

The Rewards of Great Lighting

- 💡 How do we select the correct equipment?
- 💡 How do we achieve the optimised solutions?
- 💡 What are the benefits of good lighting?
- 💡 Does it really matter?
- 💡 How can correct the correct lighting & power solutions support the environment?

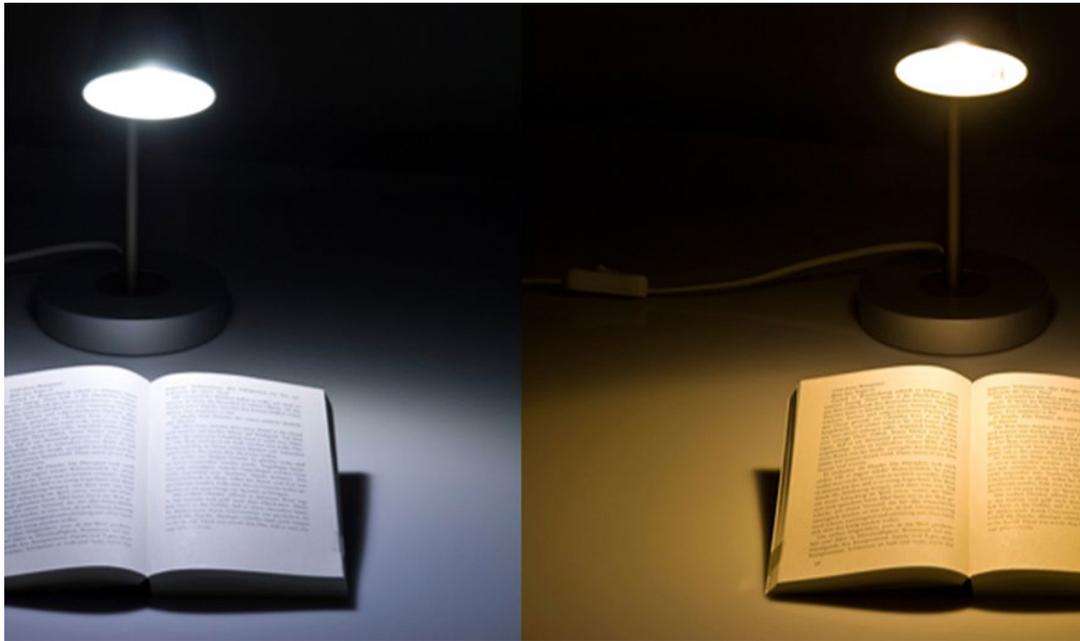
Understanding Lighting terminology?

**Lumens – Lux – Foot candles – Candela –
Lumens per watt – Luminous flux – Luminous
intensity – Luminance – Illuminance – Frenzel –
Total Internal Reflection –
Uniformity – glare – circuit wattage – Colour
Temperature – Kelvin – RA-index- Isometric
plots - UGR – Colour Rendering Index**

