



Introduction

Unlike traditional picture lights the Academy Light can be customised to the specific requirements of individual paintings and similar items. These notes are intended to assist in the selection of appropriate fixtures and cannot fully replace the exercise of individual judgement. Pictures of similar sizes may require different lighting, either in terms of intensity or distribution. To accommodate this, specification matrices have been assembled for two categories, portraits and landscapes. In part, this refers to the proportions of the painting but also its subject. For instance, a light color or evenly painted subject will require more carefully distributed illumination than a portrait head against a dark background.

Guidance on specification

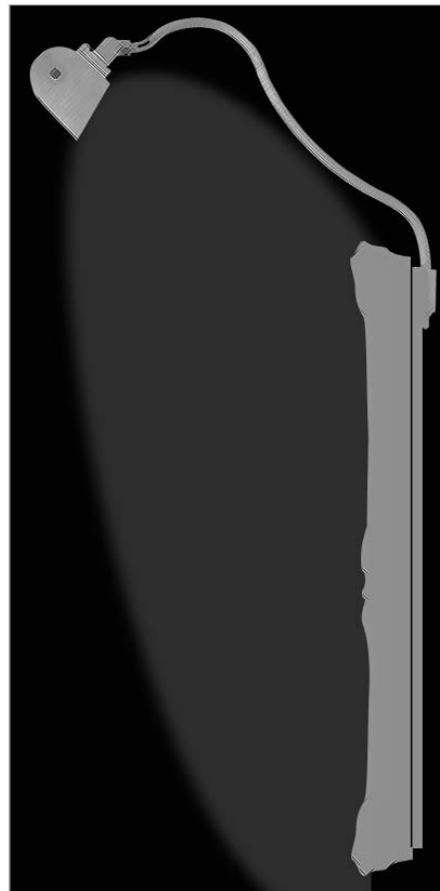
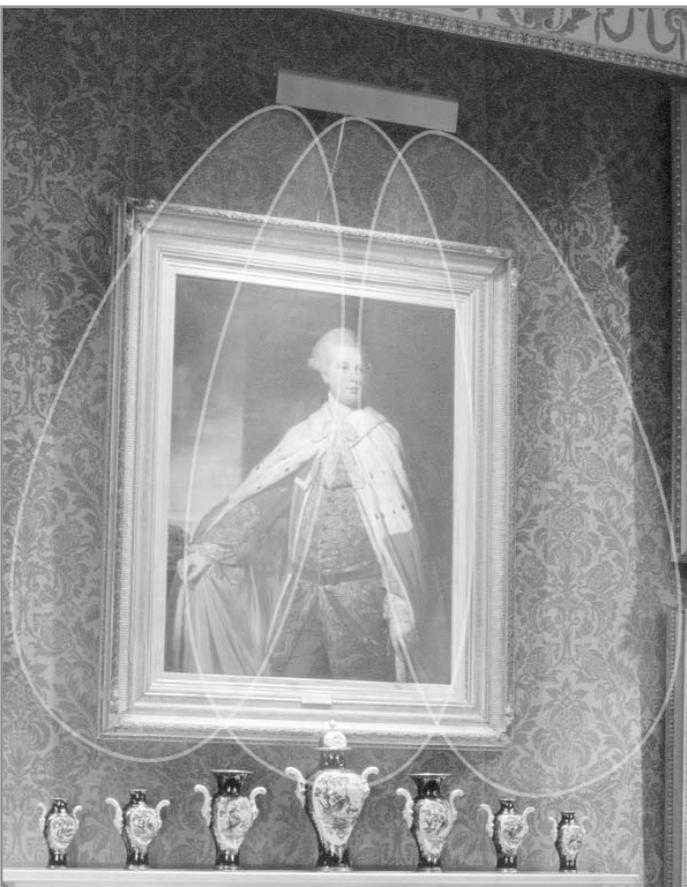
Specification of an Academy Light integrates both aesthetic and functional decision-making. Outwardly, fixture length, arm type and finish will determine the appearance of the fixture. Most of these elements will also affect the lit appearance of the painting, and further customisation is achieved by adjusting the tilt of the head, changing lamp wattage and spacing, as well as use of special lenses or filters. These notes identify each of these elements and their function.

