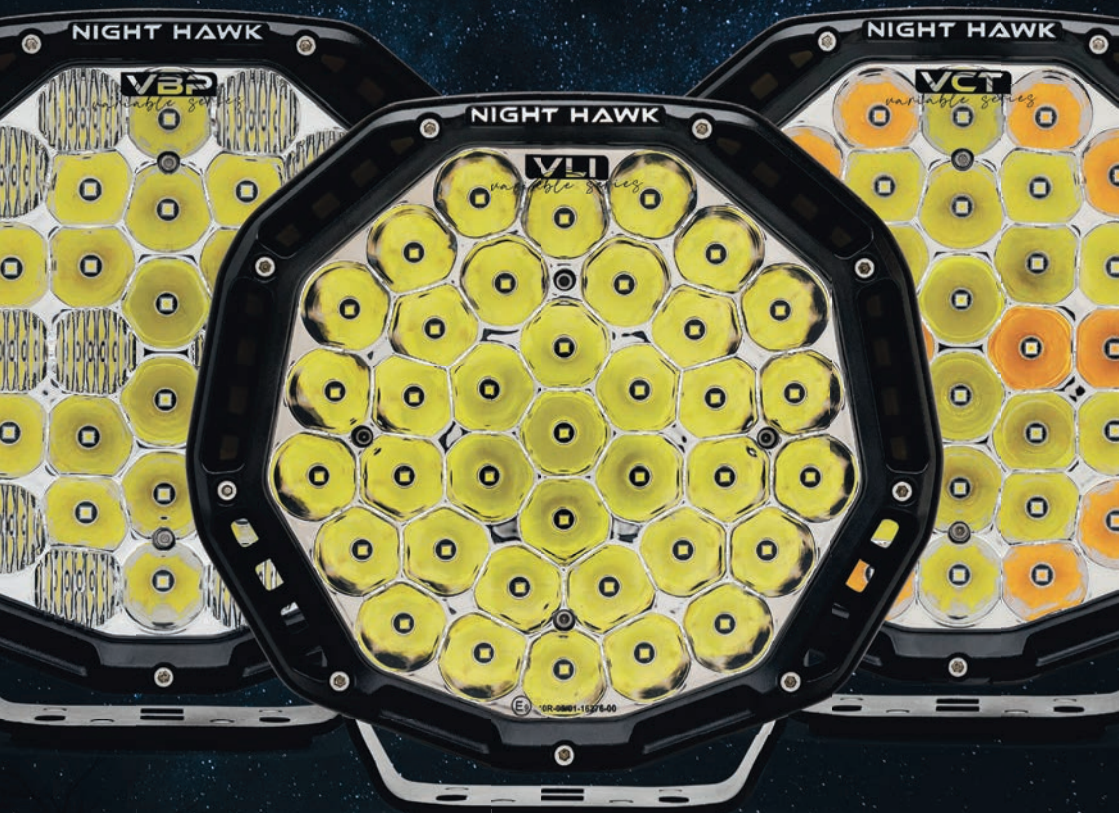




NIGHT HAWK

Variable series

LED DRIVING LIGHTS



NIGHT HAWK

Variable series

Congratulations! on your purchase of the Night Hawk® Variable Series LED Driving Lights by Bushranger 4X4. To take full advantage of this product, please read this manual carefully before using. Retain this manual for future reference for installation and warranty.



Register Your Product

Contents

Overview

Model Specific Features	03
Variable Series Driving Light Features	04

Specifications

NHX230VBP 9" Variable Beam Pattern	05
NHX230VCT 9" Variable Colour Temperature	09
NHX230VLI 9" Variable Light Intensity	13
NHX180VLI 7" Variable Light Intensity	17

Components

NHX230 Components Diagram	21
NHX180 Components Diagram	22

Installation

23

Care and Maintenance

25

Cover Fitting and Removal	25
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Warranty Policy

26



Overview

The Night Hawk Variable Series LED Driving Lights by Bushranger 4X4 have been developed from the ground up by our team of engineers to offer a truly unique design that takes performance, aesthetics and usability to a whole new level. They lead the way with simple, plug and play installation and an advanced control system that offers greater control and reliability over traditional on/off relay-based lighting systems.

The three variations offered in the Variable Series line-up unlock more options to suit the driver's individual needs when tackling their next adventure. We have put user-controlled lighting at the forefront of our development, and the ability to choose the optimum settings to suit an individual's visual preference or the environment, plus change on the fly, sets these lights apart from the rest. This is high performance lighting that is adaptable to suit you and your needs.

Control the night.

Model Specific Features

VBP Variable Beam Pattern | NXH230VBP

- 36 genuine high performance CREE LED's.
- Electronically controlled Beam Pattern and Light Intensity settings.
- 8 Beam settings, from full spot to full flood.
- 8 Light Intensity settings, from 0% to 100%.
- Beam and Intensity settings are controlled with a backlit dual dial controller.
- Supplied with optional protective covers.

VCT Variable Colour Temperature | NHX230VCT

- 36 genuine high performance CREE LED's.
- Electronically controlled Colour Temperature and Light Intensity settings.
- 8 Colour settings, from warm white to day white (3000K - 6000K).
- 8 Light Intensity settings, from 0% to 100%
- Colour and Intensity settings controlled with a backlit dual dial controller.
- Supplied with optional spot and flood protective covers.

VLI Variable Light Intensity | NHX230VLI - NHX180VLI

- Available in both 7" and 9" sizes.
- 37 (9") or 19 (7") genuine high performance OSRAM LED's.
- Electronically controlled Light Intensity settings.
- 8 Light Intensity settings from 0% to 100%.
- Intensity settings controlled with a single dial controller.
- Supplied with optional spot and flood protective covers.

Variable Series Driving Light Features

Versatile Installation

- Unique shape and low profile design allows for diverse fitments where regular round lights may not suit.

Superior Cooling Design

- Large air intakes channel cool air over the heatsink for unmatched cooling

Active Temperature Control System

- Intelligent onboard monitoring of the LED temperatures, combined with the superior cooling design allows for maximum output in all conditions.

High Performance Genuine LED's

- Genuine high output CREE or OSRAM LED's for unmatched performance
- Tested by an Australian NATA accredited photometry lab to produce real light performance data

Modern Electronics Design

- Built in Transistor switching simplifies wiring installation by removing the need for traditional 12V relay switching.
- PWM output provides complete control at the turn of the dial.
- Over voltage and Reverse Polarity Protection.

Durable Exterior

- Hard Coated polycarbonate lens offers long term scratch resistance ensuring maximum optical efficiency for years to come.
- UV stable AkzoNobel Powder coat, polycarbonate lens and protective covers ensure long term durability in the harsh Australian environment.

