

# Horti Solutions



# About Us



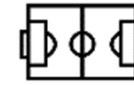
For 5+ years **SVETOGOR** company has been producing modern Russian luminaries for greenhouses with 1150, 1000, 750 and 600 W sodium lamps with electronic ballast and lamps by PHILIPS.

There are less than 10 OEMs of this level in the world.

**SVETOGOR** is an official Partner of **PHILIPS Horticultural Lighting** in Russia.

Luminaires were developed with the participation of **PHILIPS** and have a number of important technical advantages that distinguish our products from competitors.

In addition to greenhouse lighting, the Company also specializes in lighting solutions for many other segments.



Sports objects



Industry objects



Park and landscape lighting



Shopping centers



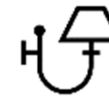
Road lighting



Offices



Architectural lighting of buildings



Hotels



Gas stations

# Our Projects



Media facade, "book-house", Moscow



Radisson "Slavyanskaya", Moscow



Television Tower, Nalchik



Bauman Garden, Moscow



Luzhniki Stadium media roof, Moscow



"Belaya Dacha" factory facade, Lipetsk region

# Comprehensive Approach



## **Pre-project works**

Technical and economic in-depth analysis of the proposed solutions, primary budgeting, and cost coordination of key items.

**Design** based on own luminaries and Philips LED solutions with integration into all other greenhouse systems.

**Supply** of cable and panel equipment.

**Installation of luminaries** and laying of cable routes.

**Commissioning works.**

**Technical and agronomic project support.**

**Warranty and post-warranty service of the** entire system.



# We are an official OEM Partner of Philips Horti (Signify)





## Сертифицированный OEM Horti Партнер

Настоящий сертификат удостоверяет, что компания

**ООО ПТК «СВЕТОГОР»**

является сертифицированным OEM Horti Партнером

ООО «Сигнифай Евразия»

на территории Российской Федерации и в странах СНГ

Дата выдачи сертификата: 14.01.2021

Срок действия сертификата: до 31.12.2021

Генеральный директор  
ООО "Сигнифай Евразия"  
Эрик Бенедетти




PHILIPS Lighting Eindhoven  
BU Lighting Electronics Europe 1 of 8  
Lamps Development

Doc nr: AP-IM 0001

### Verification report EMI measurements Stroytech fixture with 1000W TD GP lamp and 1000W 400V driver

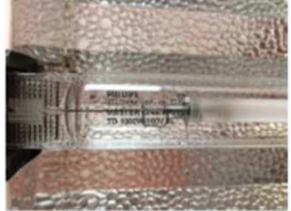
<b>Title / Job</b>	- Philips Lighting HCL-DV1 1000W GP-DV1 400V 1000 W GP-DV1 400V Manufacturing site: Pils, Poland - Philips Master Green Power TD 1000W400V EL Manufacturing site: Philips Lamps, Turnhout, Belgium - Philips Lamps 1000W-1000W-0 www.philips.com
<b>Report date:</b>	July 06, 2017
<b>Principal:</b>	Mr. Konstantin Petrov, Product Manager Outdoor rHD 4, rHD
<b>Description:</b>	<b>Conducted EMI measurements.</b> A conducted and CDN EMI measurement acc. CISPR15 are executed. Temperature is included by test 1729
<b>Test conditions:</b>	1) Lamp: 400W/0V (EMI measurement) 2) Power: 1000W 3) Phase: 230V 4) Temp: 30°C Lamp: Master Green Power TD 1000W400V EL
<b>Results:</b>	<b>Conducted EMI measurements.</b> Temperature of the ballast (L300, EM-coil (L30)) and the electronic capacitors are on the edge. It is not an measurement. Advice to Stroytech is to repeat temperature measurements for the electronic capacitor and ballast coil only of a few drivers more to be sure that drivers meet life time > 30000h. <b>EMI measurements.</b> Conducted EMI according CISPR15: PASS Radiated EMI acc. CISPR15 and F.2.2: CDN method: PASS Radiated EMI according acc. CISPR15: 40.2.2.3 is possible pass if lamp wires are so short as possible and not twisted
<b>Conclusion:</b>	Driver is not tested in measuring category 3 class. System passed CISPR15 measurements but attention is needed for CDN. Specification of driver will be executed according instruction in GDG system with clear CEEM/CEM/CEM/CEM requirements
<b>Reported by:</b>	Harry Michels, Technical Project Leader OHS drivers
<b>Copy:</b>	Elaine Clarkson, Konstantin Petrov

