ECOSENSE® | RISE®

RISE 101 - Handbook

Complete Guide to RISE including an
extensive list of Frequently Asked Questions

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Design

1. What's the idea behind the RISE design?
    a. The design philosophy for RISE was to create the most complete system of LED accent/landscape/floodlight fixtures that the market has ever seen, delivering lumen packages from 300-11,200 lumens.
    b. RISE was designed from the ground up. Rise is a scalable system that provides Lighting Designers with a nearly limitless palette of options. All this packaged in a compact and elegant form factor that produces clean beautiful light.

2. What does the name RISE mean?
    a. RISE refers to a new generation of lighting products that lift customer's expectations for quality and performance. RISE offers limitless options for the lighting designer and aligns perfectly with the meaning of the word "rise", whose definition reads: *Succeed in not being limited or constrained by a restrictive environment or situation*

3. What is MACRO Lock™ and what are the benefits of it?
    a. The uniquely designed hinge that allows the fixture to be easily tilted from 0 degree to 180 degrees, and panned 360 degrees, putting light exactly where you want it.

4. What materials are used for the lenses? How will they hold up to cracking and fading?
    a. The Secondary optic is made of a durable acrylic and will never yellow or discolor in any way and has a 5-degree light distribution. The tertiary lens that sits above the secondary lens is made of UL f1 rated UV-stabilized PC, which results in lower haze over long term

exposure and better strength against impact. This superior UV stabilization will prevent yellowing for up to 10 years depending on UV exposure. Tertiary lens are available in 0 (Clear), 10, 15, 20, 40, 60, 80, 15x60, 30x60, 60x15, 60x30.

5. What is the IP rating for RISE?
    a. RISE exterior products are rated IP66 which means they can withstand a very strong spray of water for long periods of time.

IP First number - Protection against solid objects

0	No special protection
1	Protected against solid objects over 50 mm, e.g. accidental touch by persons hands.
2	Protected against solid objects over 12 mm, e.g. persons fingers.
3	Protected against solid objects over 2.5 mm (tools and wires).
4	Protected against solid objects over 1 mm (tools, wires, and small wires).
5	Protected against dust limited ingress (no harmful deposit).
6	Totally protected against dust.

IP Second number - Protection against liquids

0	No protection.
1	Protection against vertically falling drops of water e.g. condensation.
2	Protection against direct sprays of water up to 15° from the vertical.
3	Protected against direct sprays of water up to 60° from the vertical.
4	Protection against water sprayed from all directions - limited ingress permitted.
5	Protected against low pressure jets of water from all directions - limited ingress.
6	Protected against temporary flooding of water, e.g. for use on ship decks - limited ingress permitted.
7	Protected against the effect of immersion between 15 cm and 1 m.
8	Protects against long periods of immersion under pressure.

6. What is the finish on the housing and how does that hold up to elements?
    a. RISE is made of aluminum and is finished with an outdoor rated, corrosion resistant, powder coat paint. It holds up very well to corrosion and fading. RISE has a high-performing, corrosion-resistant finish that uses high durability Triglycidyl Isocyanurate (TGIC) powder coatings specifically designed for exterior and weather exposure.

This finish is tested against the most severe specifications, providing significant resistance to color change.

b. Standard color finishes include Black, Bronze, Silver and White. Custom colors available

7. Are the fixtures paintable?
    a. Yes, RISE housing can be painted in a select offering of custom colors. See the reference Pantone Chart for wet paints. There is a charge for this premium service and a longer delivery time. This will not void the warranty.

8. Can the fixture be field paintable?
    a. It is not recommended to paint the fixture in field since adding layers of non-approved paint to the unit may degrade the lifetime and performance of the product.

9. What is the internal vent and how does it work?
    a. A vent is a thin membrane material that allows air to pass through it, but not moisture or dust. The purpose of the vent is to keep the internal pressure from rising as temperature increases inside a sealed vessel, like our LED housing. Without this pressure release the gaskets that seals the LED housing can fail.

10. How does EcoSense test RISE for water tightness?
    a. EcoSense performs a pressure test and if the fixture fails that test, the nitrogen leak-down test is used to diagnose where the issue is. This test is done by injecting nitrogen gas through the vent holes before the vent is installed. Once pressure has been reached inside the fixture a nitrogen gas sniffer is used to detect any nitrogen that

might be leaking out of the fixture. Nitrogen molecules are smaller than water molecules, so if nitrogen does not leak out it would be impossible for water to get in.

