Abstract Fix a pair of positive integers $(p,q)$. We obtain a lower bound in terms of $p,q$ for the dimension of the space of isometry classes of metric 2-step nilpotent Lie algebras $\mathfrak{g}, \langle , \rangle$ of type $(p,q)$ with a fixed Ricci tensor. We also consider two special types of Ricci tensors: optimal and geodesic flow invariant, where the first is an example of the second. We show that if $(p,q) \neq (2,2k+1)$ or its dual $(D,2,2k+1)$, where $D = (1/2)(2k+1)(2k)$, then a generic 2-step nilpotent Lie algebra $\mathfrak{g}$ of type $(p,q)$ admits an inner product $\langle , \rangle$ whose Ricci tensor is optimal. This result has also been obtained by Y. Nikolaevsky. (Received September 04, 2014)