Internal report

PHILIPS Lighting Eindhoven  
BU Lighting Electronics Europe 4 of 8  
Lamps Development


Doc nr: AP-IM 0001

### Fig 4. Philips Green Power TD lamp



**Temperature measurement**

#### 5.3 Driver critical temperature design-is points



Critical Temp points as specified in Design-in Guide

Internal report

PHILIPS Lighting Eindhoven  
BU Lighting Electronics Europe 5 of 8  
Lamps Development

Doc nr: AP-IM 0001

### EMI measurements

1) Conducted EMI acc. CISPR15

Before we start with EMI measurements we need to know the type and arrangement of the wires. A Plan with the type for looking to the wiring design as guide are sent followed up.

Internal report

# RX-7-H-600 / 750 / 1000 / 1150W-S



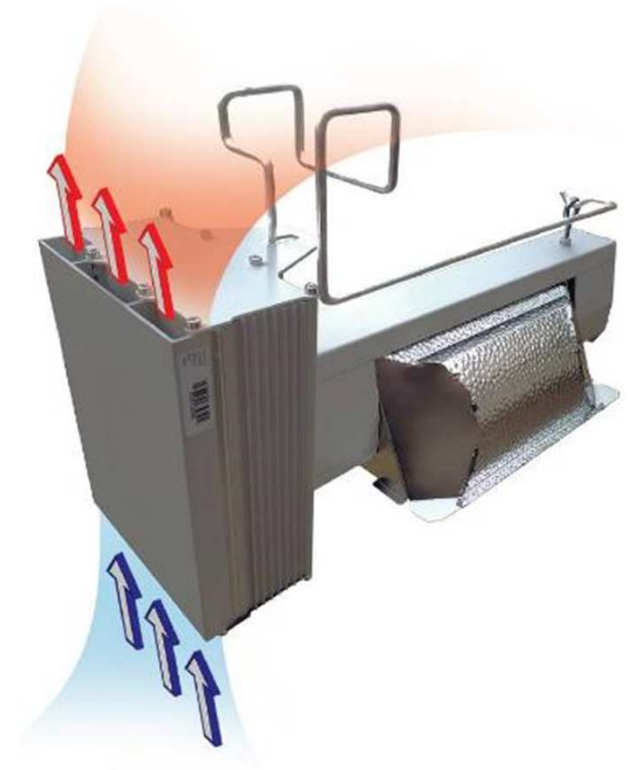
Best Russian Greenhouse luminary.

**PHILIPS GreenVision** electronic control gear (ECG).

ECG housing **has an innovative design with direct air channels** providing high efficiency of heat removal and maximizing the ECG service life.

90% of housing parts are made of anodized **aluminum by extrusion molding**, making the luminary extremely light in weight and reduces the load on the greenhouse structure. The luminary weights only 3.2 kg.

The fastening unit is made especially for luminary installation system used (framework, tray, cable, etc.).



# RX-7-H-600 / 750 / 1000 / 1150W-S



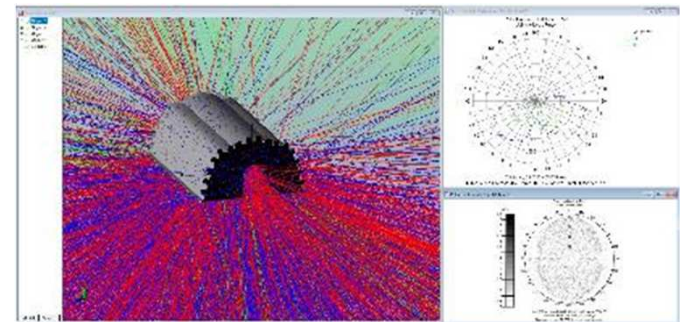
**Removable reflector** is made of pure **VegaGreen** lighting aluminum (ALMECO, Italy), intended for use in greenhouses and having an increased reflection coefficient at the red part of the spectrum. The reflector is one of the most effective among competitors in the terms of Photosynthetically active radiation;

**Reflector shape** is designed to provide a better distribution of light on the surface of plants. Light distribution can be optimized for a specific client task;

The luminaries utilizes **Philips GreenPower Xtra** lamps with spectral radiation composition optimized for assimilative illumination of plants;

**Vossloch-Schwabe** lamp holders used in luminaries are resistant to high temperatures;

Regular testing of SVETOGOR luminaries by independent light equipment laboratories show that their parameters are not only not inferior to Western competitors, but are better on some of the parameters.



