Fail-Safe is a leading provider of specialty grade lighting products for the healthcare industry designed to perform in a wide variety of complex environments. Fail-Safe’s complete family of luminaires are designed to meet the most demanding application needs in all healthcare spaces including examination rooms, procedure rooms, operating rooms, patient rooms, MRI suites, and behavioral health rooms.

### Glossary of Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP64</td>
<td>Dustproof, sealed against low pressure hose down</td>
<td>Dust cannot get into the lighting fixture. Lighting fixture can be cleaned by spraying it down.</td>
</tr>
<tr>
<td>IP65</td>
<td>Dustproof, sealed against moderate pressure hose down</td>
<td>No dust can pass from the plenum to the room through this lighting fixture. Can be easily cleaned by including hosing down the lighting fixture.</td>
</tr>
<tr>
<td>IP66</td>
<td>Dustproof, sealed against high pressure hose down</td>
<td>No dust can pass from the plenum to the room through the lighting fixture. Can be easily cleaned using high pressure sterilization cleaning.</td>
</tr>
<tr>
<td>ISO 5</td>
<td>Fixture is certified for use in sterile cleanroom applications</td>
<td>No air can pass through the lighting fixture between the room and the plenum space.</td>
</tr>
<tr>
<td>Antimicrobial Paint</td>
<td>Paint contains a special additive to prevent bacteria or germs from growing and settling on metal surfaces.</td>
<td>Painting metal surfaces in antimicrobial finishes helps reduce the risk of HAIs (Hospital Acquired Infections) in healthcare facilities.</td>
</tr>
<tr>
<td>NSF</td>
<td>Food safety rating; lighting fixture can be used in food processing and preparation areas</td>
<td>Lighting fixture can be easily wiped clean. Paint is resistant to chipping. Materials used contain no potentially harmful chemicals.</td>
</tr>
<tr>
<td>Wipe Down</td>
<td>Ability of the lighting fixture to be easily wiped down without snags, or risk of cleaner entering the fixture</td>
<td>Fixture is designed for easy cleaning, but not necessarily to the level of an NSF rating.</td>
</tr>
<tr>
<td>MIL-STD-461-G</td>
<td>Certification for lighting fixtures with limited conducted and radiated electromagnetic interference</td>
<td>Applies to operating room lighting fixtures. Lighting fixtures do not create electronic “noise” which could potentially interfere with sensitive operating room electronics.</td>
</tr>
<tr>
<td>Non-Ferrous</td>
<td>Not containing any magnetic materials</td>
<td>Lighting fixture contains no steel that could cause interference or interaction with the magnets used in an MRI machine.</td>
</tr>
</tbody>
</table>
Typically, the first step in treatment at a medical facility is a visit to an examination room. In an examination room, it is important to not only have sufficient light but also high quality light to properly evaluate a patient’s condition. Recently, a shift has been made from utilitarian design of examination rooms to a more aesthetically appealing layout. As part of this shift, the use of lighting that is visually aligned to common spaces in the facility has become more prevalent in these rooms.

### Featured Products

- **MAO UCL FLD4B (open)**
  - Open center basket design
  - Decorative inlays available
  - Center basket design aligns with aesthetics of common spaces

- **Medical undercabinet**
  - Feature loaded - sensor, outlet, and switch

- **Open medical downlight**
  - Aesthetics comparable to traditional downlights
  - CRI up to 97
  - VividTune™ White Tuning Technology

### Sizes

<table>
<thead>
<tr>
<th></th>
<th>1’ x 4’, 2’ x 2’, 2’ x 4’</th>
<th>1’, 2’, 3’, 4’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting</td>
<td>Recessed Troffer</td>
<td>Recessed Downlight</td>
</tr>
<tr>
<td>UL Location</td>
<td>Damp</td>
<td>Wet</td>
</tr>
<tr>
<td>Max Lumens</td>
<td>10,000</td>
<td>2,400</td>
</tr>
<tr>
<td>CRI</td>
<td>80, 90</td>
<td>80, 90</td>
</tr>
<tr>
<td>CRI</td>
<td>–</td>
<td>80, 90, 97</td>
</tr>
<tr>
<td>Ease of Cleaning</td>
<td>Wipe Down, Antimicrobial</td>
<td>Wipe Down, Antimicrobial</td>
</tr>
<tr>
<td>IP Rating</td>
<td>–</td>
<td>IP65 (SULV)</td>
</tr>
<tr>
<td>NSF Rating</td>
<td>–</td>
<td>Standard</td>
</tr>
</tbody>
</table>