General principles

Unlike conventional picture lights with linear light sources, the Academy Light uses miniature spot light beams to illuminate the painting's surface. The spots throw light further than linear sources and, with adjustment, deliver a relatively even illumination.

The geometry of light distribution from spotlights requires the fixture to be raised above the top of the frame and this separation is governed by the beam angles and height of the painting. Raising the head above the frame top also has the benefit of removing the light source from reflection angles that would disadvantage the viewer. This benefit is gradually lost as the painting is raised above eyelevel and it is often helpful to use taller arms for lighting paintings where the fixture is 10ft (3m) or more above floor level. Particular care should be taken when paintings are glazed.

The effect of a point source or spotlight on a surface is to create a cone or circle of light. In some situations such as a portrait with a dark background this may be tolerated but in most cases a more even distribution of light is needed. To achieve this all Academy Light fixtures (heads) contain a miniature track into which lamp holders and reflectors can be clipped. These reflectors deliver soft edged beams that when overlapped can provide a relatively even curtain of light. This may be adjusted by changing the spacing and angle relative to the painting's surface as well as the wattage of individual spots.

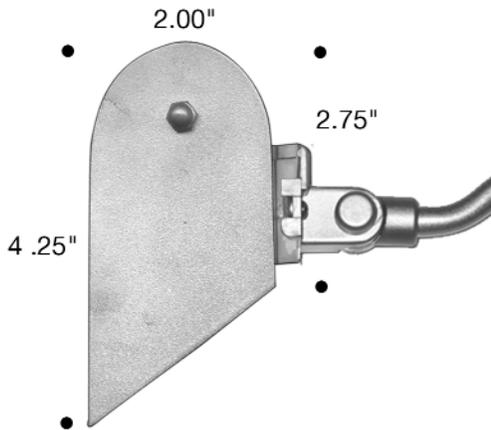


Miniature spot light beams illuminate the painting's surface. The spots throw light further than linear sources and, with adjustment, deliver a relatively even illumination.

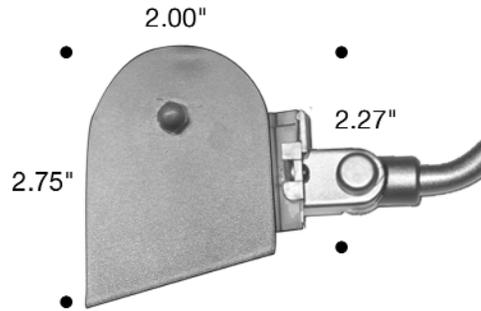
Fixture Depth

Two crosssectional depths of fixture are available and for most applications the shallow section is appropriate. The deep section is used primarily for paintings over 55" in height and in special locations, particularly when paintings are hung above eyelevel. Visually, the deep sections look heavier and thus are not suitable normally for small paintings.

Deep Case



Shallow Case



Eye Level



Selecting Arms

The primary factor in selecting arms is the height of the painting (longer arms are needed for taller paintings). In order to increase the amount of light reaching the bottom of the canvas and to avoid reflections,. A range of standard arms in different sizes and shapes is available (see Table Below). Arms of almost any size can be made and this can be useful in areas where paintings are hung together or in cramped locations. Specials can be made to order, however it is recommended to make preliminary tests before final specification.