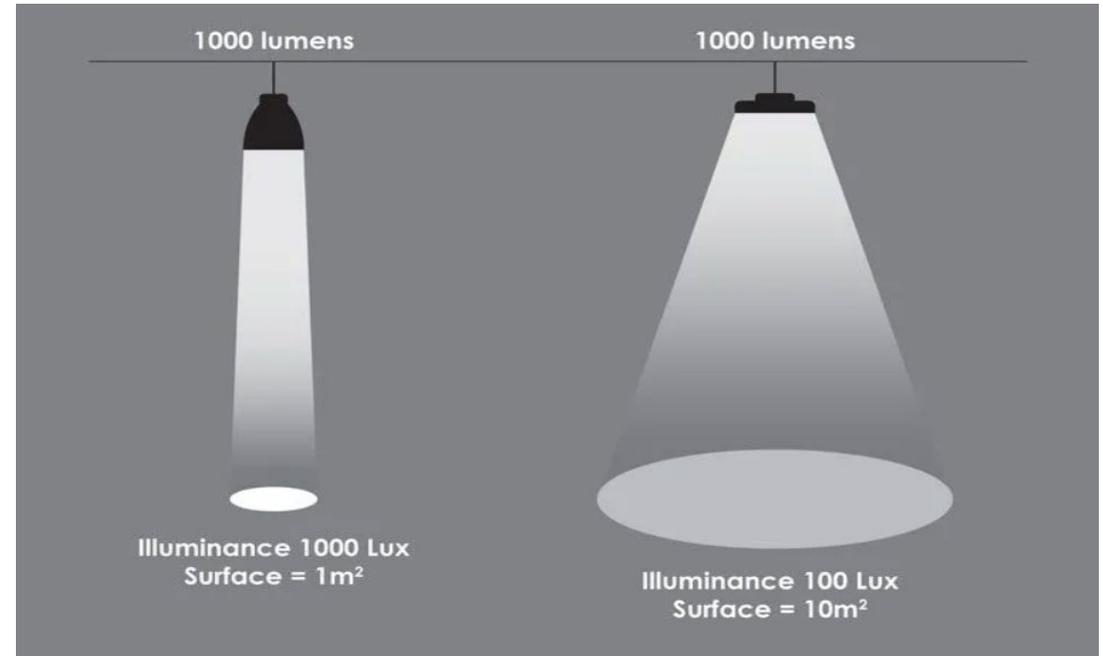


Take care with the numbers

- 6000K v's 2700K
Bathroom v's The Pub



- Same 'power' light
- different result



DON'T
GET LEFT
IN THE
DARK

LIGHTING AND SAFETY

The HSE specify the following minimum lighting levels in HSG 38 Lighting at Work

ACTIVITY	TYPICAL LOCATIONS/ TYPE OF WORK	AVERAGE ILLUMINANCE (LUX)	MINIMUM MEASURED ILLUMINANCE (LUX)
Movement of people machines and vehicles	Car parks, circulation routes and walking routes	20	5
Movement of people machines and vehicles in hazardous areas; rough work not requiring any perception to detail	Construction site clearance, excavation and soil work, loading and distribution points	50	20
Work requiring limited perception of detail	General factory type work, assembling large components	100	50
Work requiring perception to detail	Electrical work, fine detail carpentry, surveying etc	200	100
Work requiring perception of fine detail	Viewing site plans, fine detail electrical work	500	200

Table based on HSE guidance Lighting At Work HSG38

The minimum lighting levels that are therefore important for our work are:

5 lux for getting to and from the worksites

20-50 lux for general P Way work

100 lux for S&T and E&P type activity where a degree of perception to detail is required

It should be noted that the requirement for lux values in excess of 50 lux is to avoid visual fatigue; the illuminance values quoted below this figure are adequate for general safety purposes.

Generic Scenarios

<https://riteliteportablelighting.co.uk/applications-rail-speedy/>

Open Track – Access – Tunnel - Trolley

Speedy Hire

RAIL LIGHTING SOLUTIONS

In Partnership with **RITELITE**
PORTABLE LIGHTING

Design your Rail Lighting Solutions with our online calculator

Rail Lighting Solutions

Please select your scenario

Open Track

Number of tracks

Select An Option

Linear Length you need to light

Select An Option

Book Your Lighting Demonstration

Would you like to see the Ritelite lights in your application?

Complete the following fields and one of our team will be in touch to organise a demonstration at your worksite.

