



## The Inside Track on Court Lighting

by Mary Helen Sprecher

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How do we love our indoor courts? Let's count the ways. They can be used year round, whatever the weather, whatever the program, whatever the level of play. They don't generally need seasonal maintenance, since freeze/thaw never really becomes an issue. Wind isn't ever a factor, and the sun always shines on them, thanks to today's great lighting systems.

But then the day comes. You look around and realize the courts look less than their best. The surface is dirty, the nets are drooping, and the lighting doesn't shine as bright. Even the divider netting looks a bit shabby. It's months until the facility goes into shutdown, and you're facing a busy schedule. League is about to start, Cardio Tennis is heating up, and lessons and clinics are in full swing. How are you going to correct all those problems at once?

The good news - you don't have to. After all, they didn't all happen at once. You just now got the overall impression of a facility that looks slightly tired. Those minor problems and annoying detractions crept in, a little bit at a time. You can vanquish them (and bring your court back to a first class finish) by working the same way.

Do a quick walk through of your facility and make a list of the problems you see. Then prioritize them. If something needs a professional's assistance, make that call first, so that you can get on their schedule. Other jobs that you can do yourself should be arranged in order of whether supplies need to be purchased, or whether you can get the work done either before or after the courts get busy.

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### Let there be Light

According to Bruce Frasure, at LSI Industries in Cincinnati, Ohio, "It is a good idea to check the light levels at the beginning of the season. Reasonably priced light meters can be purchased at the local industrial supply dealer (an example would be Grainger) for this purpose. Using the original lighting design as the baseline, check the current light levels with the light meter. If the light levels have depreciated more than 30% from the original design, it would be a good idea to clean and relamp the lighting fixtures. Group cleaning and group relamping is always more economical than spot cleaning and relamping."

Light readings should be taken at various points around the court (see p. 21). The light meter is held three feet above the playing surface. Both horizontal and vertical measurements are taken. Vertical measurements are taken with the meter facing up; horizontal measurements are taken with the meter facing parallel to the surface.

Even if you don't suspect that some lights are burned out, remember that lighting depreciates over time, and may not be producing optimal illumination any longer. According to an article in *Tennis Industry Magazine* in 1992, (the publication is now referred to as *Racquet Sports Industry*), "In planning levels of illumination, the average age of the players also should be considered. One study showed that a 50 year old player needed six times as much light, and a 60 year old player needed 15 times as much light, to see as effectively as a 20 year old player."

Because specialized equipment and/or personnel may be needed to relamp fixtures or perform repairs, this is an issue you should address first. A tennis court lighting manufacturer or contractor can advise you on how to proceed.

### On the Surface

As you go through your court, you have probably noticed marks on the surface. Shoe marks, smudges, stains where individuals have dropped food or spilled sports drinks or coffee. It can all add up to a surface that looks uncared for.

Although indoor soft courts are making their way into the market, most clubs, gyms and other facilities have hard courts (those made of asphalt or concrete and surfaced with an acrylic coating, which may or may not be cushioned). If your facility has one of the new soft surfaces, contact the manufacturer or installer for information on the best way to keep it looking its best, since it will require different care from that of a hard court.

"First," says David Marsden, of Boston Tennis Court Construction Company, Inc. in Hanover, Massachusetts, "take a push broom and remove all loose debris from the surface. (Some contractors prefer a leaf blower.) Pay particular attention to the net area where ball lint, dust and more tend to be found."

If stains are found, say contractors, try using plain warm water and a soft brush. If that doesn't work, a mild detergent can be tried. If the stain is more stubborn, contact the surface manufacturer or the contractor who installed it for suggestions. Be particularly careful if your courts are cushioned, because you don't want to do anything that will puncture or damage the surfacing.

"Once you've gotten rid of stains," says Marsden, "try to keep them from making a reappearance. Never allow any liquids other than water

to be brought out onto the courts."

While some problems can be remedied in an afternoon, others may require more involved work.

"Check the condition of the surface on hard courts," notes Marsden. "Look for excessive wear in the baseline areas, usually indicated by a shiny look or a slick feeling underfoot. Inconsistent surfaces lead to inconsistent ball bounces, which detracts from play. Such problems should be addressed by a contractor during shut down. This will require making arrangements in advance of that time."

Note: If you've been thinking about adding a hitting wall, QuickStart lines, or other changes that will affect the courts, mention this now to your contractor, who can advise you on the amount of lead time you need, and whether courts will have to be closed during installation.

### Around the Edges

Once you've addressed the playing surface, start looking around the facility as a whole.

"A new coat of paint on the net posts adds a nice touch," says Marsden. "Pros should also check the condition of all accessory items, such as waste baskets, benches, scorekeepers and ball machines. They may be getting worn out or dilapidated, and now is the time to order new ones or make repairs. Check tennis nets, divider curtains and backdrops for tears. When curtains and backdrops are replaced, tighten the cables that they hang on for a neater, crisper appearance."

### Keeping Your Cool or Turning Up the Heat

Something many pros might not think about is the HVAC system in the building. Have a professional do an inspection and recommend any repairs, changes or upgrades. In addition to better energy efficiency, player comfort will be increased. Once repairs are made, make sure your facility is doing its part as well.

"To prevent heat loss, check that doors are tight and insulated where the wall meets the foundation. Check for air leaks or open gaps," notes Marsden.

### Have the Power

Make sure electrical outlets around the court are working. Ball machines, sound systems for Cardio Tennis and other equipment should be able to function from all areas without using extension cords, which can cause tripping hazards. An electrician can make any necessary repairs.

