

## R <br>  A

## M R Z

$\underset{\text { [lem]-[ahr]-[zee] }}{\text { m. }}$ /lem)-la
noun
A multi-head, recessed, integral LED luminaire that is used in retail, commercial, and hospitality applications
to intensify and beautify objects it illuminates. In addition, the option of sophisticated integrated controls systems enables the fixture to understand its environment and you.


Where old meets new

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How far we have come
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from the days of halogen, metal halide, and incandescent lamp sources, to a new era of high performing optical design, elegance, and performance.
One LED form that spans generations of lighting sources.
0000000 Lumen range
250 to 1700


Introducing the RSA-MRZ
a new multi-head family of luminaires Cooper Lighting Solutions RSA - MRZ LED architectural luminaries 5

The RSA-MRZ family is the next generation of muli-head ajustable, integrat LED lum inaires offering a wide breadhofoptions and features that place this family in a class by itself at an economical vantage point.
Available in: one, two, three or four head luminaire configurations
RSA-MRZ-1 One head RSA-MRZ
$\longrightarrow$


The whole difference between construction and creation is exactly this: that a thing constructed can only be loved after it is constructed, but thing created is loved before it exists,"

- Charles Dickens

Trim it
Choose between two different trim styles: Flanged or Mud-ln

Three different optical distributions are available to accommodate most accenting needs: $25^{\circ}$ [narrow flood. $40^{\circ}$ [flood), and $55^{\circ}$ [wide flood] beam optics. The following is a demonstration of each effect.

The chart below shows representative Light Levels using:
$4000 \mathrm{~K}, 40^{\circ}$ Optical Flood Distribution.
Please view full suite of photometric files for other lumen levels on the website
$1=550$ lumens @7W @ 97CRI $1=700$ lumens @7W @80CRI
$\begin{array}{ll}1=550 \text { lumens @7W @ 97CRI } & 1=700 \text { lumens @7W @80CRI } \\ 2=700 \text { lumens @9W @ 97CRI } & 2=900 \text { lumens @9W @80CRI }\end{array}$ $\begin{array}{ll}\begin{array}{l}3=1000 \text { lumens @12W @ 97CRI } \\ 4=1300 \text { lumens @16W @ 97CRI }\end{array} & \left.\begin{array}{l}3=1300 \text { lumens @12W @80CR } \\ 4=1700\end{array}\right)\end{array}$ Turn it

##  <br> Il7uminance: of a point source <br>  $d=$ distance

 Charles Dickens

Color rendering index: CRI
CRI: the measure of the degree of color shift objects undergo when illuminated by the light
source as compared with the color of those source as compared with the color of those
same objects illuminated by a reference
source of comparable color temperature.
 $97=97 \mathrm{CRI}$

The RSA-MRZ has several "color" features. They include the housing/ trim color options, the color of the LED (CCT), the color shift in LEDS (CRI), and the color quality as defined by TM-30.

Correlated color temperature: ССT CCT: the absolute emperature of a blackbody
whose chromaticity most nearly resembles that whose chromaticitit
of alight source.



Three different combinations of housing and
trim colors to choose. trim colors to choose.

## = White Housing/ White Trim



TM-30
TM-30
TM-30 is a method for evaluating light source
color rendition
TM-30 is a method for evaluating light source
color rendition.t
thincludes numerous measures

such as fidelity and gamut.
Example: The RSA-MRZ TM-30 fidelity and gamut values for a $3500 \mathrm{~K}, 97$ CRII Flood is $\mathrm{Rf}=90.1$ and $\mathrm{Rg}=97.2$.


Options with benefits
"For the rest of my life, I want to reflect on what light is."

- Albert Einstein [1916]
The RSA-MRZ family has many additional options that provide added versatility. A few notable options are emergency battery option
(not available in one head version), and a number of shielding media that help designers, shape light.



The RSA-MRZ is available with an emergency battery option to aide in fixture conditions needing egress outputs. The RSA-MRZ is available with an emergency battery option to a
The battery can be located 2 ft trom the housing in flex conduit.
as a variety of industry standard lenses: Linear Spread Lens, Soft Focus Lens, Hex Louver, and Snoot.

