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A New Land For Sulphur

A New Age of Light for Mankind – The Future Has Arrived!

Invented by **Michael Ury** over the period 1986 – 1990

First manufactured by Fusion lighting (USA) followed by Tungtai (China), Ningbo (China), **Island Systems** (UK) & LG Electronics (Korea)

Actually Available Now

3 models 700W, 900W & 1300W "Dimming" nlitedrive

Plasma Vortex – PCT

Sun on Earth

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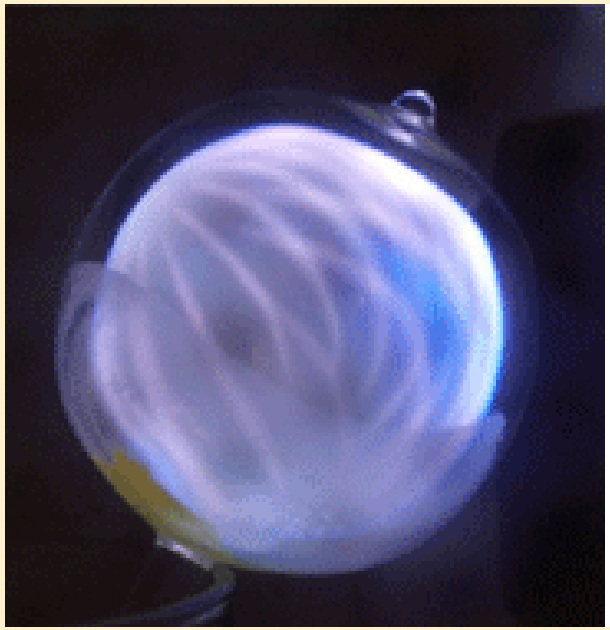
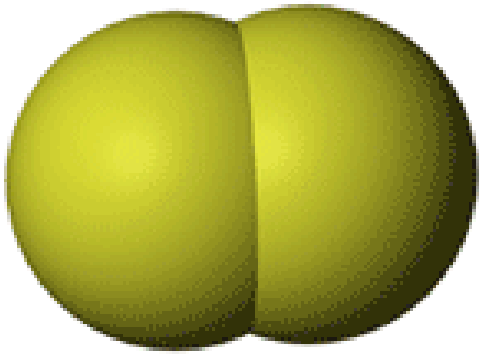
A Sun on Earth ?

How it works!

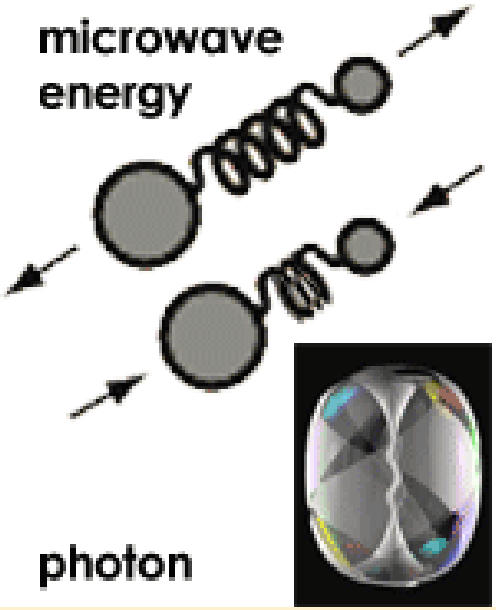
Vortex (Wing) Photoponics (Light Works)

1. Plasma Vortex – caused by Quantum Harmonic Oscillations
2. Quantum Harmonic Oscillations and S_3 shifting UV to Visible light
3. Critical Temperatures – Plasma Containment Technology (PCT) - ultimate target model





diatomic sulphur



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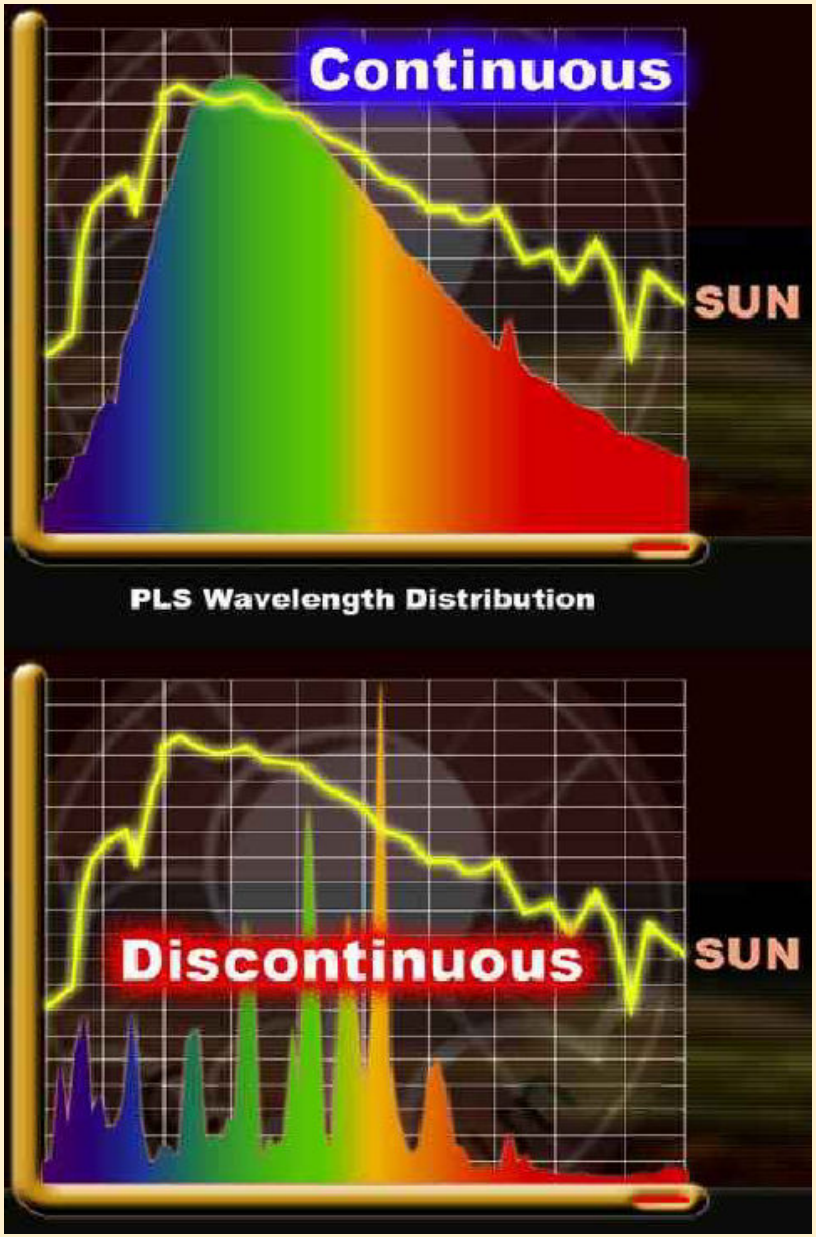
Sulphur Plasma
True Full Spectrum
True Full vision

- Full & Continuous Spectrum
- Closer to Pure Daylight than any other artificial light source known to mankind
- Relatively more powerful than the Sun in most human sensitive wavelengths
- A Pure, clean and healthy light for all living things
- Very little UV & IR, excellent for presenting & preserving UV & IR sensitive items & artifacts – archeological and archival sites, museums, art galleries, etc.



