



“Selecting the Best Light for your Paintings”

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Charter
LIGHTING

SELECTING THE BEST LIGHT FOR YOUR PAINTINGS

Lighting for Art is a specialised field but, even so, there is a quite bewildering range of options.

There are downlights, pinhole lights, framing spotlights, specialist fibre optic systems and, of course, picture lights – and the myriad variants within each type.

Introducing any new electrical hardware into the ceiling of your home is quite invasive and therefore usually best undertaken during a general redecoration exercise.

However, even though ideally served by individual electrical sockets that are hidden behind each painting, picture lights are stand-alone items which can be powered simply by running a flex from a nearby standard low-level plug socket and Job Done.

So, for the purposes of this exercise, we shall concentrate on the sort of things you should look out for when seeking to select the best type of picture lights for you and your paintings.

Some of these topics will address the broader aspect of best-lighting per se as well, and may therefore be of general interest and value, too.

This follows in a simple format of "*Frequently Asked Questions*".



“Should I use LED lights? They seem very harsh to me.”

Most of us have woeful experiences to relate – awful LED lighting that washes out the colour in a painting and throws a ghostly grey/blue light.

We also have cases of LED bulbs not lasting as long as promised, and of LED lights flickering, or simply not being bright enough.

But the answer is YES – now there are wonderful LED lights that have been developed especially for the lighting of beautiful things.

When lighting Art, nothing matters more than the **quality** of the light, so you need to look out for the following:

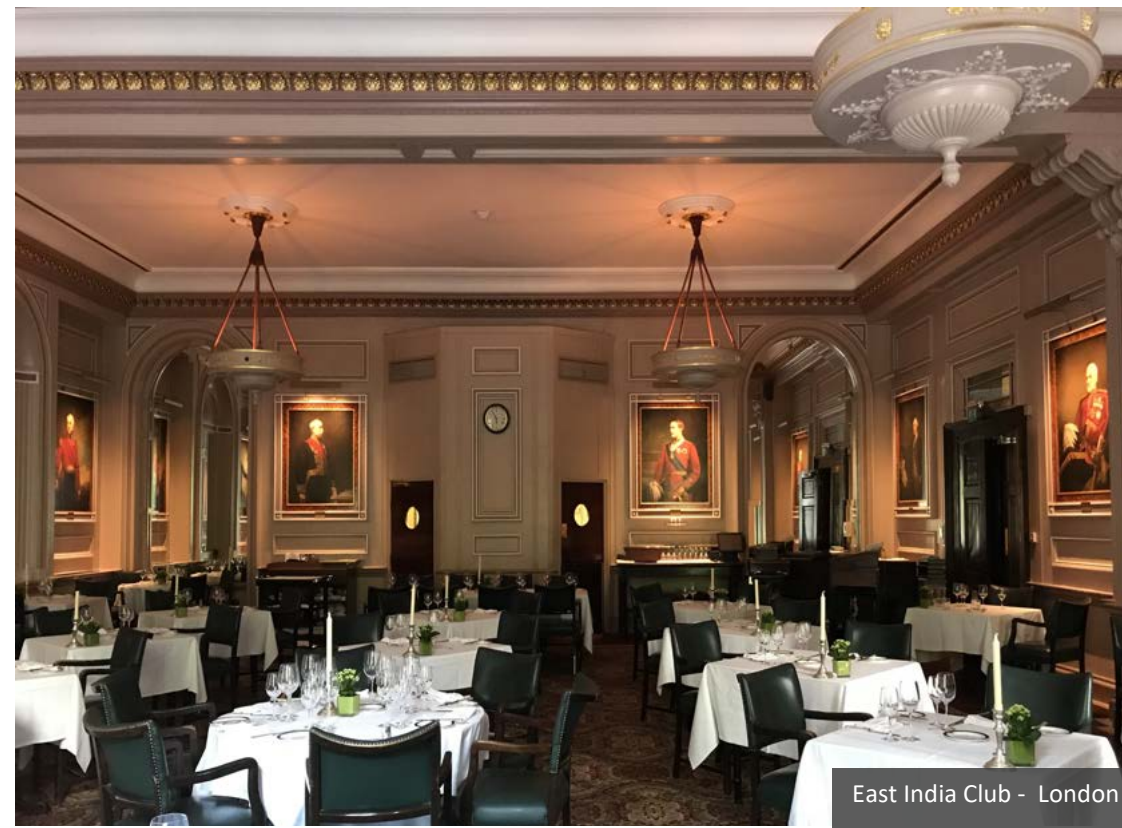
- **Correlated Colour Temperature (CCT) of the LED:** This is measured in Degrees Kelvin and denotes its ‘tonality’. For a traditional picture light, you should aim for a CCT of 2700°K, which will give you the kind of nice warm light you are used to from traditional incandescent or tungsten lamps.
- **Colour Rendering Index (CRI) of the LED:** This is the most important consideration of all when lighting art, and denotes how uniformly distributed the white light delivery is across the full colour spectrum, and how well that ratio is maintained over its life.

