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WELCOME TO POWER LEVEL I



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OBJECTIVES


To gain beginner knowledge of electricity
in live production.



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OBJECTIVES

Covering core concepts of safety, metering
techniques, and proper load calculations.





DISCLAIMER!!!

At the end of this lesson, you will NOT be an electrician. You will not be certified or qualified to perform such acts as tying in a disconnect, distro, or wiring your own house. This is to cover the basics so that you can have a better understanding of power, as well as making sure your events are properly setup, electrically, for success.



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SUPPLY CHECK

Make sure that you have each of the following items:

- Power and Electricity Study Guide & Pencil
- Power PIE Chart
- Phillips Head Screw Driver
- Flat Head Screw Driver
- Adjustable Crescent Wrench
- Calculator
- Digital Multi Meter with Amp Meter Attachment (Will Share with a Partner)



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PART I: CLASSROOM TIME

What is Power?



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PART I: CLASSROOM TIME

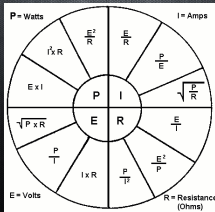
Power is the relationship of four items:

- _____
- _____
- _____
- _____



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PART I: CLASSROOM TIME



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PART I: CLASSROOM TIME

POWER COMPONENTS

_____ = P
 _____ = I
 _____ = E



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PART I: CLASSROOM TIME

RELATIONSHIPS

Watts/Voltage = Amps (/ =)
 Watts/Amps = Voltage (/ =)
 Volts/Amps = Watts (/ =)



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PART I: CLASSROOM TIME

Of these Calculations
 one will stand above the others.

Watts/Voltage = Amps
 (P/E = I)



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PART I: CLASSROOM TIME

What are Watts?



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PART I: CLASSROOM TIME

What is Voltage?



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PART I: CLASSROOM TIME

What are Amps?



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PART I:

Using our $P/E = I$ Equation
Please find the amp load for each of the items listed below:

Assume that the Voltage is 110V

- Platinum Spot 5R - 400W
- 60" Led TV - 160W
- Leko with a 575W lamp
- Leko with a 375W lamp
- Opti Tri 30 Led - 35W



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PART I: CLASSROOM TIME

HOW DID YOU DO?



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5 MINUTE BREAK



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PART II: CLASSROOM TIME

WHY DO WE CARE WHAT THE AMPS ARE?!



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PART II: CLASSROOM TIME

It's all about the Breakers
(or fuses in a few venues)!



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PART II: CLASSROOM TIME

So because we understand the $P/E = I$ we can make sure that we safely load our circuits so we do not trip anything.



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PART II: CLASSROOM TIME

A Circuit is an outlet right?



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PART II: CLASSROOM TIME

A Circuit (in terms of ballrooms and house electricity) is a line of power coming from a breaker in the breaker panel (or fuse box). A single circuit may have many outlets on it but the circuit is EVERYTHING that is on the line for a single breaker.



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PART II: CLASSROOM TIME

Some Ballrooms/Event Centers will have all of their outlets _____ with which circuit they belong to.



Some will have _____ at all!

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PART II: CLASSROOM TIME

Some Ballrooms/Event Centers
_____ and _____ of circuits supplying
power to their rooms



Some will have ____ or ____!

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PART II: CLASSROOM TIME

Let's get back on track...

WHY DO WE CARE WHAT THE AMPS ARE?!



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PART II: CLASSROOM TIME

“Can I plug this video light in here?”



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PART II: CLASSROOM TIME

Concierge Class Service



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PART II: CLASSROOM TIME

So again I ask you...

WHY DO WE CARE WHAT THE AMPS ARE?!



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PART II: CLASSROOM TIME

Knowing the _____ of individual items
will allow us to total our _____ load.



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PART II: CLASSROOM TIME

FIND THE TOTAL AMP LOAD

x2 Platinum Spot 5R	400W
x2 Mega Tri Bars	80 W
x2 QSC KW181 Subs	230W
x2 QSC KW152 tops	230W
DJ Rig	300W
x2 Flat Par 7 leds	35W
Lighting Controller	200W



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PART II: CLASSROOM TIME

If the venue is using 20amp breakers
(this is an assumption we make in modern
venues), how many circuits do we need?



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PART II: CLASSROOM TIME

What if the venue is an older venue?
At this point we may choose to assume
they are only using 15 amp breakers.
How many circuits do you need?



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PART II: CLASSROOM TIME

Q & A TIME



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5 MINUTE BREAK



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PART III: HANDS ON SAFETY

Electricity _____ kill you. Electricity
_____ kill you if you are careless.



Always remember:



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PART III: HANDS ON SAFETY

BE AWARE OF:



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PART III: HANDS ON SAFETY

Now we will use on extremely useful tool when it comes to power.

The Digital Multi Meter
(oohh, aaaaaahhh)



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PART III: HANDS ON USING A METER



MultiMeter



ClampMeter



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PART III: HANDS ON USING A METER

Finding the voltage on our outlets/power lines



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PART III: HANDS ON USING A METER

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ClampMeter: We are also able to find the _____, but the addition of the claw like clamp atop the meter also allows us to measure _____.



PART III: HANDS ON USING A METER

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Measuring Voltage on an Outlet



PART III: HANDS ON USING A METER

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Voltage Between Neutral and Ground



PART IV: WRAPPING UP

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Q&A From Hands on Exercises



PART IV: WRAPPING UP

POST ASSESSMENT:

<http://rthpowertracklevel1assessment.questionpro.com>

COURSE FOLLOW UP SURVEY:

Will come in an email from RTHLive

PASS OR RETAKE



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THANK YOU!



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