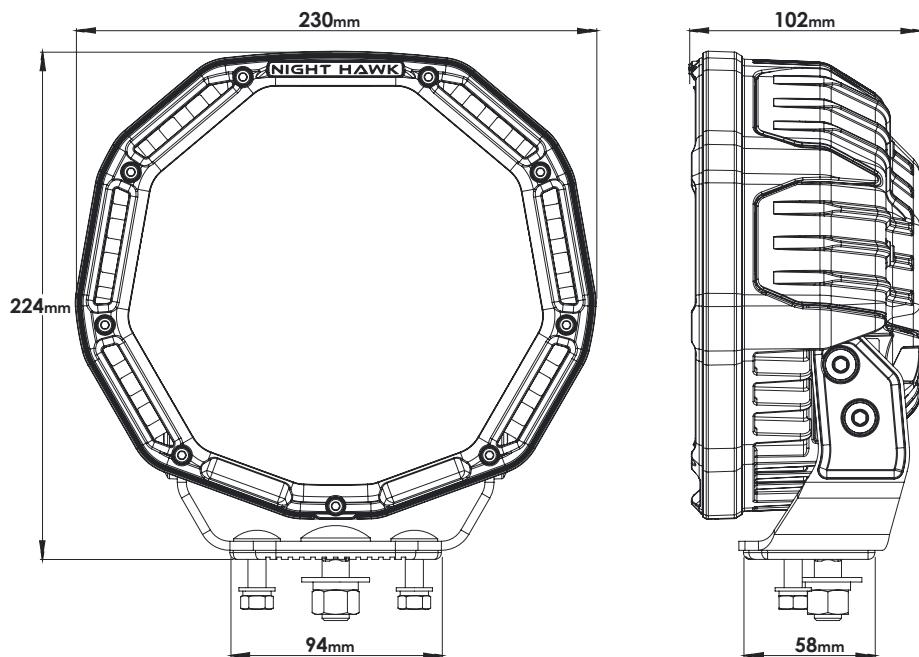
Built Tough

- Pressure die-cast aluminium housing and strong, 4mm thick stainless steel brackets will handle even the toughest tracks.
- Designed, engineered and extensively tested in Australia.
- Vibration tested to SAE J575 - Shock/Vibration Standards

Sealed Tight

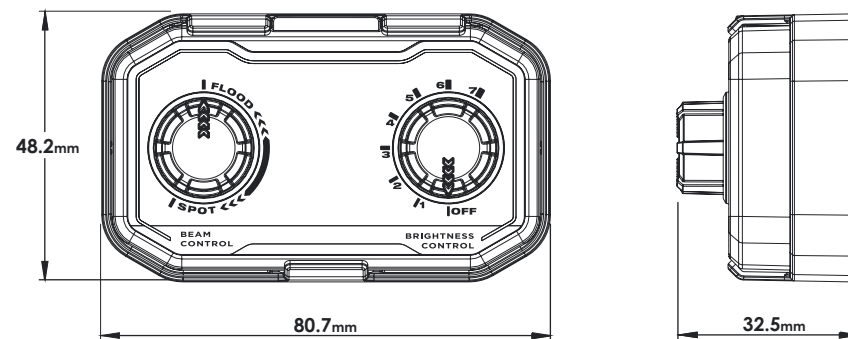
- Waterproof and submersible, IP67 & IP69K rated.
- Genuine GORE breather manages the internal air pressure of the light, preventing water ingress in all conditions.

Variable Beam Pattern | 9" Driving Light



SINGLE LIGHT SPECIFICATIONS

Power	170W
Current Draw	11.9A @14.4V
Voltage Range	10-30V DC
Luminous Flux	10,800 (effective) without protective covers fitted
LED Type	36 x Genuine CREE LED's
LED Colour Temperature	5700k (72 CRI)
Power Plug	Deutsch DTP
Control Plug	4 pin round
Fitted Weight	3.2kg
Compliance	CE, UNECE R10, IP67 & IP69K, RoHS, SAE J575 - Shock/Vibration

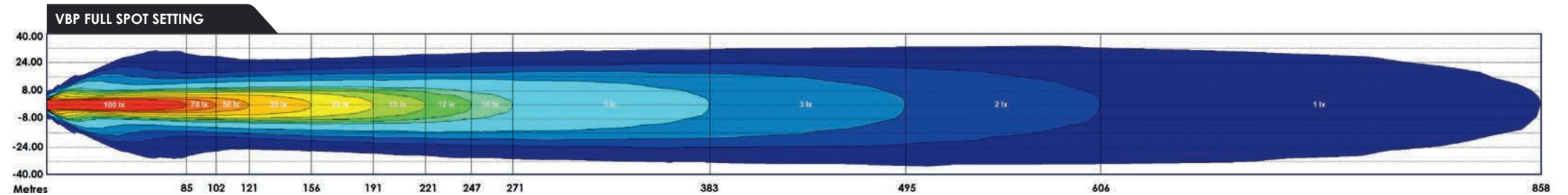
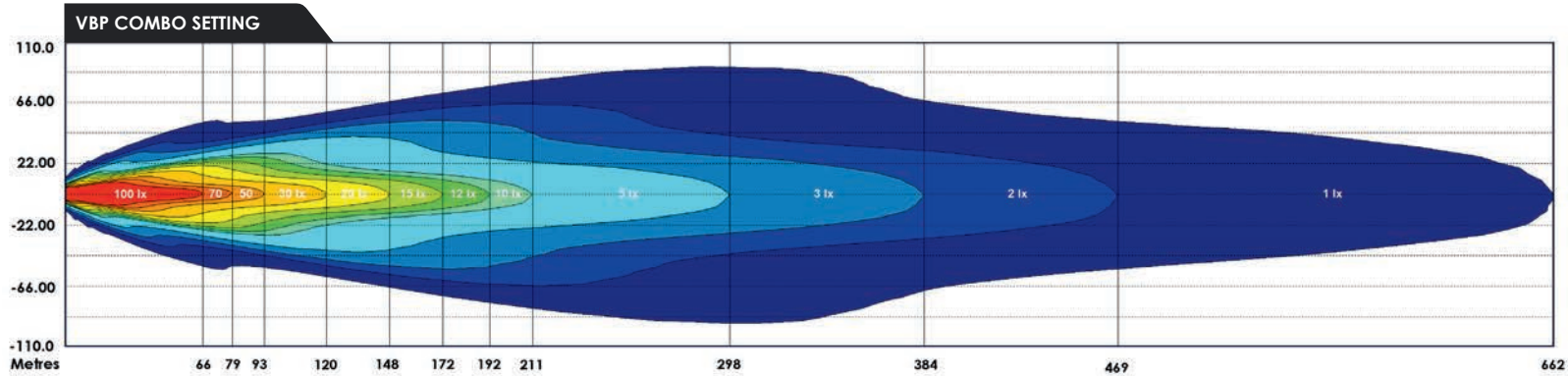
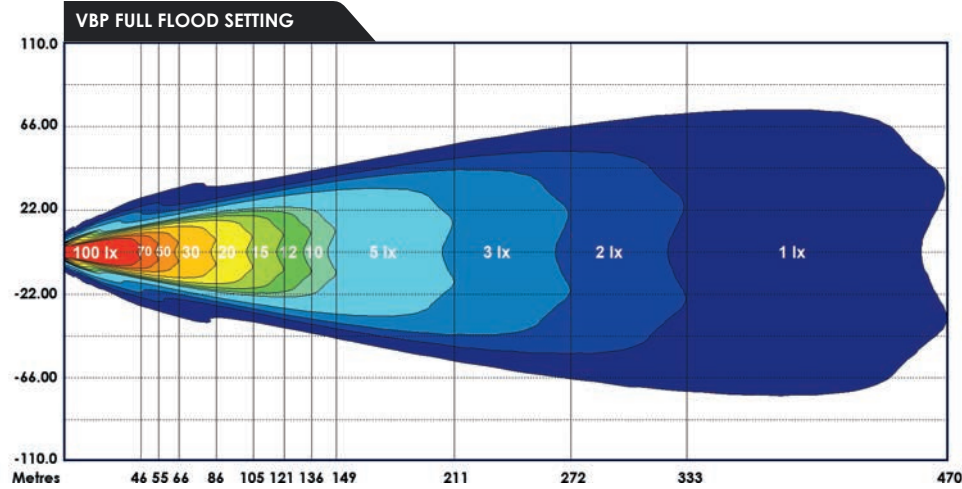