### Design Features

- **Light Levels**
  - Moderate-to-high light levels
  - Variable light levels through switching or dimming
  - Combined use of general and task lighting within space

- **Light Quality**
  - 80 CRI (minimum), 90 CRI preferred
  - Required to make qualitative color-based diagnoses

- **Ease of Cleaning**
  - Wipe down design allows easy cleaning of fixtures
  - Louvers and openings allow places for germs to hide and thrive so avoid if possible
  - Antimicrobial finishes prevent germs from multiplying on metal surfaces
After or possibly instead of visiting an examination room, a patient will frequently be sent to a procedure room. These rooms are used for minor and minimally invasive procedures where a local anesthetic may be used, but a general anesthetic is unnecessary. Since the patient is typically conscious, it is important to maintain visual comfort for the patient while also ensuring sufficiently high light levels to perform procedures.

**Featured Products**

- **ENW SGI FLD6B**
  - Low glare due to Wavestream™ technology
  - Easy to clean
  - Visual alignment with non-medical spaces
  - Sealed center basket design
  - Electronics accessible below the ceiling plane
  - Medium distribution for optical control

**Sizes**

- 1' x 2', 1' x 4', 2' x 2', 2' x 4'

**Mounting**

- Recessed Troffer

**Wet Location**

- ENW: 6,700
- SGI: 11,500
- FLD6B: 7,000

**CRI**

- ENW: 80, 90
- SGI: 80, 90
- FLD6B: 60, 90, 97

**Ease of Cleaning**

- Wipe Down

**IP Rating**

- ENW: IP66
- SGI: IP66
- FLD6B: IP65

**NSF Rating**

- Standard

**Room Design**

- High light levels required for performing minor procedures
- Proper light distributions needed to avoid glare on monitors and screens
- Minimum of 80 CRI
- Color quality important in patient evaluations
- Room and equipment must be regularly sterilized
- Properly sealed fixtures aids in routine cleaning
- Antimicrobial finish on metal surfaces to prevent germ reproduction

**Procedure Room**

- **Light Levels**
  - High light levels required for performing minor procedures
  - Proper light distributions needed to avoid glare on monitors and screens
- **Light Quality**
  - Minimum of 80 CRI
  - Color quality important in patient evaluations
- **Sealed and Gasketed**
  - Room and equipment must be regularly sterilized
  - Properly sealed fixtures aids in routine cleaning
  - Antimicrobial finish on metal surfaces to prevent germ reproduction
### Fail-Safe

In operating rooms, light levels and distributions are key requirements. Bright lights are used to illuminate the space to ensure proper visibility of the patient for surgeons and other medical staff. In addition, modern surgical suites have numerous monitors and displays so eliminating glare by optimizing the lighting layout is of utmost importance.

### Light Levels and Quality
- Very high light levels
- Optical control needed to avoid glare on screens and monitors
- Green LEDs can help with contrast and minimize glare

### Sealed and Gasketed
- Prevent air from the plenum space entering into the operating room
- Improves ease of cleaning the fixtures

### Electromagnetic Interference (EMI) Control
- Avoid interference with sensitive electronics
- Some ORs require MIL-STD-461 compliance

### Featured Products

<table>
<thead>
<tr>
<th>ORL</th>
<th>FLD6B/OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Operating room troffer</td>
<td>- Downlight designed for operating room environments</td>
</tr>
<tr>
<td>- Green LEDs for glare reduction applications</td>
<td>- Certified for EMI control</td>
</tr>
<tr>
<td>- High lumen output</td>
<td>- Easy to clean</td>
</tr>
<tr>
<td>- Prevent air from the plenum space entering into the operating room</td>
<td>- Light distribution-designed to reduce glare</td>
</tr>
</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>ORL</th>
<th>FLD6B/OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sizes</td>
<td>1’ x 4’, 2’ x 2’, 2’ x 4’</td>
</tr>
<tr>
<td>Mounting</td>
<td>Recessed Troffer</td>
</tr>
<tr>
<td>UL Location</td>
<td>Wet Location</td>
</tr>
<tr>
<td>Max Lumen</td>
<td>28,000</td>
</tr>
<tr>
<td>CRI</td>
<td>80, 80</td>
</tr>
<tr>
<td>Ease of Cleaning</td>
<td>Wipe Down, Antimicrobial</td>
</tr>
<tr>
<td>IP Rating</td>
<td>IP66</td>
</tr>
<tr>
<td>NSF Rating</td>
<td>Standard</td>
</tr>
<tr>
<td>MIL-STD-461-E</td>
<td>Optional</td>
</tr>
</tbody>
</table>
The patient room is considered one of the most critical areas of a healthcare facility. Patients will typically spend several days in these rooms and it is important to provide lighting that meets the needs of a variety of patient types. From reading and night lights to bright examination lights during doctor and nurse visits, lighting in these spaces must fulfill a number of functions. Patients will also spend hours looking at these fixtures so maintaining an aesthetically pleasing design and ensuring visual comfort is critical to enhancing patient satisfaction.

