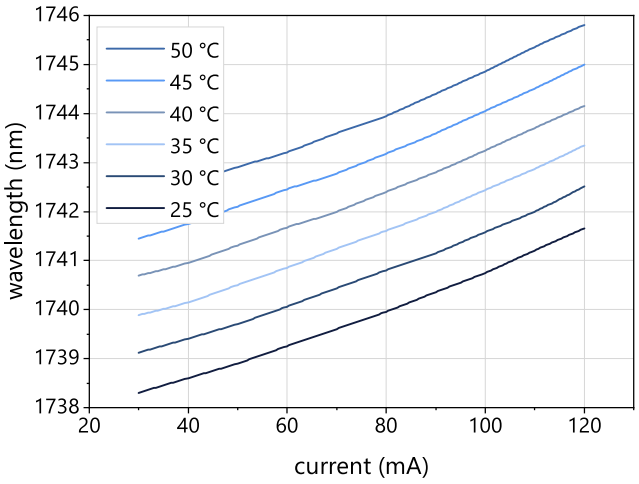
Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 1742.0 nm

This data sheet reports performance data of a **sample nanoplus DFB laser at 1742.0 nm with enhanced specifications.** Standard specifications are available at: https://nanoplus.com/DFB/1650-1850-nm.



Typical room temperature cw spectrum of a nanoplus DFB laser at 1742.0 nm



Typical mode hop free tuning of a nanoplus DFB laser at 1742.0 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		1742.0	
optical output power (at λ_{op})	P_{op}	mW		5	
operating current	I_{op}	mA		70	
operating voltage	V_{op}	V		2	
threshold current	I_{th}	mA	10	25	30
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA	0.008	0.02	0.03
temperature tuning coefficient	C_T	nm / K	0.07	0.10	0.14
operating chip temperature	T_{op}	°C	+20	+25	+50
operating case temperature*	T_c	°C	-20	+25	+50
storage temperature*	T_S	°C	-40	+20	+80

* non-condensing

laser packaging options

TO5 with TEC and NTC, black cap, AR coated window

TO56 without TEC or NTC, sealed, window

c-mount without TEC or NTC

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chip on carrier without TEC, with NTC

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Nanosystems and Technologies GmbH
nanoplus

TOP Wavelengths
DFB: 1854 nm & 1877 nm

TOP WAVELENGTH

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- 1278.8 nm
- 1392.0 nm
- 1512.2 nm
- 1560 - 1590 nm
- 1651 & 1654 nm
- 1742.0 nm
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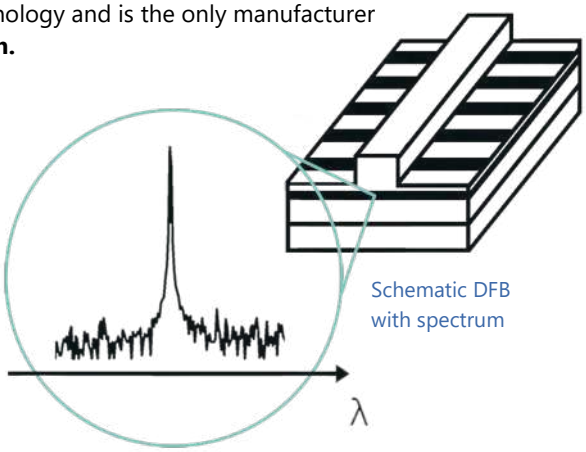
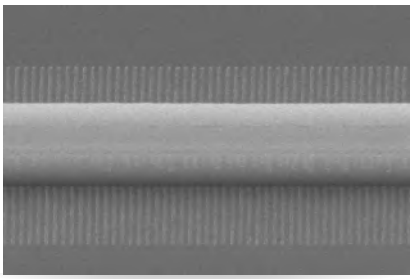


Schematic DFB with spectrum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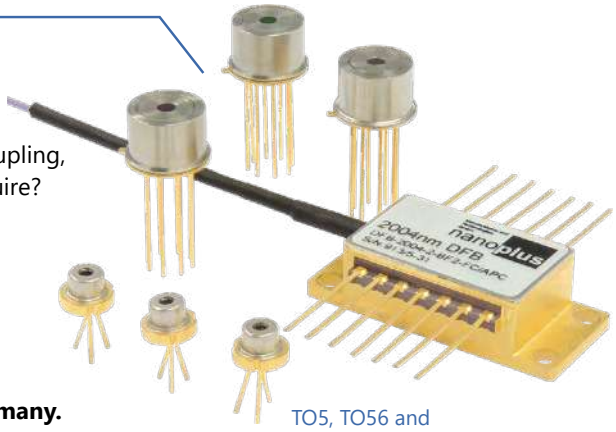

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Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 1854 nm & 1877 nm

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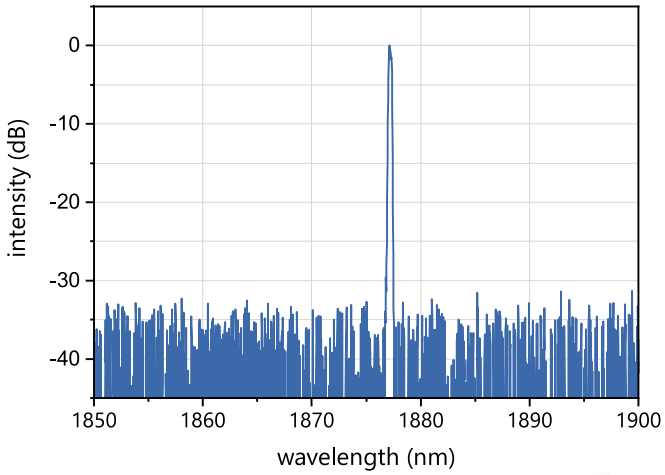
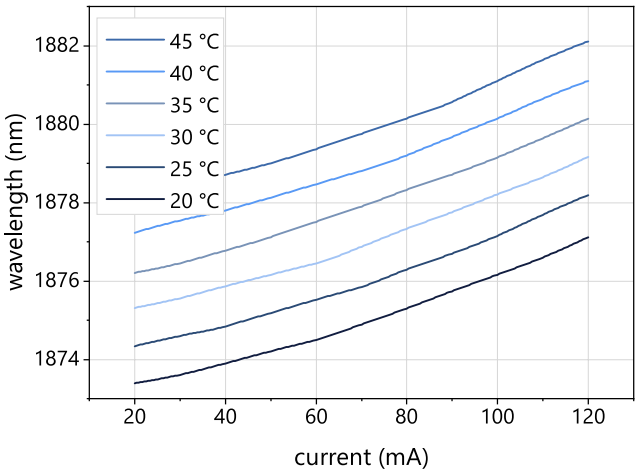
Standard specifications are available at: https://nanoplus.com/DFB/1850-2200-nm.