VBP WIRING SYSTEM SPECIFICATIONS

Voltage Range	10 - 30V DC
Controller	Backlit with two rotary control dials & mounting cradle
Light Intensity Control	8 x Brightness settings (0% - 100%)
Beam Pattern Control	8 x Beam pattern settings (Spot - Flood)
Light Capacity (as supplied)	Connect and control 2 x VBP Series lights simultaneously
Light Capacity (max)	Connect and control 4 x VBP Series lights simultaneously (additional lights and control leads sold separately)

Isolux Data (Pair of Lights)

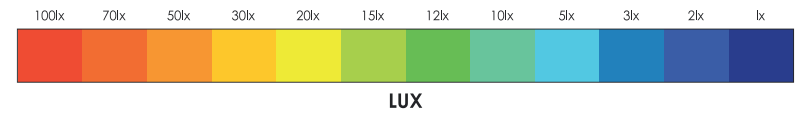
All results shown below are obtained from real scientific testing carried out by a NATA Accredited Photometric Laboratory in Australia. **Measurements displayed with optional clear protective covers fitted.**



Light Performance (Pair of Lights)

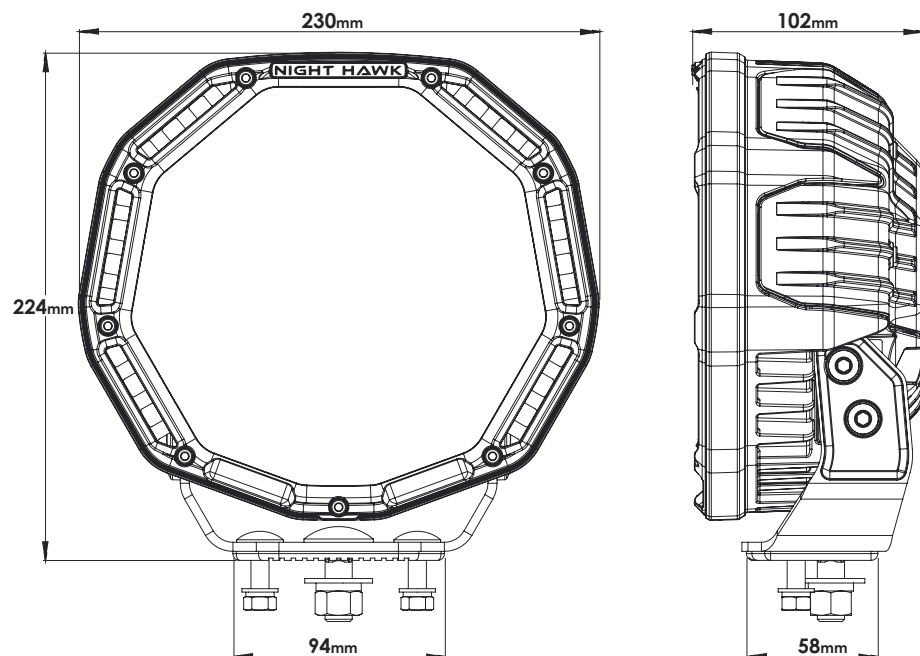
OPTIONAL PROTECTIVE COVERS FITTED			
Beam Pattern	Full Spot	Combo (Setting 4)	Full Flood
Max distance @ 1 lux	857m	661m	469m
Max width @ 1 lux	68m	117m	150m

OPTIONAL PROTECTIVE COVERS REMOVED			
Beam Pattern	Full Spot	Combo (Setting 4)	Full Flood
Max distance @ 1 lux	939m	724m	512m
Max width @ 1 lux	75m	128m	164m



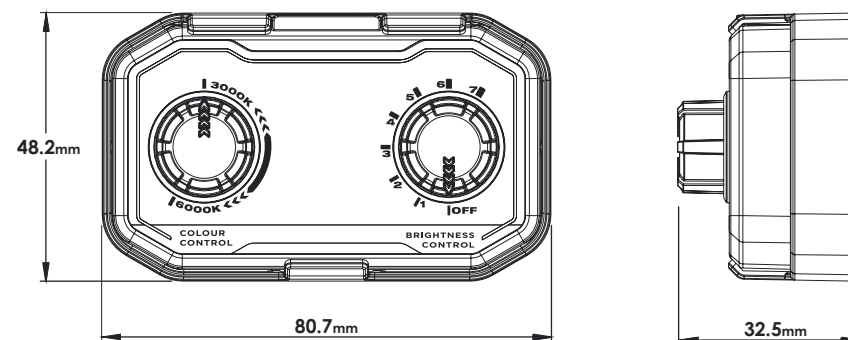
NATA ACTUAL PHOTOMETRIC TEST DATA PERFORMED BY NATA ACCREDITED LABORATORY IN AUSTRALIA

Variable Colour Temperature | 9" Driving Light



SINGLE LIGHT SPECIFICATIONS

Power	170W
Current Draw	11.9A @14.4V
Voltage Range	10-30V DC
Luminous Flux	11,400 (effective) without protective covers fitted
LED Type	36 x Genuine CREE LED's
LED Colour Temperature	3000K (82 CRI) & 6000K (72 CRI)
Power Plug	Deutsch DTP
Control Plug	4 pin round
Fitted Weight	3.2kg
Compliance	CE, UNECE R10, IP67 & IP69K, RoHS, SAE J575 - Shock/Vibration

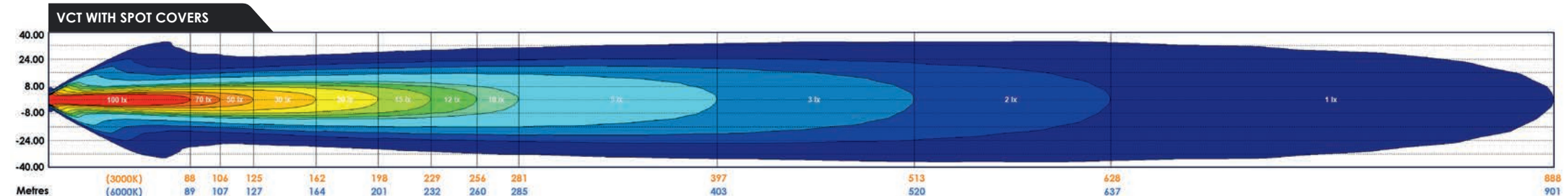
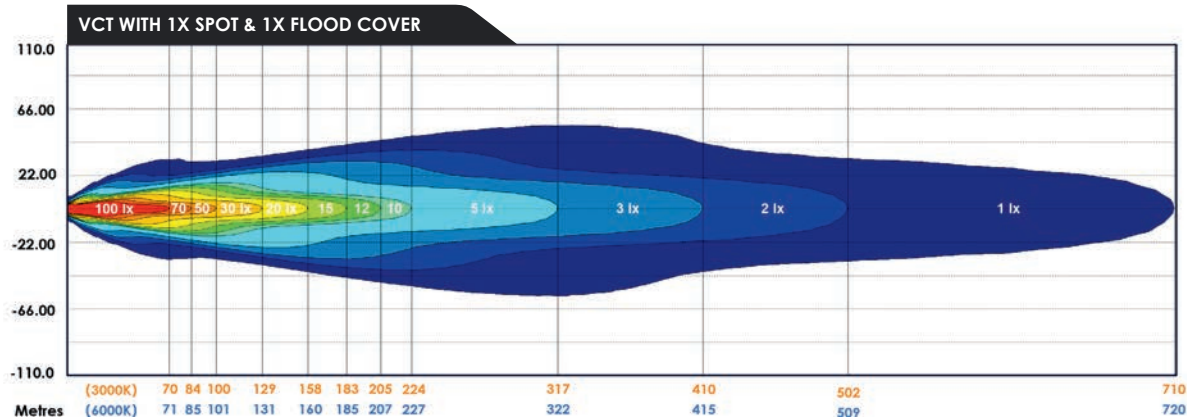
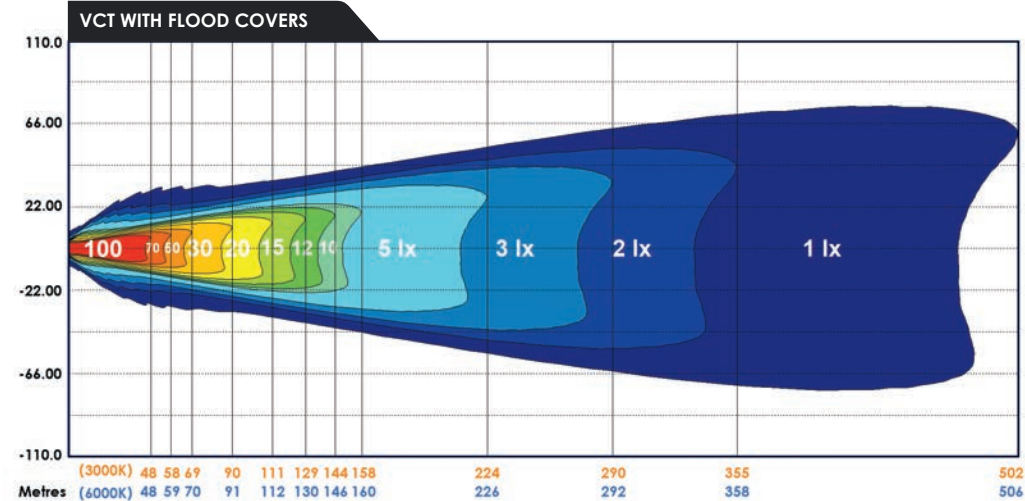