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Sulphur Plasma

Vision For Humans as Nature intended

Driving in full spectrum light increases drivers response times by 15%

Less fatigue - **Circadian Rhythms**

More alert driving - **Circadian Rhythms**

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Sulphur Plasma Light – nature's time keeper

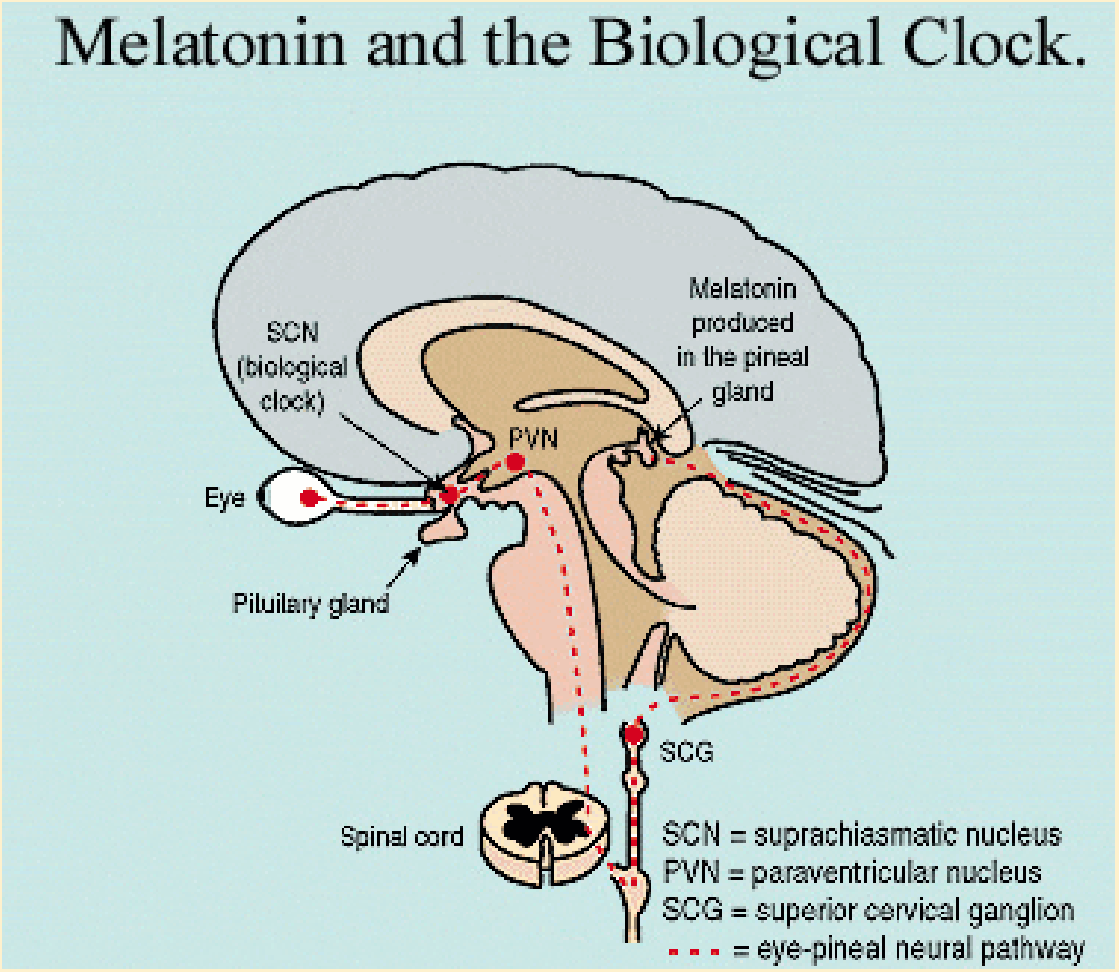
Circadian rhythms - Vision For Humans as Nature intended

Bright light therapy of subsyndromal seasonal affective disorder in the workplace: morning vs. afternoon exposure. Psychiatr Scand. 2001 Apr;103(4):267-74.

There are patterns of brain wave activity, hormone production, cell regeneration, and other biological activities linked to the 24-hour cycle. The circadian "clock" in humans is located mainly in the suprachiasmatic nucleus (SCN), which is a group of cells located in the hypothalamus (a portion of the brain). *Circadian rhythms* are important in determining human sleeping patterns. Shifting into or out of daylight savings time, travelling across time zones (which can cause jet lag), or working at a job that involves late evening or night time work can affect the body's circadian rhythm.

In a person with a circadian rhythm sleep disorder, the body is unable to maintain its normal rhythm. The natural sleep schedule changes so that the person is out of phase with day and night.

Light around 460nm (blue) is needed to set the internal clock to the day cycle or time schedule appropriate to where the person is.



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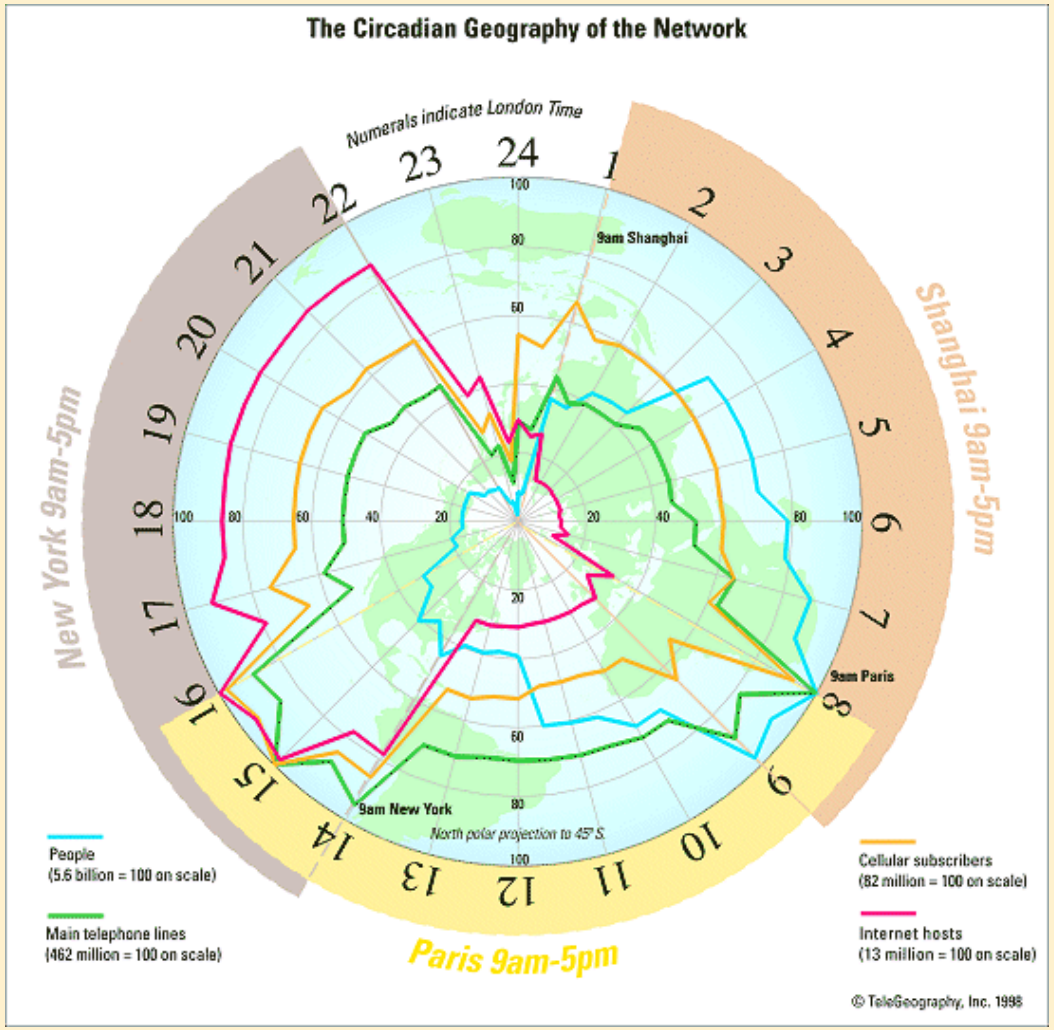
Sulphur Plasma Light – nature's time keeper

Circadian rhythms - Vision For Humans as Nature intended

Source: http://www.telegeography.com (1998). See also Telegeography 1999: Global Telecommunications Traffic Statistics and Commentary, edited by Gregory C. Staple, 1998, TeleGeography?, Inc., Washington, DC. (Alternate sources: [1], AtlasOfCyberspace p.71.)