Typical room temperature cw spectrum of a nanoplus DFB laser at 1877 nm



Typical mode hop free tuning of a nanoplus DFB laser at 1877 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		1877	
optical output power (at λ_{op})	P_{op}	mW		5	
operating current	I_{op}	mA		100	
operating voltage	V_{op}	V		2	
threshold current	I_{th}	mA	8	18	32
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA	0.017	0.025	0.035
temperature tuning coefficient	C_T	nm / K	0.17	0.19	0.21
operating chip temperature	T_{op}	°C	+20	+25	+45
operating case temperature*	T_c	°C	-20	+25	+55
storage temperature*	T_S	°C	-40	+20	+80

* non-condensing

laser packaging options

TO5 with TEC and NTC, black cap, AR coated window

TO56 without TEC or NTC, sealed, window

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Nanosystems and Technologies GmbH
nanoplus

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DFB: 2004.0 nm

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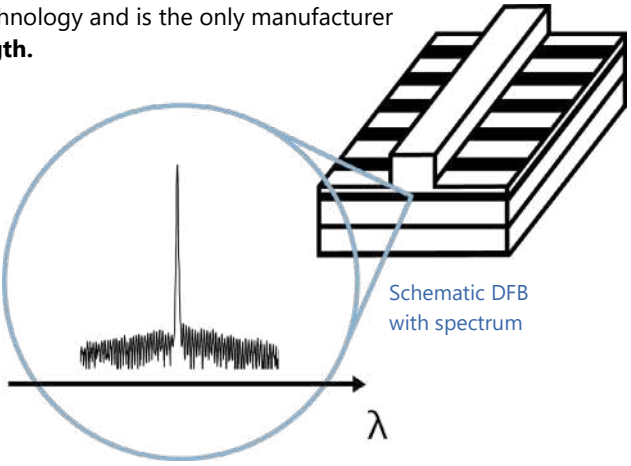
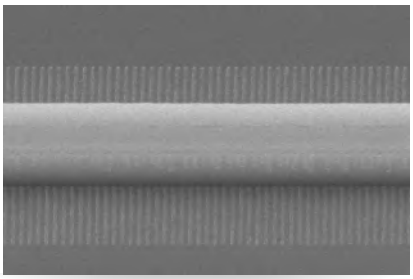


Schematic DFB with spectrum


Overgrowth-free DFB device processing

Any **custom wavelength** is possible: You tell us what you need and we deliver it. With our patented DFB technology we design any wavelength **between 760 nm and 14 µm.**

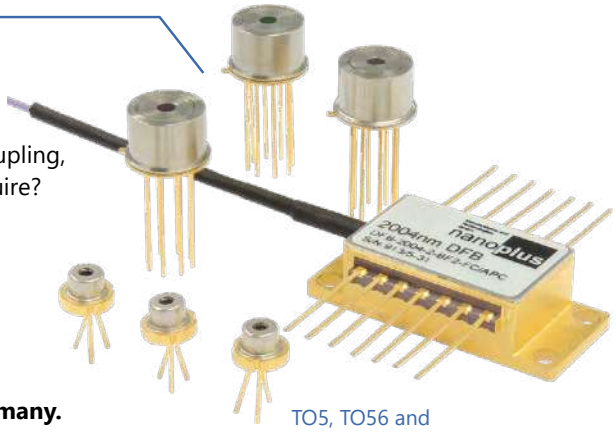
Our excellent **spectral purity** is characterized by a large side mode suppression ratio **(SMSR)** of **> 35 dB,** giving your system a low signal to noise ratio against crossinterference.

A **narrow linewidth** **below 3 MHz** guarantees ultra-precise scanning of the absorption line feature. The **high output power** of **several mW** yields a stronger signal and increases your measurement precision.

Fast and wide wavelength tuning is required for in situ systems. Most customers use a scan rate of 10 kHz and benefit from our very **large tuning coefficient.**

"Do not change your ideas, let us deliver a laser that fits your application."

We offer **various** **packaging options,** e.g. several free space housings including TEC and NTC, fiber coupling, **collimation** and **custom designs.** What do you require?



