```python
from numba import jit

@jit(nopython=True)
def hoare_partition(array_, start, end):
    pivot = array_[(start + end) // 2]

    i = start - 1
    j = end + 1

    while True:
        i += 1
        while array_[i] < pivot:
            i += 1

        j -= 1
        while array_[j] > pivot:
            j -= 1

        if i >= j:
            return j

        temp = array_[i]
        array_[i] = array_[j]
        array_[j] = temp

@jit(nopython=True)
def quicksort_numba(array_, start, end):
    if start >= 0 and end >= 0 and start < end:
        crossing = hoare_partition(array_, start, end)

        quicksort_numba(array_, start, crossing)
        quicksort_numba(array_, crossing + 1, end)
```