It is only under a well-balanced, high CRI light that all the colours in your painting, especially red, will be properly reproduced. The best picture lights offer a CRI of 95 or more. The cheaper the LED, the less you can trust the CRI to be maintained over its life, or to be consistent from fixture to fixture if you are purchasing more than one.



Oriental Club - London

The red colours in these two collections of paintings are represented richly under the very best quality of light



East India Club - London



“What difference will changing to LEDs make to my running costs?”

In truth, this depends upon how many picture lights you already have—and, moreover, whether those old lights are still working!

The energy consumed by an efficient LED picture light will typically be less than one-tenth of its halogen predecessor.

But most people don't actually have their picture lights on all the time and so, unless you own a stately home which is open all year long and with walls covered in paintings that have lights a-top, the actual saving on your electricity bills will not be huge.

It is in the maintenance costs, and associated effort, that you will notice the biggest difference. Tungsten halogen lamps were notoriously short-lived, and their replacement frequently required climbing up ladders or, at the very least, scrambling onto chairs.

Where paintings are hung above e.g. mantelpieces, which are usually adorned by an array of precious ornaments, the hazards of dropping something just added to the frisson of the whole exercise.

Both the costs of all those lamps, and the inconvenience of their regular replacement, are things you can genuinely bid farewell to for very many years to come.

In our view, energy saving—admirable though the objective is—should not be the driving imperative when selecting the best type of lighting for your art.

“What about heat and UV?”

You are absolutely right to be concerned about such things.

Terrible—and largely irreversible— damage has been done in the past, with owners and curators having been simply unaware of the harmful effects these two invisible energies, jointly and severally, were having on their art collections.

It is a widely-proclaimed, and dangerous, fallacy that LEDs don't get hot. They do. The brighter they are the hotter they run, and proper thermal management is very, very important.

Badly-managed LEDs will get too hot for their own comfort.

They then become 'parasitic' and consume more energy, thereby getting hotter and, by the same cycle, progressively hotter. *This will severely shorten their life and cause premature failure of your picture light.*

An LED system which is man enough to illuminate a reasonably-sized canvas will be packing some punch, so you should be sure that the picture light head has sufficient capacity to dissipate the heat generated.

The good news is that, unlike traditional tungsten halogen lamps, any heat being emitted by the LED should be conducted backwards into the metal hardware of the picture light head rather than projecting forwards onto your painting, as had been the case in the past.

The other good news is that LEDs emit no harmful UV rays, either. From an art-conservation point of view, therefore, you are on safe ground.

But be careful about exposure to sunlight. Lovely though it is, do not let this stream across walls that are hung with your precious paintings.



***“How can I get the light to cover my whole picture,
rather than just the top?”***

We are constantly amazed at how much the users of standard picture light products have learnt to put up with, meekly accepting as their lot the truly appalling lighting coverage these have traditionally given. The actual term ‘picture light’ was really something of an oxymoron!

Light heads were too small, the arms were too short, they often stuck out from bang on top of the picture frame and even obscured some of the picture, and the standard light bulbs benefitted from no optics at all. What light there was just dumped onto the top of the painting.

Sometimes, this splodge of reflected light glared so badly that it almost completely obscured the image underneath. And as for the rest of the canvas, what detail there was could hardly be discerned.

Professional picture lights, using individual halogen lamps in varying numbers, have been around for a long time and these gave a far better light distribution across the canvas expanse. These tended to be mainly on the radar of specialist Lighting Consultants, and not very many normal (of even slightly paranormal) households would think it necessary to seek the services of a ‘lighting consultant’ when looking to acquire a few picture lights!