Name your full name

Email a valid email

Company

Phone

SUBMIT

OPEN TRACK

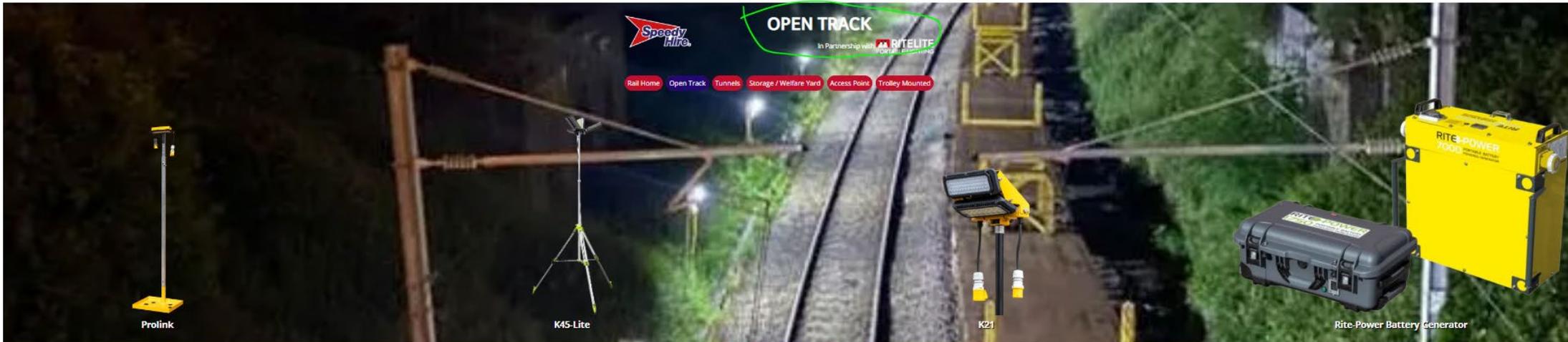
FIND OUT MORE

ACCESS POINT

FIND OUT MORE

STORAGE / WELFARE YARD

FIND OUT MORE



ProLink

K45-Lite

K21

Rite-Power Battery Generator

PROLINK LINKABLE FLOOD LIGHT

Speedy Product Code 35/8508

LOCATOR: [Open Track](#) [Tunnels](#) [Storage / Welfare Yard](#) [Access Point](#)

Design your Lighting Solution
And find out how CO2 you can save

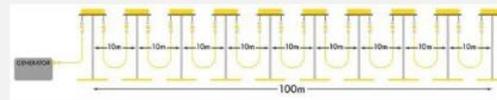


Key Features & Benefits

- Ultra Efficient LED linkable track light compatible with generators and batteries
- Low power consumption allows product to be powered from RITE-POWER battery packs
- Minimised light pollution from bespoke optics and beam control lensing
- Full Even coverage between lights along track exceeding HSE required levels
- Smaller & lighter than other track lighting – avoids issues with weight limits, space on vehicles & security
- Lower carbon footprint in use and in supply chain
- Rugged construction & maintenance free
- Fully compatible with existing lighting systems & deployment methods – Masts, Bases, Cables



Typical Installation



Average Lux – Approx 34 lux

Power Options for Pro-LINK lighting chains

1 x RITE-POWER 1750 Battery Generator will power 10 x ProLink Linkable Floodlights over 100M for up to 11 hours

1 x RITE-POWER 1750x2 Battery Generator will power 10 x ProLink Linkable Floodlights over 100M for up to 22 hours

1 x RITE-POWER 3850 Battery Generator will power 20 x ProLink Linkable Floodlights over 200M for up to 12 hours

Please select your scenario

Open Track

Number of tracks

Single or Double

Linear Length you need to light

200m

Lighting solutions for your Lighting scenario

PROLINK

Quantity	20
Average Lux	34 lux

K21

Quantity	8
Average Lux	84 lux approx

K45 LITE

Quantity	3
Average Lux	Area coverage 3553m2 with 20 lux average @ 100% power

Power your lighting scenario with the **RITE-POWER** PORTABLE BATTERY POWERED GENERATORS

Battery Generator Duration per solution (Hours per model)

RITE-POWER Portable Battery Solutions	RITE-POWER 1750 PORTABLE BATTERY POWERED GENERATOR	RITE-POWER 1750x2 PORTABLE BATTERY POWERED GENERATOR	RITE-POWER 3850 PORTABLE BATTERY POWERED GENERATOR	RITE-POWER 7000 PORTABLE BATTERY POWERED GENERATOR
PROLINK x20	5.25 hours	10.5 hours	11.55 hours	23.1 hours
K21 x8	0.86 hours	1.71 hours	1.88 hours	3.77 hours
K45 LITE x3	0.81 hours	1.62 hours	1.78 hours	3.55 hours

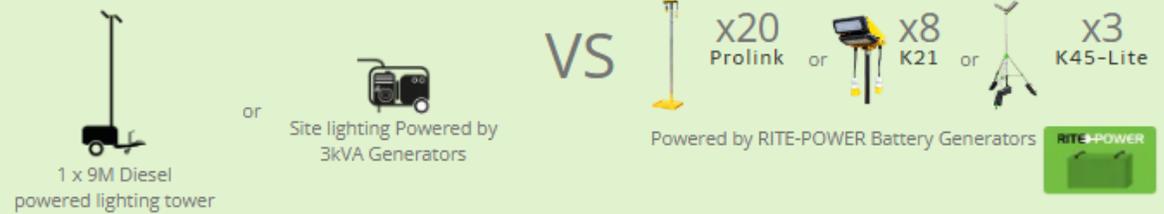
Linkable for extra capacity



How Much Carbon Can I Save?