Paintings and Arm Proportions



8" - 20" Picture Height: Short Arm



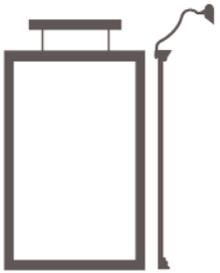
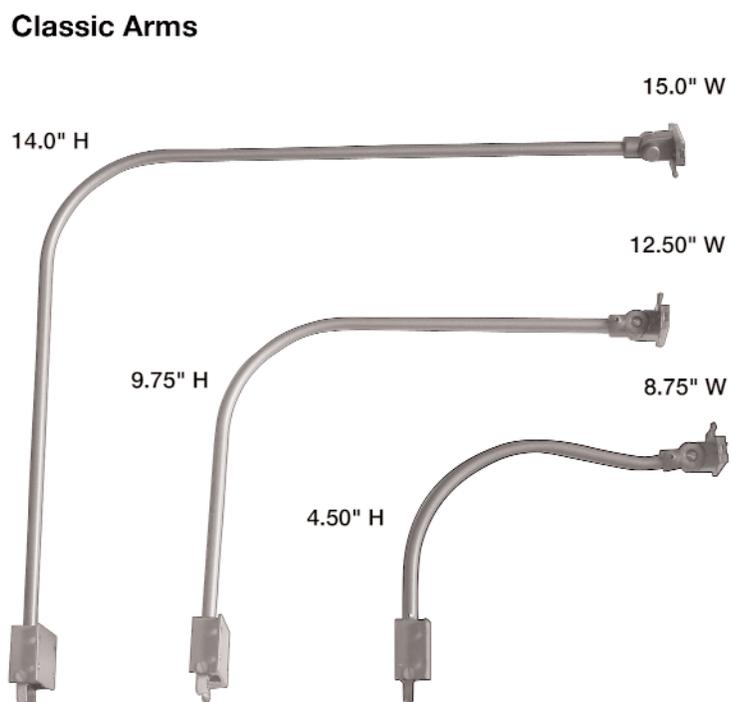
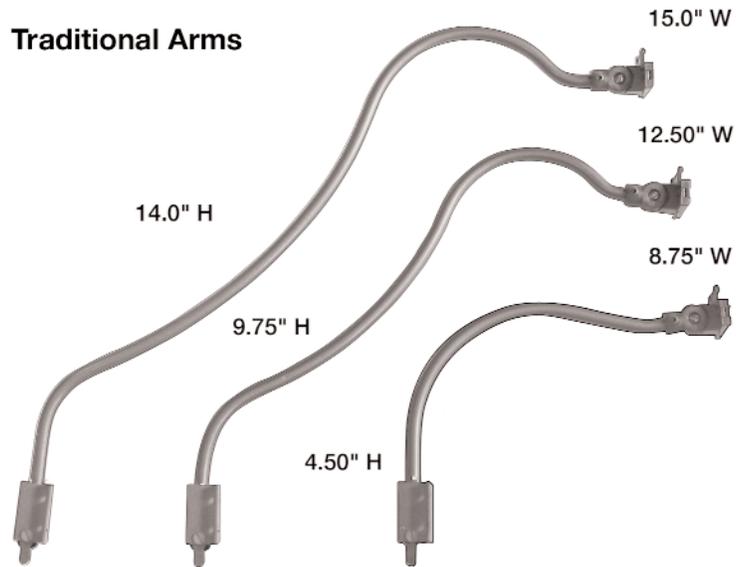
22" - 44" Picture Height: Medium Arm



46"+ Picture Height: Long Arm



80" Picture Height: Custom Arm

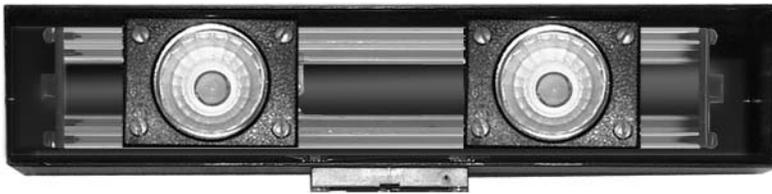



Lamp spacing and wattage

Both 12V tungsten halogen capsules and MR 8/11 dichroics can be used in Academy Lights. It is recommended that for an even coverage at least two lamps are used and as a general guide they should be spaced at approximately 12" intervals.

For taller paintings over 55" in height, this spacing can be increased. Wattage is also related to canvas height, as can be seen in the table below.

The maximum wattage for each lamp holder is 20W and no more than 60W of lamps and should be used in any Academy Light fixture. This is usually adequate even for large painting and any queries on maximum loading should be referred to the supplier.