VCT WIRING SYSTEM SPECIFICATIONS

Voltage Range	10 - 30V DC
Controller	Backlit with two rotary control dials & mounting cradle
Light Intensity Control	8 x brightness settings (0% - 100%)
Colour Temperature Control	8 x colour temperature settings (3000K - 6000K)
Light Capacity (as supplied)	Connect and control 2 x VCT Series lights simultaneously
Light Capacity (max)	Connect and control 4 x VCT Series lights simultaneously (additional lights and control leads sold separately)

Isolux Data (Pair of Lights)

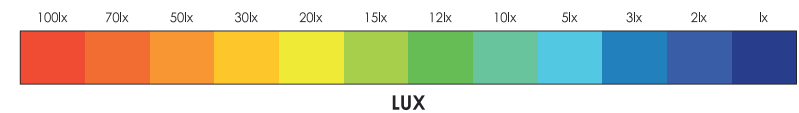
All results shown below are obtained from real scientific testing carried out by a NATA Accredited Photometric Laboratory in Australia. **Measurements displayed with optional clear protective covers fitted.**



Light Performance (Pair of Lights)

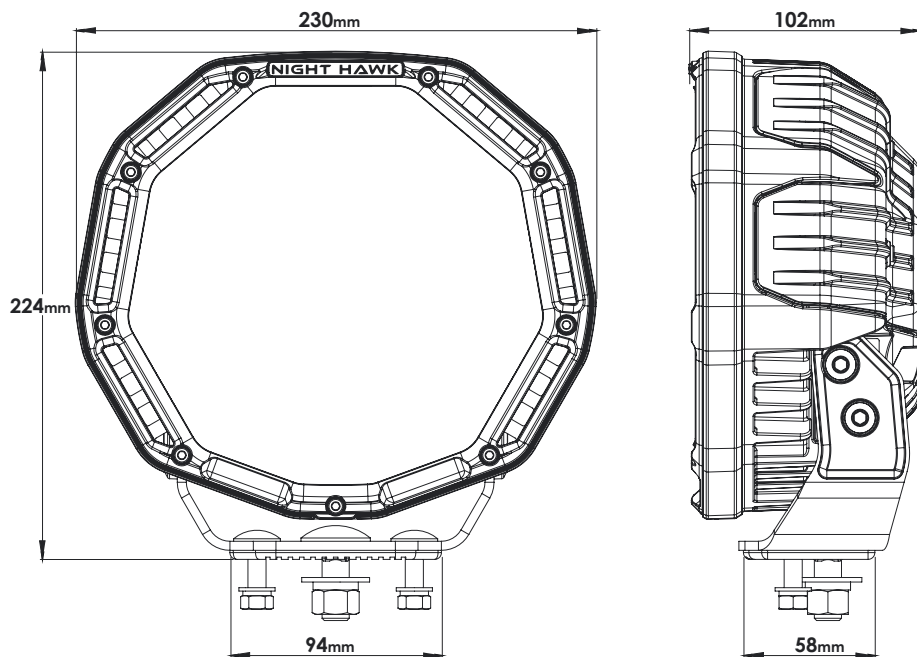
6000K TEMPERATURE SETTING				
Optional Protective Covers	Covers Removed	Spot Covers	Flood Covers	1 Flood Cover + 1 Spot Cover
Max distance @ 1 lux	974m	900m	506m	719m
Max width @ 1 lux	80m	74m	150m	113m

3000K TEMPERATURE SETTING				
Optional Protective Covers	Covers Removed	Spot Covers	Flood Covers	1 Flood Cover + 1 Spot Cover
Max distance @ 1 lux	960m	888m	501m	709m
Max width @ 1 lux	78m	72m	149m	112m



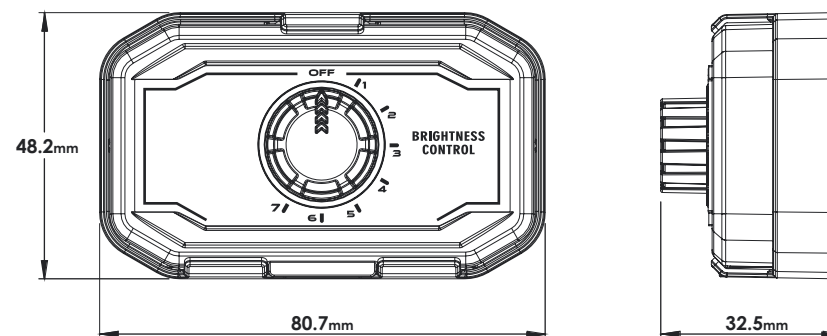
NATA ACTUAL PHOTOMETRIC TEST DATA
PERFORMED BY NATA
ACCREDITED LABORATORY
IN AUSTRALIA

Variable Light Intensity | 9" Driving Light



SINGLE LIGHT SPECIFICATIONS

Power	175W
Current Draw	12.2A @14.4V
Voltage Range	10-30V DC
Luminous Flux	13,700 (effective) without protective covers fitted
LED Type	37 x Genuine OSRAM LED's
LED Colour Temperature	5700K (72 CRI)
Power Plug	Deutsch DTP
Control Plug	4 pin round
Fitted Weight	3.2kg
Compliance	CE, UNECE R10, IP67 & IP69K, RoHS, SAE J575 - Shock/Vibration

