sylex® FIBER OPTICS

LIST OF CALIBRATION COEFFICIENTS - EXAMPLE

Customer order:			**Revision:**	A	**Print date:**	09.12.2020
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EQUATIONS

STRAIN EQUATION

$$\Delta\varepsilon = \frac{\dfrac{\lambda_{act,strain} - \lambda_{0,inst,strain}}{\lambda_{0,inst,strain}} - B.(T_{act} - T_{0,inst})}{A}$$

Measurand	Description
$\Delta\varepsilon$ [με]	Strain shift
$\lambda_{0,inst,strain}$ [nm] **1	Initial strain wavelength
$T_{0.inst}$ [°C] **1	Initial temperature
T_{act} [°C] **2	Actual temperature
$\lambda_{act,strain}$ [nm] **2	Actual strain wavelength

STRING EXPRESSION

(((λact,strain-λ0,inst,strain)/(λ0,inst,strain))-(B*(Tact-T0,inst)))/(A)

For the determination of the strain sensitivity the free fiber length was used as a basis
**1 To be measured after installation of the sensor
**2 Measured value during monitoring of the sensor

CALIBRATION COEFFICIENTS

Nr.	Serial number	FBG	Product	A [με⁻¹]	B [°C⁻¹]
1	198126/0001		GFA-01; 1x FBG, WL: 1535nm; LCP-01: 1x2,4m, 1x0,1m, 1x FC/APC	7,758423E-07	5,892923E-06