# Philips GreenPower Xtra 1000W

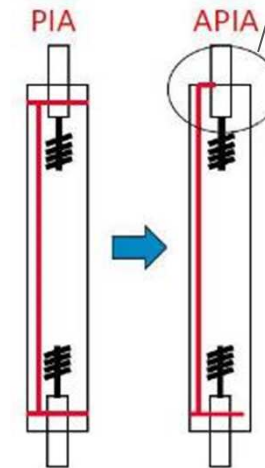


**APIA** is a patented technology for manufacturing Philips lamp burners, which allows to significantly increase efficiency and as well as to ensure high reliability throughout the entire service life.



## Technical specifications

Socket	MU	K12x30s
Power voltage	W	400
Power nominal	W	1000
Nominal photosynthetic lamp photon flux	$\mu\text{mol/s}$	2 150
Guaranteed photosynthetic photon flux after 10,000 hours	$\mu\text{mol/s}$	2 040



Active Philips Integrated Antenna (APIA)



# PILA HORTI 600/1000W





**PILA is a Philips brand.** The products under this trademark are manufactured at the same European facilities where the Philips trademark equipment is manufactured.

**Ballasts — Pila, Poland; lamps – Ternhaut, Belgium.**



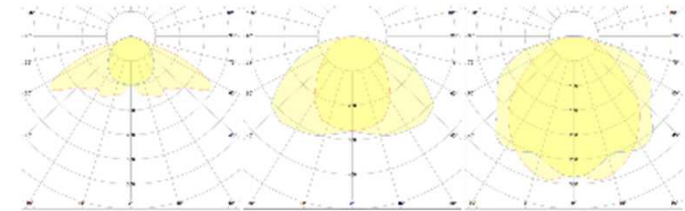
## Technical specifications

Item	MU	HPS PILA 1000W 400V EL DE & PILA Horti Driver 1000W 400V	Pila Horti 600W EL E40 SLV/12 & PILA Horti Driver 600W / 400V Product
Photo			
Socket		K12x30s	E40
Power voltage	W	400	400
System power nominal	W	1042	635
Nominal photosynthetic lamp photon flux	μmol/s	2 040	1 190
Photosynthetic photon flux after 4000 / 8000 / 10000 hours, no more than	%	2% / 4% / 5%	3% / 5% / 10%

# RX-7-H-750 / 1000 / 1150W - S



For each project, we make lighting calculations, determine the necessary light distribution and guarantee the achievement of the reported level of irradiation, as well as minimal degradation among competitors!



## Technical specifications

Item	MU	RX-7H-750W-S	RX-7-H-1000W-S	RX-7-H-1000W-S / PILA	RX-7-H-1150W-S
CG type		HID-GV III 750W/P GP-SON 400V	HID-GV III 1000W/P GP-SON 400V	PILA Horti Driver 1000W 400V	HID-GV III 1150W/P GP-SON 400V
Socket		K12x30s	K12x30s	K12x30s	K12x30s
Power voltage	W	400	400	400	400
System power nominal	W	775	1030	1042	1220
Current consumption	A	2.0	2.6	2.6	3.2
Power factor	cos φ	≥ 0,95	≥ 0,95	0.96	0.96
ECG compartment protection level	IP65	IP65	PI65	PI65	PI65
Lamp compartment protection level	IP23	IP23	IP23	IP23	IP23
Overall dimensions, LxWxH	mm	545x225x220	545x225x220	545x225x220	545x225x220
Recommended lamps		MASTER GreenPower Plus 750W	MASTER GreenPower Xtra 1000W	HPS PILA 1000W 400V EL DE	MASTER GreenPower Xtra 1150W

