

## PoE and IP Device power considerations

The PoE module in the CXi has a power limit of 120 Watts, which provides enough power for 16 Mitel IP phones. The power required for Mitel IP phones is fairly constant whether they are in use or sitting idle. Very loud ringer and hands free settings can draw more power than normal. Additional devices connected to the IP Phone such as a Programmable Key Module (PKM) and a Conference Unit increase the power required by the IP phone. If additional devices are connected to the IP phones it is possible to exceed the power budget. The power budget for the CXi, which guarantees power allocation, is based on the PoE class.

### Line Loss

A certain amount of power is consumed from the switch to the PD (Powered Device) (typically less than 16% loss), which can be influenced by cable length, quality, and other factors. The IEEE 802.3af specification has addressed loss of power by providing more power than a powered device requires. As well, depending upon the classification (Class 0-3) of the device, the switch will provide more or less power to address the specific power needs of that end device.

### PD Power Classification

A PD is classified based on the maximum power it draws across all input voltages and operational modes. The most common class is 0, in which the switch will allow a maximum draw of 15.4 Watts per port. As an example, 15.4 Watts - Power Loss (16%) = 12.95 watts.

The Class power budget PD (Powered Devices):

Class	Power Consumption	Range of Maximum Power required by the PD	Comments
Class 0 (Default)	15,4 Watts	0,44 to 12,95 Watts	All Mitel IP Phones except for 5212 & 5224
Class 1	4 Watts	0,44 to 3,84 Watts	
Class 2	7 Watts	3,84 to 6,49 Watts	5212 / 5224 dual mode IP Phones
Class 3	13 Watts	6,49 to 12,95 Watts	

## HP ProCurve 2600 PoE Switch Provisioning

### Switch 2626-PWR

This switch has 24 PoE ports and the internal power supply provides 406 Watts PoE across all 24 ports. If the external power device HP 600 RPS/EPS or an HP 610 EPS is connected to the switch for the purpose of supplying external power to the PoE portion of the switch, there will be either 408 Watts or 204 Watts of power available should the switch's internal PoE power supply fail.

If a single switch is connected to the EPS ports on the HP 600 RPS/EPS or a single port of a pair on the HP 610 EPS, 408 Watts are available, providing fully redundant PoE power to the switch. If two switches are connected to the EPS ports on the HP 600 RPS/EPS or to both ports of a pair on the HP 610 EPS, only 204 Watts are provided to the switch if the internal PoE power supply fails.

### Switch 2650-PWR

This switch has 48 ports and the internal power supply supplies 406 Watts PoE across all 48 ports. The switch reserves 38 Watts for either ports 1-24 or 25-48, so that neither set of ports receives the entire 406 watts. By connecting an HP 600 RPS/EPS or an HP 610, more PoE power is provided to the switch. With the HP 600 RPS/EPS or the HP 610 EPS connected, the internal PoE power supply provides the first 24 ports (1-24) with 406 Watts and the HP 600 RPS/EPS or the HP 610 EPS supplies the second 24 ports (25-48) with 408 or 204 Watts (408 Watts if only one switch is connected to the EPS ports; 204 Watts if two switches are connected to the EPS ports). If the internal PoE power supply in the switch fails, 408 Watts or 204 Watts are provided to ports 1-48. 38 Watts of power are always allocated to ports 1-25 or 25-48.