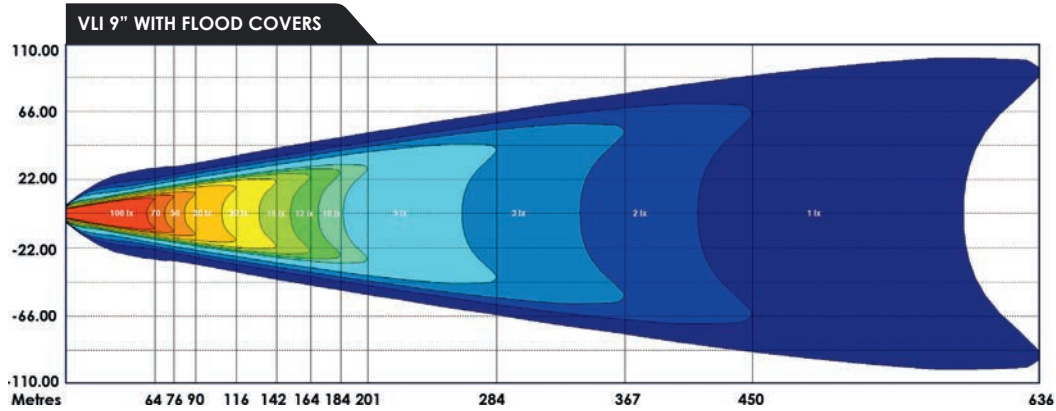


VLI WIRING SYSTEM SPECIFICATIONS

Voltage Range	10 - 30V DC
Controller	Single rotary control dial & mounting cradle
Light Intensity Control	8 x Brightness settings (0% - 100%)
Light Capacity (as supplied)	Connect and control 2 x VLI Series lights simultaneously
Light Capacity (max)	Connect and control 4 x VLI Series lights simultaneously (additional lights and control leads sold separately)

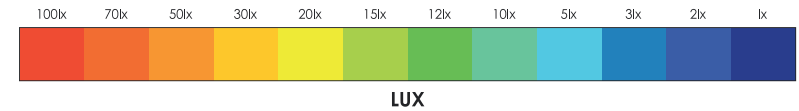
Isolux Data (Pair of Lights)

All results shown below are obtained from real scientific testing carried out by a NATA Accredited Photometric Laboratory in Australia. **Measurements displayed with optional clear protective covers fitted.**

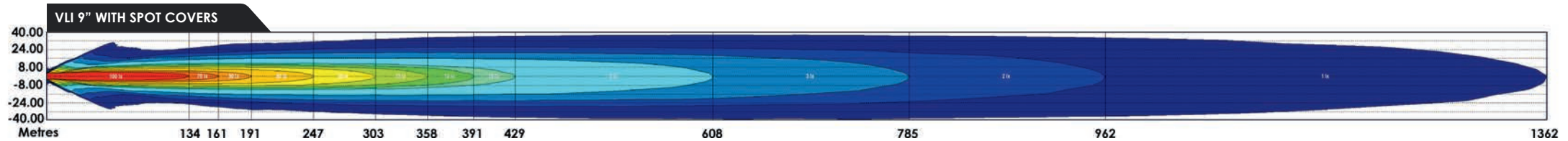
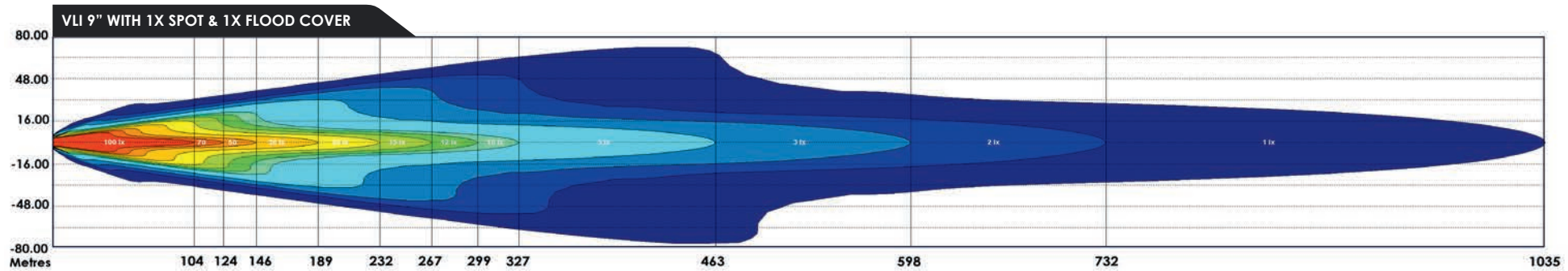


Light Performance (Pair of Lights)

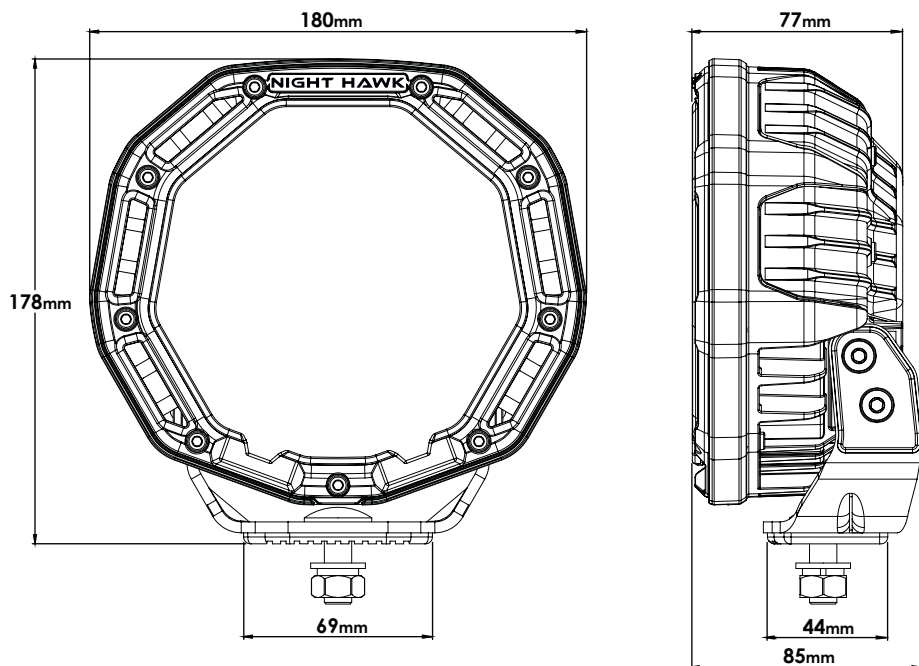
HIGHEST INTENSITY SETTING				
Optional Protective Covers	Covers Removed	Spot Covers	Flood Covers	1 Flood Cover + 1 Spot Cover
Max distance @ 1 lux	1486m	1362m	636m	1035m
Max width @ 1 lux	86m	79m	200m	147m



NATA ACTUAL PHOTOMETRIC TEST DATA PERFORMED BY NATA ACCREDITED LABORATORY IN AUSTRALIA

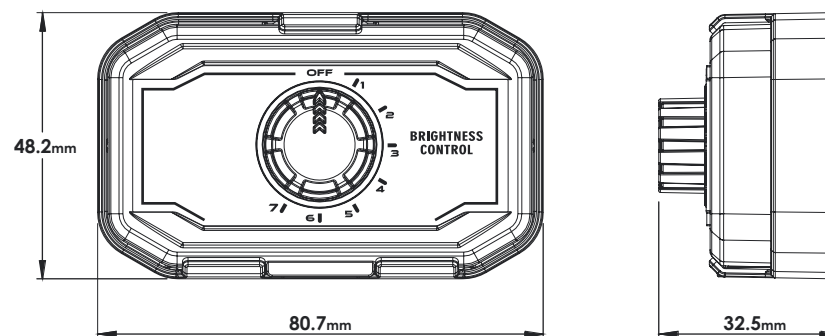


Variable Light Intensity | 7" Driving Light



SINGLE LIGHT SPECIFICATIONS

Power	85W
Current Draw	5.9A @14.4V
Voltage Range	10-30V DC
Luminous Flux	6,450 (effective) with protective covers fitted
LED Type	19 x Genuine OSRAM LED's
LED Colour Temperature	5700K (72 CRI)
Power Plugs	Deutsch DT
Control Plugs	4 pin round
Fitted Weight	1.7kg
Compliance	CE, UNECE R10, IP67 & IP69K, RoHS, SAE J575 - Shock/Vibration

