



Filter capacitor:
smooths out
ripples on the
power supply

Superbright
LED produces
light beam
aimed at LDR

Light Dependent Resistor:
detects tiny changes of
light level as bar moves

Capacitors: filter out
thermal drift as
temperature changes in
room

10k resistors set as a
reference voltage for
pin 3 of amplifier

"Op Amp": almost any common op-
amp can be used e.g. 741, TL071,
LF351, OP27 etc. It amplifies the
difference between pins 2 and 3

100k (or 250k) variable
resistor controls the
amplification of the op-amp

3.3k and 1k resistors form a
voltage divider to give a high
level output or a low level 0-
5volt output for some
datalogger sensors

Positive power
6 – 15 volts

positive
high output

positive
low output

negative
output

Zero
(negative)
output