Bright light is a synchronizing agent that entrains human circadian rhythms and modifies various endocrine and neuroendocrine functions. The aim of the study was to determine whether and how the exposure to a bright light stimulus during the 2 h following a 2 h earlier awakening could modify the disturbance induced by the the sleep deprivation on the plasma patterns of hormones whose secretion is sensitive to light and/or sleep, namely melatonin, prolactin, cortisol and testosterone. Six healthy and synchronized (lights on: 07.00-23.00) male students (22.5 +/- 1.1 years) with normal psychological profiles volunteered for the study in winter. The protocol consisted of a baseline control night (customary sleep schedule) followed by three shortened nights with a rising at 05.00 and a 2 h exposure to either dim light (50 lux; one week) or bright light (2000 lux; other week). Our study showed a phase advance of the circadian rhythm of plasma cortisol without significant modifications of the hormone mean or peak concentration. Plasma melatonin concentration decreased following bright light exposure, whereas no obvious modifications of plasma testosterone or prolactin patterns could be observed in this protocol.



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Common Circadian Rhythm Disorders

Jet Lag or Rapid Time Zone Change Syndrome: Jet lag is the common term for time zone change syndrome, a temporary set of symptoms that occur when people travel across more than two time zones. The resulting change in daylight hours can cause excessive daytime tiredness, headaches, moodiness, tired muscles, and a general "worn-down" feeling. This syndrome consists of symptoms including excessive sleepiness and a lack of daytime alertness in people who travel across time zones.
Shift Work Sleep Disorder: Shift work can wreak havoc with the body's circadian rhythm: many people never fully adapt to their new schedule. Maintaining regular bedtime schedules, even on days off, can help reduce the effects of shift work.
Delayed Sleep Phase Syndrome (DSPS): Delayed Sleep Phase (DSPS) occurs when people fall asleep more than two hours later than their desired bedtimes.
Advanced Sleep Phase Syndrome: The main characteristic of advanced sleep phase syndrome is when the major rest period begins earlier than desired. People fall asleep earlier than normal, and have unusually early awakening times. This syndrome results in symptoms of evening sleepiness, an early sleep onset, and waking up earlier than desired.
Non 24-hour sleep wake disorder: Non 24-hour sleep wake disorder is a condition in which an individual has a normal sleep pattern but lives in a 25-hour day. Throughout time the persons sleep cycle will drift in and out of normal societal norms, sometimes falling asleep at a later time and waking up later, and sometimes falling asleep at an earlier time and waking up earlier.

Bright light improves vitality and alleviates distress in healthy people. J Affect Disord. 2000 Jan-Mar;57(1-3):55-61.

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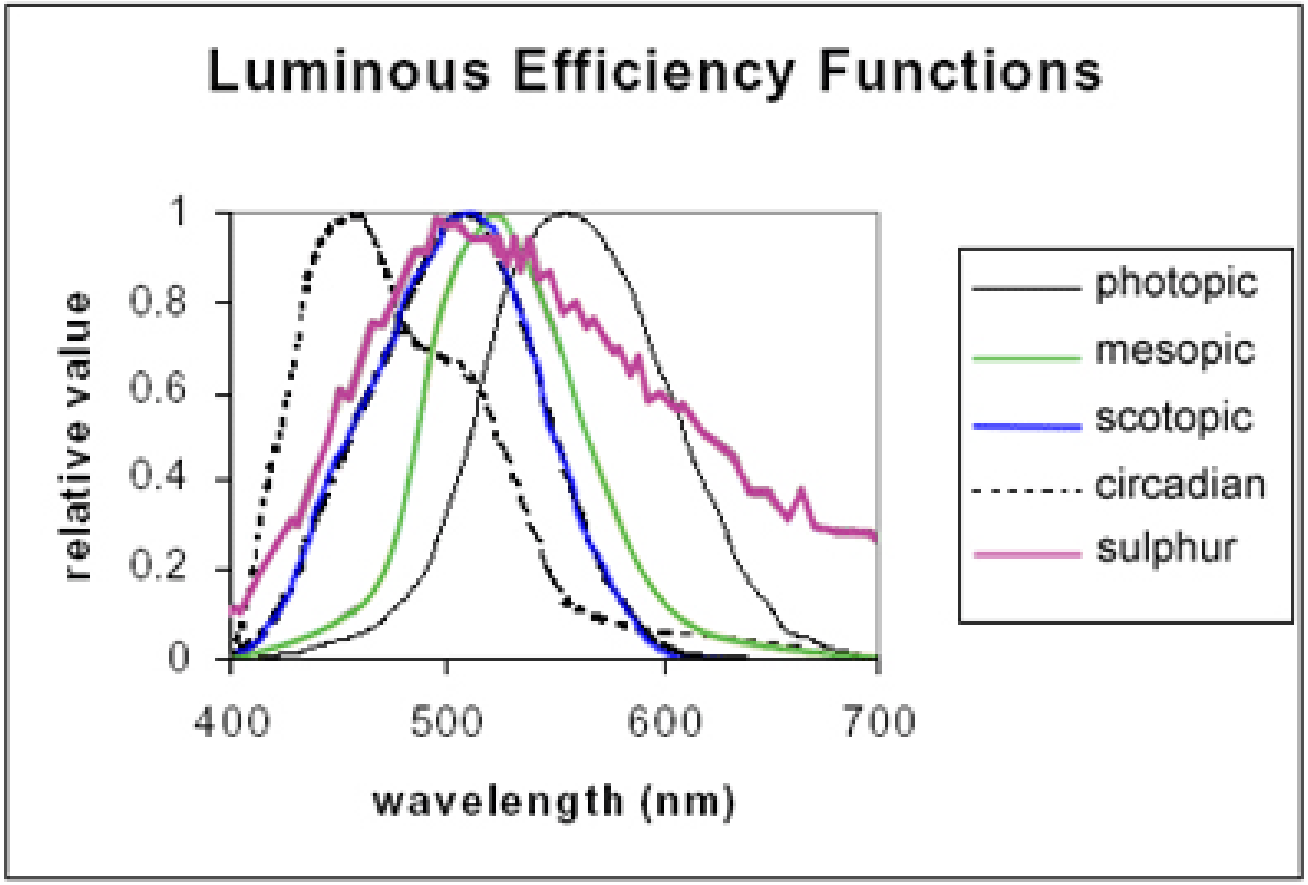
Circadian Rhythms

Vision For Humans as Nature intended

Circadian, Scotopic, Mesopic or Photopic Lumens ?



empirically derived action spectrum for melatonin suppression

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Sulphur Plasma

Here comes the Sun - Sulphur Lighting:

Human Vision at its Best.

Photopic : 72,000 lm Daytime
Mesopic : 105,000 lm Twilight
Scotopic : 182,000 lm Night

Photopic vision is the term for human colour vision under normal lighting conditions during the day.
In the range above 3.4 cd/m2, the human eye uses three types of cones to sense light in three respective bands of colour. The pigments of the cones have maximum absorption values at *wavelengths* of about 445 nm (blue), 535 nm (green) & 575 nm (red). Their sensitivity ranges overlap to provide continuous (but not linear) vision throughout the visual spectrum. The maximum efficacy is 683 *lumens*/W at a *wavelength* of 555 nm (yellow).

Mesopic vision is the term for a combination between *photopic vision* and *scotopic vision* in low but not quite dark lighting situations.
The combination of the higher total sensitivity of the rods in the eye for the blue range with the colour *perception* through the cones results in a very strong appearance of bluish colours, like those in flowers, around dawn.