The following numbers are based on comparing either a 9M Diesel powered lighting tower or portable lighting powered by either a 3kVA petrol or diesel generator with a number of Ritelite beam controlled LED lighting solutions powered by RITE-POWER portable battery powered generators.

All numbers are based on a typical 11 hour working shift. Data source – **Ecoscore**



Product and quantity	Cost Saving	Co2 % Saving	Co2 Saving (kg)	Cost Fuel (£1.80 per litre)	Cost to recharge (generator quantity based on typical lighting set up)	Co2	Co2
x20 Prolink	£43.88	98.2%	51.86kg	£45 (2 x 3kVA generator)	£1.12 (2 x 1750 generator)	52.8kg	0.94kg
x8 K21	£80.08	92.1%	97.36kg	£90 (4 x 3kVA generator)	£9.92 (4 x 7000 or 8 x 3850 generators)	105.6kg	8.24kg
x3 K45-Lite	£60.06	92.1%	73.02kg	£67.50 (3 x 3kVA generator)	£7.44 (3 x 7000 or 6 x 3850 generators)	79.2kg	6.18kg

Ritelite Beam Control Concept



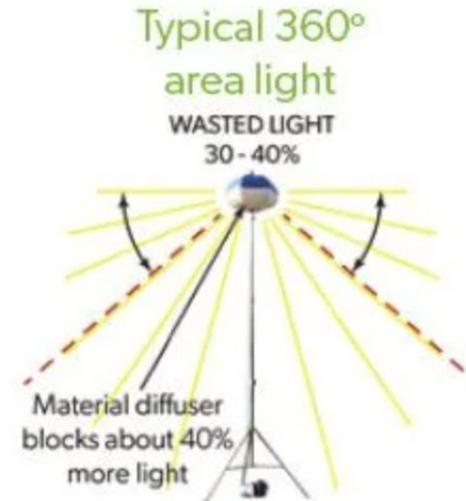
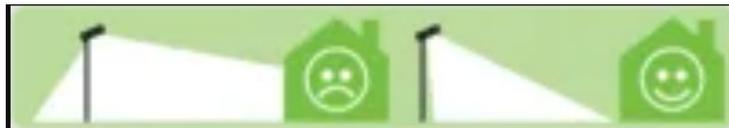
Massively reduced direct glare to people in vicinity of the light.



Massively reduced light pollution to neighbouring houses or areas



All light focused on the area that needs illuminating



Ritelite beam control
K45-LITE 180° - 360° area light

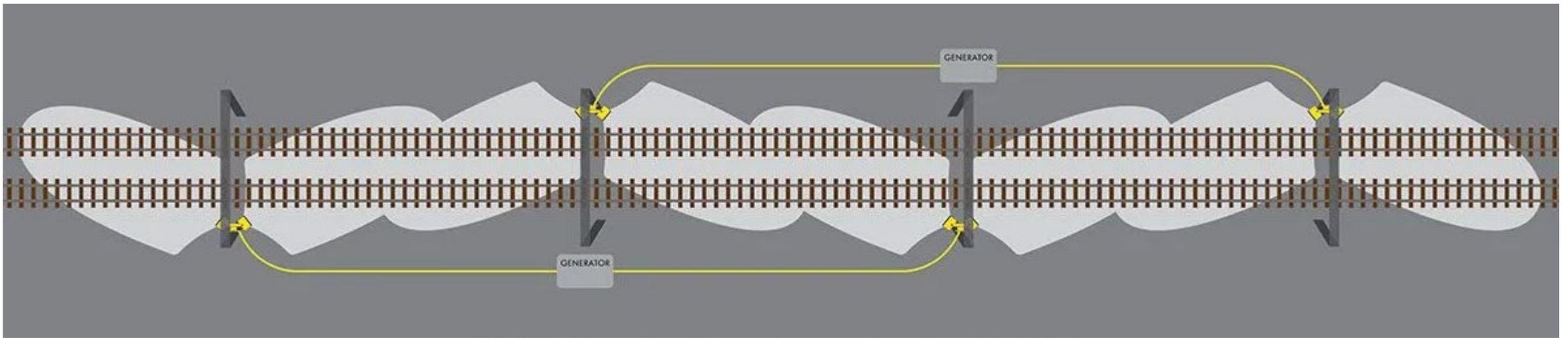


85,000 lumens	Total lumens from the light	85,000 lumens
20% from diffuser 35% wasted in sky	Wasted lumens	0% wasted lumens
33,150 lumens @ 360° 16,575 lumens @ 180°	Useful lumens	85,000 lumens @ 360° 85,000 lumens @ 180°
360° - average 20 lux over 1385m ² 180° - average 20 lux over 395m ²	Approx useful light (lux)	360° - average 20 lux over 3552m ² 180° - average 20 lux over 2028m ²