### What Else?

If your indoor tennis facility incorporates other amenities (a pro shop, locker rooms, social area/lounge, food service or vending machines, for example), make sure these areas are also in good shape. If your court has suffered a little, it's likely that other things have as well. Your players will appreciate your attention to detail.

As a pro, your job is not only to teach tennis, but to maintain an enjoyable atmosphere for players. Help that happen by keeping up on small items before they turn into big eyesores. It only takes a few minutes each day to do a walk through and to make any adjustments that are needed. Your courts will shine as a result.

## Recommended Illumination for Indoor Tennis Facilities

Recommended Horizontal Illumination				
Performance Criteria	Class I	Class II	Class III	Class IV
Average Maintained Horizontal Footcandles within PPA (1,2,4)	125 (1250 lux)	75 (750 lux)	60 (600 lux)	50 (500 lux)
Minimum Maintained Horizontal Footcandles within PPA (2,4)	100 (1000 lux)	60 (600 lux)	50 (500 lux)	40 (400 lux)
Maximum Uniformity Ratio (3)	1.5	1.5	1.7	2.0

Recommended Vertical Illumination				
Performance Criteria	Class I	Class II	Class III	Class IV
Average Maintained Vertical Footcandles within PPA (1,2,4)	50 (500 lux)	30 (300 lux)	25 (250 lux)	N/A
Maximum Uniformity Ratio (3)	2.0	3.0	3.0	N/A

### Notes

- Maintained footcandles is determined by applying a light loss factor (LLF) to the initial or measured footcandles. LLF is dependent upon lamp characteristics, fixture maintenance, voltage variations and atmospheric conditions. It normally varies between .6 and .85. Consult the Illuminating Engineering Society handbook and fixture manufacturer's publications for proper LLF values.
- Average maintained and minimum maintained footcandles should be calculated within the Primary Playing Area (PPA) with the footcandle values multiplied by the appropriate LLF.
- Uniformity ratio is defined as the ratio of the maximum footcandles divided by the minimum footcandles.
- Primary Playing Area (PPA) is defined as the area that includes 6' beyond the sidelines and 10' behind the baseline.

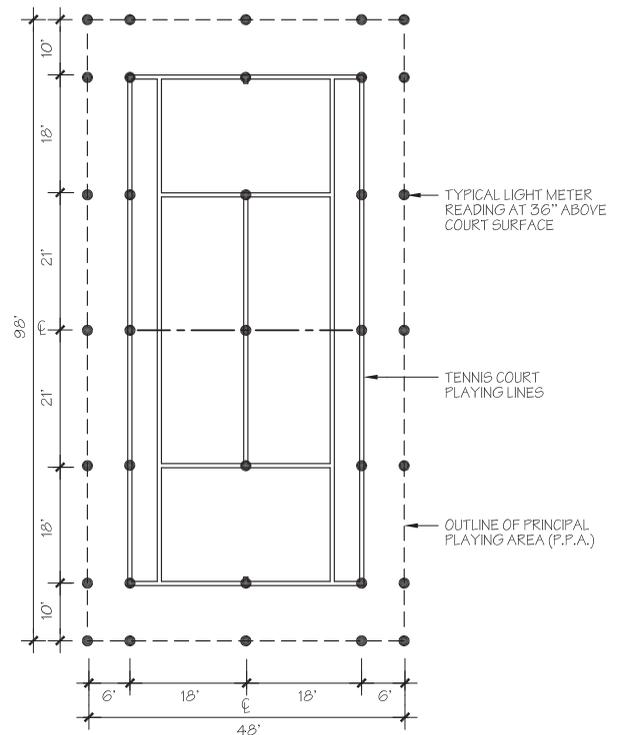
Typical Facility Classifications			
Class I (1)	Class II	Class III	Class IV
Professional	College (2)	College (4)	High School (6)
International	Tennis Clubs (6)	High School (6)	Tennis Clubs (6)
Satellite	Residential (6)	Tennis Clubs (6)	Parks & Recreation (6)
Challenger	Parks & Recreation (6)	Residential (6)	College (5)
College		Parks & Recreation (6)	

### Notes

- Class I facilities generally involve broadcast quality television production. These facilities will include permanent spectator accommodations.
- Facilities that host intercollegiate play, but without broadcast television requirements. These facilities may have permanent or temporary seating.
- Professional tennis events without broadcast television requirements.
- Collegiate facilities primarily used for practice or for intramural or recreational play.
- Collegiate facilities used strictly for recreational play.
- Please note that some facility types appear in multiple categories. Illumination levels for a specific facility should be chosen based on the highest skill level, or spectator and television requirements that will take place at the facility. It is recognized that older players require higher light levels. Facilities with older average player ages should be designed for higher levels of light.

## Light Meter Reading Location Diagram

Not to Scale



Recommended Illumination and Light Meter diagrams are from *Tennis Courts: A Construction and Maintenance Manual*, ©2010 ASBA



The American Sports Builders Association (ASBA) is a non-profit association helping designers, builders, owners, operators and users understand quality sports facility construction. The ASBA sponsors informative meetings and publishes newsletters, books and technical construction guidelines for athletic facilities including tennis courts. Available at no charge is a listing of all publications offered by the Association, as well as the ASBA's Membership Directory. An excellent source of information is the publication, *Tennis Courts: A Construction and Maintenance Manual*, available through ASBA and the USTA. For information, call 866-501-ASBA or [www.sportsbuilders.org](http://www.sportsbuilders.org)