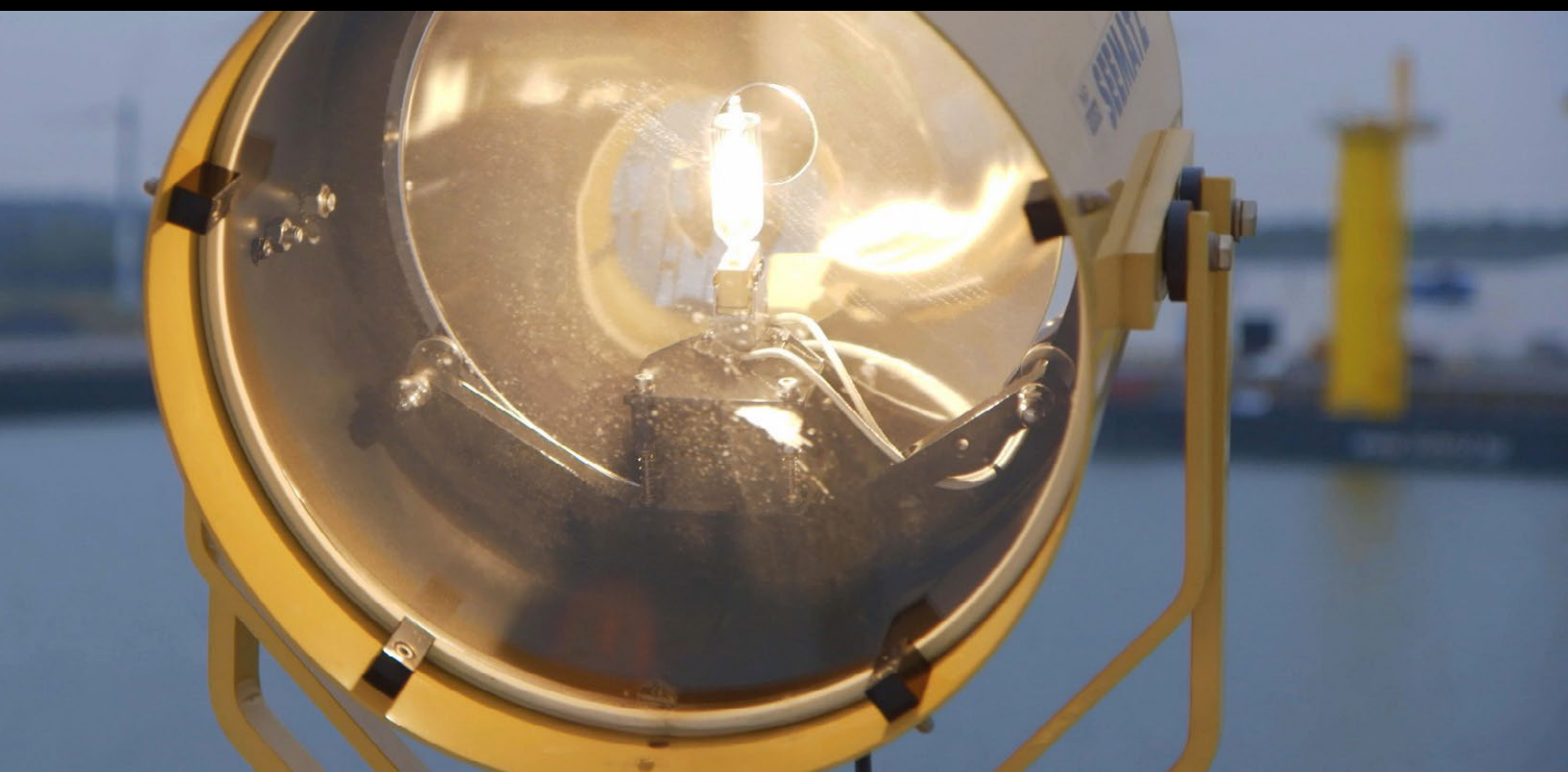


# SEARCHLIGHTS & WINDOW WIPERS



## THEUNISSEN TECHNICAL TRADING BRANDS



### LIGHTING ON BOARD

Technical | Navigation | EX | LED assortment | Floodlights



### PIPE- AND CABLE TRANSITS

Water- and gastight | EMC | ATEX



### COMMUNICATION ON BOARD

Telephone | Intercom | PA | GA | EX | Wireless



### ELTEK POWER CONVERSION

UPS | Rectifiers | Inverters | Battery banks



### FIRE DETECTION

Complete systems | Conventional | Addressable



### REVERSE OSMOSIS WATERMAKERS

650 - 1.200.000L a day



### SEARCHLIGHTS

Halogen | Xenon | LED



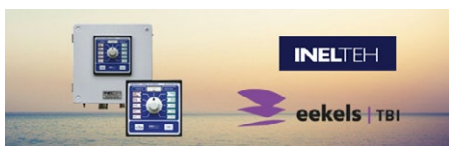
### SINGLE PIPE- AND CABLE TRANSITS

ASTM | DIN | DH-AP | PVC



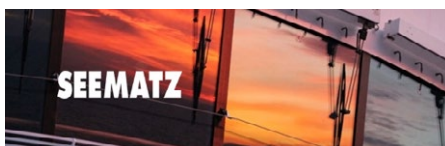
### LOUDSPEAKERS

Horn | Cabinet | Music | Ceiling | Projector | Voice Alarm | Clean Room | EN54-24 | EX



### EMERGENCY TELEGRAPHS

two wire based



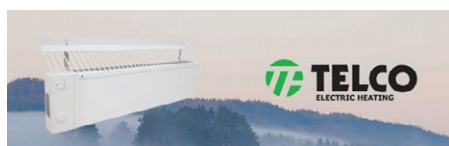
### WINDOW WIPERS

straightline wipers, custom sizes



### SIGNAL COLUMNS

Configurable as desired



### MARINE HEATERS

Elektrical | IP44 | 250-2000W

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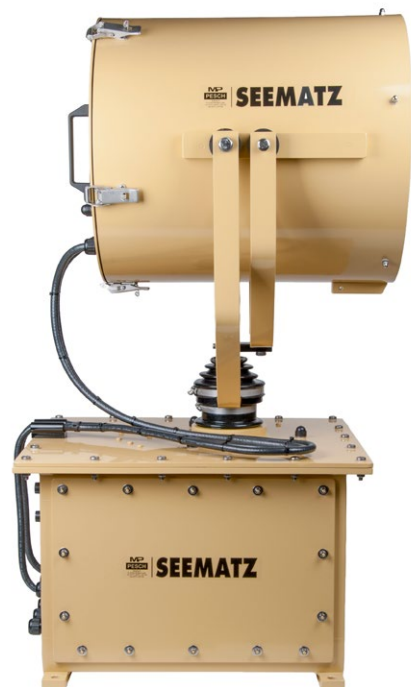
## SEEMATZ

The brand Seematz is part of the Pesch GmbH corporation, a innovative production company that exists since 1970. The company started to specialize in the production of sturdy searchlights already in the '70s. Particularly, maintaining in service in the highly demanding environment of open sea was a precondition to the development of the Seematz searchlights, since the roughest conditions are to be found onboard seagoing vessels.

The many years of experience with the Seematz searchlights were taken into account while developing the current product assortment. Today, with more than 45 years of experience gained in the maritime sector, Seematz offers searchlights and straight line window wipers of unparalleled quality and reliability. Since 1984, Theunissen is representing the Seematz searchlights and window wipers for the Benelux area.

## Characteristics of SEEMATZ searchlights

- Very low maintenance
- Robust technique
- Proven durability
- Simple electrical connection
- Quick replacement lamp (insertion unit)
- Available in Xenon, Halogen and LED
- Housing seawater resistant
- 45 years of experience
- Customized versions possible
- Quick and easy replacement
- Available in any RAL color
- Range up to 30.000m
- Auto Swiveling (optional)



## SEEMATZ SEARCHLIGHTS

Seematz searchlights are available in three types of light, LED, Halogen and Xenon. Halogen lamps offer competitive price levels combined with ample of light and a rather wide beam, suitable for close operations including man overboard situations. Xenon is recommended when a high amount of light, a narrow angle or a long distance range is necessary. Xenon also delivers a bright colour including a large part of the blue spectrum, making it the most suitable for arctic environments.

