

Tungram Flexi-Grow

Tailored to your needs



DATASHEET

The LED Greenhouse Linear Toplight lamp of the Tungram Agritech Series has been designed as a replacement for traditional 1000 W High Pressure Sodium lamps. It has an improved efficacy up to 4.0 $\mu\text{mol}/\text{J}$ and uses more than 50% less energy and it also offers light level up to 3580 $\mu\text{mol}/\text{s}$ therefore fewer LED fixtures may be needed to achieve the required PPF (photosynthetic photon flux density). Our Toplight modules have standard and special wide beam optics, with which we can ensure the most uniform light distribution for your plants to grow evenly and maximize the yield.

We are flexible in meeting your demands for lighting up your greenhouse. The offer will be based on the main criteria you specify:

- 
Optimized for investment: If the goal is to keep the initial investment low, choose our investment optimized solution, which balances energy consumption and light output.
- 
Optimized for operational cost: If the aim is to minimize operating costs, we will be able to power the greenhouse with high efficiency luminaires up to 4.0 $\mu\text{mol}/\text{J}$.
- 
Maximized for light output: If you want to maximize the photons for your crop, our high PPF (up to 3580 $\mu\text{mol}/\text{s}$) lamps are the most optimal. You can achieve the best quality, yield and nutritional value with them.

4.0
 $\mu\text{mol}/\text{J}$

Modular
design

3580
 $\mu\text{mol}/\text{s}$

Customizable
spectrum

Wide beam
Optics high
uniformity

Compact
size

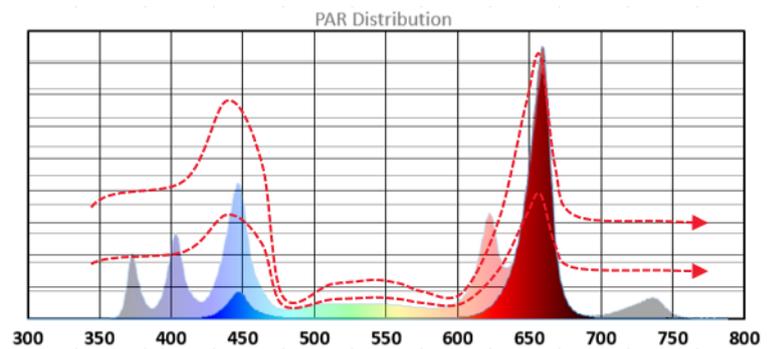
Key product features

- Modular system 1,2,3 module options
- Highest efficiency LED design, up to 4.0 μ mol/J
- High PPF up to 3580 μ mol/s
- Small size for minimal shading
- Life time L90/B50 50000h (Ta=25°C)
- Operating Environment: 0°C to +40°C
- Remote driver
- Standard and wide beam option
- Passive cooling, No moving part!
- Simple hanging system for easy installation
- 180-528V driver, Pf > 0.9
- IP66, IK08 rated
- Regulatory approvals CE, RoHS
- Dimming options available (1-10 V and bluetooth controlled)

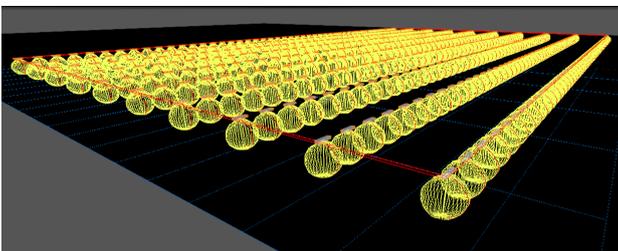
Customizable spectrum

Our crop advisors could help you to choose the most suitable spectrum for your crops and our factory make the lamps accordingly. Exact spectrum may vary between varieties and growth strategies.

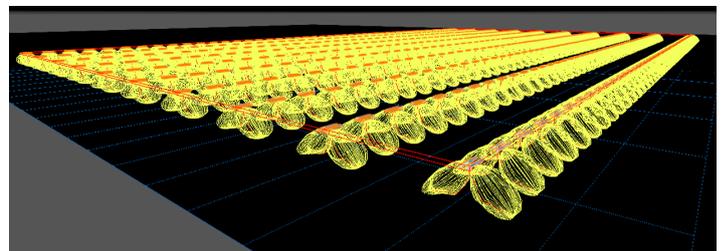
We can customize the spectrum based on what **the buyer** or an **independent crop advisor** or **our own crop adviser** suggests.