TO5, TO56 and fiber coupled butterfly package

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REGISTERED COMPANY ISO 9001 14001

CLASS 3B LASER PRODUCT (DIN EN 60825-1:2015-07) DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS

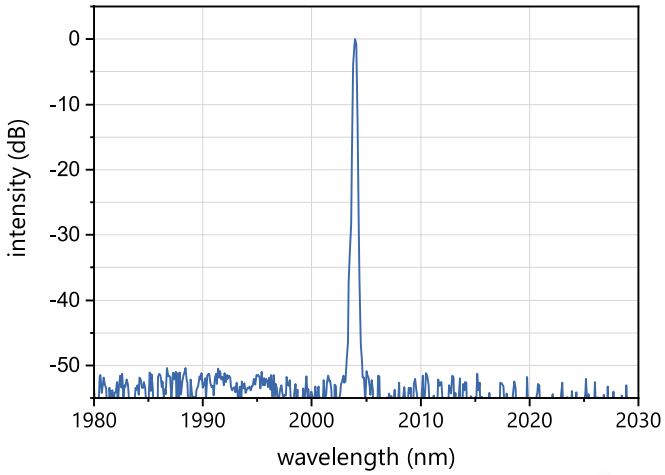
ATTENTION OBSERVE PRECAUTION FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

DANGER LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM CLASS 3B LASER PRODUCT

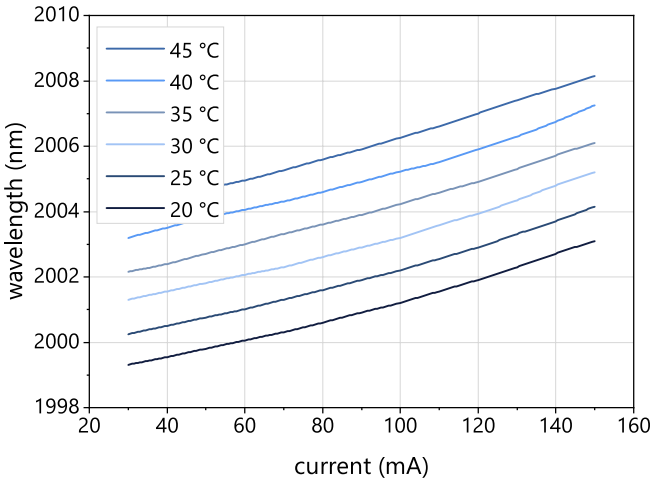
Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 2004.0 nm

This data sheet reports performance data of a **sample nanoplus DFB laser at 2004.0 nm with enhanced specifications.** Standard specifications are available at: https://nanoplus.com/DFB/1850-2200-nm.



Typical room temperature cw spectrum of a nanoplus DFB laser at 2004.0 nm



Typical mode hop free tuning of a nanoplus DFB laser at 2004.0 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		2004.0	
optical output power (at λ_{op})	P_{op}	mW		5	
operating current	I_{op}	mA		100	
operating voltage	V_{op}	V		2	
threshold current	I_{th}	mA	5	10	25
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA	0.019	0.025	0.035
temperature tuning coefficient	C_T	nm / K	0.18	0.19	0.21
operating chip temperature	T_{op}	°C	+20	+30	+45
operating case temperature*	T_c	°C	-20	+25	+55
storage temperature*	T_S	°C	-40	+20	+80

* non-condensing

laser packaging options

TO5 with TEC and NTC, black cap, AR coated window

TO56 without TEC or NTC, sealed, window

c-mount without TEC or NTC

butterfly package with TEC and NTC, SM or PM fiber, FC/APC connector

chip on carrier without TEC, with NTC

Technical drawings & accessories are available at: https://nanoplus.com/packaging-options

Please contact sales@nanoplus.com for customized specifications, quotes and further questions.
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Rev.TOP2004.00

Nanosystems and Technologies GmbH
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TOP Wavelengths
DFB: 2330 nm & 2334 nm

TOP WAVELENGTH

- 760.8 nm
- 1278.8 nm
- 1392.0 nm
- 1512.2 nm
- 1560 - 1590 nm
- 1651 & 1654 nm
- 1742.0 nm
- 1854 & 1877 nm
- 2004.0 nm
- **2330 & 2334 nm**
- 3240 & 3270 nm
- 3345 & 3375 nm
- 4524 & 4534 nm
- 5184 & 5263 nm

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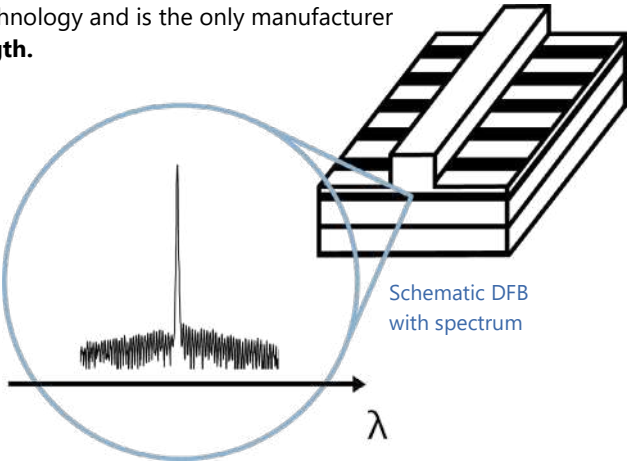
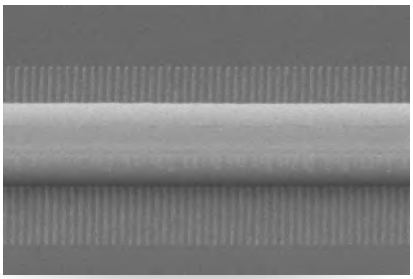
Key features:

- MONOMODE
- CONTINUOUS WAVE
- ROOM TEMPERATURE
- MODE HOP FREE TUNING



Schematic DFB with spectrum


Overgrowth-free DFB device processing

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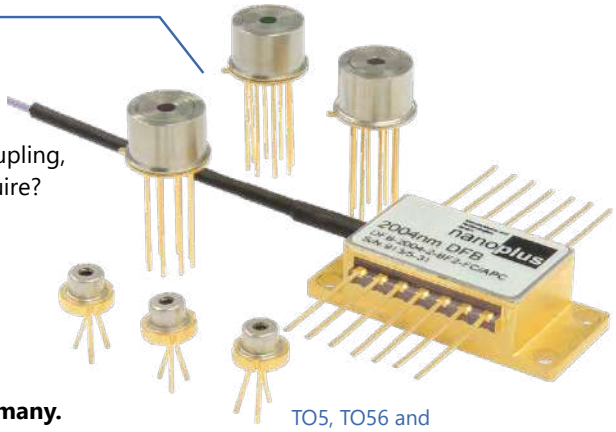