LED is often chosen for its long lifespan and low cost of ownership (minimum maintenance). The latest versions of LED searchlights also offer various new advantages: a wide beam LED searchlight is even more suitable for close operations than halogen, while a 463 LED narrow beam is capable of meeting the high demands for use onboard Fi-Fi ships.

### Lamp types

HGS = Halogen lamp  
XBO = Xenon short-arc lamp  
LED = Light-emitting diode

### Standard Sizes

Sizes are indicative for the reflector diameter (in mm)

- 273
- 351
- 463
- 525
- 750 (Suez size)

### Steerings / operation

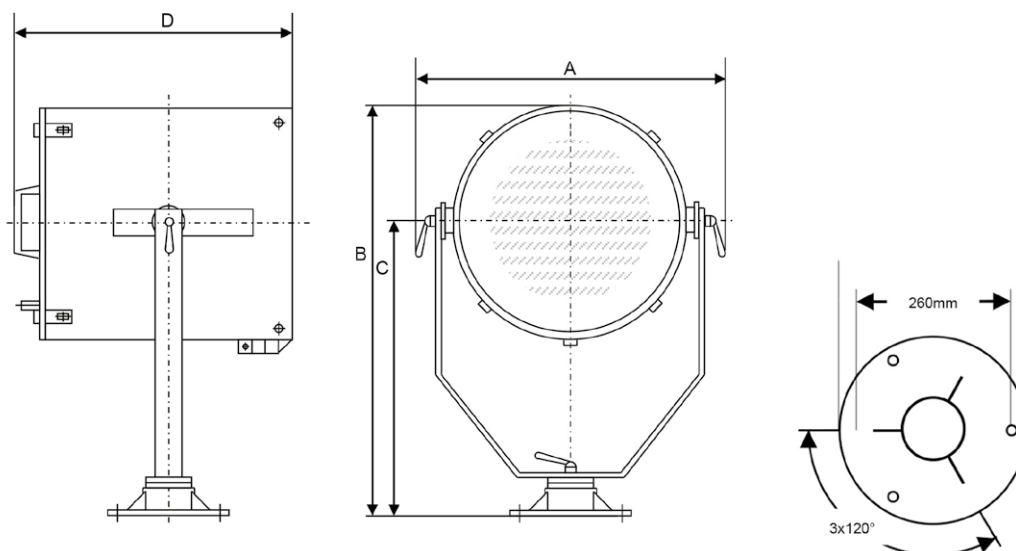
**DS** Direct operation at searchlight  
**DH** Direct operation at searchlight incl. pedestal  
**WS** Searchlight with column into the wheelhouse  
**WH** Searchlight with column into the wheelhouse, on a 1m pedestal above deck  
**EF** Electrical remote controlled searchlight

### Power

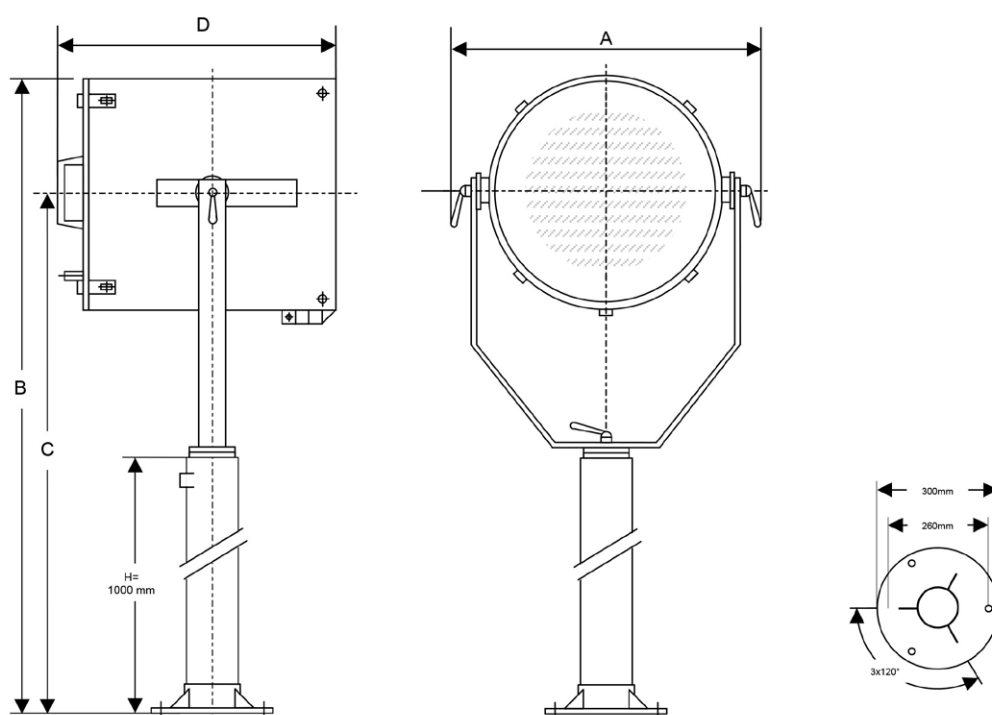
HGS 250W up to 2000W  
LED 75W up to 220W  
XBO 450W up to 6000W  
Suez 2000/3000W