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10 Cooper Lighting Solutions RSA - MRZ LED architectural luminaieses

## A movement of design

The following information are simple guidelines or considerations on how to light a three dimensional object or flat vertical surface using the RSA-MRZ
multi-head fixture. The following guide lines suggest methodst to determine the distance away from an onject the RAA-MRZ light fixture could be placed, as well as design consideration

Consider the intensity and spill light of the beam as defined by
Beam angle - the focused path of light. The angle between two
directions where the intensity is $50 \%$ of the maximum intensity as
directions where the intensity is $50 \%$ of the maxi
measured through the nominal beam centerline.
Field angle - the angle between two directions where the intensity
is $10 \%$ of the maximum intensity as measured in a plane through the
is 10\% of the maximum in
nominal beam centerline


In lighting artwork or vertical surfaces, lighting generally should provide
uniform intensity over an entire vertical surface that is chosen to be uniform intensity over an entire veritical surface that is chosen to be
illuminated. Beow are typical height and distance recomendations.
However actual values should be determined per actual situation and However, actual values should be determined per ractual situation and
take environment into consideration.

## Average viewing heights and distances from flat vertical surfaces



Calculated viewing heights and distances from flat vertical surfaces: Luminaires positioned so the beams' center axis is $30^{\circ}$ from the vertical
will produce minimal shadows and glare-free viewing while allowing the will produce minimal shadows and glare-free viewing while allowiniticte
viewer to approach the viewer to approach the object llosely yithout casting his or her own
shadow on the object. The following formula is a guide: shadow on the object. The following formula is a guide:
A
Optimal luminaire
distance from wall
$=$ [ceiling height - eye level] * 0.577 Wall-t-luminaire distances should be increased or decreased as required
to avoid shadows, and the angle of incidence and reflection should be to avoid dhadows, and the angle of incidence and reflection should b
calculated to avoid glare to the viewer. Luminaires aimed 30 from
the vertical plane, typically reduce glare. calculated to avoid glare to the viewer. Le
the vertical plane, typically reduce glare.
minub昰 $\square$

The features of the RSA-MRZ can help illuminate objects, but where the luminaire is placed, is as important as what beam spread is used
The following are examples of what happens to an object when the luminaire is placed in different positions around the object. There are
also factors like glare and reflections to consider when illuminating objects.
SIDE lighting is effective for revealing
the depth and shape of three-dimensional
objects.to enhance shadows and create
contrast.


BACK lighting helps to separate an object from the back.
focus on the object.


Reference: DG-18-08

To gain a perspective of creating an effect on an object, comparing and contrasting the
intensity of light can be used to create this dram or or not. Below is a table that shows intensity of light can be used to create this drama or not. Below is a table that shows
contrast ratios that compare the illuminance values against one level of intensity contrast ratios that compare the illuminance values against one level of intensity.
Here, 152 fo is used as the base value to compare to. If the intent is to dramatically illuminate an object, then choose a contrast ratio of $20: 1$ or 1001.1 The irmage on the
right depicts different illuminance values that when compared to the base 152 fc , right depicts different illu
is that illuminance ratio.
Example:
To highlight a display or a vignette in a department store, using a $10: 1$ contrast ratio
is recommended. So the highest value is 10 times brighter than its surrounding. Here is how that contrast would look:


| Effect Desired | Contrast Ratios of Max to Min for Different Effects |  |  |  | Applications |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Strong | Dominant | 20:1 | 152 fc : | 7.6 fo | High end retail - poignant displays / House of Worship/ |
|  | Dramatic/Accent | 10:1 | 152 fc : | 15.2 fc | Department Store displays and vignettes at store entry Corporate and Hospitality Lobbies; textured walls |
| Moderate | Feature | 5:1 | 152 fc : | 30.4 fc | Hospitality; destination features such as concierge/ front desk. Retail: Accentuated highlights and feature displays. Wall covering textured materials |
| Soft | Visual Edge | 2:1 | 152 fc : | 77.1 fc | Conference Rooms: art work wall materials, general task illuminance. Reception; artwork wall material features |
| Subtle | Visual Relief | 1:1 | 152 fc | 152 fc | Office: art work, traditional residence |

## Controls, simplified.

WaveLinx - the simplest controls system you will love. This wireless controls solution gives you all the benefits of standard code compliant systems, for less cost and less labor. Instantly meet energy code as the system default settings meet Titte 24 and ASHRAE 90.1. The devices instantly connect to each other with an IEEEE 802.15 .4 wireless mes.
to control your space, simply.


What's in the box?


Icon-ic
Look what I can do!
Security first!

$\qquad$ ns RSA- MRZ LED architectural Luminaites

Architecture is alive...
Architecture has entered into a new era that is changing and challenging the built
space. The evolution of architectural design, is taking a static building to a state space. The evolution of architectural design, is taking a static building to a state
of dynamic movement, esponse, and reaction. This is possible today, with the most of dynamic movement, response, and reaction. This
sophisticated and advanced system on the market.