### Fail-Safe Space Overview

The patient room is considered one of the most critical areas of a healthcare facility. Patients will typically spend several days in these rooms and it is important to provide lighting that meets the needs of a variety of patient types. From reading and night lights to bright examination lights during doctor and nurse visits, lighting in these spaces must fulfill a number of functions. Patients will also spend hours looking at these fixtures so maintaining an aesthetically pleasing design and ensuring visual comfort is critical to enhancing patient satisfaction.

### Design Features

- **Mounting Location**
  - Light location is determined by the bed’s location
  - Wall mount vs ceiling mount

- **Light Levels**
  - Moderate-to-high light levels
  - Single fixture needs to perform multiple functions at widely varied light levels
  - Color temperature selectability to maintain patient comfort
  - Light levels for every time of day

- **Controls**
  - Low voltage control for nurse call systems
  - Dimming vs non-dimming

### Featured Products

- **MPBL**
  - Headwall mounted direct/indirect
  - Architectural-style aesthetics
  - Designed to accommodate equipment being mounted directly above the bed
  - Multi-function: ambient/exam/nightlight/reading/chart light
  - Interface with nurse call systems

- **MNAE**
  - Maximum light output from a single above-the-bed troffer
  - Multi-function: ambient/exam/nightlight/reading

- **MAF**
  - Wall-mounted chart and night light
  - Photocell for nightlight, push button for chartlight
  - Scoop design directs light only where desired

### Sizes

- **MPBL**
  - 2’, 3’, 4’
  - 8” x 36”, 48”, 54”, 60”

- **MNAE**
  - 2’ x 2’, 2’ x 4’

