

# HPS CONTROL GEAR (SUNLUX ACE)



EYE Lighting has a range of control gear products (IEC 60188) that are suitable for operating EYE "ACE" retrofit type lamps, including Sunlux ACE lamps. Versions are available in Gear Tray, Cast Box and Sturdigear configurations.

### CONTROL GEAR REQUIREMENTS

Discharge lamp control gear for Sunlux ACE lamps consists of a reactor ballast (also commonly called a "choke") and a capacitor to adjust the power factor to within acceptable parameters. No ignitor is included with control gear because EYE "ACE" lamps feature "internal ignitors" inside the lamp.

### GEAR TRAY TYPE

Gear Trays (GTS) are designed to be easily installed inside poles, walls, cabinets and other structures away from weather and other potential hazards. They do not have an IP rating. Gear Trays come in two basic footprints depending on the wattage see Figures 1 and 2 for the dimensions.

### CAST BOX TYPE

Cast Box (CB) types are IP65 certified and are fully enclosed in a cast aluminium casing allowing fitment in exterior locations that are exposed to the weather. Cast boxes also come in two basic footprints depending on the wattage; see Figures 3 and 4 for the dimensions.

### STURDIGEAR

Sturdigear types are like Cast Boxes but with the added protection of anti-vibration features allowing fitment in more demanding industrial locations or situations. Sturdigear is focused on higher wattage industrial situations so comes in one basic footprint; see Figure 5 for the dimensions.

### WHY IS CONTROL GEAR NEEDED?

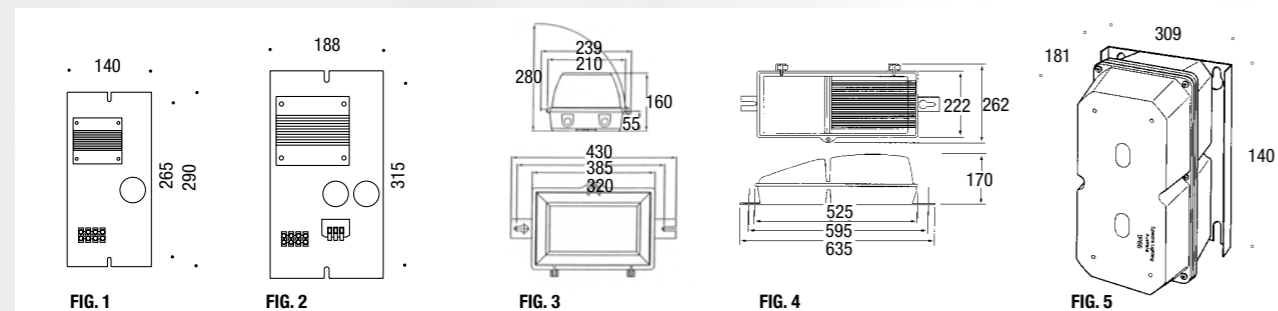
Discharge lamps cannot function directly on mains voltage supply (eg, 240V 50Hz AC). Control gear is required to:

- ensure the lamp will continue to operate even though twice during each AC cycle the voltage is effectively zero;
- regulate and stabilise the current flow (this is because HPS arc tubes have a "negative resistance" and without regulation will draw current until they self-destruct).

### CAUTION

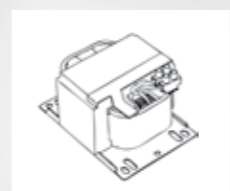
Control gear is designed to match the characteristics of particular lamp types and brands. The ballast (also known as a "choke") and ignitor requirements are different for many American, European and Japanese lamp types, and care is required to correctly match the lamp / choke / ignitor / supply voltage / combination. Mis-matched lamp / gear combinations can cause short life, reduced light output, colour shift, cycling and overheating of the components.

