LIST OF CALIBRATION COEFFICIENTS - EXAMPLE

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EQUATIONS

DISPLACEMENT EQUATION

$$L(\mu m) = \psi.\left(\lambda_{act,\varepsilon} - \left(\left(\varphi.\left(\frac{\lambda_{act,T} - \lambda_{ref,T}}{\lambda_{ref,T}}\right)^2 + \phi.\left(\frac{\lambda_{act,T} - \lambda_{ref,T}}{\lambda_{ref,T}}\right) + \chi\right)\right)\right)^2 + \omega.\left(\lambda_{act,\varepsilon} - \left(\left(\varphi.\left(\frac{\lambda_{act,T} - \lambda_{ref,T}}{\lambda_{ref,T}}\right)^2 + \phi.\left(\frac{\lambda_{act,T} - \lambda_{ref,T}}{\lambda_{ref,T}}\right) + \chi\right)\right)\right) + \tau$$

Measurand	Description
L [µm]	Displacement change
$\lambda_{act,\varepsilon}$ [nm] **1	Actual displacement wavelength
$\lambda_{act,T}$ [nm] **1	Actual temperature wavelength
$\lambda_{ref,T}$ [nm]	Reference temperature wavelength
ψ [µm.nm^{-2}]	Displacement sensitivity coefficient
ω [µm.nm^{-1}]	Displacement sensitivity coefficient
τ [µm]	Displacement sensitivity coefficient
φ [nm]	Temperature sensitivity coefficient
ϕ [nm]	Temperature sensitivity coefficient
χ [nm]	Temperature sensitivity coefficient

The sensor measures the change in displacement and therefore we recommend „reference“ it after installation using the software in-built option.

***1 Measured value during monitoring of the sensor*

CALIBRATION COEFFICIENTS

Nr.	Serial number	Customer code	Product	DISPLACEMENT COEFFICIENTS						
				λref,T [nm]	ψ [µm.nm-2]	ω [µm.nm-1]	τ [µm]	φ [nm]	ϕ [nm]	χ [nm]
1	181685/0001		D-01; WL: 1556,9 / 1557,9nm, LCP-03: 1x 1mtr, 1x FC/APC, 1x WCP-01	1556,69110723	-2,38376E+01	6,26289E+04	-3,96975E+07	6,31231E+04	5,05285E+02	4,95529E-05