- **MAF**
  - Single-Gang

### UL Location

- **MPBL**
  - Surface Wall
  - Recessed Troffer

- **MNAE**
  - Recessed Troffer

- **MAF**
  - Recessed Troffer

### Max Lumens

- **MPBL**
  - UP: 7100
  - Down: 5500

- **MNAE**
  - Ambient: 3100
  - Exam: 3000

- **MAF**
  - Ambient: 11000
  - Exam: 7000

### CRI

- **MPBL**
  - 80, 90

- **MNAE**
  - 80, 90

- **MAF**
  - TBD

### NSF Rating

- **MPBL**
  - –

- **MNAE**
  - –

- **MAF**
  - –

### Ease of Cleaning

- **MPBL**
  - Wipe Down

- **MNAE**
  - Wipe Down

- **MAF**
  - Wipe Down

### IP Rating

- **MPBL**
  - –

- **MNAE**
  - –

- **MAF**
  - –

- **MCI**
  - TRD

### NSF Rating

- **MPBL**
  - –

- **MNAE**
  - –

- **MAF**
  - –

- **MCI**
  - –

### Controls

- **MPBL**
  - Surface Wall
  - Recessed Troffer

- **MNAE**
  - Recessed Troffer

- **MAF**
  - Recessed Troffer

- **MCI**
  - Single-Gang

- **UL Location**
  - Surface Wall
  - Recessed Troffer

- **Max Lumens**
  - UP: 7100
  - Down: 5500

- **CRI**
  - 80, 90

- **Ease of Cleaning**
  - Wipe Down

- **IP Rating**
  - –

- **NSF Rating**
  - –

- **Location**
  - Surface Wall
  - Recessed Troffer

- **Max Lumens**
  - Ambient: 3100
  - Exam: 3000

- **CRI**
  - 80, 90

- **Ease of Cleaning**
  - Wipe Down

- **IP Rating**
  - –

- **NSF Rating**
  - –

- **Location**
  - Surface Wall
  - Recessed Troffer

- **Max Lumens**
  - Ambient: 11000
  - Exam: 7000

- **CRI**
  - TBD

- **Ease of Cleaning**
  - Wipe Down

- **IP Rating**
  - –

- **NSF Rating**
  - –

- **Location**
  - Surface Wall
  - Recessed Troffer

- **Max Lumens**
  - TBD

- **CRI**
  - TBD

- **Ease of Cleaning**
  - Wipe Down

- **IP Rating**
  - –

- **NSF Rating**
  - –

- **Location**
  - Surface Wall
  - Recessed Troffer

- **Max Lumens**
  - TBD

- **CRI**
  - TBD

- **Ease of Cleaning**
  - Wipe Down

- **IP Rating**
  - –

- **NSF Rating**
  - –

- **Location**
  - Surface Wall
  - Recessed Troffer

- **Max Lumens**
  - TBD

- **CRI**
  - TBD

- **Ease of Cleaning**
  - Wipe Down

- **IP Rating**
  - –

- **NSF Rating**
  - –

- **Location**
  - Surface Wall
  - Recessed Troffer

- **Max Lumens**
  - TBD

- **CRI**
  - TBD

- **Ease of Cleaning**
  - Wipe Down

- **IP Rating**
  - –

- **NSF Rating**
  - –

- **Location**
  - Surface Wall
  - Recessed Troffer

- **Max Lumens**
  - TBD

- **CRI**
  - TBD

- **Ease of Cleaning**
  - Wipe Down

- **IP Rating**
  - –

- **NSF Rating**
  - –

- **Location**
  - Surface Wall
  - Recessed Troffer

- **Max Lumens**
  - TBD

- **CRI**
  - TBD

- **Ease of Cleaning**
  - Wipe Down

- **IP Rating**
  - –

- **NSF Rating**
  - –
MRI Suite

Design Features

Light Levels
- Low-to-moderate light levels
- Use of decorative fixtures to create soothing environment

Non-Ferrous
- Fixtures must be made from non-magnetic materials

Electromagnetic Interference
- Power supplies must be located outside of the MRI room shielding area
- Incoming DC power must be filtered before entering the room
- Unfiltered power or AC can cause issues in scan results

Featured Products

MRI-R6DNLT
- Non-ferrous downlight
- Remote drivers capable of powering up to 15 fixtures

CV-LEL
- Decorative imagery fixtures
- Designed to mount on wall or ceiling
- Luminous scenery ceilings relax patients

Sizes

MRI-R6DNLT

CV-LEL

6" Perforated Downlight
2’ x 2’, 2’ x 4’ Various

Perforated Grid
Surface Flat

Damp

Damp

1,800

3,100 NA

60 NA

Wipe Down

Wipe Down

Wipe Down

Standard

Optional

Optional

Up to 15 fixtures

100W

1 per fixture

MRI Suite

Space Overview

MRI (Magnetic Resonance Imaging) rooms use large magnets to create a magnetic field which can be analyzed to generate an image of the body or its parts. As a result, any fixtures used in an MRI suite must be made using non-magnetic components and generate no EMI (Electromagnetic Interference) from their electrical components. It is important to provide a comforting and visually pleasing environment for patients as they undergo MRI scanning.

Fail-Safe

MRI (Magnetic Resonance Imaging) rooms use large magnets to create a magnetic field which can be analyzed to generate an image of the body or its parts. As a result, any fixtures used in an MRI suite must be made using non-magnetic components and generate no EMI (Electromagnetic Interference) from their electrical components. It is important to provide a comforting and visually pleasing environment for patients as they undergo MRI scanning.
### Behavioral Health

#### Design Features
- **Self-Harm Resistance**
  - Lenses should be made of polycarbonate and fasteners should be tamperproof.
  - Edges and sides should be sloped to avoid ligature points.
- **Mounting Type**
  - Surface and wall mounted fixtures present an increased risk of self harm by patients.
  - Casings are typically sheetmetal,requiring either integral or flanged fixtures or drywall kits.
- **Aesthetics**
  - Matte paint finishes that are less harsh vs. gloss finishes maintain the look and feel of a healthcare facility while still keeping patient well being in mind.
- **Features**
  - Full bottom lens creates tamper-resistant fixture.
  - Ligature resistant design.
  - Easy to clean.
  - Architectural style.
  - Bottom trim ring resistant to abuse.
  - Trim ring on fixture prevents patient access.

