Let the dimensions be u_1, u_2, u_3, and u_4. In a row-major mapping, the $u_2u_3u_4$ elements with first index equal to zero come first. These are followed by the elements with first index equal to 1 and so on. So, the elements with first index i_1 are preceded by $i_1u_2u_3u_4$ elements that have a smaller first index. Each block of elements with the same first index is stored in row-major order also. Since each block is a three dimensional array, we may use the formula for a three dimensional array to get the position of an element withing a block of elements with the same first dimension. If the second, third, and fourth indices are i_2, i_3, and i_4, then the element position in the i_1 block is $i_2u_3u_4 + i_3u_4 + i_4$. As a result,

$$map(i_1,i_2,i_3,i_4) = i_1u_2u_3u_4 + i_2u_3u_4 + i_3u_4 + i_4$$