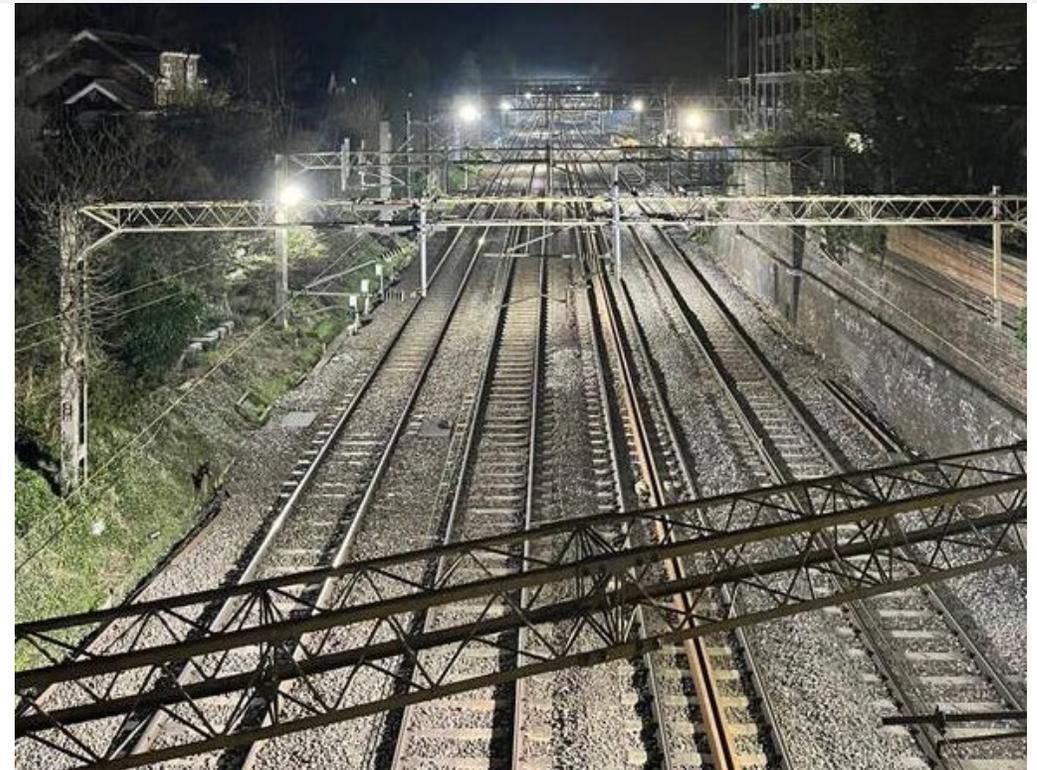
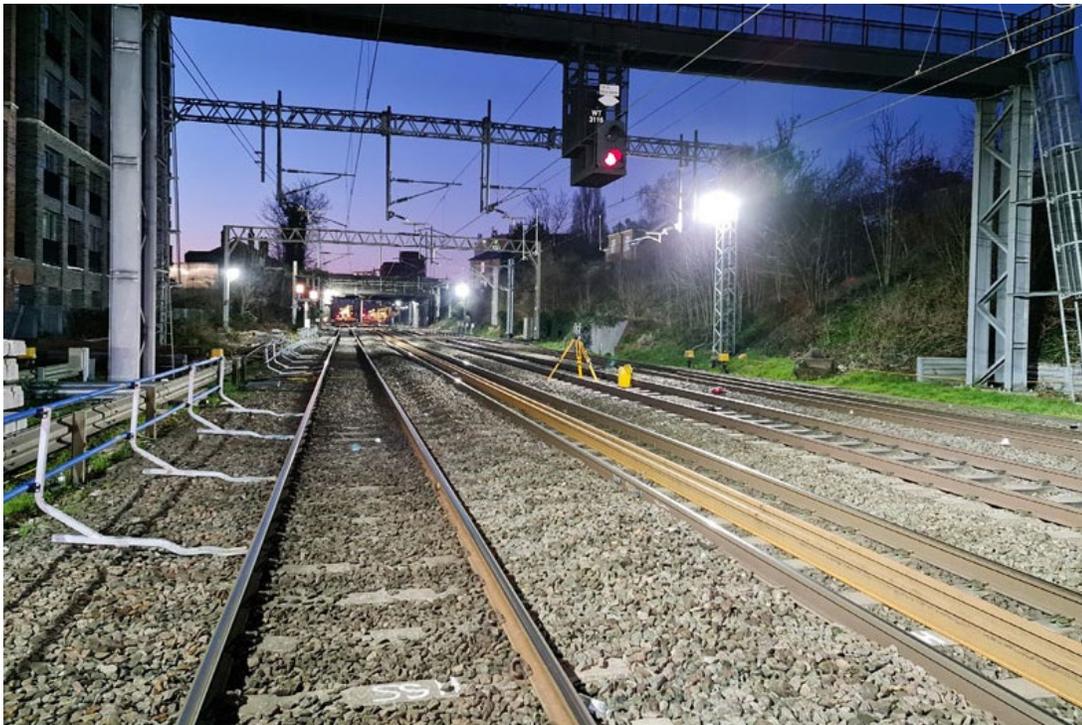
Lighting Options / Site Survey