As yet there are no quality LED lamps available to replace the equivalent tungsten lamps, like for like.

However, if you are fortunate enough to be the owner of some of these fittings you are better placed than most, since the existing hardware can almost certainly be quite easily re-purposed by helpful fabricators, or even by your own handyman, to incorporate today’s new LED components.

There will always be inexpensive off-the-shelf products that will deliver the same disappointing results as their predecessors.

In summary, there really is no need to suffer from badly-distributed light any more—so don’t!





Well - distributed lighting can now be tailored to suit either a landscape or a portrait painting
 Look at the difference of this before and after situation!



Hunting Scene : Private Residence

Today's mid- and top-of-the-range picture lights are fitted with LEDs which have been specially developed to project the light using a range of lenses with varying optical properties.

Some of these will be designed to spread the light broadly in the horizontal plane, across the width of the canvas; others will be intended to project the light in a stronger vertical axis, down the height of the picture.

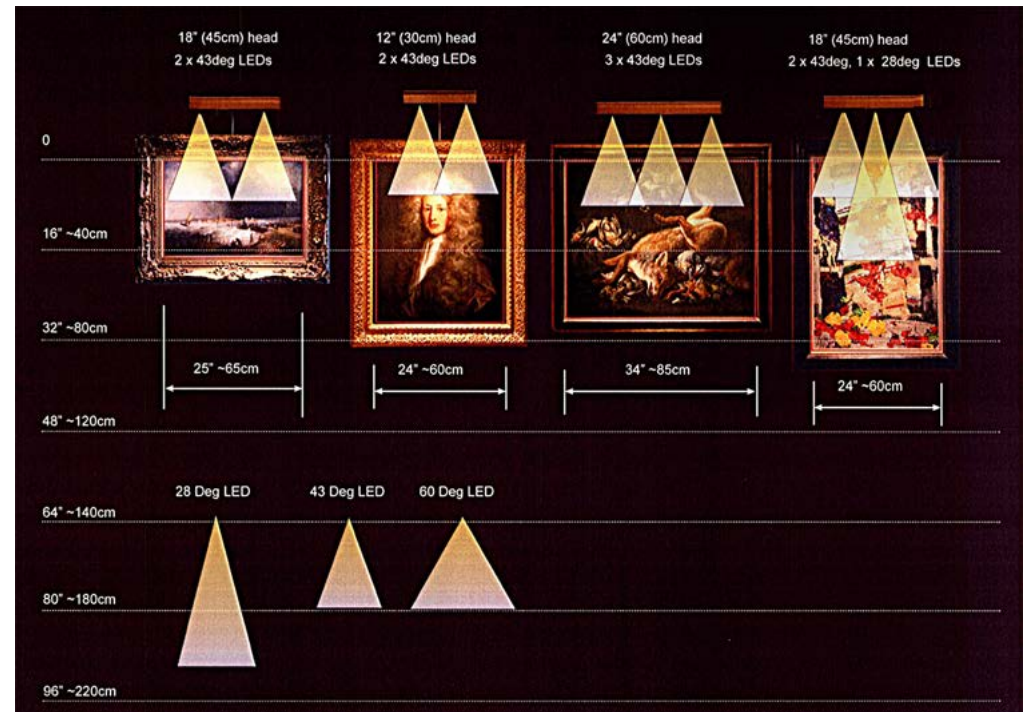
The best of these picture lights will also have lensing that is tailored to suit the orientation of the canvas (for portrait or landscape).

The very best will even feature optics that have been selected exactly to suit your particular painting — its shape as well as its overall size.

So, at last, you can ensure that your most precious works of art, those which really deserve lighting perfection, can be properly and uniformly illuminated.

You will finally be able enjoy the discernment of all their finest detail in a state of calm contemplation. Enjoy!

The use of variable lensing finally enables the whole canvas to be properly and evenly lit



“You can’t dim LED lights, can you?”

It is true that LEDs are reluctant dimmers, especially in cheaper products. If you have new LED light bulbs in other lighting fixtures around the house, on circuits that you have customarily dimmed down, you may already have suffered from the irritation of flickering and guttering.