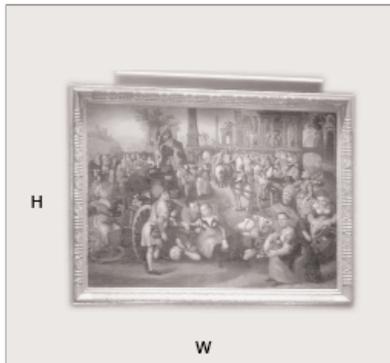
Bulb Wattage: **5W Bulb** **10W Bulb** **20W Bulb**

Picture's Height \ Width	Picture's Width																
	8"	12"	16"	20"	24"	28"	32"	36"	40"	44"	48"						
8"	3.5																
12"	3.5	3.5															
16"	3.5	3.5	8	8													
20"		3.5	8	8													
24"			8	8	12												
28"				8	12	12	18										
32"					12	12	18	18									
36"						12	18	18									
40"							12	18	18								
44"								18	18	24	24	24					
48"									18	18	24	24	24				
52"										18	24	24	24				
56"											24	24	24				
60"												24	24	24			
64"													24	24	24		
68"														24	24	24	
72"															24	24	24
76"																24	24

Picture's Height \ Width	Picture's Width										
	8"	12"	16"	20"	24"	28"	32"	36"	40"	44"	48"
8"		3.5	3.5	8	12						
12"		3.5	3.5	8	12	18					
16"				8	12	18	18				
20"				8	12	12	18	24			
24"					12	12	12	18	18		
28"						12	12	18	18	24	24
32"							12	18	18	24	24
36"								18	18	24	24
40"									24	24	24
44"										24	24
48"											24

Selecting fixture length

Specification of the fixture length starts with the dimensions of the painting's sight size and this is aided by knowledge of the painting's appearance. As a general rule, the fixture length should be slightly shorter than the width of the sight size. In practice, this varies with the size of the painting and its composition, as can be seen in the tables below. Smaller paintings require more consideration than larger ones, as the fixture may need to be longer in relative terms and close to the canvas width to ensure an even distribution of light. Landscapes and paintings with light even colors are particularly sensitive to variations in light levels. For larger paintings, especially landscapes a useful rule



Sight Size

of thumb is to select a fixture about 12" shorter than the sight size width. This can be increased to 18" or more for large paintings taller than 55", particularly ones with 'portrait' proportions. The standard fixtures are available up to 60" and this length is suitable for paintings up to 80" wide. It is recommended that two fixtures are used for wider paintings. In these situations the canvas width can be halved and fixtures specified for each 'half'. A hands-on trial is recommended in these

circumstances. The tables below give recommended standard fixture lengths for typical picture sizes. These standard lengths are 3.5", 8", 12", 18" and 24", and intermediate and longer heads sizes can be made as custom orders.

Picture's Height \ Picturer's Width	Picture's Width										
	8"	12"	16"	20"	24"	28"	32"	36"	40"	44"	48"
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44"							18	18	24	24	24
48"							18	18	24	24	24
52"								18	24	24	24
56"									24	24	24
60"									24	24	24
64"									24	24	24
68"									24	24	24
72"									24	24	24
76"									24	24	24