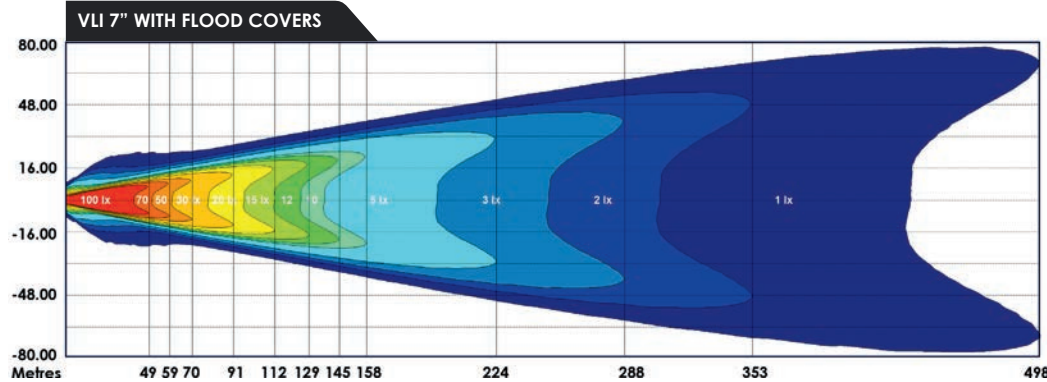


VLI WIRING SYSTEM SPECIFICATIONS

Voltage Range	10 - 30V DC
Controller	Single rotary control dial & mounting cradle
Light Intensity Control	8 x Brightness settings (0% - 100%)
Light Capacity (as supplied)	Connect and control 2 x VLI Series lights simultaneously
Light Capacity (max)	Connect and control 4 x VLI Series lights simultaneously (additional lights and control leads sold separately)

Isolux Data (Pair of Lights)

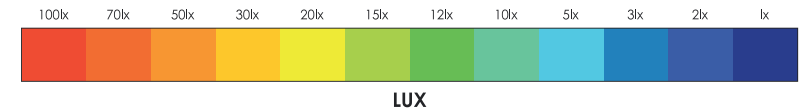
All results shown below are obtained from real scientific testing carried out by a NATA Accredited Photometric Laboratory in Australia. **Measurements displayed with optional clear protective covers fitted.**



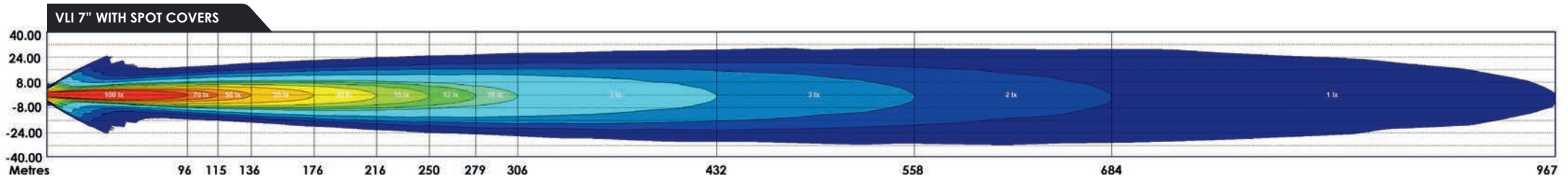
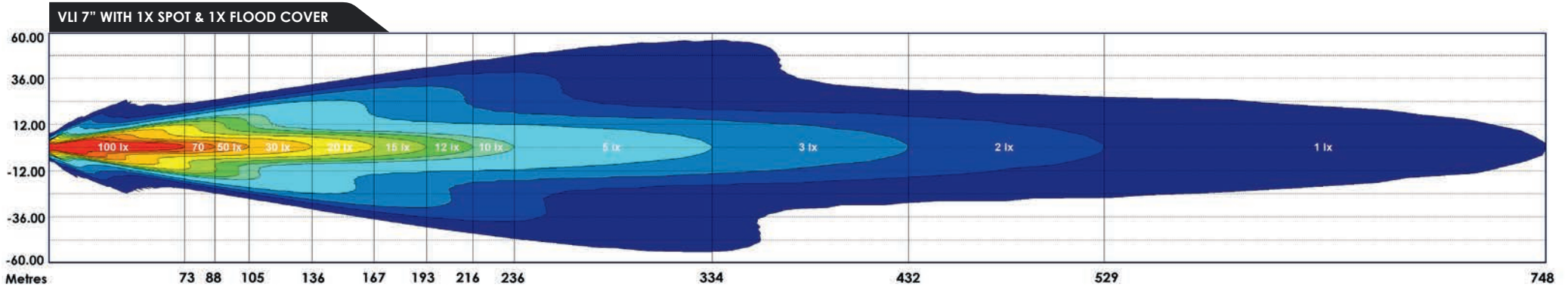
Light Performance (Pair of Lights)

HIGHEST INTENSITY SETTING

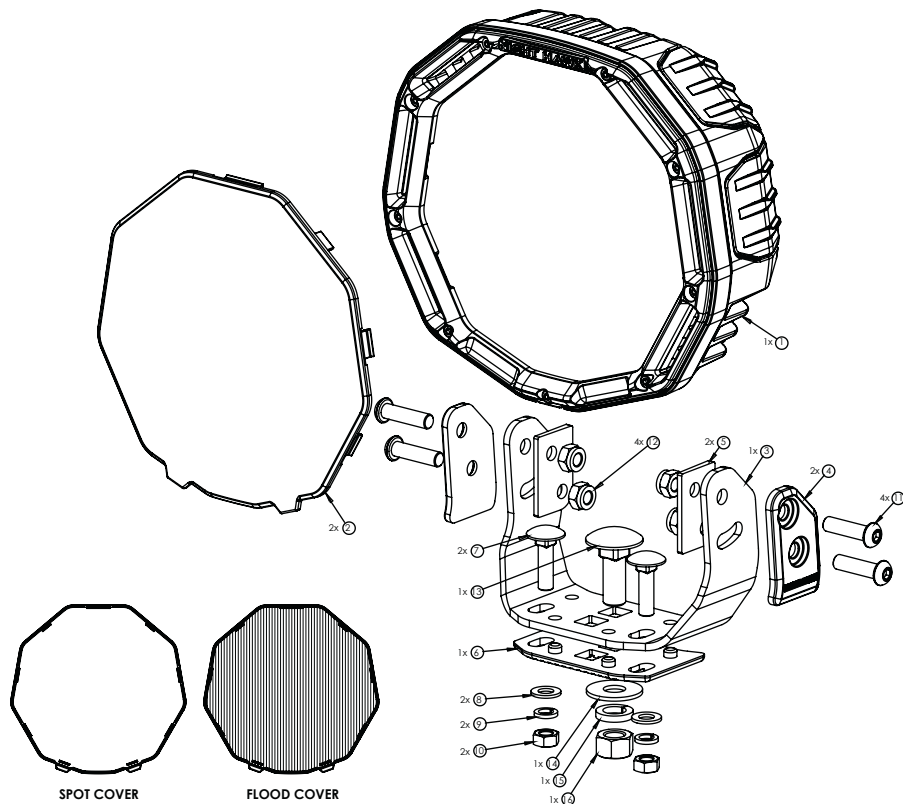
Optional Protective Covers	Spot Covers	Flood Covers	1 Flood Cover + 1 Spot Cover
Max distance @ 1 lux	967m	748m	498m
Max width @ 1 lux	60m	110m	153m