# RX-7-H-600W- S ( /PILA )



## Technical specifications

Item	MU	RX-7-H-600W-S	RX-7-H-600W-S / PILA
CG type		HID-GV III 600W/P GP-SON 400V	PILA Horti Driver 600W / 400V
Socket			E40
Power voltage	W		400
Power nominal	W	635	635
Current consumption	A		1.6
Power factor	cos $\varphi$	$\geq 0,95$	0.99
ECG compartment protection level			IP65
Lamp compartment protection level			IP23
Overall dimensions LxWxH	mm		545x225x220
Recommended lamps		MASTER GreenPower Plus 600W	WLS Pila Horti 600W EL E40



# Philips (Signify) Horticulture LED Solution



We want to draw your special attention to the fact that SVETOGOR may provide LED assimilation lighting system from PHILIPS, a leader in this industry. This allows our company to offer different, most efficient for the End User solutions of assimilation lighting.



**Signify**

**Сертифицированный OEM Horti LED Партнер**

Настоящий сертификат удостоверяет, что компания

**ООО ПТК «СВЕТОГОР»**

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ООО «Сигнифай Евразия»

на территории Российской Федерации и в странах СНГ

Дата выдачи сертификата	Срок действия сертификата
14.01.2021	до 31.12.2021

Генеральный директор  
ООО "Сигнифай Евразия"  
Эрик Бенедетти

A blue ink signature and a circular blue seal with the text "Сигнифай Евразия" and other details.

# Interlighting



## Philips GreenPower LED Interlighting

92 W power consumption of a 2.5m long module;

Efficiency - 3.3  $\mu\text{mol}/\text{J}$ ;

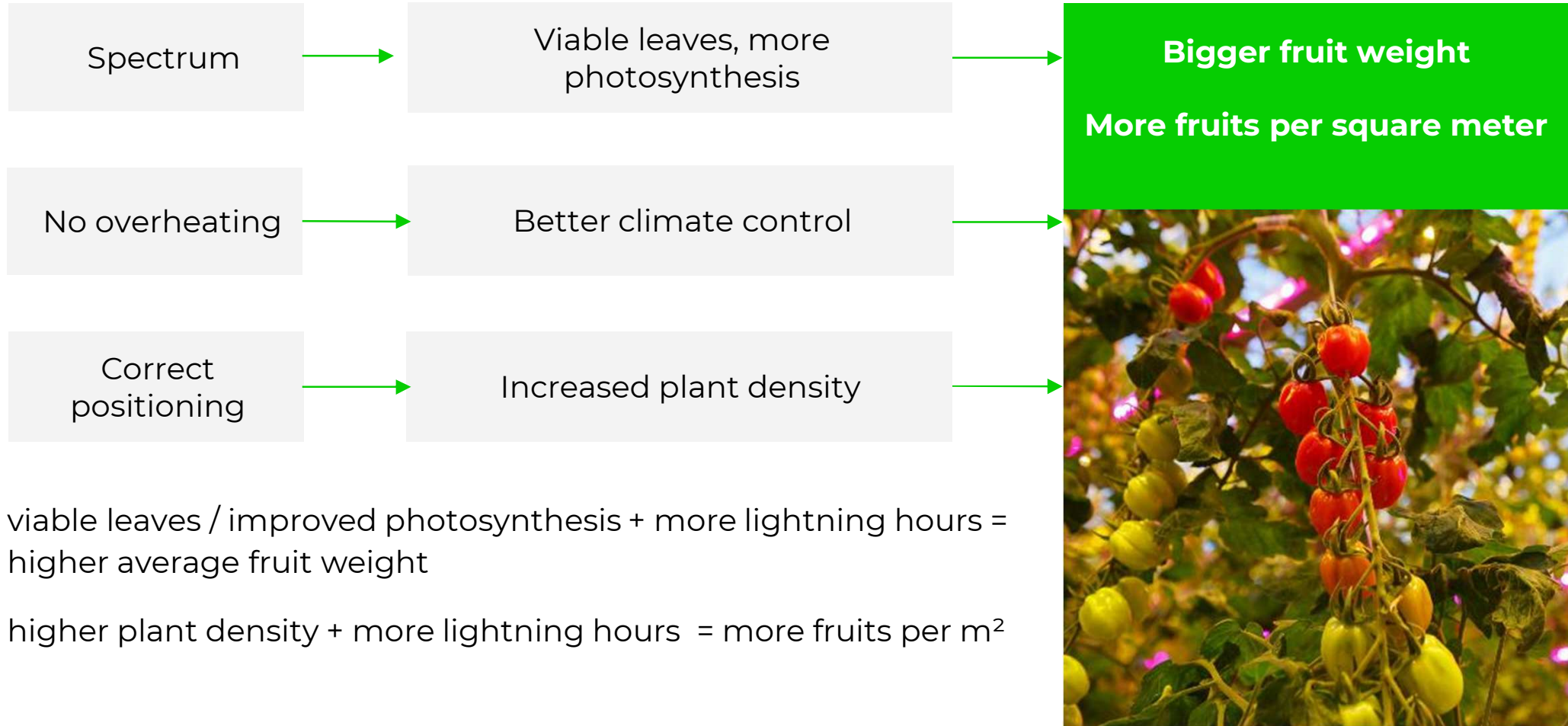
Service life - 36.000 hours (L90 at 25°C);

