



MeetGreen® AV Primer



Produced by Meeting Strategies Worldwide (www.meetingstrategiesworldwide.com, www.meetgreen.com) and Hollywood Lighting Services (www.hollywoodlighting.biz)

SCENIC and STAGE DESIGN PROVIDERS

- Source products locally to eliminate the need for harmful emissions from airlines and trucks. Obviously, trucks have to bring products in from a location so require that all deliveries are made with alternative fuel trucks. Regardless of fuel type, sum all the miles traveled for production to calculate total carbon emitted.
- For all wood purchases use Forest Stewardship Certified (FSC) or Scientific Certification Systems (SCS) certified wood.
- Incorporating recycled materials such as old tires, oil drums, aluminum cans, etc. into the set design.
- Use water-based-instead of solvent based-paints to minimize toxic emissions. Water-soluble latex paints typically contain fewer volatile organic compounds.
- Reuse and donate material after the show.
- Avoid toxic materials. Certain building materials should be avoided to the greatest extent possible, including PVC materials containing phthalate plasticizers, materials containing brominated flame-retardants and arsenic- or chromium containing-preservative-treated wood.
- Design for disassembly. All stage and infrastructure should be designed and constructed to facilitate easy deconstruction. This might include a) designing to standard dimensions (e.g. 4' x 8') so that sheet goods can be salvaged full size; b) using screws and bolts for fabrication as opposed to adhesives and nail guns; and c) engaging a deconstruction contractor at the outset.

AV and VIDEO PROVIDERS:

There is no single video solution for greener events. Because many issues (screen size, audience needs, and ambient light, for instance), will factor into the video projection requirements for your event—and because the ratings used to define the performance of modern projectors are many and variable—it is nearly impossible to devise a meaningful set of power efficiency standards for video.

However, we offer instead the following questions that the end user should ask of their video equipment providers in order to assure that the projection solution employed at their events will be as eco-friendly as possible, while still providing effective video support:

Talking points for video projection specifiers:

- 1) Your provider must be able to assist you in selecting the most efficient projector for your event, based on your requirements and the limitations of the venue, screen size and position, and the needs of the audience.

- 2) Your provider should be a resource to you even in the design phase of your event, assisting you in making informed, efficiency-based decisions as you craft your event's video solutions.
- 3) Your provider should be able to offer a variety of projector technologies (DLP and LCD are the most common), since in many cases the same number of watts in one projector type may deliver a much higher lumen output (brightness) than in another.
- 4) Your provider should be able to assist you in selecting the right balance of electrical usage to lumens needed. To this end, the provider should state the following characteristics and ratings of their projection equipment: Lumens (a measure of brightness output) per watt consumed, contrast ratio, and foot-lamberts (lumens divided by square feet of screen) for your given screen size and projection distance, and contrast ratio (see below).
- 5) Your provider must participate in a lamp recycling program for all expended projector bulbs and ballasts.

It is notable that many providers will tend to specify the brightest projector that you can afford. This may not be the best solution for your event. In fact, it has been found that an increase in contrast ratio will often serve as an effective replacement for sheer brightness. Your vendor should be able to steer your decision in this area with clear explanations of his/her offerings.

As a rule, you should avoid projectors that offer a contrast ratio of less than 750:1. You should also note that the lumen ratings of a projector are not necessarily on a linear scale: Going from 4000 to 8000 lumens does not mean you will have an image that is twice as bright!

Lastly, note that motion picture theatres use a foot lambert rating of (16) FL as the industry-standard minimum acceptable screen brightness. If you have sacrificed many kilowatts of energy to achieve (40) FL of brightness when a projection solution offering you (30) FL is available (at a lower power consumption), it may be possible to make such a change in order to save energy. However, it should be further noted that movie theatres operate in a minimum of ambient light: You may be able reduce the light level in your meeting room, but the needs of your audience have to be considered first.