## MEASUREMENTS



Wattage	Product Code	Description	Input Volts	Supply Current (at 0.9PF)		Lamp Values		Weight (kg)	Fig	Compatible Lamps
				Start Current	Run Current	Lamp Volts	Lamp Current			
110W	253600	S110 GTS	240	0.961	0.634	125	1.15	2.15	1	NH110LX NH110FLX NHR110LX
	253200	RS110 CB	240	0.961	0.634	125	1.15	4.7	3	
150W	253570	S150LX GTS	240	1.42	0.88	130	1.5	2.65	1	NH150LX NH150FLX
	253205	RS150LX CB	240	1.42	0.88	130	1.5	5.75	3	
220W	253605	S220 GTS	240	1.85	1.25	130	2.13	3.45	1	NH220LX NH220FLX NHR220LX NHT220LX NH220FLX
	253210	RS220 CB	240	1.85	1.25	130	2.13	6	3	
360W	253610	S360 GTS	240	3.15	1.98	135	3.25	3.75	1	NH360LX NH360FLX NHR360LX NHT360LX NH360FLX
	253220	RS360 CB	240	3.15	1.98	135	3.25	7	3	
660W	253615	S660 GTS	240	5.7	3.4	140	5.4	6.8	2	NH660LX NH660FLX NHR660LX
	253230	RS660 CB	240	5.7	3.4	140	5.4	11.8	4	
940W	253620	S940 GTS	240	6.35	4.54	145	7.5	9.2	2	NH940LX NH940FLX NHR940LX NHT940LX
	253235	RS940 CB	240	6.35	4.54	145	7.5	14	4	
	253625	S940B GTS	415	4.4	2.7	145	7.5	19.2	2	
	253240	RS940B CB	415	4.4	2.7	145	7.5	24.2	4	
	251260	STURDIGEAR 940W HPS	415	4.4	2.7	130	8.3	19	5	

HIGH PRESSURE SODIUM - SUNLUX ACE - BARE CHOKE	
Product Code	Description
510134	ELX 360
510270	ELX 660
510127	ELX 940



# HPS CONTROL GEAR (SUNLUX)



EYE Lighting has a range of high pressure sodium control gear products (IEC 60662) that are suitable for operating high pressure sodium lamps. Versions are available in Gear Tray, Cast Box and Sturdigear configurations.

### HIGH PRESSURE SODIUM REQUIREMENTS

High Pressure Sodium (HPS) control gear is available in many types and is generally more complicated. There are Reactor systems and also Constant Wattage types (CW for short). These very different types are not generally interchangeable. Extra care must be taken to ensure that a control gear's ignitor will match a specific lamp's requirements and the distance a lamp may be from the ignitor (ie, in remote gear systems). Some lamps, such as EYE Sunlux "Ace" types are not suitable with HPS control gear (see Sunlux Ace section).

### GEAR TRAY TYPE

Gear Trays (GTS) are designed to be easily installed inside poles, walls, cabinets and other structures away from weather and other potential hazards. They do not have an IP rating. Gear Trays come in two basic footprints depending on the wattage see Figures 1 and 2 for the dimensions.

### CAST BOX TYPE

Cast Box (CB) types are IP65 certified and are fully enclosed in a cast aluminium casing allowing fitment in exterior locations that are exposed to the weather. Cast boxes also come in two basic footprints depending on the wattage; see Figures 3 and 4 for the dimensions.

### STURDIGEAR

Sturdigear types are like Cast Boxes but with the added protection of anti-vibration features allowing fitment in more demanding industrial locations or situations. Sturdigear is focused on higher wattage industrial situations so comes in one basic footprint; see Figure 5 for the dimensions.

### WHY IS CONTROL GEAR NEEDED?

HPS lamps cannot function directly on mains voltage supply (eg, 240V 50Hz AC). Control gear is required to:

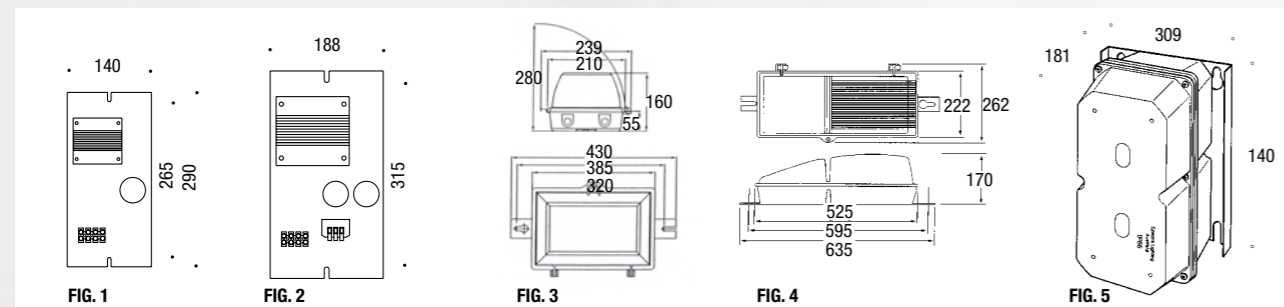
- ignite the lamp using a very high voltage spike much higher than the normal mains voltage;
- ensure the lamp will continue to operate even though twice during each AC cycle the voltage is effectively zero;
- regulate and stabilise the current flow (this is because HPS arc tubes have a "negative resistance" and without regulation will draw current until they self-destruct).