Scotopic vision is the scientific term for human vision "in the dark", below 0.034 lm/m2.
In that range, the human eye uses rods to sense light. Since the rods have a single absorption maximum of about 1700 *lumens*/W at a *wavelength* of 507 nm, scotopic vision is colour blind. The sensitivity range of the rods makes the eye more sensitive to blue light at night, while red light is almost exclusively perceived through *photopic vision*.

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Sulphur Plasma

Vision For Humans as Nature intended

HPS, Mercury Vapour, Metal halide, Tungsten, Xeon, Fluorescent … all discontinuous
Discontinuous spectrum lighting – Should be discontinued

Discontinuous spectrum lighting symptoms include headaches, poor concentration, impaired performance, gastro-intestinal distress and poor psychomotor coordination.

Only Sulphur Plasma and the Sun are True Full Spectrum

SAD – Seasonal Affective Disorders eliminated – Full Spectrum , rich in essential blue light, enabling physiological order.

Safer, Healthier & cleaner light – all life needs the Sunlight, and now its available whenever and wherever you need it.

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Sulphur Plasma

Vision For Humans as Nature intended

Discontinuous spectrum lighting – to be discontinued in Aircraft Maintenance

Civil Aviation Authority advisors recognise that a new framework for lighting is needed.

www.atclasham.co.uk

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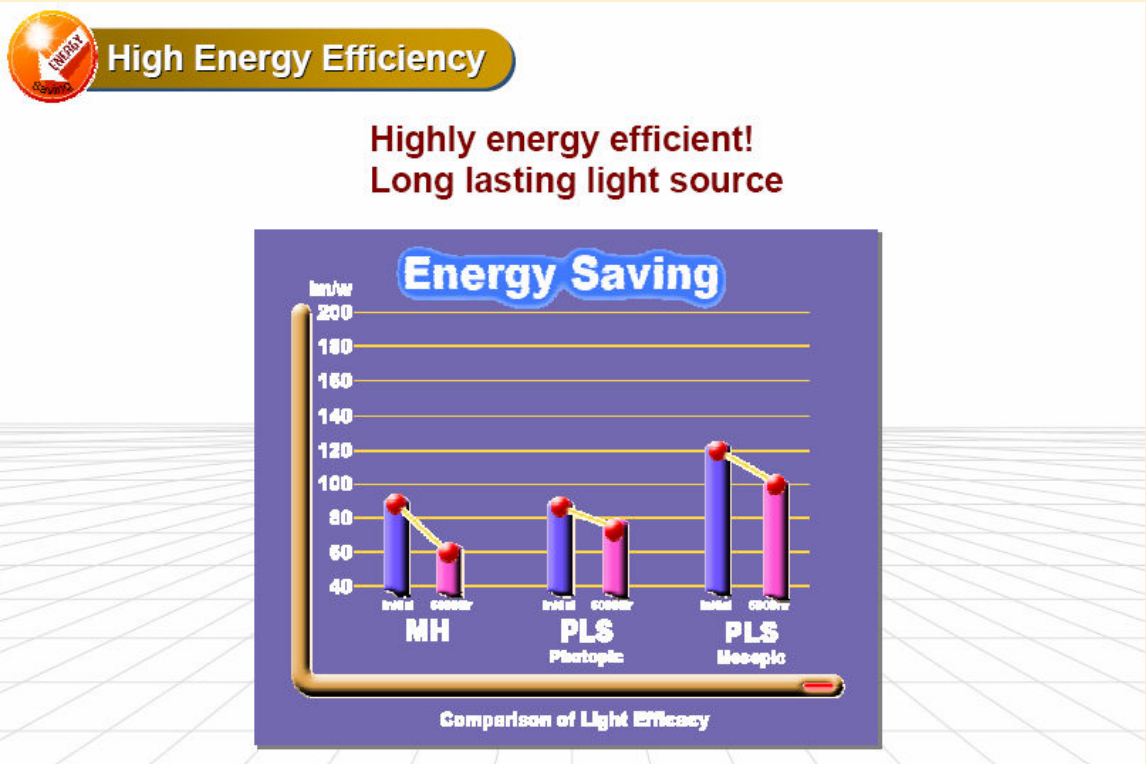
Sulphur Plasma

High Energy Efficiency , Reliability & Longevity

Highly efficient light source

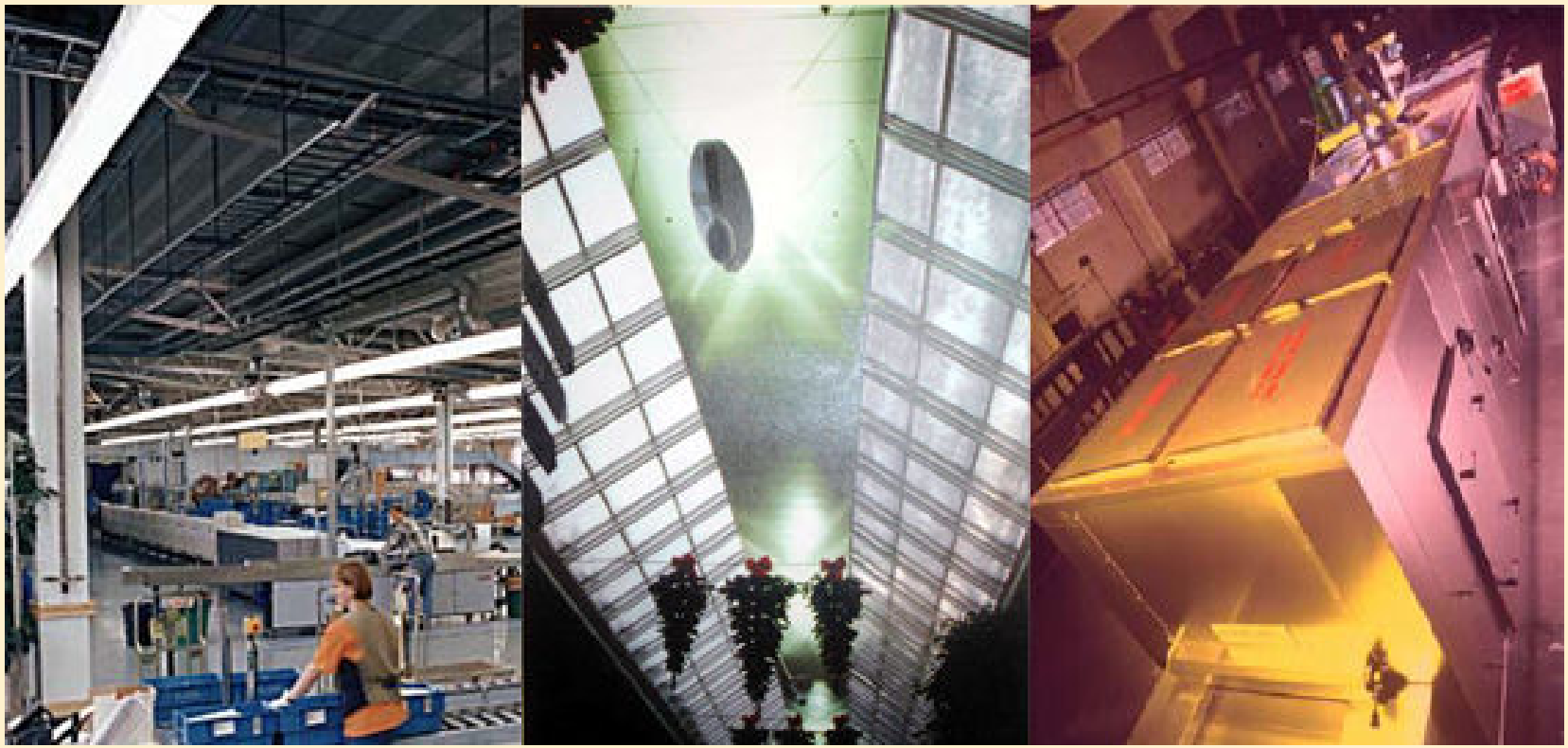
More efficient than all other HID Lighting Technology

10% to 60% Energy Saving



Longevity and Reliability – 20,000hrs for least strongest part.