SOUND PROVIDERS:

Many new technologies have emerged in recent years that have revolutionized the efficiency, size, and power requirements of live sound reinforcement components; especially for speakers (smaller, lighter, higher efficiency) and amplifiers (higher power output using less electricity). It is vital that your sound provider is conversant in and able to supply these new technologies, and that older and less efficient systems are avoided. Here are the things to ask for:

Strongly recommended best practices for sound reinforcement specifiers:

- 1) Your provider should offer one of the new breed of "Switch Mode Power Supply" amplifiers to drive your sound system. These are highly energy efficient, lighter weight, and cooler operating components. Examples of excellent amplifiers that fit a high efficiency standard include "Lab Gruppen FP+ or PLM" series, and "QSC PL 2 or 3" series. Another amplifier consideration is to utilize four-channel amplifiers if possible, which are able to deliver essentially twice the utility that an older two-channel amp would provide, but in the same amount of space.

- 2) Your provider should offer one or more compact, high-efficiency speaker systems, sized appropriately to the needs of your event. These cabinets are typically smaller and lighter compared to older traditional models, thus requiring less truck space and ultimately allowing your sound provider to burn less fuel in through greater fuel efficiency or by using smaller and fewer trucks. Examples of excellent high-efficiency speaker systems that fit a minimum size and weight profile are the “Mackie SRM 450” (for smaller events) or “L’ Acoustics dV-DOSC” (for larger events).
- 3) If possible, your provider may be able to outfit your event with one of the new breed of digital mixing consoles. This new technology helps reduce the size and amount of equipment that is used by helping to eliminate the need for outboard signal processing, once again reducing the weight and trucking requirements of your sound system. Excellent examples of digital mixers are the “Yamaha LS9” and “Digidesign Profile.”

LIGHTING PROVIDERS:

In event lighting, working with a provider that is capable of superior creative design is critical to the greening of your event. For every lighting challenge, a myriad of potential solutions exist. The right provider should understand how to find the best combination of lighting effectiveness and energy conservation. As lighting is a substantial user of electricity, care must be taken to design a lighting solution that minimizes the use of energy without sacrificing the event’s needs.

New technology has recently provided the event lighting profession with an ever-expanding selection of low-energy lighting alternatives, with higher efficiency and greater utility fixtures being introduced almost weekly. LED technology has led the way (and received the most press), but there are other similarly preferable techniques that you should also request, such as higher-efficiency automated fixtures (moving lights), “Source Four” or other HPL lamped PARs and Ellipsoidals, and an emerging range of HID (high intensity discharge) lamped fixtures, to name a few.

In addition to energy savings, quality LED fixtures also remove the need for heat-generating dimming products and hot theatrical light fixtures (LEDs burn very cool), which relaxes the demand on venue HVAC systems. LEDs also have a 50,000 to 100,000 hour life span, which keeps expended lamps out of landfills, use no mercury, and are often smaller in size than their conventional comparisons. Lastly, if you are using the very popular “RGB” (Red-Green-Blue) color mixing LED wash fixtures, they require no additional colored gel attachments, which leaves one more plastic product out of the landfills and recycling systems.

Below are product and efficiency specifications that you should ask of your provider, along with some older technologies to avoid:

Minimum best practices for stage and event lighting:

- 1) Your event’s “wash” fixture count should be comprised of a minimum of 50% LED fixtures for all throws of under 16’. Wash subjects include: Scenery, stage areas, back drops, certain audience areas, architectural features, etc. *NOTE: This rule does not necessarily apply for key and fill stage washes where presenters or other on-stage talent will be on camera for I-Mag, taped, or broadcast video. However, even in these instances, all scenic and back lighting can still be comprised of at least 50% LED fixtures.*

- 2) Automated light fixtures: Maximum lamp wattage of 700w (i.e.: Martin MAC700) for throws of up to 40', 400w for throws of up to 30' (i.e.: Martin MAC550), 250w for throws of up to 20' (i.e.: Martin MAC250). Lumens-per-watt rating of all automated fixtures should exceed 20/1.
- 3) Where "PAR" type lighting is required, 1000w PAR64 fixtures or 750w "SourceFour PAR" fixtures should be used only for throws in excess of 40'. For all other throws, 575w "SourceFour PAR" (or equivalent) fixtures should to be used.
- 4) 500w PAR 64 fixtures should not be used in any instance.
- 5) 1000w Ellipsoidals (FEL lamp) should not be used in any instance.
- 6) "R" type flood lamps (R20, 30, 40) should not be used in any instance.
- 7) Your provider must participate in a lamp recycling program for all expended fixture bulbs and ballasts.