## DS TYPE

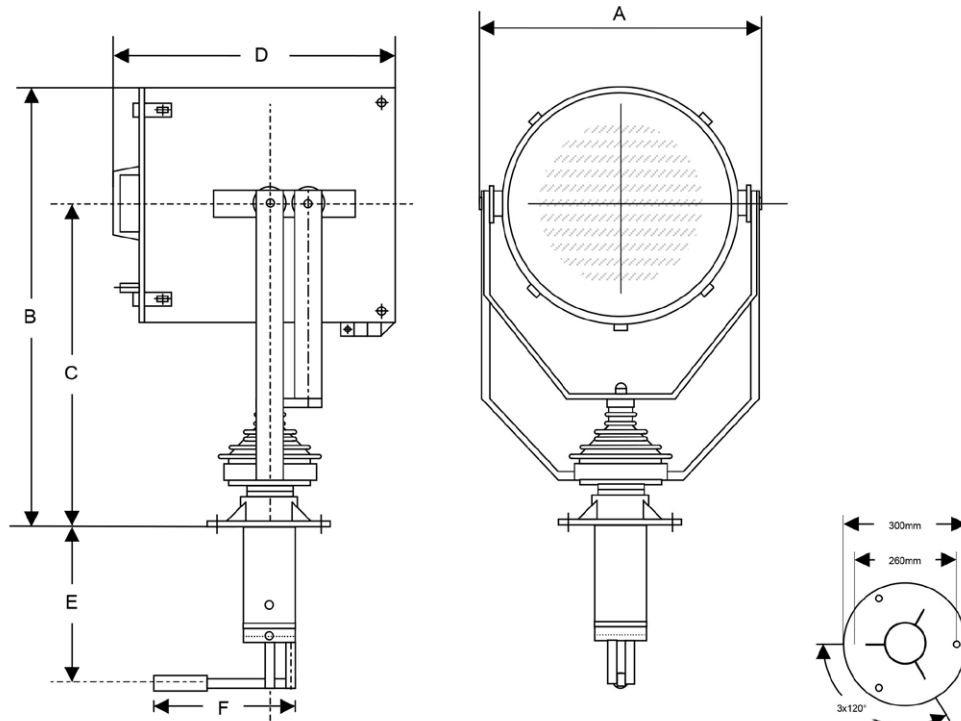


## DH TYPE

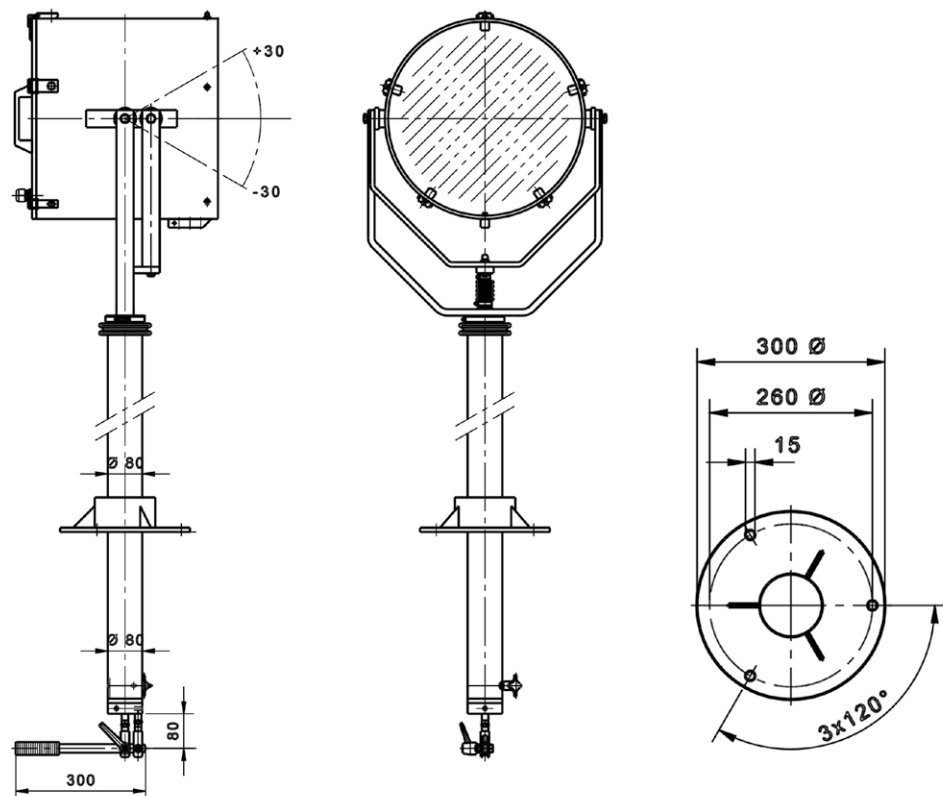




## WS TYPE



## WH TYPE

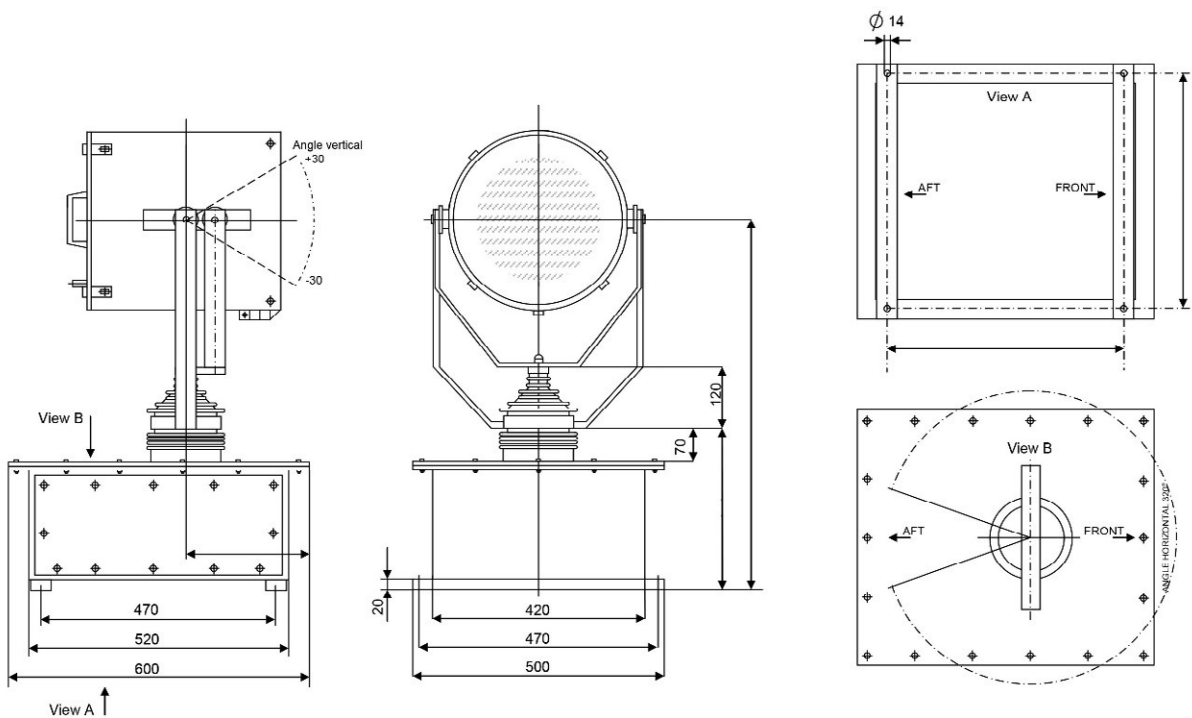


## EF TYPE

The EF-type searchlights are operated from a control panel connected to a power supply (for Xenon). EF searchlights can optionally be equipped with focus adjustment, zero position switch or digital position indication. EF searchlights can also be implemented as a tower type, which is especially practical if there is a Xenon-type search light. (XBO) is installed. In that case, the ballast unit is included in the tower. (from 500mm)