Existing magnetron units in field with over 70,000hrs maintenance free.



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Sulphur Plasma

Light Tube & Fibre Technology

Even distribution of light or whole photoponic transfer of light up to 40 feet long

New Architectural Creations Possible – Remote Control Lighting

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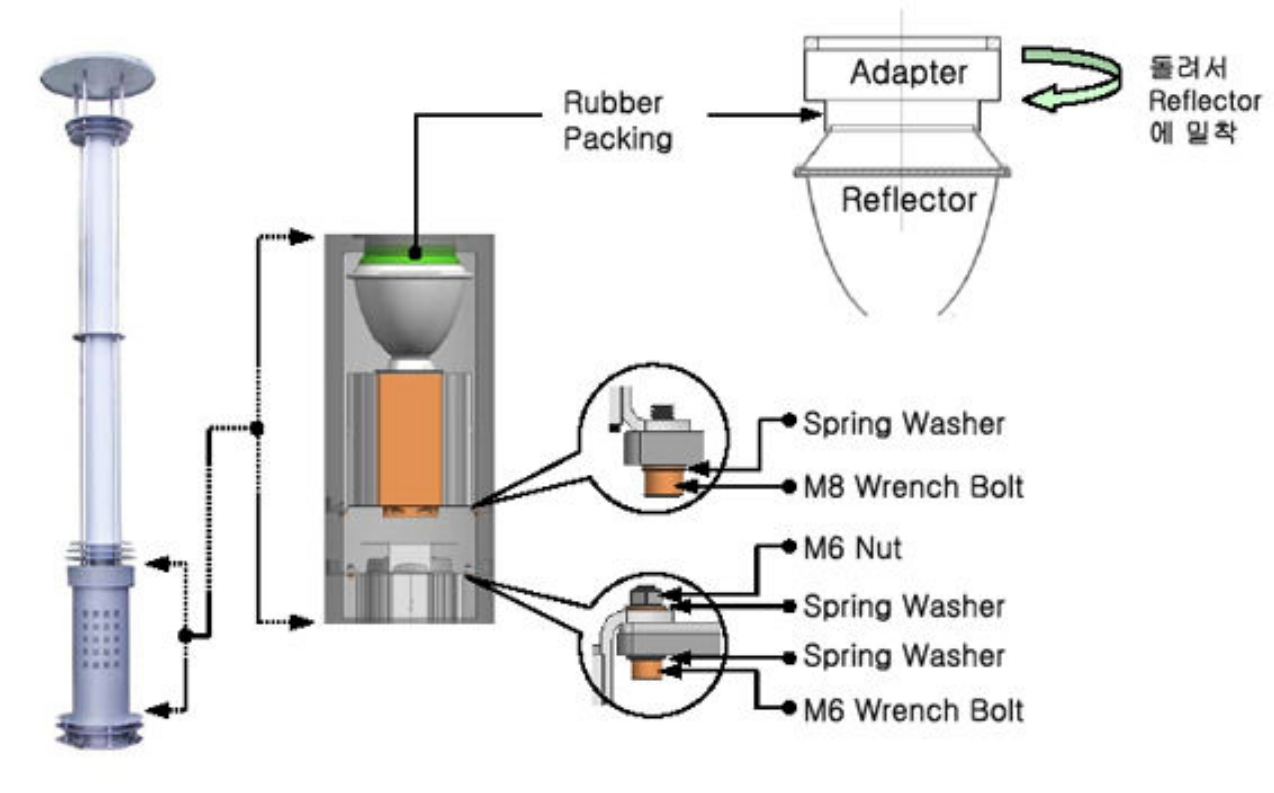
Sulphur Plasma

Light Tube & Fibre Technology



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Sulphur Plasma

Light Tube & Fibre Technology

Even distribution of light or whole photoponic transfer of light up to 40 feet long

Hazardous & Dangerous environments are provided with "photons only" zero fire risk perfect for Petroleum and Sulphur Refineries.

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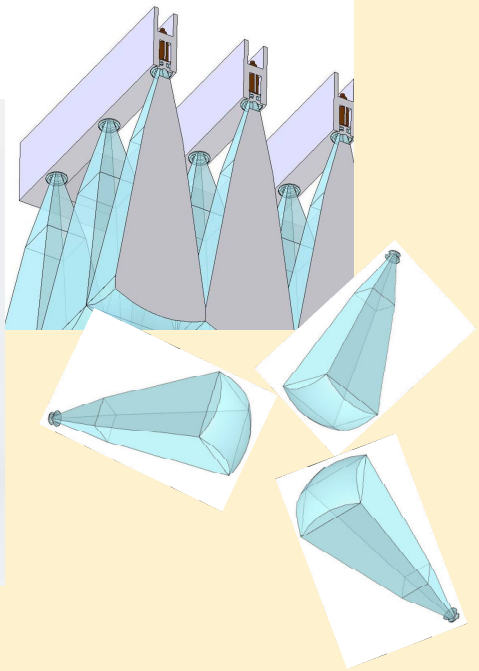
Sulphur Plasma

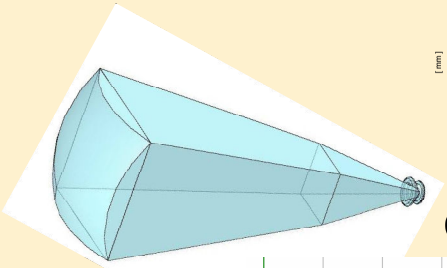
Light Tube & Fibre Technology

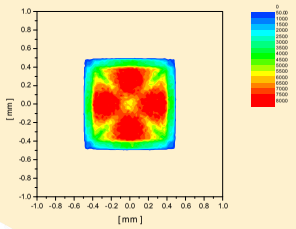
Even distribution of light or whole photoponic transfer of light up to 40 feet long

Fibre optical distribution of light

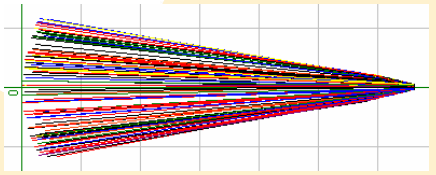
Managed Distribution of light which can be blended with collected natural sunlight, networked through out entire building, Sulphur light for everyone in the building, no windows needed







Concentration



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Sulphur Plasma

Light Pipe & Fibre Technology

Even distribution of light or whole photoponic transfer of light up to 40 metres long

Under Water

Down the leg surface of an oil rig deep down in the dark depths of a cold ocean where divers are working. Aquaculture (Aquaponics & Inland Horticulture) Photoperiod Manipulation and Light Pipes for multiple grow levels (racks or tiers)

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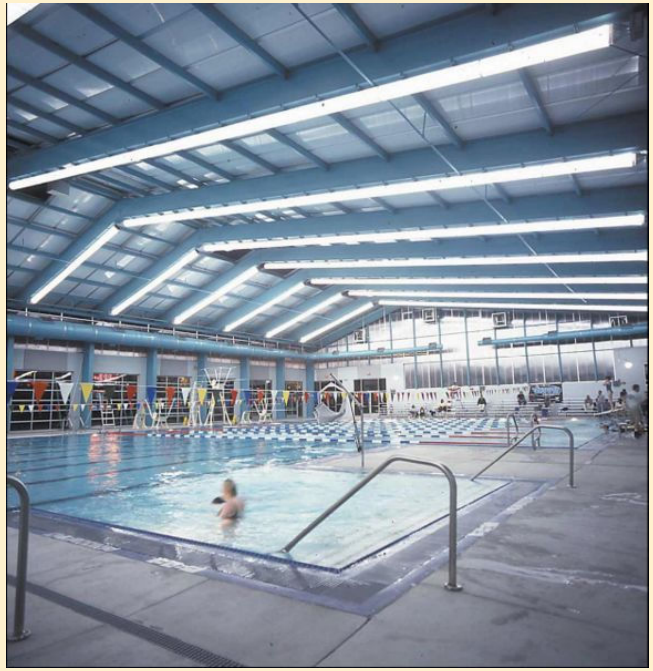
Sulphur Plasma

Proven Light Tube Technology

Hazardous & Dangerous environments are provided with "photons only" zero fire risk, perfect for warm, wet and humid indoor areas and Ice cool Refrigerated warehousing. Powerful Remote Full Spectrum Lighting.