Strongly recommended best practices for stage and event lighting:

- 1) Where "always on" projection ellipsoidals are used (ie, constant logo projection using a gobo), HID or CDM fixtures may be used, not to exceed 150w, for throws of under 30'.
- 2) Where "cue-able" ellipsoidals are required, HID or CDM fixtures with a mechanical dowser are recommended, provided that the fixture is "in use" (not mechanically blacked out) at least 35% of the time its lamp is on. Otherwise, a standard 575w ellipsoidal will prove to be just as efficient.
- 3) If your provider offers an HID version of the "SourceFour PAR," it may be preferable in situations where the fixture is to be "always on," such as in a static scenic wash, area light, or similar.
- 4) If you are using "effects" style lighting (sometimes referred to as "DJ" or "Dancefloor" lighting), a wide variety of very-low-wattage LED alternatives are now available. Ask your provider which options are in their inventory.

Economic Impacts of Low Energy Lighting Alternatives for Meetings

Lighting will likely be the most directly measurable craft when it comes to production economics, as a fixture-by-fixture comparison should be reasonably simple, and because the electricity saved can be so significant. In general, here are the changes you should expect:

HIGHER COSTS

- LED and HID fixtures will be priced at a premium. There is no hard rule of thumb, but you should expect that your provider has paid a minimum of double to acquire the equipment (compared to a conventional solution), as these new technologies are uniformly expensive. Markets vary (as does the quality of different fixtures), but we have seen individual fixtures typically rent for 50-150% more than the nearest conventional fixture. SAMPLE: 575w Conventional PAR fixture with a color scroller @ \$40.00 rental per day, compared to an RGB LED PAR fixture (color mixing built in) @ \$60.00 rental per day.
- LED fixtures will usually require more control channels per fixture than a conventional light, thus, 24 LED units will need a larger control console than 24 conventional units (ie, PAR, Ellipsoidal, or Fresnel). SAMPLE: For a 24 light

conventional system, you would likely use a 12 channel console @ \$50.00 rental per day, compared to the same system in LED, you would likely use a 48 channel console @ \$150.00 rental per day.

LOWER COSTS

- With LED fixtures, you generally do not need a dimmer, which is usually one of the more costly rental items in the lighting control system. LEDs are dimmed electronically, with those features usually built into the fixture. SAMPLE: You should save approximately \$5-15.00 per fixture.
- With LED fixtures that are “RGB or RGBA” color mixing (which is 90% of what you will be using), there is no need for colored gel filters. SAMPLE: You should save approximately \$2.00 per fixture.
- With a robust low-energy lighting package, your electrical requirements will be reduced significantly: The more LED and HID units your provider is able to substitute into your lighting scheme, the less power you will need. In venues where electricity is charged by the watt or service size, this can amount to thousands of dollars in savings. SAMPLE: For a 36 light system using conventional 575-1000 watt fixtures, your power needs (100amps 3phase 120/208volt) would average about \$1000.00. For the same system in LED, your power needs ((3) 20amp 120volt outlets) would average about \$225.00. Please note that these charges vary wildly from venue to venue.
- In many event lighting designs, the use of LED fixtures can reduce the sheer number of conventional fixtures needed. For instance, since the majority of higher end LED fixtures you will encounter are capable of projecting hundreds of different colors, they can each replace several conventional lights that each had a different gel color focused on the same position. This means that not only do you rent 1 light instead of 4, you also save on labor to install and truck space to deliver the equipment.
- Automated lighting is almost always priced by the “size” of the fixture. Because you will be specifying the newer, higher efficiency/lower wattage units, many if not most vendors will offer these units at a lower rental price compared to higher-powered fixtures. SAMPLE: A high-efficiency 250 watt automated fixture should cost approximately \$25-50.00 less than an older 575 watt comparable fixture.