The EF searchlight has become the industry standard, due to its simple operation, and is particularly suitable for operation from larger or closed bridges. The position of the EF type searchlight is independent of the position of the operator, who can perform the operation from the control panel. This allows the searchlight to be placed almost anywhere, such as high in the mast or at the front or rear of the ship.

There are several EF types where the easiest is the EFA. It is equipped with single relay and thus has a simple operation. The EFA is operated with a maximum of one control panel.







If several control panels are desired (maximum 4) one can opt for the EFD version. From this type we work with a motorprintcard as a technical basis. The remote control of the EFA and EFD requires 24V. The EFA and EFD are suitable for searchlights of the 273-463 series. If you prefer a searchlight with heating, we can recommend the EFS. The EFS is the same in size as the EFA and EFD. From the EFS the remote control is powered by a 230V voltage.

The EFN is also equipped with heating as standard, but the remote control is slightly higher than the EFA / EFD and EFS. When the remote control is equipped with heating, it is automatically located in the head of the searchlight. The EFS and EFN are suitable for searchlights of the 273-525 series.

Remote controls can be combined with all types of searchlights. For Xenon the EFN remote control is the basis.

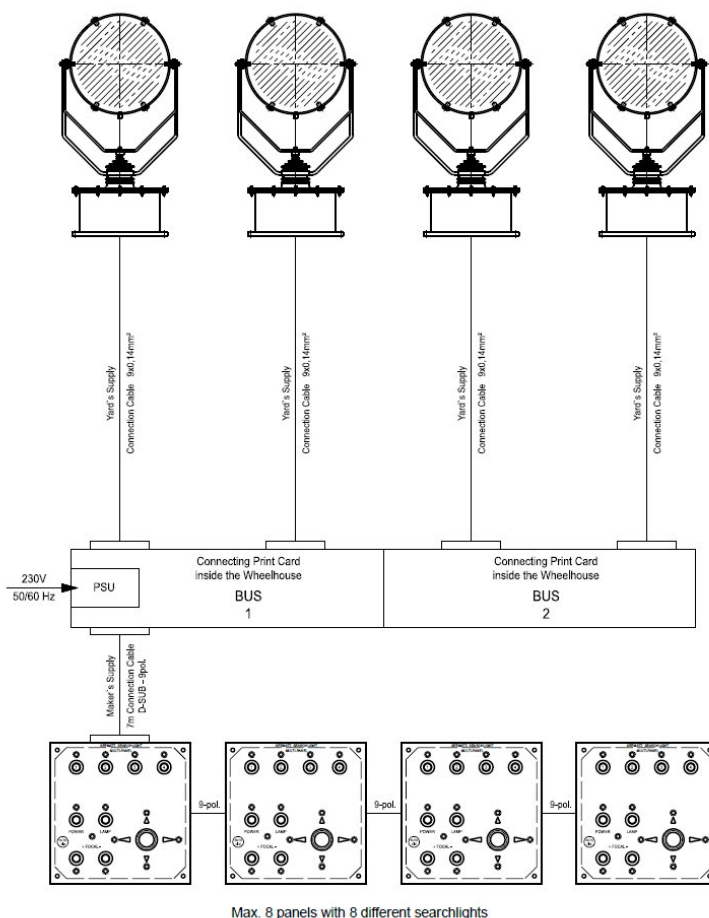
Other remote controls on request.