### CAUTION

Control gear is designed to match the characteristics of particular lamp types and brands. The ballast (also known as a "choke") and ignitor requirements are different for many American, European and Japanese lamp types, and care is required to correctly match the lamp / choke / ignitor / supply voltage / combination. Mis-matched lamp / gear combinations can cause short life, reduced light output, colour shift, cycling and overheating of the components.

Care must be exercised with the correct selection of cable between the output of the remote control gear and the lamp. The ignitor pulses required to start the lamp can be attenuated by the self capacitance of the cable and the capacitance between the conductors and an earthed surface. Self capacitance in most installations is between 70-100 PF/m. It is good practice to locate the ignitor as close as possible to the lamp.

## MEASUREMENTS



Product Code	Description	Input Volts	Supply Current (at 0.9PF)		Lamp Values		Weight (kg)	Fig	Compatible Lamps
			Start Current	Run Current	Lamp Volts	Lamp Current			
253570	S150 GTS	240	1	0.78	100	1.8	3.6	1	NH150F
253205	RS150 CB	240	1	0.78	100	1.8	6.1	3	NHT150 NHR150

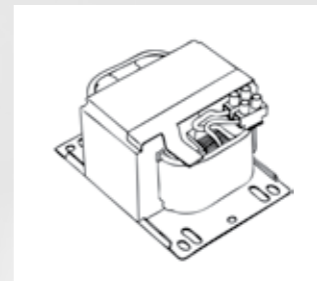
Product Code	Description	Input Volts	Supply Current (at 0.9PF)		Lamp Values		Weight (kg)	Fig	Compatible Lamps
			Start Current	Run Current	Lamp Volts	Lamp Current			
253575	S250 GTS	240	1.60	1.28	100	3	4.3	1	NH250F
253215	RS250 CB	240	1.60	1.28	100	3	6.8	3	NHT250 NHR250
251250	STURDIGEAR 250W HPS	240	1.60	1.28	100	3	13.2	5	

Product Code	Description	Input Volts	Supply Current (at 0.9PF)		Lamp Values		Weight (kg)	Fig	Compatible Lamps
			Start Current	Run Current	Lamp Volts	Lamp Current			
253580	S400 GTS	240	2.8	2.02	100	4.6	5.5	1	NH400
253225	RS400 CB	240	2.8	2.02	100	4.6	8	3	NH400F NHR400
251255	STURDIGEAR 400W HPS	240	2.8	2.02	100	4.7	16.2	5	NHT400
251258	STURDIGEAR 400W HPS CW	240	2.8	2.02	100	4.6	19.5	5	

Product Code	Description	Input Volts	Supply Current (at 0.9PF)		Lamp Values		Weight (kg)	Fig	Compatible Lamps
			Start Current	Run Current	Lamp Volts	Lamp Current			
253585	S1000 GTS	240	6.6	4.9	100	10.6	11	2	NH1000
253245	RS1000 CB	240	6.6	4.9	100	10.6	15.5	4	NH1000F NHT1000
251265	STURDIGEAR 1KW HPS	240	6.6	4.9	250	4.7	27.8	5	NHT1000B

### HIGH PRESSURE SODIUM - BARE CHOKE

Product Code	Description
510142	ES70
510143	ES150
510144	ES250
510145	ES400
510147	ES1000



# HPS CONTROL GEAR (IGNITRON)



EYE Lighting has a range of customised high pressure sodium control gear products (IEC 60662) that are suitable for operating EYE's Ignitron range of lamps. These lamps are high pressure sodium types with internal ignitors. Versions are available in Gear Tray, Cast Box and Sturdigear configurations.

### HIGH PRESSURE SODIUM REQUIREMENTS

High Pressure Sodium (HPS) control gear is available in many types and is generally more complicated. There are Reactor systems and also Constant Wattage types (CW for short). These very different types are not generally interchangeable. Extra care must be taken with matching ignitor types. EYE Ignitron lamps feature an internal ignitor inside the lamp and so require HPS control gear WITHOUT AN EXTERNAL IGNITOR.

### GEAR TRAY TYPE

Gear Trays (GTS) are designed to be easily installed inside poles, walls, cabinets and other structures away from weather and other potential hazards. They do not have an IP rating. Gear Trays come in two basic footprints depending on the wattage see Figures 1 and 2 for the dimensions.

### CAST BOX TYPE

Cast Box (CB) types are IP65 certified and are fully enclosed in a cast aluminium casing allowing fitment in exterior locations that are exposed to the weather. Cast boxes also come in two basic footprints depending on the wattage; see Figures 3 and 4 for the dimensions.