High light efficiency for increasing tomato yield;

A simple increase in irradiation in the cenosis by 60-75  $\mu\text{mol}/\text{m}^2/\text{sec}$ , depending on the distance between rows.



# What Supplemental Interlightning Give?



viable leaves / improved photosynthesis + more lightning hours = higher average fruit weight

higher plant density + more lightning hours = more fruits per m<sup>2</sup>



# Top LED Light - Linear Modules



## Philips GreenPower LED Toplighting 1.3

Photosynthetic flow at the luminary level with HPS lamps of 600W (1000  $\mu\text{mol/s}$ ) with a consumption of only 305 watts;  
L90 service life - 36,000 hours;  
Photosynthesis efficiency - 3.4  $\mu\text{mol/J}$  ;  
Linear systems stand for the best uniformity of photosynthetic flow distribution in the greenhouse;  
Lamp flow dimming possibility;  
No greenhouse overheating, the best climate control;  
Time-tested high reliability of modules.



# Top LED light - Compact



## Philips GreenPower LED Toplighting Compact 1.2

Performance up to 2650  $\mu\text{mol}/\text{sec}$  (33% more productive than 1000 W HPS lamps);

Power consumption from 520 W;

Efficiency up to 3.7  $\mu\text{mol}/\text{J}$ ;

Service life - 36.000 hours (L90 at 25°C);

Dimming Capability (GWCS);

### Main advantages:

HPS lamps simple 1:1 replacement;

No greenhouse overheating, the best climate control;

High module reability



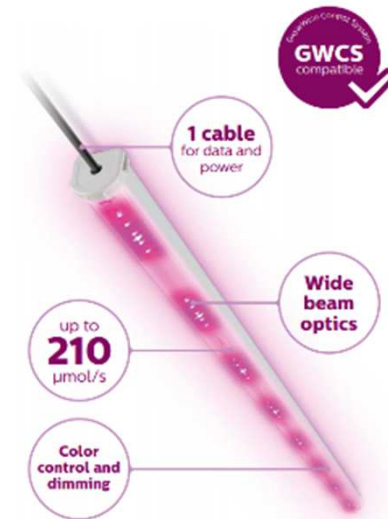


# Shelf Stand Lighting - CityFarm LED



## Philips GreenPower LED Production 3.0

L90 service life - 36,000 hours;  
 Three standard sizes - 120/150/240 cm;  
 Modifications with the possibility of different color channels dimming (up to 4 channels);  
 Easy installation and mounting;  
 IP66 protection level