For the operation of all LEDs, the standard European 230v Mains voltage needs to be converted down (typically) to 12V or 24V, which is achieved either by electronics that have been built into the light bulb itself, or via an ancillary and separately-boxed transformer. This is typically referred to in the industry as a ‘driver’.

Most picture lights today come with their own individual and separate driver. It is as much the quality of this component as the LEDs themselves that is key to the stability of your picture light, and whether and how well you can dim it.

And, beware, your existing dimming circuit may also need to be modified to ensure compatibility between the old and new technologies. If you want to dim your picture lights (many don’t, so there’s no need to get too hung up!) a good electrician should be able to guide you through this.

You may want to control the light intensity on just a few of your paintings for conservation reasons, with water colours requiring the most care.

You would be wise then to consider not just dimming on a mains circuit – which will dim all your picture lights to the same level – but also which products will enable fine-tuning of the intensity of an individual picture light, typically by varying the dip-switch arrangement on its driver.

The most sophisticated WiFi control options are also finding their way into this rather conservative market. It may not be up your street at all, but perhaps you should at least be aware that special Apps have now been developed which enable control of your picture lights from your mobile ‘phone – using either the WiFi of your own property, or independently via Blue Tooth.

Just fancy that!



“What happens when the LEDs fail?”

The early claims of LED immortality (for expectations of 100,000+ hours) have long been exposed as complete Bunkum.

But they still do last a very long time (if properly thermally-managed), and you will not need to waste all that money replacing blown bulbs – or to navigate the inconveniences associated with so doing.

Typically, you should expect to get 50,000 hours of light life before the LED loses more than 30% of its output – so, say, 15+ years of normal domestic use. That’s a fair old time for most of us to contemplate!

You may anticipate around 10% of these not lasting that long, so you should be cautious and perhaps even have a strategy – probably in the form of a few spare back-up lights – to manage the consequences of premature/rogue failure.

In considering your options, bear in mind the following:

- For picture lights where the LEDs are built into the light head, the bad news is that the whole picture light will need to be replaced when an LED fails.

When selecting a light which has been manufactured as a complete entity in this way, pay particular attention to the issue highlighted earlier of ‘thermal management’.

Probe a bit into the optimum temperature operating conditions of the LEDs, and ask how the heat they generate is being directed away from the individual lamps.

If you have confidence in the responses you get, you are probably safe to rely upon rogue failure occurring during the manufacturer’s warranty period – which is typically 3 years; and in which case the unit should be repaired or replaced free of charge.

So potentially not too much to worry about, beyond just a bit of inconvenience.



- For picture lights where the LEDs are separate lamps or individual modules, you are on much safer ground. The LED lamp may be a market standard, in which case you can be pretty confident that major lamp manufacturers will continue to produce like-for-like alternatives as technology progresses.

If the modules are a special-make, discuss the issue of future 're-lamping' with your supplier and ask him to clarify his policy and plans for future iterations—bearing in mind that this LED technology is moving much faster than we are accustomed to for such things.

You may want to hold a few individual LED modules in reserve in your cupboard – where, of course, you used to store your substantial maintenance hoard of incandescent and halogen replacement light bulbs; so not too much hardship in that.



A detachable, and replaceable, LED module ensures future maintenance is assured.

- As an aside, in reality it is more likely to be failure of the driver at its end of life that will precede failure of the LED lamps. This will probably have been fixed separately to the back of your picture frame, so should be relatively easy to replace in due course.





***“Are the lights fitted to the wall, or to the painting?
How disruptive is this going to be?”***

Many picture light styles can be fitted onto either the picture frame, or the wall.

The former is the most common style for what might be considered a more ‘serious’ approach, since this enables an adjustable arm to be set in the correct position in relation to the canvas and to ensure the best lighting distribution has been achieved before the painting is re-hung.

Of course, this approach does mean that the paintings will have to come off the wall – but they may need to in any event where the driver is also to be fitted onto the back of the frame.

It is helpful if your picture light supplier also offers an installation and commissioning service, since this means they will be able to help you where necessary, and will be familiar with the process.

If your paintings are exceptionally large or hung in particularly awkward places such as on a staircase, they can probably also introduce you to some specialist art handlers who have all the access apparatus needed and as much experience in such matters as you could ever want, as well as being comprehensively insured to carry out this kind of work.



