FIBER OPTICAL SOLUTION

Specification catalogue 2026

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26 October 2026

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Integrated optical components

opticalsolution.lv/products/integrated-optical-components

Multifunctional integrated optical chip (MIOC) is a monoblock hermetic product. It includes a linear polarizer, Y-junction coupler and two pairs of electro-optic phase modulators.

Parameter	Value
Operating wavelength	λ=1550 nm
Half wave voltage	<3 V
Polarization extinction ratio	>25 dB
Intensity modulation	<0.1 %
Fiber-to-fiber insertion loss	<6 dB

Polarization-maintaining fiber

opticalsolution.lv/products/pm-fiber

These fibers are available for operation at 850, 1300 and 1550 nm wavelengths. Fiber specifications:

Parameter	Value
Operating wavelength	1.55 µm
Mode Field Diameter	6.5 µm
Cladding Diameter	80-125 µm
Coating Diameter	160-175 µm
Numerical Aperture	0.13
Polarization crosstalk (h-parameter)	$<10^{-5}$ m^{-1}
Attenuation	< 2 dB/km
Cutoff Wavelength	1300nm-1450nm
Beat Length	<3mm
Stress Type	PANDA

Fiber-optic gyroscopes

opticalsolution.lv/products/fiber-optic-gyroscopes

Parameter	SFOS-2	SFOS-6	SFOS-10
Range of measured angular rate, °/s	±550	±250 (optional ±1000)	±90 (optional ±550)
Bias drift at stabilized temperature (100 s-averaging, 1σ), °/hour	≤0.1	≤0.03	≤0.005
Bias drift at changing temperature from -40°C to +60°C (100 s-averaging, 1σ), °/hour	≤0.7	≤0.1	≤0.03
Scale factor error in temperature range -40°C to +60°C (1σ), ppm	≤800	≤300	≤100
Bandwidth, Hz	>1000 (user defined)	>1000 (user defined)	>1000 (user defined)
Random walk, °/√hour	≤0.015	≤0.003	≤0.0007
Physical Characteristics			
Power supply, V	5±0.25	5±0.25	5±0.25
Power consumption, W	≤6	≤7	≤7
Weight (net), kg	0.2	0.35	0.9
Dimensions, mm	Ø70×28	Ø100×30	Ø150×40
Operational temperature range	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C
Output	RS-485	RS-485	RS-485

Fiber-optic gyroscopes

opticalsolution.lv/products/fiber-optic-gyroscopes

Parameter	TFOS-2 series			
	TFOS-2	TFOS-2-3	TFOS-2-5	TFOS-2G*
Range of measured angular rate, °/s	±950	±760	±495	±495
Bias drift at fixed temperature, °/hour	≤0.15	≤0.1	≤0.05	≤0.05
Bias drift at changing temperature from -30°C to +60°C (100s-averaging, 1σ), °/hour	≤0.3	≤0.2	≤0.15	≤0.1
Scale factor error in temperature range -30°C to +60°C (3σ), ppm	≤250	≤200	≤200	≤200
Random walk, °/√hour	≤0.02	≤0.012	≤0.008	≤0.005
Bandwidth, Hz	>1000 (user defined)	>1000 (user defined)	>1000 (user defined)	>1000 (user defined)
Physical Characteristics				
Misalignment, °	≤0.06	≤0.06	≤0.06	≤0.06
Output sample rate	up to 2000 Hz	up to 2000 Hz	up to 2000 Hz	up to 2000 Hz
Power supply, V	5±0.25	5 or 27	5 or 27	5 or 27
Power consumption, W	≤7 W	≤7 W	≤7 W	≤7 W
Digital output interface	RS-422	RS-422	RS-422	RS-422
Operation temperature	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C
Dimensions, mm	75×75×60	75×75×60	75×75×60	75×75×60
Weight, kg	0.5	0.5	0.5	0.5