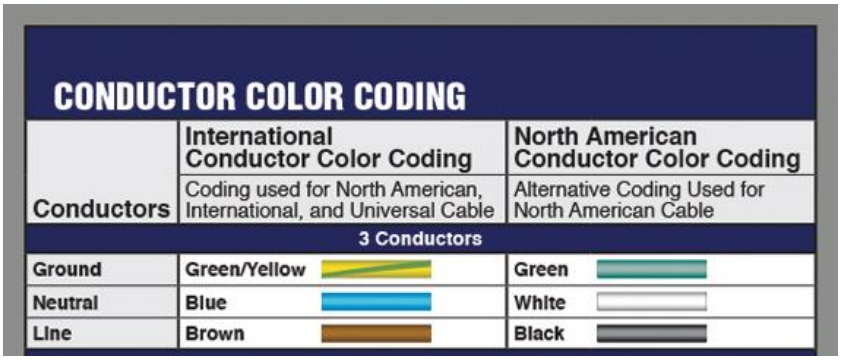
11. Marine grade
    a. No, RISE fixtures are not marine grade
    b. RISE has a high-performing, corrosion resistant finish that uses high durability triglycidl isocyanurate (TGIC) powder coatings specifically designed for exterior and weather exposure. This finish is tested against the most sever specifications, providing significant resistance to color change.

12. What is the length of the IC-Interior Rated cable?
    a. The Interior rated cable is 3 flying lead measuring in at 19" (482.6mm)

13. What is the length of the EC-Exterior Rated cable?
    a. The Exterior rated cable measures in at 3.3' (1m)

14. What tools do I need to install RISE?
    a. RISE F080 and F170 Single Head fixtures are available in multiple mounting options:
        i. ½" NPT Fitting to fit a standard junction box – fixture screws onto junction box using hand

15. What are the wiring colors?
    b. We use international wiring on RISE Color of wiring – Blue = Neutral, Brown = Phase Conductor (Line), Green/Yellow = Ground



CONDUCTOR COLOR CODING

Conductors	International Conductor Color Coding Coding used for North American, International, and Universal Cable	North American Conductor Color Coding Alternative Coding Used for North American Cable
3 Conductors		
Ground	Green/Yellow	Green
Neutral	Blue	White
Line	Brown	Black

16. Can the individual fixture heads be dimmed?
    c. No, the individual fixture heads cannot be individually controlled or dimmed.

17. Minimal load for other manufacturers controls – sensors, dimmers, controls
    d. Minimum loads vary by controller so please reference individual dimmer/controller requirements for minimum and maximum load.

18. What are the Dark Sky requirements?
    e. International Dark-Sky Association advocates that any required lighting be used wisely. To minimize the harmful effects of light pollution, IDA recommends that lighting should:
        - Only be on when needed
        - Only light the area that needs it
        - Be no brighter than necessary
        - Minimize blue light emissions
        - Be fully shielded (pointing downward)

19. Has the product been through Vibration Testing?
    f. Yes, RISE was put through rigorous vibration testing and passed up to 3G force.

20. Safety harness

g. Safety harness hole is designed into any fixture that weighs more than 10lbs in order to accommodate a safety harness.

Optics

21. What materials are used for the optics and lenses?

    The Secondary optic is made of a durable acrylic and will never yellow or discolor in any way and has a 5 degree light distribution. The tertiary lens that sits above the secondary lens is made of UL f1 rated UV-stabilized PC, which results in lower haze over long term exposure and better strength against impact. This superior UV stabilization will prevent yellowing for up to 10 years depending on UV exposure. Tertiary lens are available in 0, 10,15 20, 40, 60, 80, 15x60, 30x60, 60x15, 60x30.

