



LIST OF CALIBRATION COEFFICIENTS

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EQUATIONS

LOAD EQUATION

$$L [kN] = \left(\frac{(\lambda_2 - \lambda_{2,ref}) + (\lambda_3 - \lambda_{3,ref}) + (\lambda_4 - \lambda_{4,ref}) - \left(\frac{C_2}{C_1}\right) \cdot (\lambda_1 - \lambda_{1,ref})}{C_3} \right)$$

STRING EXPRESSION

L = ((FBG_A2-L_ref_2)+(FBG_A3-L_ref_3)+(FBG_A4-L_ref_4)-(C2/C1)*(FBG_A1-L_ref_1))C3

Measurand	Description	String equation parameter
L [kN]	Load	L
λ_1 [nm]	Wavelength FBG 1	FBG_A1
λ_2 [nm]	Wavelength FBG 2	FBG_A2
λ_3 [nm]	Wavelength FBG 3	FBG_A3
λ_4 [nm]	Wavelength FBG 4	FBG_A4
$\lambda_{1,ref}$ [nm]	Reference wavelength FBG 1	L_ref_1
$\lambda_{2,ref}$ [nm]	Reference wavelength FBG 2	L_ref_2
$\lambda_{3,ref}$ [nm]	Reference wavelength FBG 3	L_ref_3
$\lambda_{4,ref}$ [nm]	Reference wavelength FBG 4	L_ref_4
C_1 [nm/K]	Sensitivity to temperature FBG 1	C1
C_2 [nm/K]	Sensitivity to temperature FBG 2,3 and 4	C2
C_3 [nm/K]	Sensitivity to Load	C3

CALIBRATION COEFFICIENTS

Nr.	Serial number	Customer code	Product	LOAD COEFFICIENTS						
				$\lambda_{1,ref}$ [nm]	$\lambda_{2,ref}$ [nm]	$\lambda_{3,ref}$ [nm]	$\lambda_{4,ref}$ [nm]	C1 [nm/K]	C2 [nm/K]	C3 [nm/K]
1	123456/0001		ALC-01; 240 kN; 1541-47-49-81nm; 2x FC/APC	1541,848810	1547,460030	1549,967730	1552,814630	0,0267	0,0621	-0,0370