TO5, TO56 and fiber coupled butterfly package

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REGISTERED COMPANY ISO 9001 14001

CLASS 3B LASER PRODUCT (DIN EN 60825-1:2015-07) DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS

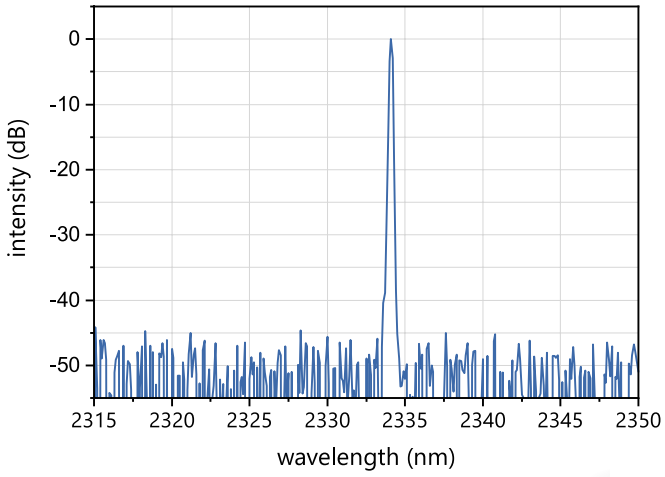
ATTENTION OBSERVE PRECAUTION FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

DANGER LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM CLASS 3B LASER PRODUCT

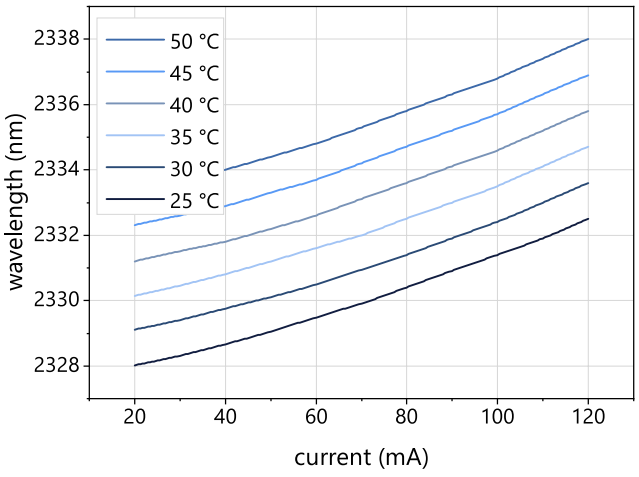
Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 2330 nm & 2334 nm

This data sheet reports performance data of a **sample nanoplus DFB laser at 2334 nm with enhanced specifications.** They are equally valid for 2330 nm.
Standard specifications are available at: https://nanoplus.com/DFB/2200-2600-nm.



Typical room temperature cw spectrum of a nanoplus DFB laser at 2334 nm



Typical mode hop free tuning of a nanoplus DFB laser at 2334 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		2330 / 2334	
optical output power (at λ_{op})	P_{op}	mW		6	
operating current	I_{op}	mA		100	
operating voltage	V_{op}	V		2.3	
threshold current	I_{th}	mA	5	10	22
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA	0.022	0.04	0.07
temperature tuning coefficient	C_T	nm / K	0.19	0.20	0.23
operating chip temperature	T_{op}	°C	+20	+30	+45
operating case temperature*	T_c	°C	-20	+25	+55
storage temperature*	T_S	°C	-40	+20	+80

* non-condensing

laser packaging options

TO5 with TEC and NTC, black cap, AR coated window

TO56 without TEC or NTC, sealed, window

c-mount without TEC or NTC

butterfly package with TEC and NTC, SM fiber, FC/APC connector

chip on carrier without TEC, with NTC

Technical drawings & accessories are available at: https://nanoplus.com/packaging-options

Please contact sales@nanoplus.com for customized specifications, quotes and further questions.
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Rev.TOP2330.00

Nanosystems and Technologies GmbH
nanoplus

TOP Wavelengths
DFB: 3240 nm & 3270 nm

TOP WAVELENGTH

- 760.8 nm
- 1278.8 nm
- 1392.0 nm
- 1512.2 nm
- 1560 - 1590 nm
- 1651 & 1654 nm
- 1742.0 nm
- 1854 & 1877 nm
- 2004.0 nm
- 2330 & 2334 nm
- **3240 & 3270 nm**
- 3345 & 3375 nm
- 4524 & 4534 nm
- 5184 & 5263 nm

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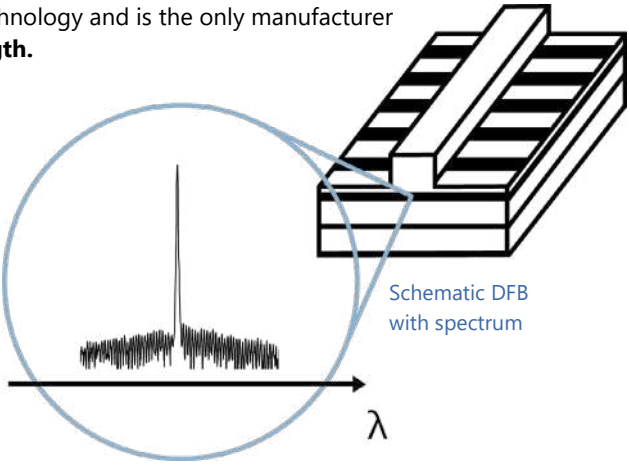
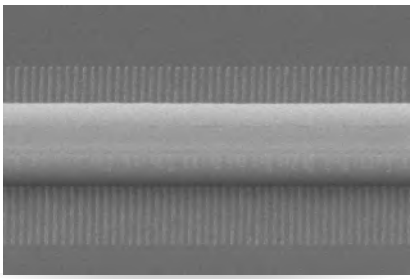
Key features:

- MONOMODE
- CONTINUOUS WAVE
- ROOM TEMPERATURE
- MODE HOP FREE TUNING



Schematic DFB with spectrum


Overgrowth-free DFB device processing

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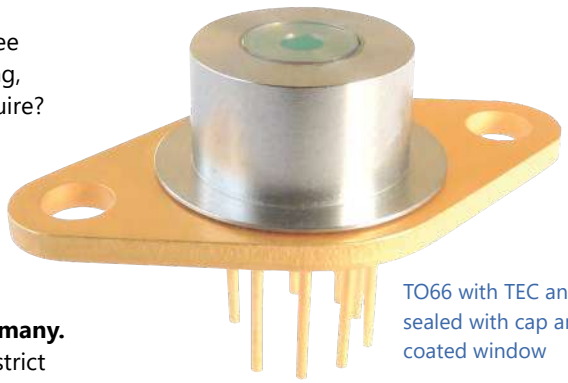
TO66 with TEC and NTC, sealed with cap and AR coated window

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REGISTERED COMPANY ISO 9001 14001

CLASS 3B LASER PRODUCT (DIN EN 60825-1:2015-07) DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS

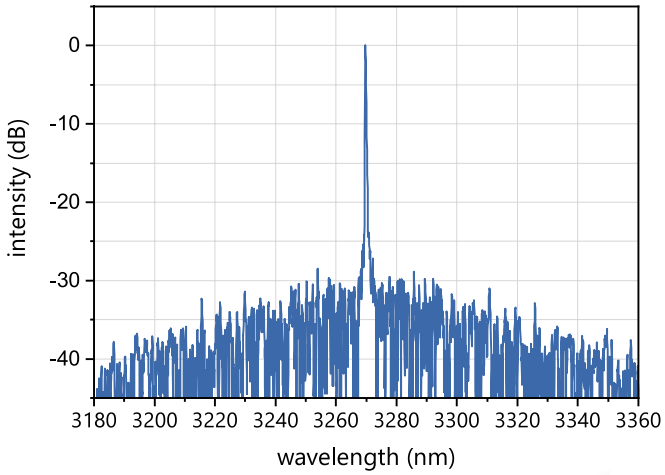
ATTENTION OBSERVE PRECAUTION FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

DANGER LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM CLASS 3B LASER PRODUCT

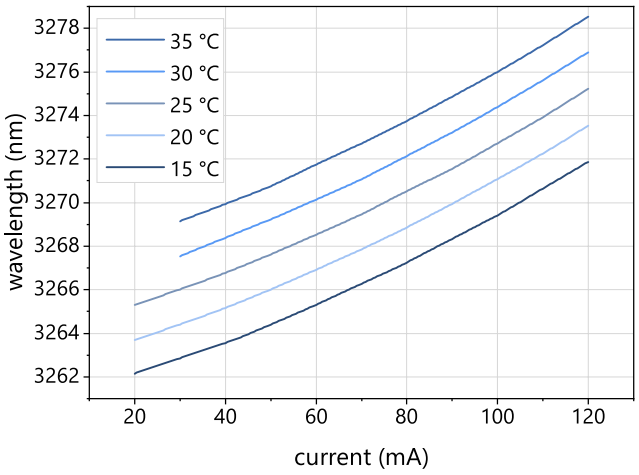
Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 3240 nm & 3270 nm

This data sheet reports performance data of a **sample nanoplus DFB laser at 3270 nm with enhanced specifications.** They are equally valid for 3240 nm.
Standard specifications are available at: https://nanoplus.com/DFB/2800-4000-nm.



Typical room temperature cw spectrum of a nanoplus DFB ICL at 3270 nm



Typical mode hop free tuning of a nanoplus DFB ICL at 3270 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		3270	
optical output power (at λ_{op})	P_{op}	mW		15	
operating current	I_{op}	mA		120	
operating voltage	V_{op}	V		5	
threshold current	I_{th}	mA	15	25	40
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA		0.10	
temperature tuning coefficient	C_T	nm / K		0.35	
operating chip temperature	T_{op}	°C	+15	+20	+40
operating case temperature*	T_c	°C	-20	+25	+55
storage temperature*	T_S	°C	-30	+20	+70

* non-condensing

laser packaging options

TO66 with TEC and NTC, black cap, AR coated window

Other packaging options may be discussed on request.

Technical drawings & accessories are available at: https://nanoplus.com/packaging-options

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nanoplus Nanosystems and Technologies GmbH, www.nanoplus.com, phone: +49 (0) 3693 50 5000-0, email: sales@nanoplus.com

Nanosystems and Technologies GmbH
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TOP Wavelengths
DFB: 3345 nm & 3375 nm

TOP WAVELENGTH

- 760.8 nm
- 1278.8 nm
- 1392.0 nm
- 1512.2 nm
- 1560 - 1590 nm
- 1651 & 1654 nm
- 1742.0 nm
- 1854 & 1877 nm
- 2004.0 nm
- 2330 & 2334 nm
- 3240 & 3270 nm
- **3345 & 3375 nm**
- 4524 & 4534 nm
- 5184 & 5263 nm

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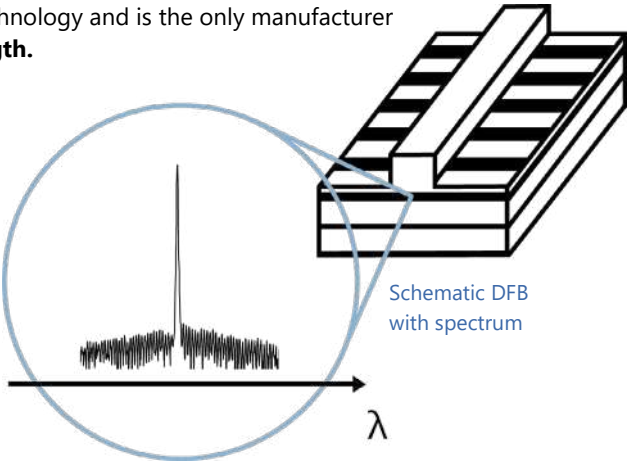
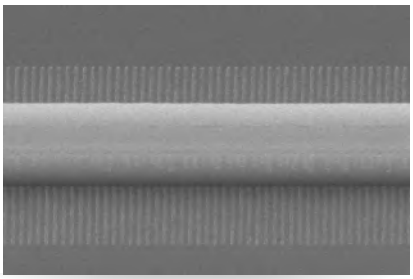
Key features:

- MONOMODE
- CONTINUOUS WAVE
- ROOM TEMPERATURE
- MODE HOP FREE TUNING



Schematic DFB with spectrum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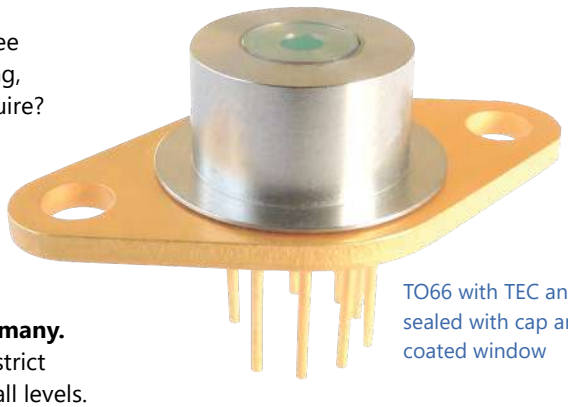
TO66 with TEC and NTC, sealed with cap and AR coated window

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REGISTERED COMPANY ISO 9001 14001

CLASS 3B LASER PRODUCT (DIN EN 60825-1:2015-07) DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS

ATTENTION OBSERVE PRECAUTION FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

DANGER LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM CLASS 3B LASER PRODUCT

Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 3345 nm & 3375 nm

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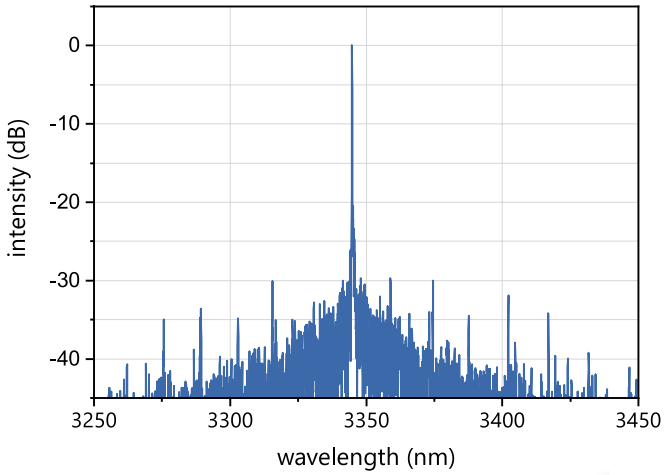
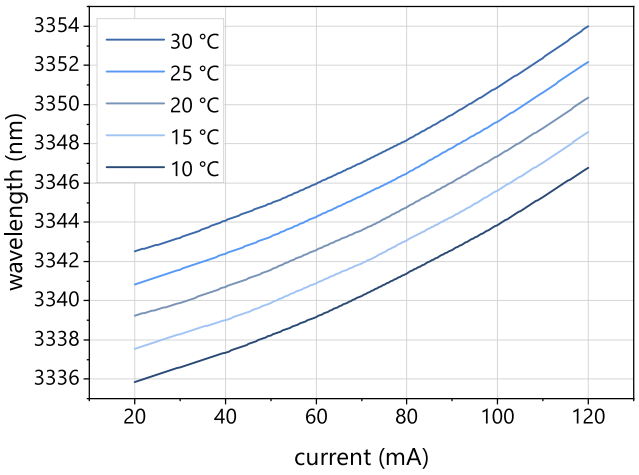
Standard specifications are available at: https://nanoplus.com/DFB/2800-4000-nm.



Typical room temperature cw spectrum of a nanoplus DFB ICL at 3345 nm



Typical mode hop free tuning of a nanoplus DFB ICL at 3345 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		3345	
optical output power (at λ_{op})	P_{op}	mW		15	
operating current	I_{op}	mA		120	
operating voltage	V_{op}	V		5	
threshold current	I_{th}	mA	15	25	40
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA		0.10	
temperature tuning coefficient	C_T	nm / K		0.35	
operating chip temperature	T_{op}	°C	+15	+20	+40
operating case temperature*	T_c	°C	-20	+25	+55
storage temperature*	T_S	°C	-30	+20	+70

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laser packaging options

TO66 with TEC and NTC, black cap, AR coated window

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Rev.TOP3345.00

nanoplus Nanosystems and Technologies GmbH, www.nanoplus.com, phone: +49 (0) 3693 50 5000-0, email: sales@nanoplus.com