22. Why did EcoSense choose this set of beam angles?

    a. In our market research, we found that customers prefer to have a family of products that range in application uses. We decided to include a full range of spot, accent, flood and elliptical beam angles so as to address multiple application needs. We designed beam angles that are widely used in the market today as well as introduce new beam angles to give designers fresh ideas on lighting design. See Chart for reference:

Description	Beam Angle	Recommended Applications & Average Dimensions	Setback	Aiming to Surface	Lumen Package
Laser Spot – Highly Intense, very focused beam for precise lighting	5°	Very Narrow Columns (10'-70'H x .5'-2'W) Between Window Frames (10'–50'H x 2'-5'W) Statues (10'-50'H x <5'W) Architectural Facade (10' – 1,000'H x 2'-6')	<2' <1' <3' 2'-4'	0° - 20° 0° - 10° 10°-30° 0° - 20°	300-700lms 300-700lms 300-700lms 700-11,200lms
Very Narrow Spot – Very tight beam	10°	Columns (10'-60'H x 1'-3'W) Very Narrow Trees (10'-50'H x 1'-3'W) Flagpoles (15'-200'H x 5'-10'W) Architectural Façade/Feature (10' – 1,000'H x 2'-6'W)	1'-3' 1' – 6' 2'-3' 2' – 4'	0° - 20° 10°-45° 10°-40° 0° - 20°	300-2,000lms 300-2,800lms 300-700lms 700-11,200lms
Narrow Spot – Tight beam	15°	Wide Columns (10'-50'H x 1'-3'W) Narrow Trees (10'-50'H x 3'-5'W) Landscape Feature (5'-30'H x 5'-10'W) Flagpoles (15'-25'H x 5'-10'W) Architectural Façade/Feature (10' – 1,000'H x 2'-6'W)	1' – 3' 1' – 6' 1' – 6' 2'-3' 2' – 4'	0° - 20° 10° - 45° 0° - 45° 10°-40° 0° - 45°	300-2,800ms 300-2,800ms 300-2,800ms 300-700lms 700-11,200lms
Spot – Medium size beam	20°	Architectural Façade/Feature (10' – 100'H x 2'-6'W) Trees & Shrubs (10'-50'H x 5'-10'W	2' – 4' 1'-6'	0° - 20° 10° - 45°	500-11,200lms 500-2,800ms
Narrow Flood – Wide beam	40°	Trees & Shrubs (10'-50'H x 5'-15'W) Architectural Façade (10'-20' H x 10'-20'W)	1'-6' 3'-6'	10° - 45° 0° - 45°	700-2,800ms 700-11,200lms
Flood – Extra wide beam	60°	Trees & Shrubs (10'-50'H x 10'-20'W) Architectural Façade (30' – 60'H x 10-30'W)	1'-6' 3'-8'	10° - 45° 0° - 45°	1200-2800ms 700-11,200lms
Wide Flood – Soft expansive wide beam	80°	Specialty Architectural (10' – 60'H x 20-40'W)	3'-6'	0° - 45°	500-11,200lms

Description	Beam Angle	Recommended Applications & Average Dimensions	Setback	Aiming to Surface	Lumen Package
Horizontal Spot – Intense horizontal beam	15° x 60°	Small Signage (4' H x 6'W) Small Signage (6' H x 10'W) Medium Signage (8'H x 12'W) Medium Signage (16'H x 24'W)	3' 4' 6' 8'	30°-45° 30°-45° 30°-45° 30°-45°	300-500lms 500-700lms 500-5600lms 700-5600lms
Horizontal Flood – Wide horizontal beam	30° x 60°	Medium Signage (10'H x 20'W) Large Signage (20'H x30'W) Landscape/Shrubs (10'H x 20'W)	5' 10' 5'	30°-45° 30°-45° 30°-45°	500lms 700lms 700lms
Vertical Spot – Intense vertical beam	60° x 15°	Small Signage (6'H x 4'W) Small Signage (10'H x 6'W) Medium Signage (12'H x 8'W)	3' 4' 6'	30°-45° 30°-45° 30°-45°	300lms 500lms 700lms
Vertical Flood – Wide vertical beam	60° x 30°	Façade (10' – 50'H) Medium Signage (20'H x 15'W) Large Signage (30'H x20'W)	3'-10' 5' 10'	30°-45° 30°-45° 30°-45°	300-2800lms 700lms 700lms

23. Why did EcoSense design their own optics?
    a. We designed an exclusive optical system for RISE so that we could optimize for the smallest form factor possible, while still delivering beautiful beam angles and high quality of light. With our unique optical system, we are able to deliver 11 unique beam angle options for any application.

24. Do you perform IES test on every option available with RISE?

a. No, we do a test for every beam option and then do a test for all power, CCT, and CRI options on the same beam. This gives us enough data to calculate the rest of the IES files. See the Photometry Chart for each fixture for all data.