Watford Junction





K21 fitted to gantry or tripod, staggered down track dual lights



High Efficiency Link Lighting for Rail Track

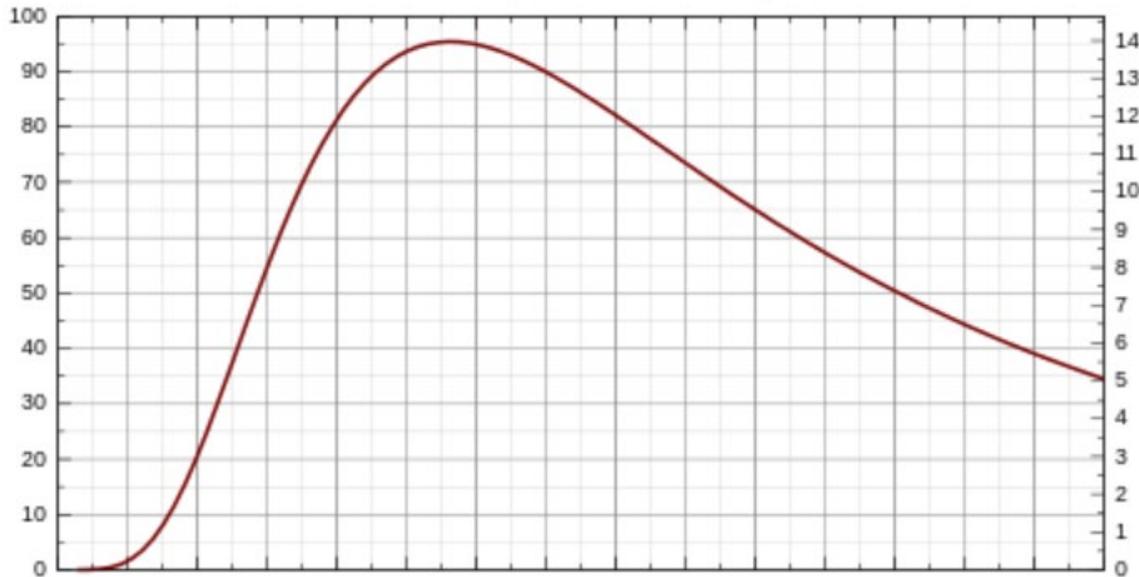


Our bespoke lighting heads are low input, high output with beam control optics on each LED
This allows the maximum amount of lights for cover at the lowest power input.