Nanosystems and Technologies GmbH
nanoplus

TOP Wavelengths
DFB: 4524 nm & 4534 nm

TOP WAVELENGTH

- 760.8 nm
- 1278.8 nm
- 1392.0 nm
- 1512.2 nm
- 1560 - 1590 nm
- 1651 & 1654 nm
- 1742.0 nm
- 1854 & 1877 nm
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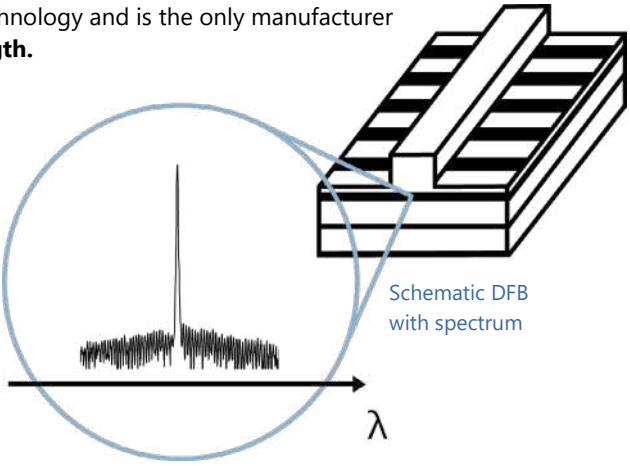
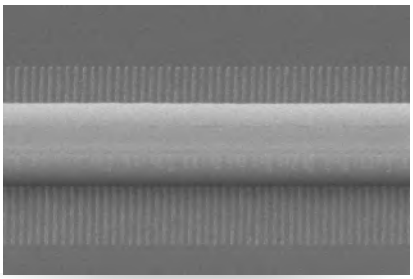
- ROOM TEMPERATURE
- MODE HOP FREE TUNING



Schematic DFB with spectrum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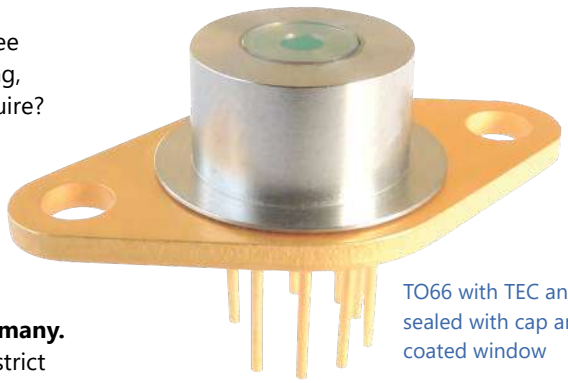
TO66 with TEC and NTC, sealed with cap and AR coated window

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REGISTERED COMPANY ISO 9001 14001

CLASS 3B LASER PRODUCT (DIN EN 60825-1:2015-07) DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS

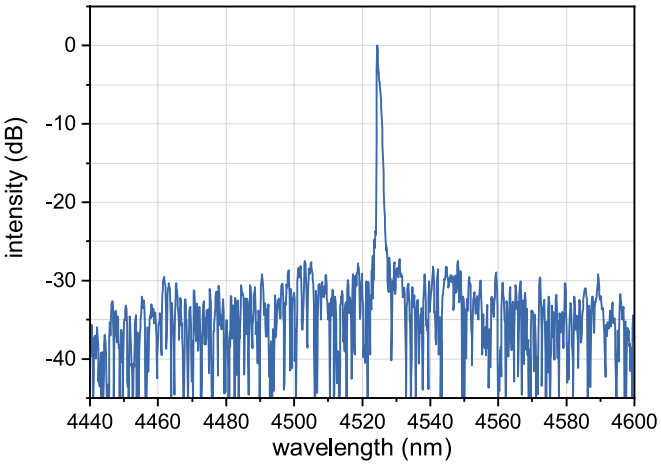
ATTENTION OBSERVE PRECAUTION FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

DANGER LASER RADIATION AVOID DIRECT EXPOSURE TO BEAM CLASS 3B LASER PRODUCT

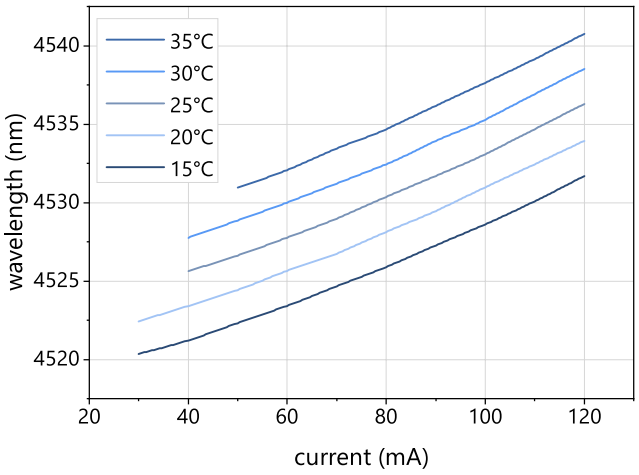
Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 4524 nm & 4534 nm

This data sheet reports performance data of a **sample nanoplus DFB laser at 4524 nm with enhanced specifications.** They are equally valid for 4534 nm.
Standard specifications are available at: https://nanoplus.com/DFB/4000-4600-nm.



Typical room temperature cw spectrum of a nanoplus DFB ICL at 4524 nm



Typical mode hop free tuning of a nanoplus DFB ICL at 4524 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		4524	
optical output power (at λ_{op})	P_{op}	mW		8	
operating current	I_{op}	mA		120	
operating voltage	V_{op}	V		5	
threshold current	I_{th}	mA	20	30	40
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA		0.12	
temperature tuning coefficient	C_T	nm / K		0.45	
operating chip temperature	T_{op}	°C	+15	+20	+40
operating case temperature*	T_c	°C	-20	+25	+55
storage temperature*	T_S	°C	-30	+20	+70

* non-condensing

laser packaging options

TO66 with TEC and NTC, black cap, AR coated window

Other packaging options may be discussed on request.

Technical drawings & accessories are available at: https://nanoplus.com/packaging-options

Please contact sales@nanoplus.com for customized specifications, quotes and further questions.
Visit our website for technical notes, application samples or literature referrals.