Product specifications EU/APR

Spectrum		DR/B						DR/B/FR					DR/W		DR/W/FR				DR/B/W/FR		
Length (cm)		120		150		120	150	120	240	120	150	240	120	150	120	150	120	150	120	150	240
Blue level		LB	HB	LB	HB	LB-HB	LB-HB	LB	LB	-	-	-	LB	LB	LB	LB	-	-	-	-	-
Type		Static (S)				Color control (C2)		Static (S)		Color control C3			Static (S)		Static (S)		Color control C3		Color control C4		
Typical photon flux	μmol/s	168	168	210	210	0-168	0-210	168	210	0-168	0-210	0-210	168	210	168	210	0-168	0-210	0-168	0-210	0-210
Power nominal	W	56	59	60	74	0-70	0-88	56	74	0-70	0-88	0-88	63	79	63	79	0-70	0-88	0-70	0-88	0-88
Efficacy	μmol/J	3.0	2.8	3.0	2.8	< 3.0	< 3.0	3.0	2.8	< 3.0	< 3.0	< 3.0	2.7	2.7	2.7	2.7	< 2.7	< 2.7	< 3.0	< 3.0	< 3.0

# What is the First Project Stage?



Each project begins with lighting design and calculation of an economic model, TCO. More than 15 years of experience with LED lighting allows Philips specialists to accurately predict the productivity of the lighting system, and implemented commercial projects have proved their validity.

				
<b>Power (W/m<sup>2</sup>)</b>	180	135	90	245
<b>Toplight</b>	HPS	HPS	HPS + LED	LED
<b>Interlight</b>	None	LED	LED	LED
<b>PAR light (μmol/m<sup>2</sup>/s)</b>	180	210	255	320

**We will calculate all variants and offer the most effective and economically feasible solutions!**

# Our Projects



**400.000+ luminaries in Russia**  
**More than 300+ Ha**  
**<0.5% of complaints**



TK Zhurinichi LLC  
UK Rost LLC



EcoProdukt LLC



Agrokultura Group LLC



Tomato-Agro-Char LLC



Lukhovitsky Ovoshchi LLC  
UK Rost LLC



State Farm "Teplichny" JSC



PTK Vladberry LLC

- ZABOLOTYE VILLAGE
- ZHURINICHI VILLAGE
- USPENSKY SETT. YAROSLAVL
- KASHIRA NIZHNIY NOVGOROD
- BOROVSK STUPINO ASTAPOVO VILLAGE
- ARKHANGELSKOE VILLAGE
- ROSLAVL' MICHURINSK
- BELGOROD
- TIKHORETSK VOLZHSKY
- PLASTUNOVSKAYA
- NEZHINSKOE
- GROZNY
- NECHAYEVKA VILLAGE
- PERM'
- NARIMANOVA VILLAGE
- CHELYABINSK
- UST'-KATAV
- MARTYNOVKA
- NOVOSIBIRSK
- KOLTSOVO SETTLEMENT
- BARNAUL

- YUZHNO-SAKHALINSK
- BEOGORSK
- KHABAROVSK
- VLADIVOSTOK

# UK Rost LLC



## Sergey Ilyich Rukin ROST Group of Companies, General Director

The SVETOGOR company is our permanent supplier. Over the last three years since 2018, more than 150,000 SVETOGOR RX-7-H-L000W-S irradiator luminaries with Philips MASTER GreenPower Xtra 1000 W lamps have been delivered to the Lukhovitsky Ovoshchi, Zhurinichi, Tyumenagro, Nizhegorodny, Michurinsky plants.

In addition, the Company supplied inter-row LED modules in order to organize hybrid interlighting an area of more than 10 Hectares in Lukhovitsky Ovoshchi plant.

All delivery obligations were fulfilled by SVETOGOR in full and on time. SVETOGOR is a reliable partner and responsible contractor in the implementation of complex technical projects.



**TK Michurinsky** Tomato/Cucumber  
Photoculture area - 30 Ha  
42,960 pcs. - SVETOGOR RX-7-H-1000W-S.



**TK Nizhegorodsky** Tomato/Cucumber/Lettuce  
Photoculture area - 16,5 Ha;  
29,203 pcs. - SVETOGOR RX-7-H-1000W-S.



**TK Zhurinichi** Tomato/Cucumber  
Photoculture area - 7,5 Ha  
10 178 pcs. - SVETOGOR RX-7-H-1000W-S.



**TC Tyumenagro** Tomato/Cucumber  
Photoculture area - 24 Ha;  
34 759 pcs. - SVETOGOR RX-7-H-1000W-S.



**TK Lukhovitsky Ovoshchi**  
Tomato/Cucumber  
Photoculture area - 27 Ha;  
33 000 pcs. - SVETOGOR RX-7-H-1000W-S.

# Lukhovitsky Ovoshchi of UK ROST



Launched at November 2019;

## **Hybrid interlightning section area - 10 Ha**

- SVETOGOR RX-7-H-1000W-S + Philips Interlighting HO 3.0;  
210  $\mu\text{mol}/\text{m}^2/\text{s}$  (TopHID) + 63  $\mu\text{mol}/\text{m}^2/\text{s}$  (InterLED);  
120  $\text{W}/\text{m}^2$  (TopHID) + 21  $\text{W}/\text{m}^2$  (InterLED).