### STURDIGEAR

Sturdigear types are like Cast Boxes but with the added protection of anti-vibration features allowing fitment in more demanding industrial locations or situations. Sturdigear is focused on higher wattage industrial situations so comes in one basic footprint; see Figure 5 for the dimensions.

### WHY IS CONTROL GEAR NEEDED?

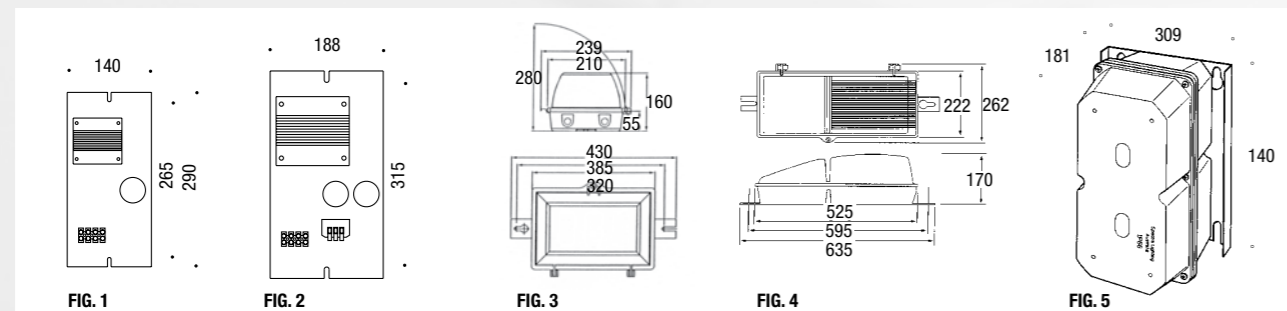
HPS lamps cannot function directly on mains voltage supply (eg, 240V 50Hz AC). Even though Ignitron lamps have an internal ignitor, control gear is still required to:

- ensure the lamp will continue to operate even though twice during each AC cycle the voltage is effectively zero;
- regulate and stabilise the current flow (this is because HPS arc tubes have a "negative resistance" and without regulation will draw current until they self-destruct).

### CAUTION

Control gear is designed to match the characteristics of particular lamp types and brands. The ballast (also known as a "choke") and ignitor requirements are different for many American, European and Japanese lamp types, and care is required to correctly match the lamp / choke / ignitor / supply voltage / combination. Mis-matched lamp / gear combinations can cause short life, reduced light output, colour shift, cycling and overheating of the components.

## MEASUREMENTS



Product Code	Description	Input Volts	Supply Current (at 0.9PF)		Lamp Values		Weight (kg)	Fig	Compatible Lamps
			Start Current	Run Current	Lamp Volts	Lamp Current			
-	S70 GTS FEC	240	0.47	0.403	90	0.98	2.05	1	NH70/HV/1/70S NHT70/1

Product Code	Description	Input Volts	Supply Current (at 0.9PF)		Lamp Values		Weight (kg)	Fig	Compatible Lamps
			Start Current	Run Current	Lamp Volts	Lamp Current			
253571	S150 GTS FEC	240	1	0.78	100	1.8	3.6	1	NH150F/HV/1 NHT150/1
253206	RS150 CB FEC	240	1	0.78	100	1.8	6.6	3	

Product Code	Description	Input Volts	Supply Current (at 0.9PF)		Lamp Values		Weight (kg)	Fig	Compatible Lamps
			Start Current	Run Current	Lamp Volts	Lamp Current			
253576	S250 GTS FEC	240	1.6	1.28	100	3	4.3	1	NH250F/1 NHT250/1
253216	RS250 CB FEC	240	1.6	1.28	100	3	7.3	3	

Product Code	Description	Input Volts	Supply Current (at 0.9PF)		Lamp Values		Weight (kg)	Fig	Compatible Lamps
			Start Current	Run Current	Lamp Volts	Lamp Current			
253581	S400 GTS FEC	240	2.8	2.02	100	4.6	5.5	1	NH400F/1 NHT400/1
253226	RS400 CB FEC	240	2.8	2.02	100	4.6	8.5	3	

Product Code	Description	Input Volts	Supply Current (at 0.9PF)		Lamp Values		Weight (kg)	Fig	Compatible Lamps
			Start Current	Run Current	Lamp Volts	Lamp Current			
253586	S1000 GTS FEC	240	6.6	4.9	100	10.6	10.5	2	NHT1000/1
253246	RS1000 CB FEC	240	6.6	4.9	100	10.6	15	4	

### HIGH PRESSURE SODIUM - BARE CHOKE

Product Code	Description
510142	ES70
510143	ES150
510144	ES250
510145	ES400
510147	ES1000