* with 3-fiber SLED transceiver

Parameter	TFOS-4	TFOS-5 series			
		TFOS-5M	TFOS-5M-G*	TFOS-5-4	TFOS-5-5
Range of measured angular rate, °/s	±550	±320	±320	±430	±320
Bias drift at fixed temperature, °/hour	≤0.05	≤0.04	≤0.02	≤0.05	≤0.03
Bias drift at changing temperature from -30°C to +60°C (100s-averaging, 1σ), °/hour	≤0.4	≤0.07	≤0.07	≤0.1	≤0.07
Scale factor error in temperature range -30°C to +60°C (3σ), ppm	≤200	≤200	≤200	≤200	≤200
Random walk, °/√hour	≤0.01	≤0.004	≤0.003	≤0.006	≤0.003
Bandwidth, Hz	>1000 Hz (user defined)	>1000 Hz (user defined)	>1000 Hz (user defined)	>1000 Hz (user defined)	>1000 Hz (user defined)
Physical characteristic					
Misalignment, deg	0.06	0.06	0.06	0.06	0.06
Output sample rate	Up to 1000 Hz	Up to 1000 Hz	Up to 1000 Hz	Up to 1000 Hz	Up to 1000 Hz
Power supply, V	5V DC (27V DC is possible)	5V DC (27V DC is possible)	5V DC (27V DC is possible)	5V DC (27V DC is possible)	5V DC (27V DC is possible)
Power consumption, W	7	7	7	7	7
Digital output interface	RS422	RS422	RS422	RS422	RS422
Operation temperature	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C
Dimensions, mm	80 x 95 x 65	110 × 110 × 90	110 × 110 × 90	110 × 110 × 90	110 × 110 × 90
Weight, kg	0.7	1.2	1.2	1.2	1.2

* with 3-fiber SLED transceiver

Inertial measurement units

opticalsolution.lv/products/inertial-measurement-units

Parameter	IFOS-2 series			
	IFOS-2	IFOS-2-3	IFOS-2-5	IFOS-2G*
Gyro				
Range of measured angular rate, °/s	±950	±760	±495	±495
Bias drift at fixed temperature, °/hour	≤0.15	≤0.1	≤0.05	≤0.05
Bias drift at changing temperature from -30°C to +60°C (100s-averaging, 1σ), °/hour	≤0.3	≤0.2	≤0.15	≤0.1
Scale factor error in temperature range -30°C to +60°C (3σ), ppm	≤250	≤200	≤200	≤200
Random walk, °/√hour	≤0.02	≤0.012	≤0.008	≤0.005
Bandwidth, Hz	>1000 (user defined)	>1000 (user defined)	>1000 (user defined)	>1000 (user defined)
Accelerometers				
Accelerometer type	MEMS	MEMS	MEMS	MEMS
Range of measured acceleration, g	±10g to ±40g	±10g to ±40g	±10g to ±40g	±10g to ±40g
Bias drift at constant temperature, mg	≤0.03	≤0.03	≤0.03	≤0.03
Bias drift at changing temperature from -30°C to +60°C (100s-averaging, 1σ), mg	0.3	0.3	0.3	0.3
Velocity random walk, μg/√Hz	≤80	≤80	≤80	≤80
Scale factor error in temperature range -30°C to +60°C (3σ), ppm	≤100	≤100	≤100	≤100
Physical Characteristics				
Misalignment, deg	≤0.06	≤0.06	≤0.06	≤0.06
Output sample rate	up to 2000 Hz	up to 2000 Hz	up to 2000 Hz	up to 2000 Hz
Power supply, V	5±0.25	5 or 27	5 or 27	5 or 27
Power consumption, W	≤7 W	≤7 W	≤7 W	≤7 W
Digital output interface	RS-422	RS-422	RS-422	RS-422
Operation temperature	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C
Dimensions, mm	75×75×60	75×75×60	75×75×60	75×75×60
Weight, kg	0.5	0.5	0.5	0.5