Paintings with 'Portrait' Proportion

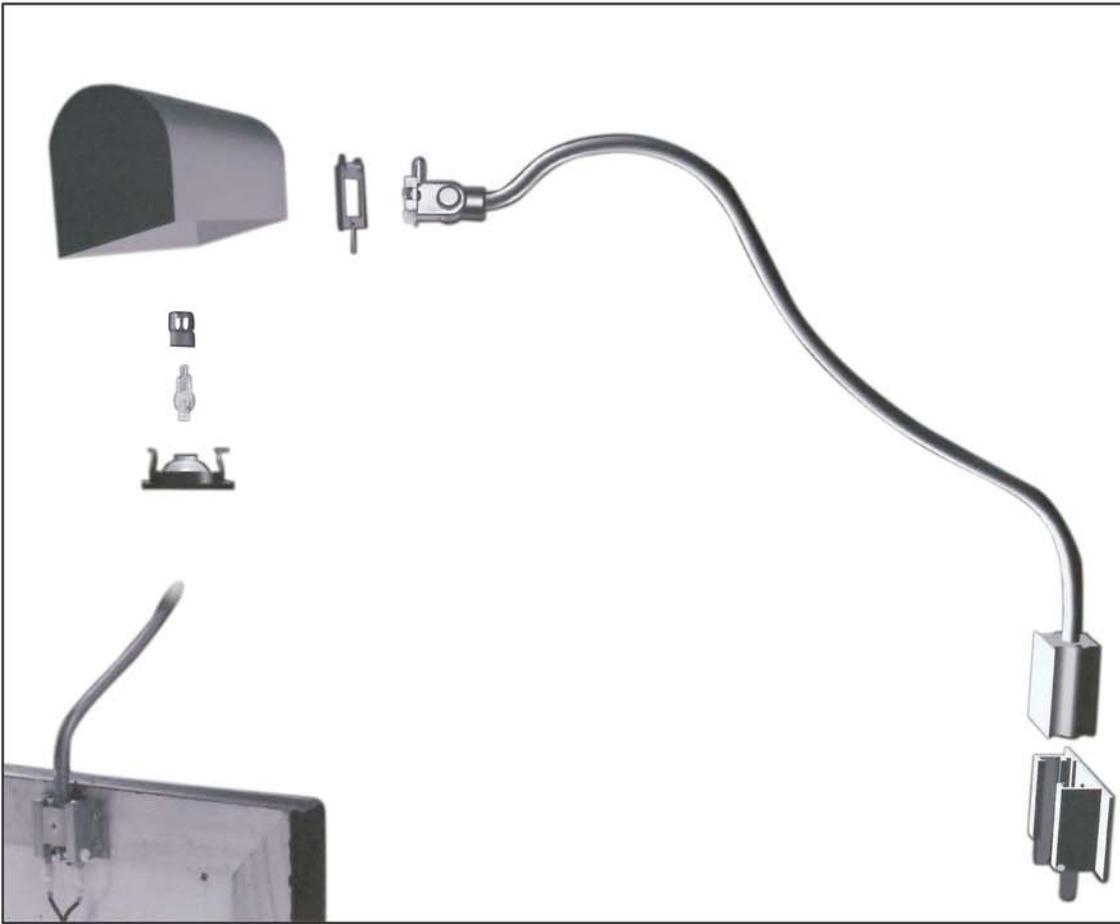
Picture's Height \ Picturer's Width	Picture's Width										
	8"	12"	16"	20"	24"	28"	32"	36"	40"	44"	48"
8"		3.5	3.5	8	12						
12"		3.5	3.5	8	12	18					
16"				8	12	18	18				
20"				8	12	12	18	24			
24"					12	12	12	18	18		
28"						12	12	18	18	24	24
32"							12	18	18	24	24
36"								18	18	24	24
40"									24	24	24
44"										24	24
48"											24

These Tables are recommendation for Standard fixture lengths.