NATA ACTUAL PHOTOMETRIC TEST DATA PERFORMED BY NATA ACCREDITED LABORATORY IN AUSTRALIA



Components Diagram - NHX230 9" Single Light

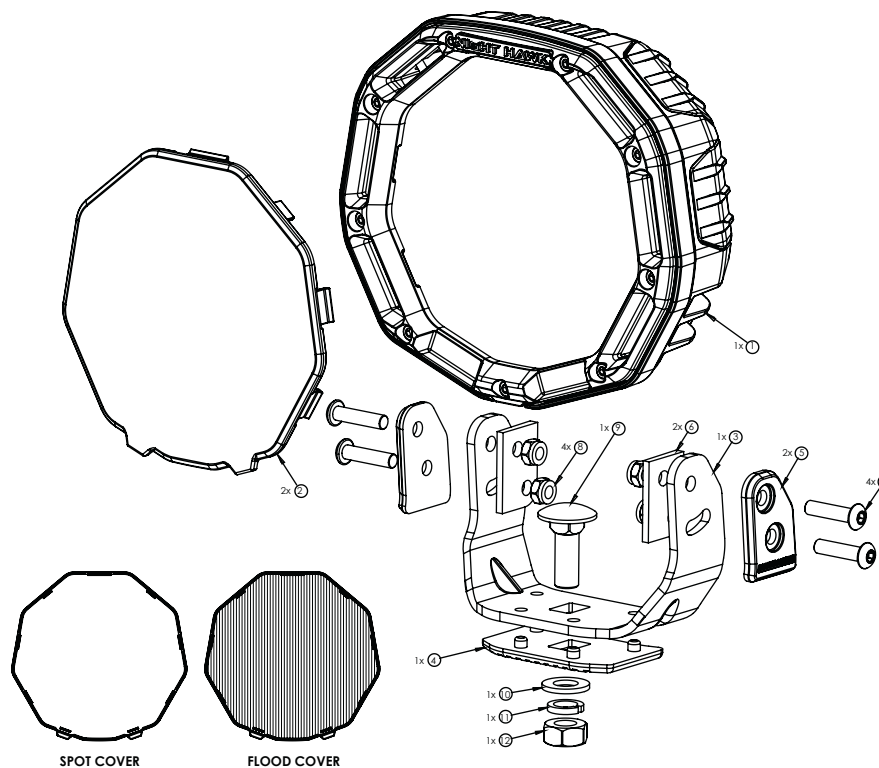


Item#	Component Name	Qty
1	NHX230 Driving Light	1
2	Cover (1 x Spot, 1 x Flood)*	2
3	Mounting Bracket	1
4	Side Plate (1 x Left, 1 x Right)	2
5	Side Rubber Isolator	2
6	Bottom Rubber Isolator	1
7	M8 x 30mm Cup Head Bolt	2
8	M8 Flat Washer	2
9	M8 Spring Washer	2
10	M8 Nut	2

* VBP driving light supplied with 1x Spot Cover per light.

11	M8 x 30mm Button Head Bolt	4
12	M8 Nyloc Nut	4
13	M12 x 35mm Cup Head Bolt	1
14	M12 Flat Washer	1
15	M12 Spring Washer	1
16	M12 Nut	1
17	Power Lead 2.5m with 20A fuse (not shown)	1
18	Anti-Seize Lubricant Sachet (not shown)	1
19	Dielectric Grease Sachet (not shown)	1

Components Diagram - NHX180 7" Single Light



Item#	Component Name	Qty
1	NHX180 Driving Light	1
2	Cover (1 x Spot, 1 x Flood)	2
3	Mounting Bracket	1
4	Bottom Rubber Isolator	1
5	Side Plate (1 x Left, 1 x Right)	2
6	Side Rubber Isolator	2
7	M6 x 25mm Button Head Bolt	4
8	M6 Nyloc Nut	4
9	M10 x 30mm Cup Head Bolt	1

10	M10 Flat Washer	1
11	M10 Spring Washer	1
12	M10 Nut	1
13	Power Lead 2.5m with fuse (Not Shown)	1
14	Anti-Seize Lubricant Sachet (not shown)	1
15	Dielectric Grease Sachet (not shown)	1

Installation Guide

IMPORTANT!

- We recommend the lights/wiring to be fitted by a qualified automotive electrician.
- A forward facing light system may be used only as an auxiliary to high beam. Check compliance and regulations with local authorities.
- Vehicle accessories mounted on the outside of the vehicle may need to comply with regulations governed by your local state authority. Please check before installation.
- When mounting lights, position them appropriately so they do not obstruct existing automotive function. If fitting to front of vehicle, check for bonnet clearances.
- Consideration should be given for airflow requirements of the vehicle and its mechanical components when mounting lights.
- All stainless steel hardware must have anti-seize lubricant applied to the threads before tightening to avoid binding or galling of components.
- Ensure all recyclable parts/packaging are discarded in accordance to local regulations.

Light Mounting Bracket

The mounting bracket is supplied loosely fitted to the light. The stainless steel M6 x 25mm or M8 x 30mm button head bolts that secure the mounting bracket to the light must be removed and have anti-seize lubricant applied to the threads before final installation. The use of anti-seize greatly reduces the risk of thread galling or binding commonly seen between stainless steel nuts and bolts during tightening. Anti-seize must also be applied to all the mounting fasteners used to secure the light to the vehicle.

Vehicle Mounting & Adjustment

Ensure the mounting location for fitment of the light/s to the vehicle is flat, stable, sufficiently strong and has enough clearance around the light to avoid damage to the vehicle from any movement during installation and use. If drilling is required for mounting, ensure raw edges are coated with corrosion resistant paint or inhibitor.

The light can be adjusted horizontally and vertically. All adjustments are to be made before final tightening of fasteners. Horizontal adjustment is gained by rotating the light body to the desired position and tightening the centre M10 or M12 bolt. Vertical adjustment is gained by tilting the light body up or down and tightening the 4 x side bolts.

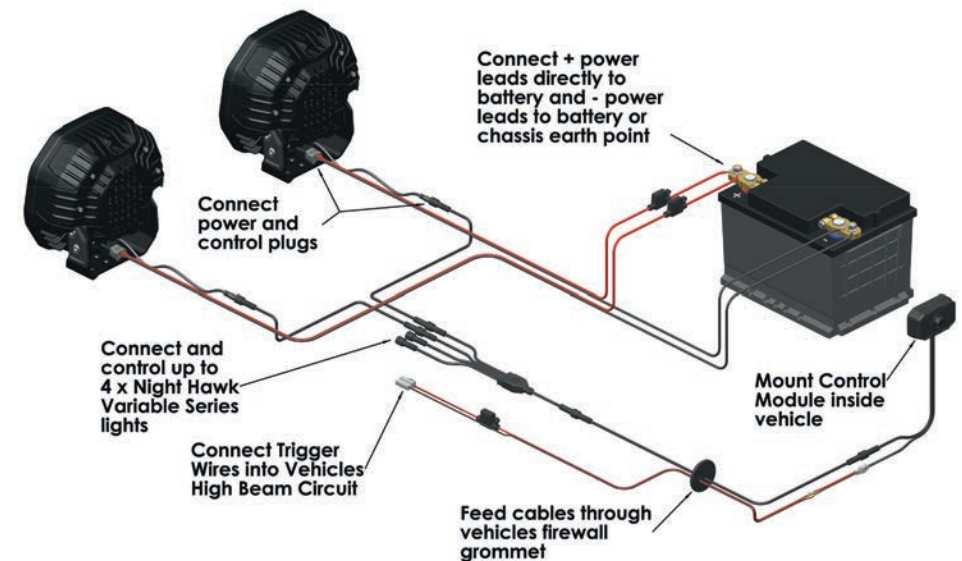
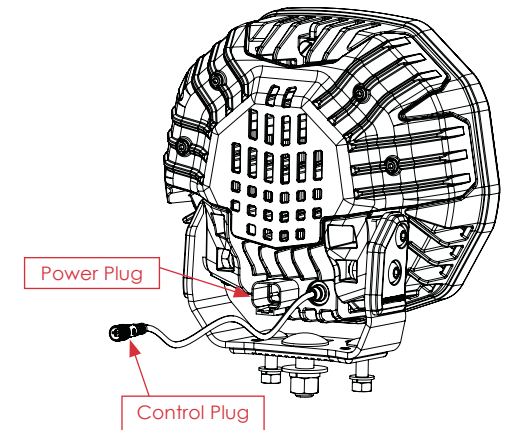
The 9" light should always be secured to the vehicle using 1 x M12 centre bolt and 2 x M8 side bolts as supplied. Apply anti-seize lubricant to these fasteners when fitting to the vehicle. For initial setup and adjustment, the fasteners should be finger tightened. Once all adjustments have been made, all fasteners should be tightened and torqued to the following specification:

RECOMMENDED TORQUE SETTINGS

M8 Fasteners	17Nm
M10 Fasteners	33Nm
M12 Fasteners	57Nm

Wiring Installation

Please refer to the wiring system owners manual, for the full guide on driving light installation.

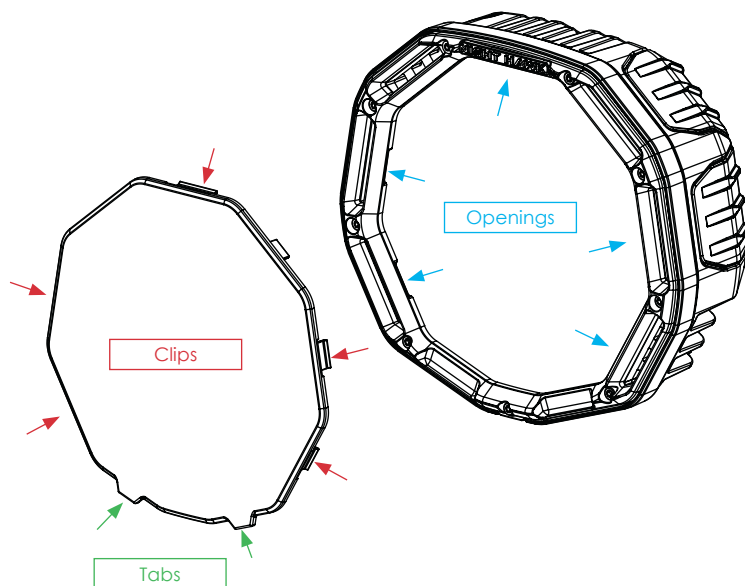


Care & Maintenance

Cover Installation & Removal

Each single driving light comes with 2* protective covers, 1x clear spot beam cover and 1x fluted flood beam cover. (*except for the VBP model which comes with 1x clear spot cover).

To fit a protective cover, align the 5 x clips on the cover with the openings in the front of the light, then push cover firmly until all of the clips 'click' into the openings. **To remove** the cover, pull out on the 2 x lower tabs until the clips release from the light.



Light Care and Maintenance

- The light is not serviceable – DO NOT disassemble.
- Clean lights using pH neutral soapy water and a soft nonabrasive brush or sponge. Rinse thoroughly after cleaning.
- DO NOT use solvents, Alkaline based cleaners or abrasive materials to clean the light.
- If lights are exposed to a high salt environment or any other corrosive substance, remove the light and mounting bracket from the vehicle and thoroughly clean and rinse the components as outlined above.
- Remove the clear cover and plastic cover on the rear of the light periodically to clean any dirt and grime build up.
- Regularly check all fasteners to ensure they are secured and properly torqued.

Warranty Policy

1. Our Warranty

We warrant to you that the Kingsley product is free from defects in workmanship and materials for the warranty period.

2. Fitting and use

Please ensure you:

- fit the Kingsley product in accordance with the product information and all relevant vehicle safety and compliance laws
- use the Kingsley product for the purpose for which it was originally designed and in accordance with the product information and all relevant vehicle safety and compliance laws

3. Exclusions

Our warranty doesn't cover:

- normal wear and tear
- fitting the Kingsley product other than in accordance with the product information and any relevant vehicle safety and compliance laws, including incorrect fitting
- using the Kingsley product other than for the purpose for which it was originally designed or other than in accordance with the product information and any relevant vehicle safety and compliance laws, including unusual, improper or negligent use or misuse or overloading
- misuse or neglect of the Kingsley product, including improper repair or maintenance or failing to repair or maintain
- alteration, abuse, acts of nature, terrorism, vandalism, collision, road hazards or adverse conditions

4. Making a claim

Please immediately contact us as soon as you become aware of a possible defect in the Kingsley product. We'll arrange for you to either attend a Kingsley outlet (at your cost) for a Kingsley representative to inspect the Kingsley product (as fitted to your vehicle) or for you to return the Kingsley product to us. We'll also request you to provide the purchase receipt and complete a warranty claim form. In order to ensure our warranty is not voided, please keep the purchase receipt as proof of purchase and don't remove the fitted Kingsley product from your vehicle before contacting us. Note: Non-transferable warranty. The original purchaser can only claim warranty. If your claim's in order, we'll notify you and (at our sole discretion) either repair or replace the defective workmanship or materials (at our cost) or refund to you the purchase price you paid for the defective Kingsley product. If further information or investigation is required or if the claim does not meet the requirements under our warranty, we'll let you know.

5. Australian Consumer Law

The Kingsley product comes with guarantees that can't be excluded under the Australian Customer Law. You're entitled to a replacement or refund if there's a major failure and compensation for any other reasonably foreseeable loss or damage. You're also entitled to have the Kingsley product repaired or replaced if it fails to be of acceptable quality and the failure doesn't amount to a major failure.

6. Other consumer rights

The benefits to you under our warranty are in addition to any other rights and remedies you are entitled to under relevant consumer laws. Our warranty replaces any other warranty given by Kingsley or its supplier in respect of the Kingsley product.

7. Terms

The following terms have the following meanings:

Term	Meaning
Product information	information about the Kingsley product which may be contained in any of the documentation provided with the Kingsley product, including safety instructions, installation instructions, operating instructions, owner's manual, service manual, labels and packaging
Purchase date	the date you purchased the Kingsley product from a Kingsley outlet, as specified in the purchase receipt
Kingsley outlet	an outlet authorised by Kingsley to sell Kingsley products
Kingsley products	products or components which Kingsley manufactures or sells through Kingsley outlets
Warranty period	commences on and from the purchase date and ends as follows: Night Hawk LED Driving Lights - 5 year warranty
We/Us	Kingsley Enterprises Pty Ltd (ABN 23 001 592 749) E: sales@bushranger.com.au A: 6A Brooks Road, Ingleburn NSW 2565 P: 1800 654 767 W: www.bushranger.com.au
You	the purchaser of the Kingsley product from a Kingsley outlet

www.bushranger.com.au/nighthawk



BUSHRANGER
4x4 GEAR

Kingsley Enterprises PTY. LTD.

Free Call | 1800 654 767 (Australia Only)

International | +61 2 8700 0400

Email | sales@bushranger.com.au

Address | 6A Brooks Road, Ingleburn NSW 2565