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# 12 Volt DC Regulated Power Supply

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## 12 Volt DC Regulated Power Supply

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**Abstract:** The requirement for dc (average) voltage power supply for the functionality of consumer electronics has made the study of rectifier circuits a very popular topic in analog electronics course. DC power pack (unit) could be inbuilt with the electronic appliances as seen in desktop computers and some heavy telecom equipment or they could be separate, detachable (plug in) unit as seen in laptops, cell phones, iPads and tablets. In this class project, we designed and constructed a 12 V, dc regulated, bridge rectifier. Bridge rectifier is chosen over half-wave rectifier or full-wave center-tap because of its many advantages over the two. The displayed results include the transformer step-down voltage waveform, the unfiltered and capacitor-filtered dc rectified waveforms and the ripple voltage waveform. The 146 mV peak-to-peak ripple voltage obtained accounted for less than 2 percent of the 12 V rectified dc voltage and it matches the theoretical values computed. This qualifies the dc power supply we constructed as an ideal candidate for powering laptops and other related electronic equipment.