

I don't know that it's the cheapest method, but it's pretty darn cheap and requires a minimum number of components and design time:

<https://www.digikey.com/product-detail/en/microchip-technology/ATTINY88-MU/ATTINY88-MU-ND/1886250>

An ATTINY88 is \$1, runs on 5V, has an 8MHz internal oscillator and ADC, and has 28 IO pins.

So, if you write a bit of code to read the ADC and set the output pins based on the value read, you don't need a crystal, and you don't even need to multiplex the LEDs if you don't absolutely need to drive 30 of them. But if you wanted to multiplex the LEDs you could drive over 144 from 24 pins and have a few left over for input!

And if you want to go even cheaper:

<https://www.digikey.com/product-detail/en/microchip-technology/ATTINY20-MMH/ATTINY20-MMH-ND/2357322>

The ATTINY20 is \$0.57 and is much the same, though you will need to multiplex to drive your LEDs (no FETs needed since the desired current is so low), but with 12 IO pins, you could drive a 5x6 array of 30 LEDs and have 1 pin left over for your ADC reading!

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