25. Are tertiary lens field-replaceable?
    a. Yes, they are removable lenses with a Philips #0 Screwdriver and a hex Key – 2.5mm on the F080 and 3mm on the F170. The screws are captive, stainless steel.

26. Can color filters or other media be used with the fixtures?
    a. Yes, Color Filters/Louvers – can be added post installation and will be inserted into the secondary optic.

Power Supply / Driver

27. Why did EcoSense design the fixture with a digital power supply?
    a. The digital power supply allows RISE to have a proprietary driver that can be customized specific to the luminaire design for optimal performance. Unlike off-the-shelf analog drivers that limit the performance of a fixture design. Some of the benefits of a digital driver include: smooth, flicker-free dimming at extremely low levels; when connected to a dimmer, digital drivers deliver 100% light at high output levels (100% output power), where analog drivers tend to cap light output at 85-95% at 100% output power; digital drivers allow for easy firmware updates, so that updates can be made real-time resulting in better performing products for customers.

28. What type of driver does RISE use?

a. RISE will use a constant current multi-volt driver.

29. What is Multi-volt and why is it better?
    a. Multi-Volt allows RISE to operate on any input voltage from 100VAC to 277VAC. This prevents mix ups that are common with ordering and installing the incorrect voltage and prevents massive fixture failure. Operate at 50/60hz.

30. What is the power factor, and THD?
    a. On RISE the Power Factor is $\geq$.90 for majority of product variations and the THD in $\leq$.20

31. Will RISE work on an emergency inverter?
    a. No, RISE will not work on most emergency invert systems since they use a square-wave. If the system uses a pure sine wave then RISE will work. These are not common in emergency invert systems.

32. What happens if power supply fails?
    a. If the power supply fails, the unit will turn off. If this occurs, return the unit to EcoSense for analysis and replacement if within 5 year warranty.

33. Is the cable plenum-rated?
    a. No, none of the cables are plenum rated. Typically, an electrical inspector will allow fixture power cords to go approx. 1'- 2' into the plenum before it has to be terminated into a junction box. In stricter municipalities the cord will have to be terminated right as it enters the plenum space. The majority of lighting products do not use plenum rated cables.

b. Plenum is the space that is used for air circulation in heating and air conditioning systems, typically between the structural ceiling and the suspended ceiling or under a raised floor.

34. What is the UV rating on the cable?
    a. There is no specific UV rating for our cables, but they do meet UL outdoor UV requirements, which are required for outdoor products.

LEDs

35. Why did EcoSense choose CREE?
    a. Cree was chosen because they had the highest lumen density, smallest footprint power LED component available on the market. Cree's SC5 technology allows for much higher lumen outputs that any other industry player from a single LED chip. The lumen density of the Cree component is what allows Rise to generate such a narrow beam in such a small fixture package. Cree's Extreme High Power (XHP) class of LEDs provide twice the lumen output and improved reliability compared to previous LEDs.

36. What is the binning strategy on RISE?
    a. EcoSense has an exclusive contract with CREE that provides us with a single bin strategy for all of our CCTs. This exclusive binning strategy guarantees that we'll always get the same color bin of CCT every time. Using a single bin strategy results in uniform and consistent light that falls within 3 Step MacAdam Ellipse.

37. Can I get the same CCT across all products?

a. Yes, RISE offers 2200K, 2500K, 2700K, 3000K, 3500K, 4000K, 5000K and 6500K across the entire product line.

38. Can I replace the LED board if an LED goes out?
    a. No, the LED board is not field replaceable.

39. Can I get High CRI in all CCTs?
    a. No - 2200K, 2500K, 5000K and 6500K are not available in 90 CRI. High 90 CRI is only available with 2700K, 3000K, 3500K, 4000K

40. How is the performance of 90CRI different than 80CRI?
    a. 90CRI is typically 10% less lumen output than an 80CRI equivalent.

41. Will the Amber LED meet Florida Wildlife Commission Sea Turtle standards?
    a. No, the standard Amber LED will not meet FWC Sea Turtle requirements of no light below 560nm.

42. Does RISE affect horticulture/ can it be used as a grow light?
    a. No, RISE is not considered a good grow light since it does not provide full spectrum white light and the range of wavelengths required to make it ideal for horticulture.

43. Can we get other colors and CCTs?
    a. Other media can be used in the unit to achieve custom colors. Consult your EcoSense sales representative for available options.

