Lighting:
Operation & Safety
Spring 2016
Before Borrowing Lighting Kits

- Complete the online quiz
- Score 100% based on the material in this workshop
- Show the library technicians
- Get a sticker for your student card
• Quartz Halogen vs. Incandescent Lighting
  – Both operate on the same principle:
    • Electric current passes through a thin tungsten metal filament causing it to heat white hot and emit light
  – However, quartz halogen lamps encase the filament in a quartz casing filled with halogen gas. This allows these bulbs to run hotter, brighter and whiter
• Lighting Kits For Loan:
  – Small Lighting Kit
    • 3 x Lowel Prolight 150W tungsten balanced lights
    • Low-level key or accent light, fill light (with diffusion) or back-light for interviews & other small shooting-areas
    • 3 x stands
    • 3 x barn doors
    • Colour correction and diffusion gels

http://www.lib.sfu.ca/surrey/equipment
• Lighting Kits For Loan:
  – Large Lighting Kit
    • Contains one 750W ARRILite open face lamp and two 300W ARRI fresnel lamps
    • Ideal for lighting standing or multiple subjects or from a farther distance
    • 3 x stands
    • Soft-box
    • 3 x barn doors
    • Scrims

http://www.lib.sfu.ca/surrey/equipment
• Safety
  – Check all equipment for damage before use
  – Tape down all cables with Gaffer tape or duct tape (the library can provide duct tape)
  – Use in dry conditions
  – Always open the barn doors before turning a lamp on
  – Use at least 14 gauge extension cords
  – Never look directly at the lamps (call “Spark!”)
• Safety
  – Never pick up and move a lamp stand while the lamp is on
  – Do not operate the lamps pointing up or down at a very steep angle
  – Do not operate lamps upside down; they could overheat
  – If smoke appears around the lamp or cables turn off the lamp and return it to the library
• Hot Lamps
  – These lights can get very hot!
    • Use only approved accessories and gels that are specifically designed for use with hot lights.
    • When placed on or very near the lights, any other materials such as paper, plastic or cellophane will melt and possibly ignite.
    • If you have a problem with a bulb, DO NOT attempt to change it, return it to the library for assistance
    • Subjects will be affected by the lights; consider their comfort

http://www.lib.sfu.ca/surrey/equipment
• Hot Lamps
  • Keep all subjects/objects minimum 2 meters away
  • Keep all lamps and cables at least 6 meters away from all flammable materials such as gas and oily rags
  • Do not touch the lamps without gloves for at least 5 minutes after turning them off
• Electric Safety
  – How to find the draw on a circuit
    • Draw (amperage) = total light wattage (watts) / voltage
      – e.g. draw = 1000 watts / 120 volts = 8.3 amps
    • In North America, 120V is the standard
    • Most households have 15amp circuits
    • Using this formula do not load a circuit more than 80% of its maximum
      - e.g. most household circuits are rated at 15 amps:
        » 15 amps x 80% safety factor = 12 amps
        » (do not use more than 12 amps)
A = \frac{W}{V}

12_{\text{amps}} = \frac{W}{120_{\text{volts}}}

Lighting Kits

http://www.lib.sfu.ca/surrey/equipment
W=AV

W=12\text{amps} \times 120\text{volts} = 1440\text{watts}

approx. 1440\text{w} of lights may be loaded on a standard household circuit

Lighting Kits

http://www.lib.sfu.ca/surrey/equipment
• Activity: Inventory Check
  – What is in the Kit:
    • A set of 3 lamps
    • 3 sets of barn doors
    • 3 light stands
    • Operation and safety guide
    • Gaffer’s tape or duct tape
    • Leather gloves
    • Gels and clothes pegs are in the Small Lighting Kit only
    • Soft-box and scrims are in the Large Lighting Kit only
• Activity: Inventory Check
  – Additional items you should borrow from the library
    • Gels (not in the Large Lighting Kit)
    • Sandbags
    • Umbrellas, reflectors, bounce boards, gobos
    • 14 gauge power extension cables
    • Duct tape
  – Ask the library techs for accessories!

Lighting Kits

http://www.lib.sfu.ca/surrey/equipment
• Extras You Can Supply:
  – Wooden clothes pegs for fastening gels, foils, etc.
  – Practical lighting from hardware stores:
    • Utility lights:
      – Aluminum reflectors, ceramic sockets, etc.
    • Windshield sunscreen as a reflector
    • Foam core whiteboard
    • Leather gloves for handling bulbs
• Activity:
  – Setup and Assembly
• Assembly and Setup
  – Procedure:
    • Assemble your lighting kits according to the instructions
    • Recall what you learned about safety and…
    • Set the lights according to the 3-point lighting diagram
    • After your setup is checked by your instructor, disassemble and return the kits
Online Quiz:
  - www.lib.sfu.ca/surrey/equipment
  • Lighting kit workshop and quiz
• Questions:
  – Contact the Library Media Technicians
    • lib-surrey@sfu.ca
    • 778-782-7411