Wide beam optics for high uniformity



Standard beam



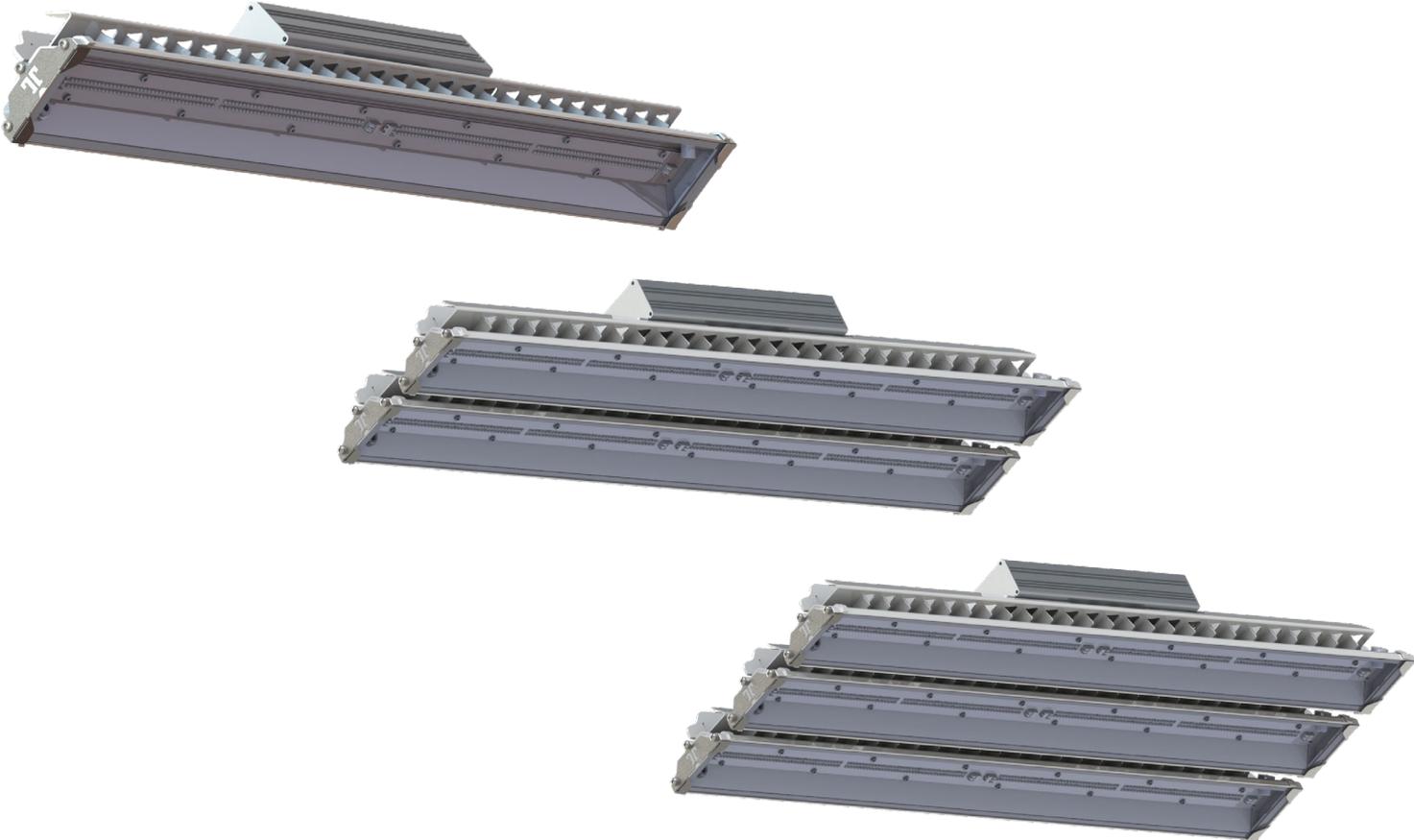
Wide beam

Uniform light distribution

Fewer fixtures, lower investment cost

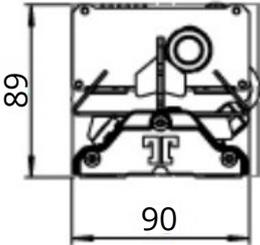
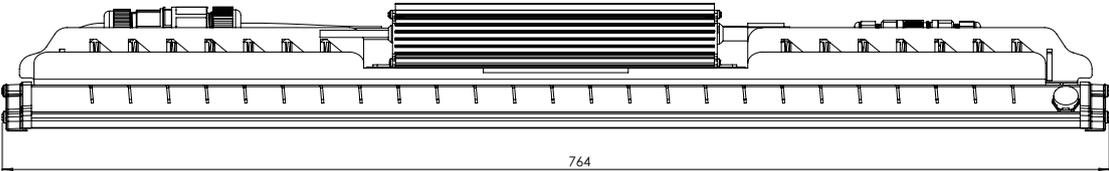
Equal light for all plants, stable yield

Modular system



Dimension (mm)

Weight: ~ 3.5 kg per module



Mounting options



Ease of installation

Extra light weight ~ 3.5kg per module

Less shading

Product Specifications for our different product types

With our products, any spectrum can be produced, thus can be requested, so **the actual number of product varieties is infinite** and depends only on the needs of our customers and their plants.



Lowest initial investment

Specification	Investment Optimized				
Growth Spectrum	HR LB				
Lamp type	Single Module	Double Module		Triple Module	
Beam type	Standard	Standard	Wide	Standard	Wide
P (W)	285	570	570	855	855
PPF $\mu\text{mol/s}$	919	1837	1801	2756	2719
Efficacy ($\mu\text{mol/J}$)	3,2	3,2	3,2	3,2	3,2

Specification	Investment Optimized				
Growth Spectrum	HR LB G FR				
Lamp type	Single Module	Double Module		Triple Module	
Beam type	Standard	Standard	Wide	Standard	Wide
P (W)	302	604	604	906	906
PPF $\mu\text{mol/s}$	923	1846	1806	2769	2729