44. Are our Monocolors saturated?
    a. Yes, our monocolors are saturated colors and available in Red, Blue, Green and Amber.

45. What kind of dimmers are compatible with RISE?
    a. RISE is dimmable on most ELV dimmers. Please see updated dimmer compatibility chart on our website for the performance results of the most popular dimmers available.

46. What happens if I connect RISE to a non-compatible dimmer?
    a. RISE will probably still operate, but the dimming will not be stable and will probably flicker.

47. Is RISE forward or reverse phase?
    a. RISE uses reverse phase dimming.

48. What is ELV?
    a. ELV stands for Electronic-Low-Voltage. ELV is reverse phase dimming, which means the voltage is turned off on the back of the sine wave, unlike forward phase which turns off voltage on the front of the sine wave. Reverse phase is quieter and more stable. ELV does not mean the fixture is low voltage.

49. Is RISE compatible with the EcoSense LDCM (0-10V-ELV Linear Dimming Control Module)?
    a. Yes, RISE is compatible with the LDCM. The LDCM converts a 0-10V input into an ELV signal. Using the LDCM, RISE is able to accept a 0-10V signal for dimming control.

50. How efficient is the LDCM?
    a. The LDCM is 95% efficient, which means if a fixture load of 100W is being used the LDCM will use 5W, making the total wattage 105W.

51. What is the lowest dimming level before RISE is turned off?
    a. RISE will dim smoothly down to <=5% measured light.

52. What is the lowest level RISE will turn on at?
    a. RISE will start up at <=5% measured light.

53. Is RISE compatible with DALI or DMX?
    a. RISE will be compatible with an interface but has yet to be tested and validated. Contact Rep for more info.

54. Why does the fixture flicker when there are only one or two connected to a dimmer?
    a. See dimmer guide for min and max loads
    b. When the minimum load of a dimmer is not met the fixtures on that dimmer can flicker or strobe. Any led fixture, not just RISE, can cause a dimmer to misbehave if there is not enough load on the circuit. This load varies greatly depending on the dimmer. The best way to deal with minimum load is to always have at least 20W of load on a dimmer. If this cannot be achieved with the fixtures a phantom load module can be added to simulate more fixtures. Lutron has a phantom load, model LUT-LBX, that works great with RISE.

Certifications & Compliance

55. Is RISE UL or ETL listed?
    a. RISE is UL listed

56. What other certifications does RISE have?

a. RISE is UL, cUL, CE, RoHS, listed. See spec sheet for complete list.

Operations

57. Can we say Made in America for RISE?
    a. No, 50% of the fixture has to be made in the USA to meet this requirement.

58. Will we meet the Buy American and Buy America Acts?
    a. No, the fixture has to be "Made in America" for these acts.

59. Will the fixtures and boxes be labeled "Made in Mexico"?
    a. Yes, they both say "Designed in the US, Made in Mexico."

60. Will we meet NAFTA standards?
    a. No, we do not meet NAFTA Standards

61. How do your fixtures ship?
    a. RISE ships via fedex or fedex freight. UPS shipment available direct from factory. Tracking is available once product clears customs.

62. Packaging
    a. What materials are used?
        i. We used recycled cardboard for packaging
    b. Can you single ship a unit?
        i. Yes, single units can ship independently

Accessories

63. When should a honeycomb louver be used?
    a. Louvers should be used to reduce glare on fixtures with grazing optics. Louvers should not be used with wide beam angles since most of the light will be cut off by the louver. If glare protection is required for wide beam angles a masking plate should be used instead of a louver.

64. How much light is lost when using a louver or snoot?
    a. About 10-80% depending on the beam angle and louver used. Not recommended to use a louver with a wide beam angle.

65. How do I determine the most appropriate louver for my installation?
    a. If the fixture can only be viewed from one side (180degree viewing), typical of wall grazing, a HALF Snoot can be used. If the fixture is visible for either side (360 degree view) a FULL Snoot can be used.

66. Are the accessories paintable?
    h. We can also custom paint accessories for an additional cost and increased lead-time.

67. Is conduit necessary for wiring the Landscape Stake?
    i. No, conduit is not required to use the Landscape Stake. The cord will have to be terminated into a junction box, but the stake does not need to mount to that junction box. (FOR NEC)

68. Can I get custom accessories?
    j. Please consult the product manager for MOQ, lead-time, and price.