

MSL SERIES 1 & 3 – CHECK LIST

At the MSL product range's development stage a comprehensive survey was carried out on other brands of medical examination lights. Customer/specifier feedback revealed shortcomings and ongoing problems with some models. The following 'Check List' summarises the points that needed to be addressed and MSL's design/manufacturing improvement responses.

These points should be considered when evaluating, selecting or specifying medical examination lights.

LIGHT SOURCE

Problems:

Use of lesser quality LEDs that are not specifically designed for medical examination lighting tasks.

MSL:

Key LED Features and Benefits:

MSL models utilise a 15W compact LED module, comprising 7 LEDs, driver and lens specifically designed for medical lighting tasks. (MSL Series 1 - 1x15W / MSL Series 3 - 3x15W).

High Illumination.

Colour Temperature - 4546°K.

Colour Rendering Index - CRI 95. In addition the LED module has a high 'Special CRI R9' value (deep saturated red, not included in normal CRI calculations). For medical examination lighting tasks this R9 value is a key issue in diagnosis and accurate tissue identification.

MSL Series 1 & 3 models comply with the **Cyanosis Observation Index (COI)**, meeting the requirements of AS/NZS 1680.2.5:1997 for examination lighting.

This important Standard takes into account the strict guidelines applying to the use of lamps in the diagnosis of patients in hospital wards, medical clinics and associated treatment/observation areas. Requirements are: A correlated colour temperature (CCT) between 3300°K and 5300°K.

A Cyanosis Observation Index (COI) of not greater than 3.3.

Beam Viewing Angle - The standard module has a precision engineered lens and reflector design which delivers a controlled 8.4° light beam maximising the examination light's performance. For special applications medium and wide beam lenses are available.

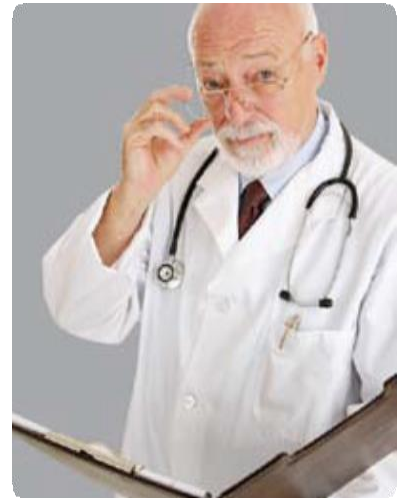
No Radiation of Heat - There is almost no damaging infrared or UV radiation, resulting in greater patient/operator comfort.

Low Energy Consumption.

Long Service Life - 35,000 - 50,000 hours.

High Shock Resistance - robust due to solid state construction.

Environmentally Friendly - contains no toxic substances.



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ARM MOVEMENTS

The majority of product brands in the main, use spring balanced arms or in some cases friction jointed arms. Both of these methods can present potential problems.

Problems:

Spring Balanced Arms

Springs lose tension over time. They need to be retensioned and possibly eventually replaced depending on work load. They require complex support components, e.g. levers, control arms, pins etc. which all wear and can be subject to failure.

Friction Jointed Arms

They are more accepted as an arm solution for general task lights. They are not considered to be a long term, user-friendly solution for mainstream medical examination lights.

A friction-jointed arm relies on a 'butterfly' screw for fine friction adjustments. The joints need to be pre-set to allow the arm to remain in its desired position. It can require resetting for different work positions.

MSL:

A counter-balance arm movement providing the following features: Simple in principle.

Minimal or no maintenance required.

Effortlessly repositionable and drift free after manoeuvring. Easy rotation and positioning of the light.

Robust construction - CNC machined joints with adjustable friction incorporating brass and acetal bushes, also stainless steel axles. Provides extended reach for full patient coverage.

CLEANING

Problems:

Difficult areas for cleaning e.g. holes - gaps - recesses - ledges - etc. These can all be a problem with some spring balanced arms and light heads.

MSL:

To assist cleaning MSL maximise the use of round, flat, smooth surfaces. All metal construction with powdercoated, anodised and chromeplated finishes for durability and resistance to cleaning agents.

Series 1 & 3 models have a removable handle for sterilisation (autoclavable).

LIGHT HEADS

Problems:

Plastic construction which can discolour over time. Limited range of movement.

MSL:

Slimline design

All metal construction.

Purpose designed heat sinking for the thermal management of LEDs.

Electronic switching - 4 stage dimming.

User-friendly, rotates at both the light head and yoke allowing accurate positioning of the light to where it is required.

In the event of a component failure in the light head the complete head assembly is removable by undoing one screw and disconnecting a make and break electrical connector. A replacement head can be operational in minutes, allowing repairs to be carried out in the workshop. This special feature was requested by maintenance staff working in busy hospitals where downtime of equipment is an important issue.

The MSL 3 light head design gives an overlapping beam pattern, minimising shadowing.



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SAFETY GLASS

Problems:

Have a plastic cover or toughened float glass.

MSL:

Have a high light transmission, safety glass - eliminates reflections.



CEILING MOUNTS

Problems:

Many brands are only available to suit limited standard heights, this means the light could be mounted too high or below the required Australian Standard.

Do not have the capability to provide special mounts.

MSL:

Manufactures each mount to the exact ceiling height requirement (ceiling heights must be specified at the time of order).

Has the capability to provide special mounts eg: 'Cotton Reel' mounts between false ceiling and slab. (Refer to 'Cotton Reel' installation drawing).



360° CONTINUOUS ROTATION – Ceiling mount

Problems:

Not always available as an option.

MSL:

Supplies a 360° continuous rotating ceiling connector at the upper rotation ceiling joint.

Note: this is a standard feature on the Series 3 model. It is an optional extra on the Series 1 model.



MOBILE TROLLEY

Problems:

Limited light adjustment and movement. Unstable. Not a space saving design.

MSL:

Counter-balanced arm allows light head to have maximum vertical sweep and adjustment.

Robust and easily manoeuvrable.

Completely folds down for easy transport and storage. Stable five leg base with two opposing braked wheels.

ELECTRICAL CABLES

Problems:

Exposed cables cause cleaning problems. Can have wear points and prone to damage at moveable joints.

MSL:

Have fully enclosed low voltage cables, there are no wear points at joints.



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LED POWER SUPPLIES

Problems:

*Quality issues/high failure rates.
Do not comply with EMC requirements.*

MSL:

High quality LED power supplies. EMC compliant.
All MSL examination lights have integral power supplies, so access is not required into the ceiling or wall space after installation. This is an essential requirement for 'Clean Room' environments.



CARDIAC PROTECTION

Problems:

Do not comply with cardiac protection requirements.

MSL:

All MSL Series 1 & 3 models are cardiac protected compliant.



INSTALLATION

Problems:

Difficult and labour intensive to install.

MSL:

Designed and manufactured with a view to assist installation and servicing.
All models are supplied as a number of pre-assembled components, with quick connect electrical terminals. Contractors and end users have confirmed installation cost savings.



MAINTENANCE & SPARE PARTS

Problems:

Imported product brands
Difficult to service and repair. Availability and cost of spare parts.

MSL:

Manufacturing in Australia continues to be a key factor in the MSL business plan. Our skilled team has total control over all design, production and delivery processes. Overseas manufacturers do not provide this level of service.
Readily available cost effective spare parts, with ongoing product developments.

WARRANTY

Problems:

Having warranties honoured.

MSL:

Supported by a reputable 5 year limited warranty.