<table>
<thead>
<tr>
<th><strong>Featured Products</strong></th>
<th><strong>FWL</strong></th>
<th><strong>SGI</strong></th>
<th><strong>ENV</strong></th>
<th><strong>FLDDB</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wall mounted high abuse behavioral health bedlight</strong></td>
<td>✔</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td><strong>Steel construction and polycarbonate lens designed to withstand frequent abuse</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td><strong>Sloped sides create a ligature resistant design</strong></td>
<td></td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td><strong>Matte finishes and diffuse optics create a soothing environment</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td><strong>Sealed center basket fixture</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Optics designed to create a relaxing mood for patients</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Polycarbonate lenses and tamperproof screws withstand abuse</strong></td>
<td></td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td><strong>Full bottom lens creates tamper-resistant fixture</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ligature resistant design</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Easy to clean</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Architectural style aesthetics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bottom trim ring resistant to abuse</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Trim ring on fixture prevents patient access</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Sizes</strong></th>
<th><strong>18”, 24”, 48”</strong></th>
<th><strong>1’ x 4’, 2’ x 2’, 4’ x 4’</strong></th>
<th><strong>1’ x 2’, 1’ x 4’, 2’ x 2’, 2’ x 4’</strong></th>
<th><strong>6’</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mounting</strong></td>
<td>Surface Wall</td>
<td>Recessed Troffer</td>
<td>Recessed Troffer</td>
<td>Recessed Downlight</td>
</tr>
<tr>
<td><strong>UL Location</strong></td>
<td>Damp Location</td>
<td>Wet Location</td>
<td>Wet Location</td>
<td>Wet Location</td>
</tr>
<tr>
<td><strong>Max Lumen</strong></td>
<td>6,000</td>
<td>11,000</td>
<td>6,100</td>
<td>7,000</td>
</tr>
<tr>
<td><strong>CRI</strong></td>
<td>80, 90</td>
<td>80, 90</td>
<td>80, 90, 97</td>
<td>80, 90, 97</td>
</tr>
<tr>
<td><strong>Ease of Cleaning</strong></td>
<td>Wipe Down, Antimicrobial</td>
<td>Wipe Down, Antimicrobial</td>
<td>Wipe Down</td>
<td>Wipe Down, Antimicrobial</td>
</tr>
<tr>
<td><strong>Lens Thickness</strong></td>
<td>Up to 0.250”</td>
<td>Up to 0.375”</td>
<td>0.250”</td>
<td>0.250”</td>
</tr>
<tr>
<td><strong>IP Rating</strong></td>
<td>IP65</td>
<td>IP66</td>
<td>IP66</td>
<td>IP66</td>
</tr>
<tr>
<td><strong>NFS Rating</strong></td>
<td>Optional</td>
<td>Standard</td>
<td>Standard</td>
<td>Standard</td>
</tr>
</tbody>
</table>

Lighting in behavioral or mental health facilities must perform all the functions of general/ambient and specialized healthcare light fixtures while withstanding the high levels of physical abuse that can occur in these environments. Unfortunately, some patients may also attempt to engage in self-harm while residing in these facilities and light fixtures must be designed to resist these attempts by patients. While it is important for fixtures to be robust in design, they must also be visually comforting to patients. Use of institutional or correctional looking fixtures can be detrimental to patient wellbeing.

### Fail-Safe

Lighting in behavioral or mental health facilities must perform all the functions of general/ambient and specialized healthcare light fixtures while withstanding the high levels of physical abuse that can occur in these environments. Unfortunately, some patients may also attempt to engage in self-harm while residing in these facilities and light fixtures must be designed to resist these attempts by patients. While it is important for fixtures to be robust in design, they must also be visually comforting to patients. Use of institutional or correctional looking fixtures can be detrimental to patient wellbeing.
### Lighting Product Lines
- Ametrix
- AtLite
- Corelite
- Ephesus
- Fail-Safe
- Halo
- Halo Commercial
- Invue
- io
- Iris
- Lumark
- Lumière
- McGraw-Edison
- Metalux
- MWS
- Neo-Ray
- Portfolio
- RSA
- Shaper
- Streetworks
- Sure-Lites

### Controls Product Lines
- Fifth Light Technology
- Greengate
- iLight (International Only)
- iLumin
- Zero 88

### Connected Lighting Systems
- Distributed Low-Voltage Power
- HALO Home
- iLumin Plus
- LumaWatt Pro
- WaveLinx