LumaWatt Pro
Evolution of the built space and how we design


Using digital se
collection can provinformation about their built space unlike ever before. This data space. The sensor resides in the density spacing of a light tixture layout, creating a grid network. The LLumaWatt Pro sensor and analytic system has been designed
and built to handle large infrastructure enterprises. The RSA-MAZ can encons and buit to handle large infrastructure enterprises. The RSA-MRZ can encompass
this technology for retail and commercial spaces that want to better understand this technology for r
their enviromment.


LumaWatt Pro - The Enlightened Building

Hand sketch
The new technology revolution is here. Buildings now have a pulse that can react to its inhabitants in real time, providing end user feedback on what their building
is doing. End users pay for outcomes collected by devices positioned strategically, in their homes, retail, or commercial spaces. This outcome provides the is doing. End users pay for outcomes collected by devices positioned strategically, in their homes, retail, or commercial spaces. This outcome provides the
services and response reactions to generate Return on Investment retention and monetization from the day it is installed. Whether through data collection or spacial analytics, the architectural space has now grown up.
Data is the new currency that provides end users with information about how their ruilt space
reacts to its inhabitants. End users pay for a service reacts to is inhabitants. End users pay for a service
that tells them information about their space. Based on their interests, the App can
the efficiency of their space.
A few examples of this return on investment are: Example $1:$ In a retail environment, being able to
track customers' "virtual paths" is key and critien track customers' "virtual paths" is key and critical
in understanding how to maximize merchandising locations and for studying traffic flow. Example 2: Occupants of a building space have
"maximized" common spaces like conference
away by staff and nurses. They can spend more than an hour trying to locate high value equipment. With
tracking devices attached to these high value pieces of equipment, they can now be located in real time. This translates into valuable time saved, and maximizing labor efficiency.
battery life and need to be re-charged regularly of battery life and need to be re-charged, regularly. An
owner can see the locations of these fork lifts, and when owner can see the locations of these fork litts, and when
they are low in battery life have them sent back to their charging stations. This prevents down time and profitability loss.
rooms or hoteling work spaces, but in reality, the spaces are not being used correctly. The building
facilty Tacility managers can use the LWP system to monitor
the occupied to unoccupied ratio, in real time to se the occupied to unoccupied ratio, in real time to see
if these spaces are truly being used to the buildings designed capacity levels. Facility managers can redirect designedcapaly
the layout mett maximum spatial efficiency by using
the data colleceted via the sensor system the data collected via the sensor system.
Example 3 : Reducing expense with Example 3 : Reducing expense with janitorial services
that may not need to clean Iow traffic areas daily. By observing the daily traffic usage pattern in large spaces, the cleaning expense can be saved.
Example 4 : Track high value equin Example 4: Track high value equipment in a space
Medical equipment in hospitals are often stowed

The LumaWatt Pro sensor is incorporated into the widest offering of light fixtures on the market under the Cooper Lighting
Solutions platform. The sensor sends information back to a central location that stores this activity and information, whic can the be analyzed. How this information can be used is endless. However, three market-ready solutions are available today: can the be analyzed. How this information can be used is endless. However, three market-ready solutions are available today
(Space) app motion, frequency of occupation, and occupied or unoccupied observation through detection. (Where) app - real (Space) app motion, frequency of occupation, and occupied or unoccupied observation through detection.
time location services of monitoring objects in motion. (Aire) app - energy management system.

Space
The movement of a path that defines a space is
best explained by.



Analyze:
Motion...Usage...Trace

Where
Through the advancement of using devices that can be markers placed on people, places or things, he LumaWatt Pro system e enables the end user to
track the physical location of that object in real time. track the physical location of that object in real time.
Owners of spaces can see how high valued object are used and where they might be at any given tim This eliminates waste of time, losing high value bjects, and time spent looking for these objects, The tracking of people, places, and things can now be Where) app.

## Aire

The LumaWatt Pro system can save you energy by enabling demand-driven heating or cooling. management system (BMS) by using the data collected by LumaWatt Pro's advanced distributed
mane stan sensor network and occupanccy application. Aire enables facility managers to direct cooling or heating
in real-time to the space where occupants are working


Track:
Assets...Places...Things




## Lighting Product Lines

Ametrix
AtLite
Corelite
Ephesus
Fail-Safe
Halo
Halo Commercial
nvue
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)
Lumin
Zero 88

## Connected Lighting Systems

Distributed Low-Voltage Power
HALO Home
iLumin Plus
Enlighted
WaveLinx
Trellix

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