



FIBER OPTICS

LIST OF CALIBRATION COEFFICIENTS - EXAMPLE

Customer order:

Revision:

A

Print date: 15.12.2020

Quality supervisor:

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Production supervisor:

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EQUATIONS

PRESSURE EQUATION

$$P = \alpha \cdot \left(\frac{\lambda_{\text{pressure},2} - \lambda_{\text{pressure,ref } 2}}{\lambda_{\text{pressure,ref } 2}} - \frac{\lambda_{\text{pressure},1} - \lambda_{\text{pressure,ref } 1}}{\lambda_{\text{pressure,ref } 1}} \right)^2 + \beta \cdot \left(\frac{\lambda_{\text{pressure},2} - \lambda_{\text{pressure,ref } 2}}{\lambda_{\text{pressure,ref } 2}} - \frac{\lambda_{\text{pressure},1} - \lambda_{\text{pressure,ref } 1}}{\lambda_{\text{pressure,ref } 1}} \right) + \gamma$$

Measurand	Description
P [bar]	Pressure
$\lambda_{\text{pressure},1}$ [nm] **1	Actual wavelength peak 1
$\lambda_{\text{pressure},2}$ [nm] **1	Actual wavelength peak 2
$\lambda_{\text{pressure},1 \text{ ref}}$ [nm]	Reference peak 1 wavelength
$\lambda_{\text{pressure},2 \text{ ref}}$ [nm]	Reference peak 2 wavelength
α [bar]	Pressure sensitivity coefficient
β [bar]	Pressure sensitivity coefficient
γ [bar]	Pressure sensitivity coefficient
**1 Measured value during monitoring of the sensor	

CALIBRATION COEFFICIENTS

Nr.	Serial number	Customer code	Product	PRESSURE COEFFICIENTS				
				$\lambda_{\text{pressure},1 \text{ ref}}$ [nm]	$\lambda_{\text{pressure},2 \text{ ref}}$ [nm]	α [bar]	β [bar]	γ [bar]
1	194714/0001		P-05; 1bar; WL: 1555/1557,5nm, LCP-03: 2x 15m, 2x FC/APC, 2x WCP-01	1554,02362	1555,99406	-1423,82308	196,61202	0,00024
2	194715/0001		P-05; 100bar; WL: 1568 / 1570,5nm, LCP-03: 2x1m, 2x FC/APC	1566,25911	1568,86606	143523,62187	39457,77527	0,94987