Picture lights with adjustable arms; best fitted on the frame before rehanging the painting

“Can I adapt my existing fittings? They were painted originally to match the Drawing Room wallpaper, and we rather like the colour.”

The answer to this question is a cautious “Yes”, in many circumstances, and there are certainly specialist companies who can do this for you.

When pursuing this option, you should consider not only the various issues discussed thus far but, in addition, you want someone who can give you the best advice and who will use the upgrade as an opportunity also to improve the lighting itself in the process.

To get the very best out of this exercise, you should be discussing issues such as:

- Are the existing picture lights of a suitable size to deliver a good light coverage across its painting? *If not -*
- Can your supplier come up with suitable suggestions for improvement – such as replacing the existing arms with different ones which might re-position the light head and thereby ensure improved distribution of the light?
- Would you be better advised to purchase a few new lights where your existing hardware really is too small (which is quite often the case), and re-purpose your old lights onto some of your other, smaller, paintings that you may fancy presenting better while you are at it?



Some specialist components can be simply transferred into your existing picture lights—with truly transformative results.



Retrofitting Picture Light—Private Residence



“What of the Future – what is going to happen next?”

Like most markets, the lighting industry is driven by the ‘more is better’ mantra, and the focus of all LED manufacturers has been on pushing the lumen output up and the energy consumption down—which, of course, is the best thing possible for Planet Earth.

In this quest, however, the quality of lighting has often been compromised in favour of the intensity of the light that can be delivered.

Paintings—be they fragile water colours or much more robust and varnished oils—don’t need, or even want, very bright lights. Those of us who have been yearning for an appropriate LED alternative have been champing at the bit at the delay.

But, finally, huge strides have genuinely been made even over the past 3 or 4 years in the development of high CRI, low power LEDs such as are typically required for the lighting of Art. Over the next few years the cost of these will reduce slightly, but this type of LED is still an exclusive product and is unlikely to become a volume commodity.

Carefully-fabricated and finished metal work will command a commensurate price, and any level of bespoke treatment (such as appropriate optics) will probably also come at a premium.

A really transformative change will occur once effective batteries have been developed which are of a suitable size, durable, can sustain a consistent brightness over the battery life, and be affordable. This will allow pictures which cannot currently access any mains electricity to be properly lit at last.

This technology is the focus of much rapid change today, driven as much as anything by constant advances in rechargeable power storage for smart communication products. We are increasingly able to tap into this now, and it is already feasible for smaller paintings to be well lit without the prospect of too much disruptive re-charging.

Who knows, maybe advances in other industries such as the electric car market will in time have useful spin-offs into the art world!

"Is it worth the cost?"

Of course, this is the million dollar question, and only you can determine how far you want to take things.

How much do you value your art?

How much do you really want to be able to see and appreciate your art?

How much, frankly, do you want to show off?

The old saying, 'Quality will Out' is as true in this matter as in any other marketplace, so there is nothing that will surprise here.

And we all have different reasons, different priorities, and will assign different budgets, to achieve our various objectives through life.

We can only advise that, if you are planning to purchase new picture lights and/or improve your existing ones, you weigh up all the options, sort out your priorities (which is not one and the same thing), and plan to invest for the future.

If you really want to show off your pictures beautifully, at least you know that, at last, you can do so. There is no comparison with the previous types of picture lighting simply because you can now light the whole painting in its entirety— evenly and well.

This has never been done so effectively by artificial, on-picture lighting before.

If you also want to invest to the benefit of your family's descendants and their descendants thereafter, then do make sure you choose a type of picture light that is designed for future maintenance, too.

You'll be glad you did!

Original Fixture – just a splash of light at the top



New Fixture – complete transformation; you can see all the fabulous detail!





Having made the investment, and if you choose the right supplier, you should be able simply to sit back, enjoy your paintings fully, and worry not about lights failing, high energy use, or any possible damage to your art.

A final word of warning, if we may.

Once your paintings are properly lit, and you are at last finally aware of all the finer details that you had never seen before, you may also well find that your paintings could do with a jolly good clean!

So maybe keep a few pennies in reserve for that exercise, too...



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- **Royal Collections Trust**
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