Given an even lattice, $L$, with a certain positivity condition, and an automorphism that fixes the principal subalgebra $W_L$ of the lattice vertex algebra $V_L$, we explore the principal subspace of the associated twisted $V_L$-module. We describe this twisted module in terms of the quotient of a polynomial algebra by an ideal generated by certain quadratic relations. In addition, the graded dimensions are found. (Received September 20, 2016)