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Sulphur Plasma

The Reliable Sulphur Lighting available now:

Photopic : 72,000 lm Daytime
Mesopic : 105,000 lm Twilight
Scotopic : 182,000 lm Night

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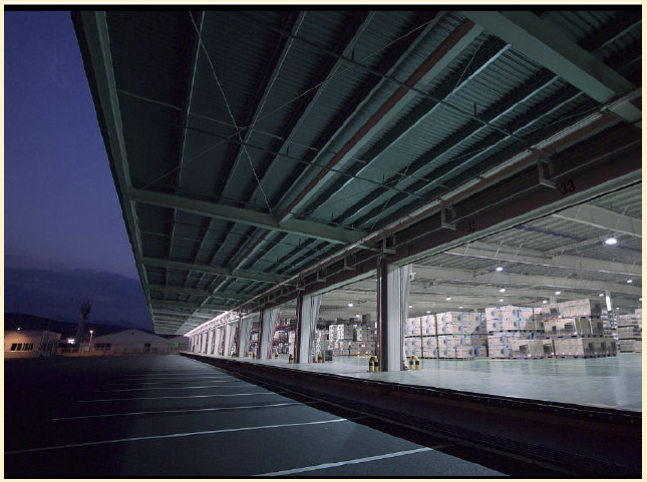
Sulphur Plasma

The Reliable Sulphur Lighting available now



Teleportation is difficult, Phase Shifting is Easy

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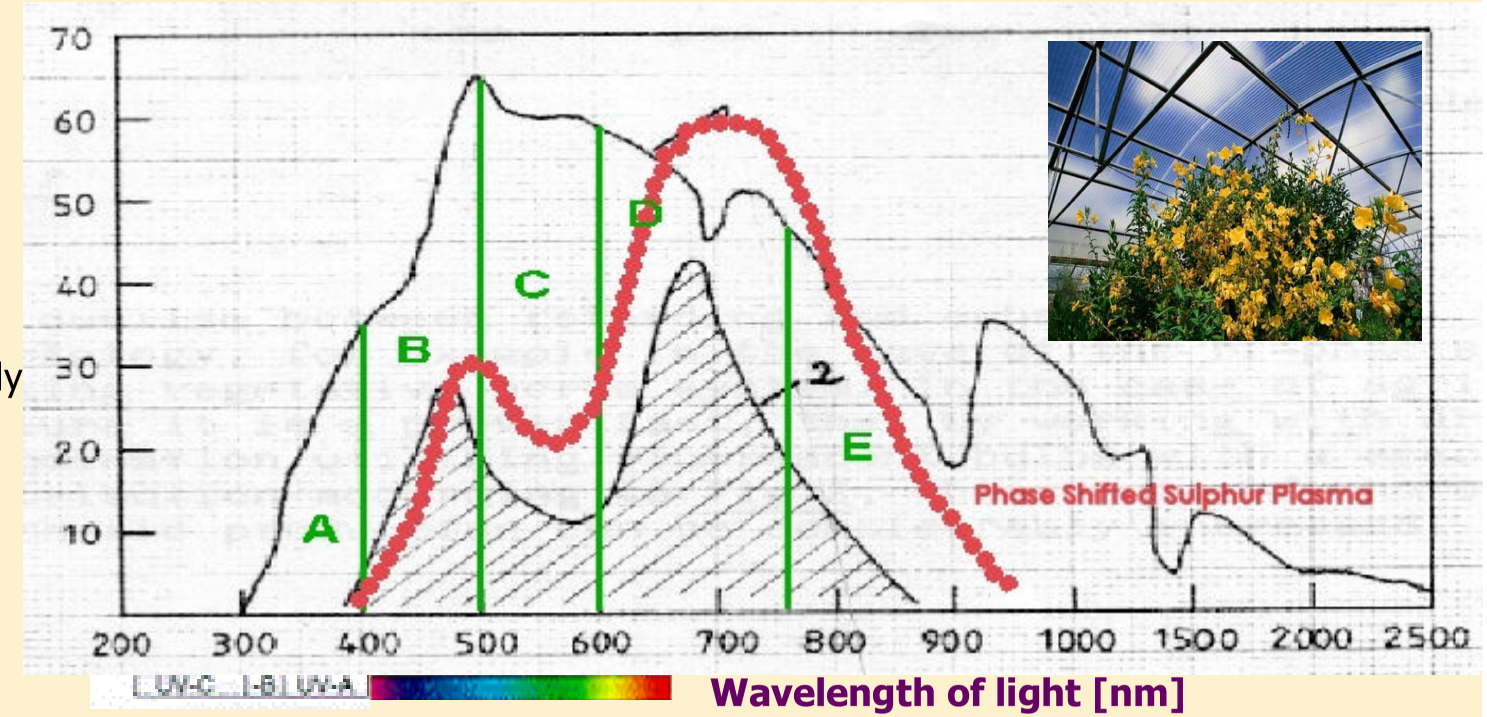
PURple
Is not a colour, it's 2 colours at least, red & blue

Photosynthetically Useful Light



Curve 1	=	*Solar spectrum, terrestrial*
Curve 2	=	*Photosynthetically Active Radiation (PAR)*
A	=	*UV-A radiation. Doesn't affect plant growth, but produces brighter colors, stronger aromas and causes natural disinfection.*
B + D	=	*Most productive spectral regions.*
C + E	=	*Only small contribution to photosynthesis*

Phase shifting technology allows us to shift colours (e.g. green to red) manipulating colours to maximise photosythesis with minimal energy losses – NOT A FILTER

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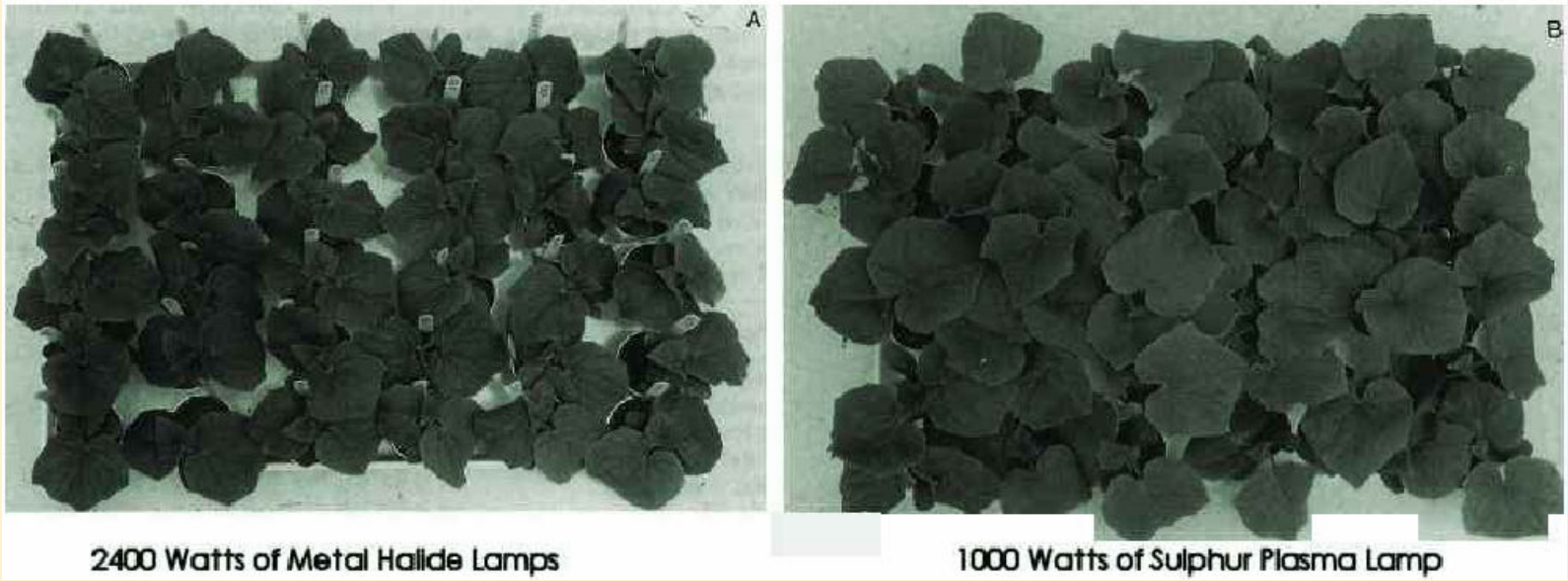
Sulphur Grows Plants from above & below