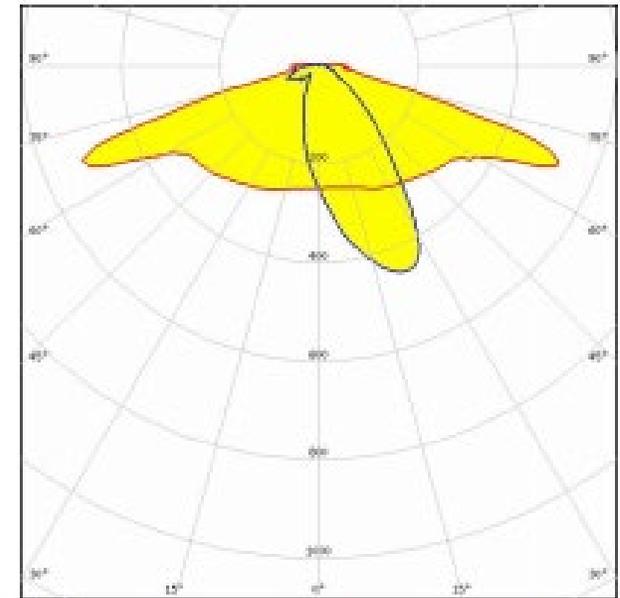


How are the Efficiencies Achieved

- High Efficiency LED Chip set configured to run in 'sweet spot' of efficient performance Lumens / Watt
- Precision Optical control from advanced lens design making all the produced light 'go to work' no spillage / pollution of light upwards or where not required

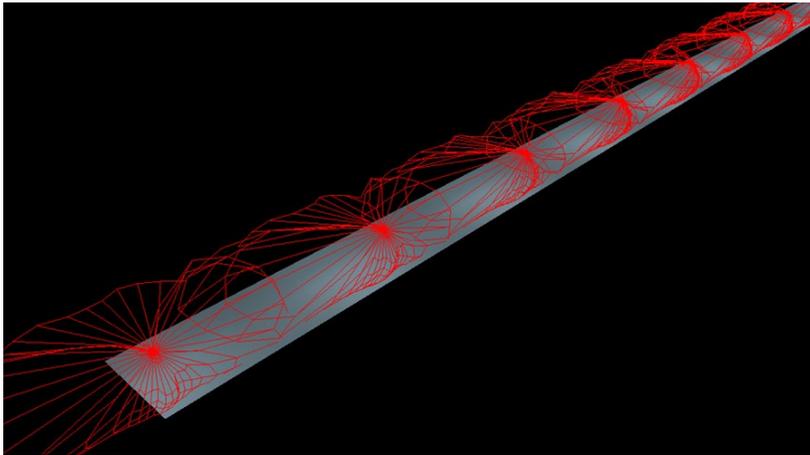


■ Lumens Maximised



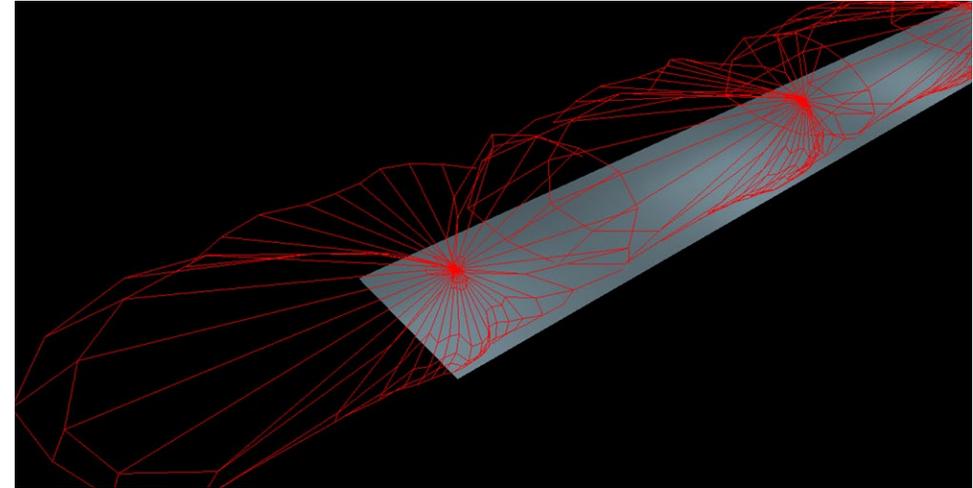
Light Directed to required destination no spillage