Efficacy ($\mu\text{mol/J}$)	3,1	3,1	3	3,1	3



Maximize energy saving

Specification	High Efficacy				
Growth Spectrum	HR LB				
Lamp type	Single Module	Double Module		Triple Module	
Beam type	Standard	Standard	Wide	Standard	Wide
P (W)	259	518	518	777	777
PPF $\mu\text{mol/s}$	960	1921	1880	2881	2840
Efficacy ($\mu\text{mol/J}$)	3,7	3,7	3,6	3,7	3,7

Specification	High Efficacy				
Growth Spectrum	HR LB G FR				
Lamp type	Single Module	Double Module		Triple Module	
Beam type	Standard	Standard	Wide	Standard	Wide
P (W)	271	542	542	814	813
PPF $\mu\text{mol/s}$	946	1893	1854	2839	2800
Efficacy ($\mu\text{mol/J}$)	3,5	3,5	3,4	3,5	3,4



Increased crop yield

Specification	High output				
Growth Spectrum	HR LB				
Lamp type	Single Module	Double Module		Triple Module	
Beam type	Standard	Standard	Wide	Standard	Wide
P (W)	323	646	646	969	969
PPF $\mu\text{mol/s}$	1119	2238	2190	3357	3309
Efficacy ($\mu\text{mol/J}$)	3,5	3,5	3,4	3,5	3,4

Specification	High output				
Growth Spectrum	HR LB G FR				
Lamp type	Single Module	Double Module		Triple Module	
Beam type	Standard	Standard	Wide	Standard	Wide
P (W)	328	656	656	984	984
PPF $\mu\text{mol/s}$	1080	2160	2117	3240	3197
Efficacy ($\mu\text{mol/J}$)	3,3	3,3	3,2	3,3	3,2

LB: low blue, HR: high red, R: red, FR: far red, G: green