Total stem length 44% increase, petiole (the small stalk attaching the leaf blade to the stem) length was 90% greater and leaf enlargement 34% higher
Thinking of Carrots and potatoes, dry weights of roots were 36% greater, thinking of cabbage and corn, dry weights of tops were 28% higher



Sulphur now recognised as the 2nd most important Plant nutrient, (world wide as 4th,), so NPK becomes NSPK Nitrogen, Sulphur, Phosphorous Potassium

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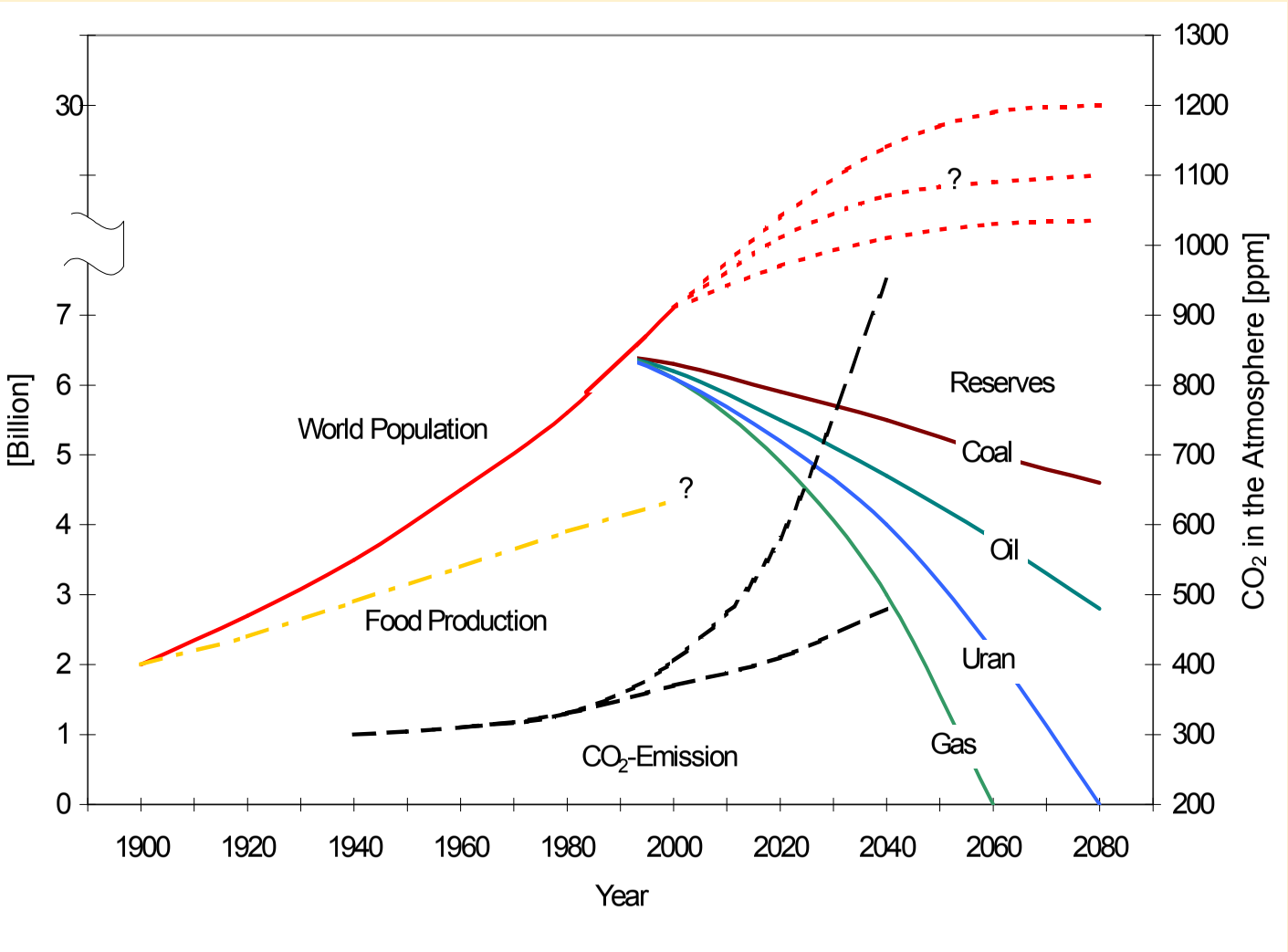
Energy Reserves, World Population, Food Production



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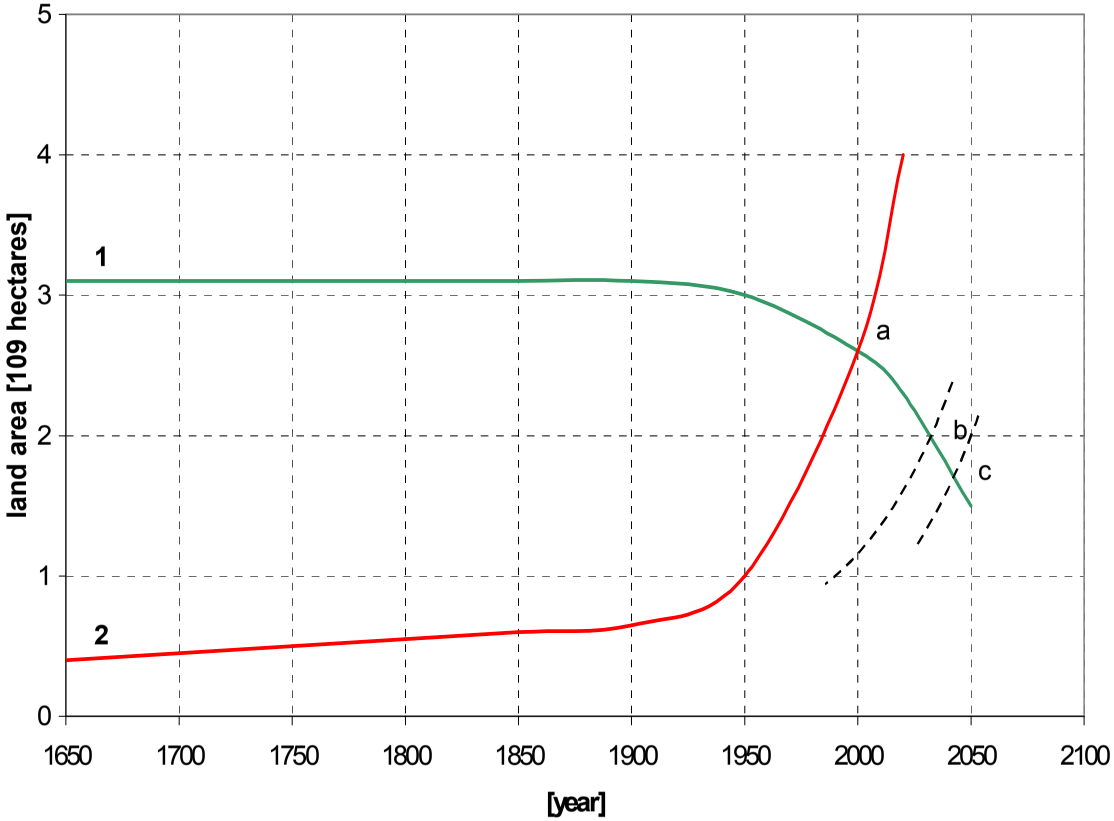
Growing population and decreasing arable land space, new land needed, must be viable, sustainable & simple.