Effect of controlling the light – beam pattern

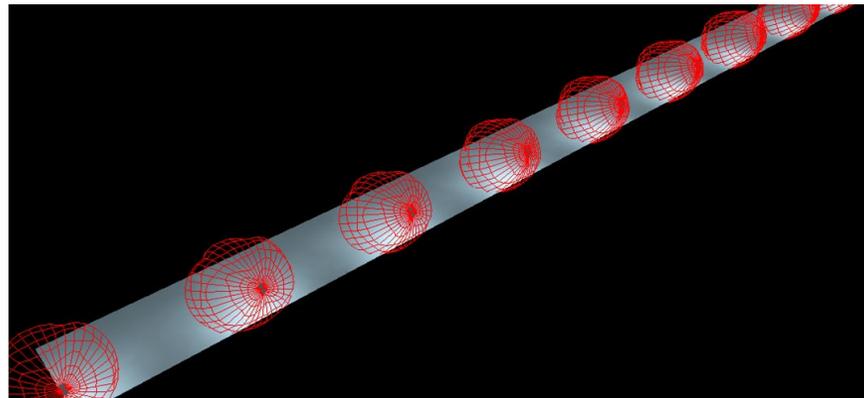


Full Even coverage between Lights

ProLink Lights
Controlled
Beam

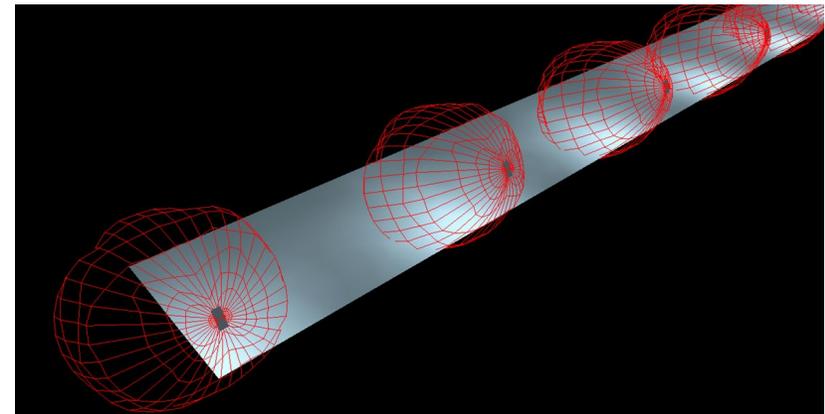


Full Even coverage between Lights



Uneven coverage between Lights

Standard
Symmetrical Beam
Less Control



Uneven coverage between Lights

Advantages of High Efficiency PROLINK Lights

Option to drive lower wattage requirements from **Battery Packs**

Silent / No Fumes / No Fuel / No Maintenance / Long Duration (weekend work)

- ✓ **Minimise disturbance in urban areas from light spillage**
- ✓ **Avoid issues with weight limits on vehicles**
- ✓ **Avoid issues with space on vehicles**
- ✓ **Reduce security concerns of generators on site**
- ✓ **Zero Noise**
- ✓ **Zero Fumes**
- ✓ **Low Carbon Footprint**
- ✓ **Minimised maintenance**
- ✓ **Fully compatible with existing lighting systems and deployment methods**
- ✓ **Masts / Base / Cables / can be driven from generators**



How these efficiencies affect the product

- High efficiency means a smaller physical product

- **ProLink**

- Width 120mm
- Height 55mm
- Length 190mm
- 1.5kg

- **MaxMax**

- Width 280mm
- Height 140mm
- Length 610mm
- 3.6kg

**SIGNIFICANTLY LESS SPACE
NEEDED ON THE VEHICLE
(JUST UNDER 20 TIMES SMALLER BY
VOLUME)**





159!!

GREEN BATTERY GENERATORS DEPLOYED IN WEEK 48

Multiple uses including: **Beam Control link lighting, tunnels and overground,
K21 stanchion lights, K45 tower lights**



Comparison Figures (Per 11 hour shift)

(Based on 10 x Beam Control link lights powered by 1 x battery generator instead of 1 x 3 kVA petrol generator for an 11 hour shift)

	PETROL GENERATOR	BATTERY GENERATOR	SAVINGS PER SHIFT
			
£	£21.09	£0.56	£20.53
CO ₂	26.4Kg	0.47Kg	98.2% (25.93Kg)

Maximum savings for
**159 units deployed over
1 working week**
(7 nights @ 11 hours)

£ = 22,849

CO₂ = 28.9 tonnes

* Figures based on petrol cost of £1.50 / litre. Electricity £0.28 / KWH.

Summary

- **Lighting is Critical to task productivity**
- **Lighting is Critical to safety**
- **The wrong lighting is wasteful**
- **The Correct lighting is available – now.**
- **Prior Lighting Planning is simple to do.**
- **Lighting is able to be driven from green power solutions**
- **The savings possible add up to significant saving in**
 - **Carbon emissions - Install Costs – Running Costs**