Rev.TOP4524.00

nanoplus Nanosystems and Technologies GmbH, www.nanoplus.com, phone: +49 (0) 3693 50 5000-0, email: sales@nanoplus.com

Nanosystems and Technologies GmbH
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TOP Wavelengths
DFB: 5184 nm & 5263 nm

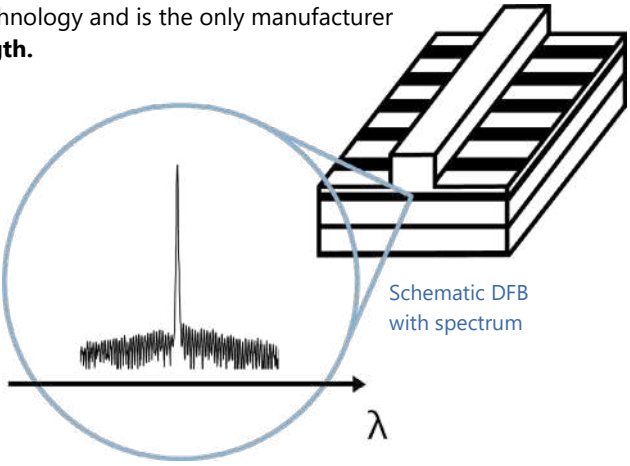
TOP WAVELENGTH

- 760.8 nm
- 1278.8 nm
- 1392.0 nm
- 1512.2 nm
- 1560 - 1590 nm
- 1651 & 1654 nm
- 1742.0 nm
- 1854 & 1877 nm
- 2004.0 nm
- 2330 & 2334 nm
- 3240 & 3270 nm
- 3345 & 3375 nm
- **4524 & 4534 nm**
- **5184 & 5263 nm**

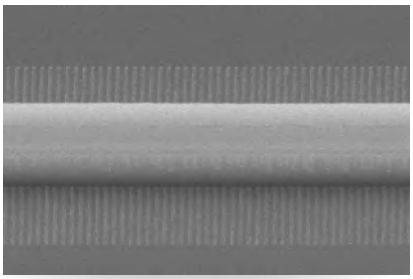
nanoplus Distributed Feedback Lasers **(DFB)** are specifically designed for high-precision gas detection using tunable diode laser absorption spectroscopy **(TDLAS)**. Our devices operate **reliably** in more than 30,000 installations worldwide. For more than 20 years nanoplus has set the standard for DFB laser technology and is the only manufacturer routinely providing DFB lasers at **any wavelength.**

Key features:

- MONOMODE
- CONTINUOUS WAVE
- ROOM TEMPERATURE
- MODE HOP FREE TUNING



Schematic DFB with spectrum


Overgrowth-free DFB device processing

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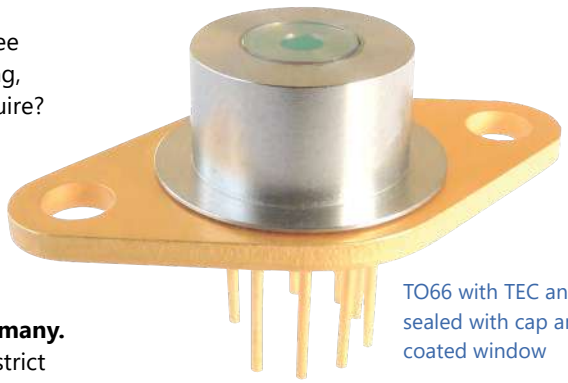
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Nanosystems and Technologies GmbH
nanoplus

Superior Specifications: 5184 nm & 5263 nm

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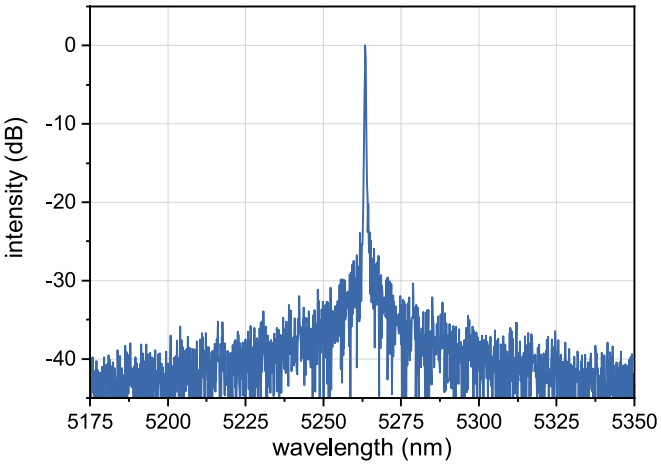
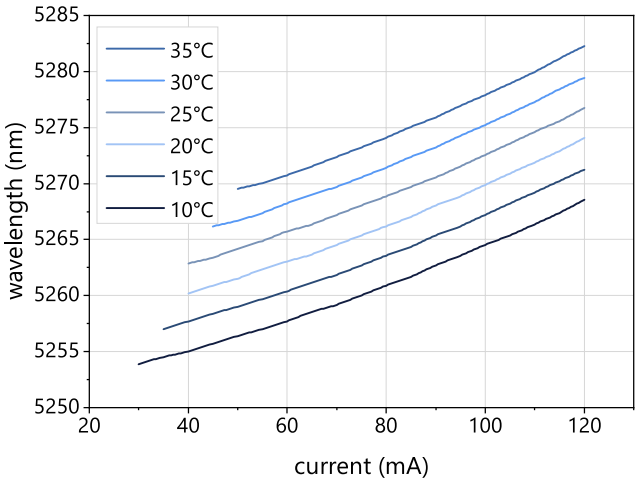
Standard specifications are available at: https://nanoplus.com/DFB/4600-5300-nm.



Typical room temperature cw spectrum of a nanoplus DFB ICL at 5263 nm



Typical mode hop free tuning of a nanoplus DFB ICL at 5263 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	nm		5263	
optical output power (at λ_{op})	P_{op}	mW		6	
operating current	I_{op}	mA		120	
operating voltage	V_{op}	V		5	
threshold current	I_{th}	mA	25	35	55
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA		0.14	
temperature tuning coefficient	C_T	nm / K		0.48	
operating chip temperature	T_{op}	°C	+15	+20	+40
operating case temperature*	T_c	°C	-20	+25	+55
storage temperature*	T_S	°C	-30	+20	+70

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Rev.TOP5263.00

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