**Expected yield increase of 20-25%** in comparison  
with a system of similar power based on sodium lamps.



# AgroKulturaGruppKashira, Moscow Region



Launched at February 2019;

## **Hybrid interlightning section area - 1 Ha**

260  $\mu\text{mol}/\text{m}^2/\text{s}$  (TopHID) + 60  $\mu\text{mol}/\text{m}^2/\text{s}$  (InterLED)

145  $\text{W}/\text{m}^2$  (TopHID) + 20  $\text{W}/\text{m}^2$  (InterLED);

The results were compared in specially selected areas with sodium lamps only and with added interlightning modules.

**The increase in yield after the addition of interlightning modules equaled 23% - in full compliance with forecasts of Philips specialists.**



# AgroKulturaGruppKashira, Moscow Region



**Tsanava Vladimir Shataevich**  
**General Director of PKF Teplichnye Technologii LLC**

If we speak about the comparative effectiveness of irradiation with various luminaries produced by different manufacturers, then first of all it is necessary speak about the reliability of the luminaries for the longest service life possible and ensuring of the irradiation declared. More than 50,000 SVETOGOR RX-7-H-1000W-S luminaries with MASTER Green Power Plus 1000W 400V (Philips) lamp that were supplied to Permsky, Agroculture Group, Yeletskie Ovoschi greenhouse plants are very effective and help to get high yields. All luminaries are equipped with Philips ballasts and lamps.

The use of hybrid lighting with inter-row LED luminaries in the TK AgroKultura Group on an area of 1 ha. The increase in yield after the addition of interlightning modules equaled 23% in full compliance with forecasts of Philips specialists.



# State Farm Teplichnoye JSC, Yuzhno-Sakhalinsk



Launched at November 2020;

## **Hybrid interlightning section area - 0,3 Ha**

with Philips toplighting HO 1.2 modules;

90  $\mu\text{mol}/\text{m}^2/\text{s}$  (TopHID) + 105  $\mu\text{mol}/\text{m}^2/\text{s}$  (TopLED);

141 kW (TopHID) + 80,7 W/ $\text{m}^2$  (TopLED).

**Proven energy savings of 20% while maintaining the same level of productivity.**





# UK Gorkurnov



Supply of luminaires SVETOGOR RX-7-H-600W-S for greenhouse plants of the group of companies, as well as the implementation of hybrid lighting based on Philips toplighting 1.2 modules on 8 Ha of greenhouses for tomato photoculture.

**Shin Vitaly Valer'evich**  
**General Director of "UK Gorkunov" LLC**

Since 2019 we have implemented SVETOGOR RX-7-H-1000W-S and SVETOGOR RX-7-H-1000W-S luminaries on all our projects, equipped with Philips electronic ballasts and lamps, which significantly increase the efficiency, including the capacity and reliability of lighting equipment. The use of Philips MASTER GreenPower Xtra 1000 W lamps also made it possible to increase the irradiation of photoculture over all years of operation by significantly reducing the decrease in light flux compared to all available analogues.

In 2020, we introduced hybrid lighting based on SVETOGOR lamps using Philips LED lamps at one of our green houses, which significantly reduced the consumption of electrical power, while increasing the irradiation of vegetable photoculture.



We have successfully realized and are realizing projects in Russia on an area of **more than 200 hectares and a total of more than 400,000 HID luminaries** with the largest representatives of the agricultural industry.



We are also the first company in Russia that has successfully realized several commercial hybrid projects with LED interlighting **on an area of more than 15 Ha** and a total of **more than 30,000 LED modules**.

Market leaders trust us!



## PTK "SVETOGOR" LLC

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