* with 3-fiber SLED transceiver

IFOS-2 series

IFOS-4

IFOS-5 series

Inertial measurement units

opticalsolution.lv/products/inertial-measurement-units

Parameter	IFOS-4	IFOS-6 series			IFOS-10
		IFOS-6M-G*	IFOS-6	IFOS-6A-G*	
Gyro					
Range of measured angular rate, °/s	±550	±290	±290 (optional ±1000)	±290	±550
Bias drift at fixed temperature, °/hour	≤0.05	≤0.02	≤0.02	≤0.02	≤0.005
Bias drift at changing temperature from -30°C to +60°C (100s-averaging, 1σ), °/hour	≤0.4	≤0.05	≤0.05	≤0.05	≤0.03
Scale factor error in temperature range -30°C to +60°C (1σ), ppm	≤150	≤200	≤100	≤200	≤100
Random walk, °/√hour	≤0.01	≤0.002	≤0.005	≤0.002	≤0.0007
Bandwidth, Hz	>1000 (user defined)	>1000 (user defined)	>1000 (user defined)	>1000 (user defined)	>1000 (user defined)
Accelerometers					
Accelerometer type	MEMS	MEMS	Quartz	Quartz	Quartz
Range of measured acceleration, g	±10g to ±40g	±10g to ±40g	±10g to ±60g	±10g to ±60g	±10g to ±60g
Bias drift at constant temperature, mg	≤0.03	≤0.03	≤0.02	≤0.02	≤0.02
Bias drift in temperature range: -30°C to +60°C (3σ), mg	0.3	0.3	0.25	0.25	0.25
Velocity random walk, μg/√Hz	≤60	≤60	≤20	≤20	≤20
Scale factor error in temperature range -30°C to +60°C (3σ), ppm	≤100	≤100	≤200	≤200	≤200
Physical Characteristics					
Misalignment, °	≤0.06	≤0.06	≤0.06	≤0.06	≤0.06
Output sample rate	up to 2000 Hz	up to 2000 Hz	up to 2000 Hz	up to 2000 Hz	up to 2000 Hz
Power supply, V	5±0.25	5±0.25	27±5	5±0.25	27±5
Power consumption, W	≤7 W	≤8 W	≤20 W	≤8 W	≤20 W
Digital output interface	RS-422	RS-422	RS-422	RS-422	RS-422
Operation temperature	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C
Dimensions, mm	80 x 95 x 65	123 x 123 x 100	140 × 140 × 110	123 x 123 x 100	171 × 224 × 233
Weight, kg	0.7	1.7	3	1.7	8.4

* with 3-fiber SLED transceiver

IFOS-4

IFOS-6 series

IFOS-10

Inertial measurement units

opticalsolution.lv/products/inertial-measurement-units

Parameter	IFOS-5 series			
	IFOS-5M	IFOS-5M-G*	IFOS-5-4	IFOS-5-5
Gyro				
Range of measured angular rate, °/s	±320	±320	±430	±320
Bias drift at fixed temperature, °/hour	≤0.04	≤0.02	≤0.05	≤0.03
Bias drift at changing temperature from -30°C to +60°C (100s-averaging, 1σ), °/hour	≤0.07	≤0.07	≤0.1	≤0.07
Scale factor error in temperature range -30°C to +60°C (3σ), ppm	≤200	≤200	≤200	≤200
Random walk, °/√hour	≤0.004	≤0.003	≤0.006	≤0.003
Bandwidth, Hz	>1000 Hz (user defined)	>1000 Hz (user defined)	>1000 Hz (user defined)	>1000 Hz (user defined)
Accelerometers				
Accelerometer type	MEMS	MEMS	Quartz	Quartz
Range of measured acceleration, g	±10g to ±40g	±10g to ±40g	±10g to ±60g	±10g to ±60g
Bias drift at constant temperature, mg	0.03	0.03	0.02	0.02
Bias drift in temperature range: -30°C to +60°C (1σ), mg	0.3	0.3	0.25	0.25
Velocity random walk, µg/√Hz	60	60	20	20
Scale factor error in temperature range: -30°C to +60°C (3σ), ppm	100	100	200	200
Physical characteristic				
Misalignment, deg	0.06	0.06	0.06	0.06
Output sample rate	Up to 1000 Hz	Up to 1000 Hz	Up to 1000 Hz	Up to 1000 Hz
Power supply, V	5V DC (27V DC is possible)	5V DC (27V DC is possible)	5V DC (27V DC is possible)	5V DC (27V DC is possible)
Power consumption, W	7	7	7	7
Digital output interface	RS422	RS422	RS422	RS422
Operation temperature	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C	-30°C ~ +60°C
Dimensions, mm	110 × 110 × 90	110 × 110 × 90	110 × 110 × 90	110 × 110 × 90
Weight, kg	1.2	1.2	1.4	1.4

