

## NCE41



Noliac piezoceramic material NCE41 is a hard doped material with low dielectric and mechanical loss. Combined with a high piezoelectric charge constant ( $d_{33}$ ), it is suitable for high-performance ultrasonic applications.

### SPECIFICATIONS

Properties	Symbol & unit	NCE41
DIELECTRIC PROPERTIES (tolerances +/- 10%)		
Relative Dielectric Constant	$\epsilon_{33}^T / \epsilon_0$	1350
Dielectric Loss Factor	$\text{tg}\delta [10^{-4}]$	40
Dielectric Loss Factor at 400V/mm	$\text{tg}\delta [10^{-4}]$	200
ELECTROMECHANICAL PROPERTIES (tolerances +/- 5%)		
Electromech. Coupling Factors**	$k_p$	0.57
	$k_{31}$	0.33
	$k_{33}$	0.68
	$k_t$	0.50
Piezoelectric Charge Constants	$-d_{31} [10^{-12} \text{ C/N}]$	130
	$d_{33} [10^{-12} \text{ C/N}]$	310
Piezoelectric Voltage Constants	$-g_{31} [10^{-3} \text{ Vm/N}]$	11
	$g_{33} [10^{-3} \text{ Vm/N}]$	25
Frequency Constants	$N_p^E [\text{m/s}]$	2280
	$N_t^D [\text{m/s}]$	2000
	$N_1^E [\text{m/s}]$	1600
	$N_3^D [\text{m/s}]$	1500
PHYSICAL PROPERTIES (tolerances +/- 5%)		
Mechanical Quality Factor	$Q_m$	1400
Density	$\rho [10^3 \text{ kg/m}^3]$	7.9
Elastic Compliances	$s_{11}^E [10^{-12} \text{ m}^2/\text{N}]$	13
	$s_{33}^E [10^{-12} \text{ m}^2/\text{N}]$	16
Curie Temperature	$T_c [^\circ\text{C}]$	284

\*\* Measured in accordance with standard EN 50324

The values listed are for reference purposes only and cannot be applied unconditionally to all shapes and

dimensions. Values vary depending on the actual shape, surface finish, shaping process and post-processing of the product.

## TEMPERATURE DEPENDENCIES