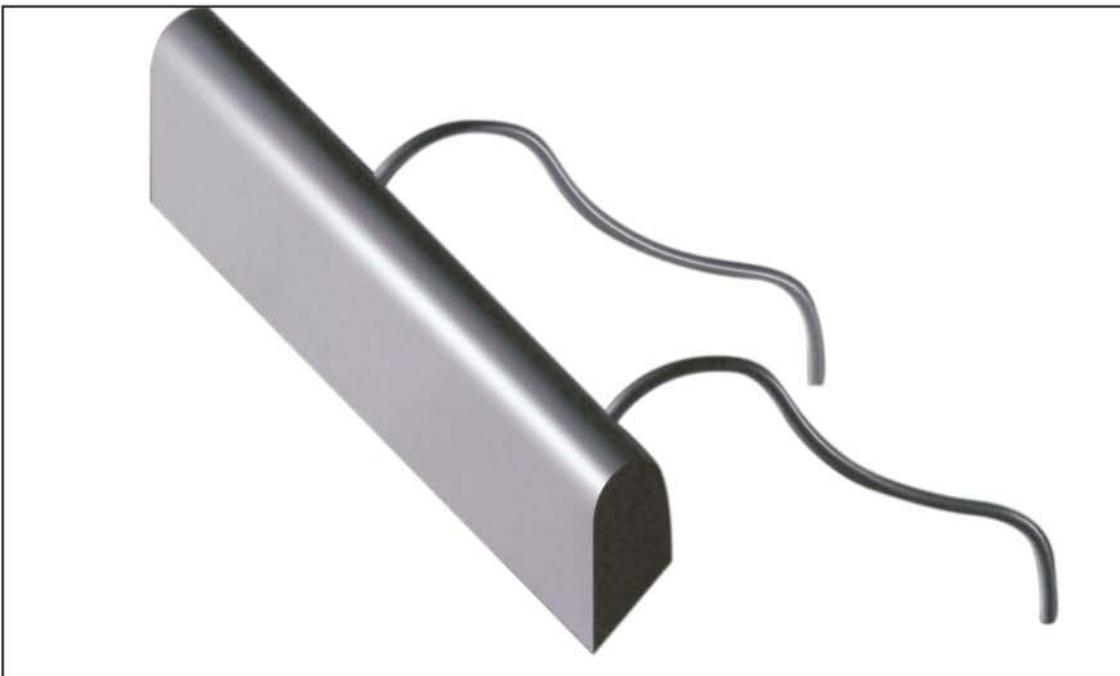
Paintings with 'Landscape' Proportion

ACCADEMY LIGHT

Assembly



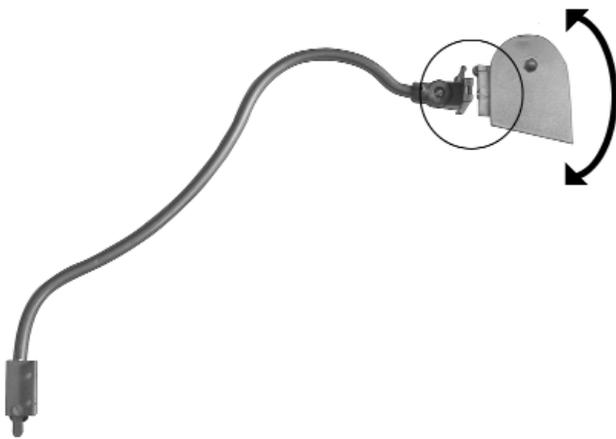
OPTIONS:
LET 75 PLUG IN
LET 75 FOR BACK BOX



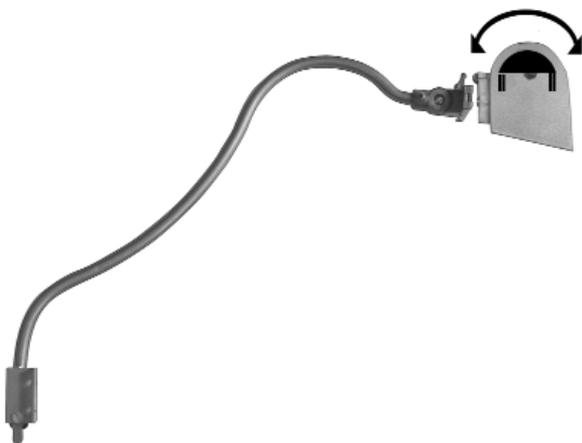
Aiming and tuning

In addition to the specification elements the fixtures can be tuned once assembled. As general guide tuning can be conducted in two stages. The first involves the tilting of the complete fixture head using the knuckle screw. This allows light at the top of the painting to be cut off preventing spill on the wall above the frame. Ideally, there should be no views of the lamp positions from the viewing position and this is easier using the deep section fixtures. The second degree of movement is allowed by tilting the track within the fixture. A small degree of movement is allowed but this can substantially vary the distribution and intensity of light on the canvas. More substantial adjustments can be achieved by changing lamp locations and wattage as well as arm sizes.

First Adjustment: Tilting of the complete Head



Second Adjustment: Tilting the track within the fixture



ADDITIONAL ELEMENTS IN SPECIFICATION

UV Glass

Bausch & Lomb museum grade filters are available on request. These are interchangeable with the standard glass fronts of the reflectors.

Lens Diffusers

Softening, prismatic and linear lenses are available.

Coloured reflectors

Champagne gold reflectors are available for applications where a slightly warmer color temperature is required. The reduction of light output compared to the standard reflectors is approximately 30%.

Paint finishes

The standard finish for Academy Lights is gold. Custom finishes are available upon request.

Special fixtures

Specials can be made to order. Recent order have included different shaped fixtures, such as square crosssection heads. Miniature fixtures are also available for small paintings.