* with 3-fiber SLED transceiver

Strapdown inertial navigation systems

opticalsolution.lv/products/inertial-navigation-systems

Ultra compact NavFOS-2 is a new generation of strapdown inertial navigation system based on IMU IFOS-2.

Parameter	NavFOS-2		
	Pure INS	INS/GNSS	INS/ADS
Roll / pitch (deg)	0.05 -0.07	0.04	0.05
Heading(deg)	0.3 - 0.5	0.1 - 0.2	0.3 - 0.5
Velocity(m/sec)	4-5 (within 1 hour)	0.3	0.7- 1
Position(meters)	100-150 (within 10min) 1000 (within 30 min)	6-8	20 - 30 (within 10 min.) 300 - 400(within 30 min.) 800 – 1000 (within 1 hour)

Parameter	NavFOS-5	NavFOS-6
Performance	For land and airborne navigation Alignment in static conditions	For land and airborne navigation Alignment in static conditions
Pure SINS performance (inertial mode), accuracy		
position (1-hour error)	8 km	4 km
velocity	2 m/s	1 m/s
heading	<0.3×sec(lat)°	<0.1×sec(lat)°
pitch and roll	<0.1°	<0.05°
GNSS/SINS performance		
position accuracy	20 m	20 m
velocity accuracy	0.1 m/s	0.1 m/s
Initialization time	10 min (available options 15, 5 min)	10 min (available options 15, 5 min)
Gyro bias drift (1σ)	≤ 0.04 °/h	≤ 0.02 °/h
Accelerometer bias drift (1σ)	≤ 5×10^{-4}g	≤ 1×10^{-4}g
Interfaces	RS-422 (1553B option available)	RS-422 (1553B option available)
Power supply	27±5 V DC	27±5 V DC
Power consumption	15 W	22 W
Size, mm	240×160×110	286×163×124
Weight	3.4 kg	4.8 kg
Operating ranges		
angular rate	≤ 400 °/s	≤ 1000 °/s
linear accelerations	Up to 10 g	Up to 10 g
vibration	Up to 2000 Hz	Up to 2000 Hz
temperature range	-30 °C to +60 °C	-30 °C to +60 °C

NavFOS-2

NavFOS-5

NavFOS-6

FIBER OPTICAL SOLUTION

Contacts

Fiber Optical Solution SIA

Registered in the Commercial Register of the Republic of Latvia

Reg. No.	50103461761
VAT No.	LV50103461761
Legal address	Podraga iela 2A, Riga, LV-1007, Latvia
Phone	+371 6745 4103
E-mail	info@opticalsolution.lv
Website	opticalsolution.lv

Request a quote

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Quality

CERTIFIED
ISO 9001

BUREAU VERITAS

Fiber Optical Solution SIA is certified to ISO 9001:2015 by Bureau Veritas Certification.

Standard: ISO 9001:2015

Certification body: Bureau Veritas Certification

Certificate No.: LV008716

Scope: DEVELOPMENT AND PRODUCTION OF OPTICAL FIBER GYROSCOPES AND NAVIGATION SYSTEM IFOS2.

Issue date: 04-06-2024

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 03-06-2027

Export control

FOS products are dual-use items controlled under Regulation (EU) 2021/821. Their export from the European Union is subject to authorisation; for most destinations an export licence is required, issued by the competent Latvian authority on the basis of an end-user certificate. Licensing normally takes at least two months and its outcome cannot be guaranteed, so delivery dates are confirmed once the authorisation has been granted. FOS complies with EU sanctions and screens its counterparties.