1. Usable worldwide agriculture land

2. World population x 0,4 ha

a. Culmination point if 0,4 ha is needed to feed one person
b. Culmination point if 0,2 ha is needed to feed one person
c. Culmination point if 0,1 ha is needed to feed one person



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Sulphur Plasma Systems

Come back to Earth – Terraponic systems using hybrid hydroponics and Aquaculture for a sustainable development

Using lights in Greenhouses

Bananas grow in winter in Iceland in greenhouses.

Greenhouses mean fresh, locally produced food for everyone

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Sulphur Plasma Systems

The Sun on Earth, best for all life - Tomato yield increase from 3Kg per square meter to 5 kg per square meter = 66% increase using Sulphur lighting.

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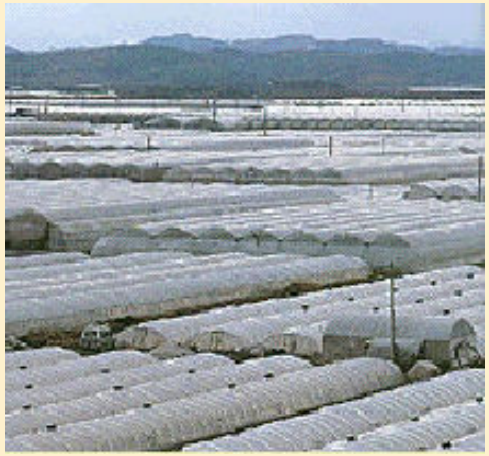
Greenhouse industry is rapidly increasing in sunny regions

Sample of Market/Overview:

Japan & South Korea
- 105 000 ha. greenhouse area
- Fast growing solar business



United Arab Emirates
- 1 450 ha. greenhouse area
- greenhouse cooling most required

Spain/Almeria
- 33 700 ha. greenhouse area
- 0,41 €/kWh solar energy

25g/ha (1000 lamps 25mg/ha) = billions of Sulphur lamps

80kg Sulphur nutrient per ha = billions of kg of Sulphur

Sulphur Lighting will significantly increase plant nutrient demand

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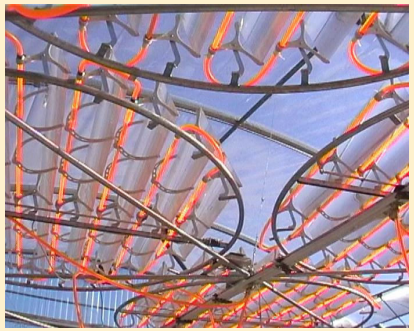
New Lands for Sulphur above and below plants Sulphur Plasma Greenhouses consume CO2

Benefiting from hybrid polymer technology which has net effect of absorbing CO2 from the outside environment and releasing inside the greenhouse for the plants to feed on.
Phase shifting liquid polymer ponics (green to red shown)
Combining with Solar Energy powering lamps for photoperiod extension, enabling viable, sustainable development of food production.



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aquariums

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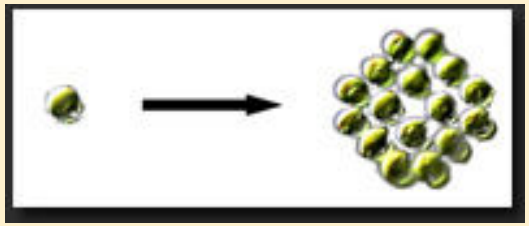
Sulphur diet is key to the Algae Alternative - Sulphur supply to algae dictates hydrogen production

Change is the only constant in the world's climate.

Change in carbon dioxide concentrations since the start of the Industrial Revolution 200 years ago is unprecedented in the millions of years of known geological history. Sulphur light is probably the best for the micro-algae based (phytoplankton) process to continuously harvest bio-mass from Photo-Bio Reactors to further produce:
Electricity (Direct Alcohol Fuel Cell)
Fuel (M/Ethanol & Bio diesel)
Coal (Hydrothermal Carbonization)
Animal Feed (Protein Residue)
…. And all in a carbon dioxide neutral way!
http://www.green-trust.org/2000/algaehydrogen.htm

Like Many plants, algae convert CO2(carbon dioxide) to organic material in photosynthetic reactions. Electrons from this reduction reaction ultimately come from water, which his converted to oxygen and protons. The energy for this process is provided by sun-light, which is absorbed by pigments (primarily chlorophylls and carotenoids).

Fresh and salt water species of phytoplankton can be cultivated



Under optimal conditions the bio-mass of algae may increase four fold within 24 hours and therefore a much higher yield compared to crop based bio-mass production can be achieved. The process is linearly scaleable
Highly efficient algae resistant surface technology fabrication techniques virtually eliminate maintenance requirements.

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Film Industry – Perfect Photography

EFA
EUROPEAN FILM ACADEMY
EUROPEAN FILM AWARDS

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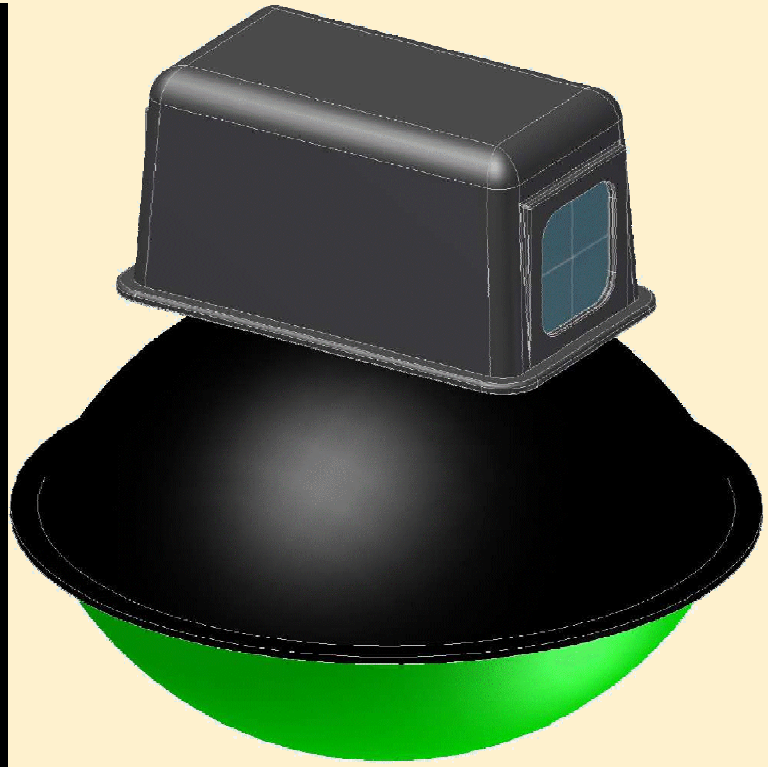
Demonstrated at the TSI World Symposium 2007



Island Systems nlite version 1.00 development package demonstrated included:

Remote MS Windows compatible network management software.

The nlitedrive plasma engine based on the Swedish Magdrive allowing efficient PFC dimming.

The German pure Sulphur 1300W lamp

The British, German and Japanese plasma-tron controlled by the American and Swedish MCP (Master Control Program)

An LGE PLS 700W was also demonstrated

Everything Needs Light