## MULTIPANEL CONTROL

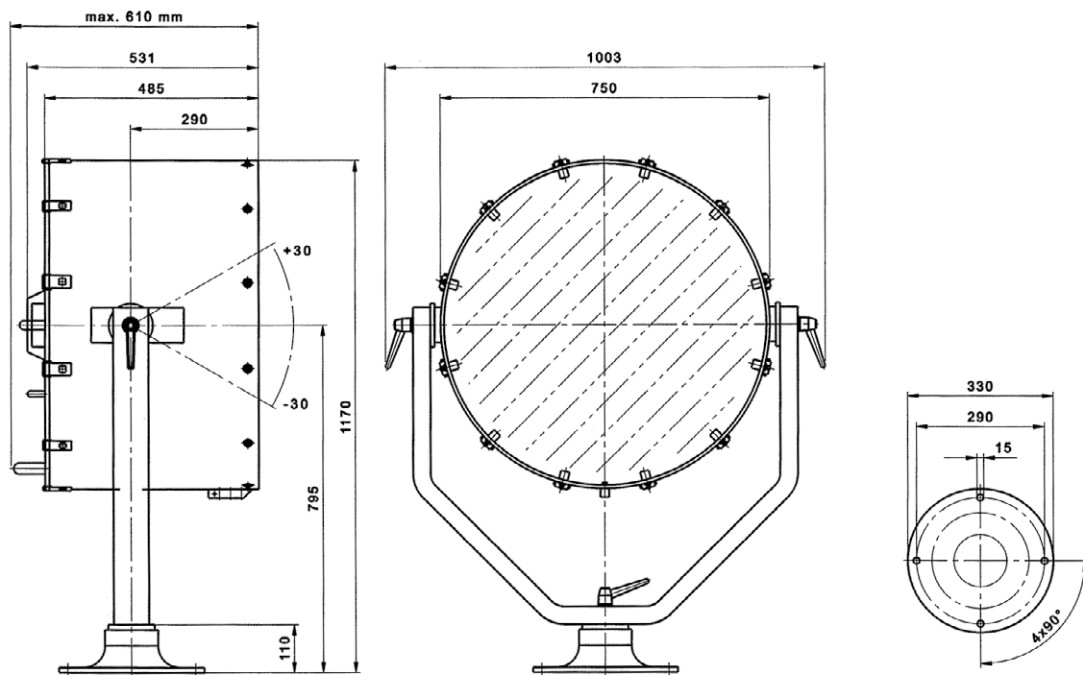
The Seematz multipanel allows up to 8 searchlights from up to 8 control panels. For the design and development, simple installation and safe operation are important key features, as for the rest of the Seematz products. Particularly on high-performance vessels with limited consoles, this solution offers an excellent possibility to save space without loss of comfort and safety.

### Characteristics

- Control up to 8 searchlights from one control panel
- Control multiple searchlights simultaneously
- Each switch is indicated by self-dimmable LEDs
- Connection of halogen, LED or Xenon search lights possible on the same panel
- Easy installation via standard cables



## SUEZ TYPE



Before transiting the Canal, the vessel should be provided with a searchlight (projector) complying with the following conditions and specifications.

- a) Minimum range of radiation of single beam 1800m ahead (Brightness of approx. 1 LUX, at the atmospheric transmission factor  $T=0,85$ ).
- b) The power of the lamp must give a luminous intensity of a single light beam not less than  $3 \times 10^6$  (3 million) candles, which is equivalent to a high efficiency incandescent lamp of:
  - i - 2000 watts for vessels up to 30.000 SC.G.T.
  - ii - 3000 watts for vessels over 30.000 SC.G.T.
  - iii - Any kind of lamp which fulfils the specifications under item 2 and to be of the non-explosive type.

The Seematz Suez Canal searchlight fulfils the SCA rules with 2 x 2000 W halogen lamps for every kind of vessel.

## SUEZ TYPE, continued

**Certified by Lloyds Register of Shipping: HAM 601408**

All aluminium parts (case mounting bow, etc) are made of ALMg3, non magnetic aluminium. All screws are made of refined stainless steel. Fastenings for plug-in-unit are made of stainless steel, F17, non corrosive. The mounting foot is made of ALMg3, non magnetic. The pressure connections and the pressure relief valve are made of brass. The reflector is made of purest aluminium 99,99%, anodized, highly polished.

Following equipment is standard:

2x halogen lamp 230 V - 2000 W, 3m cable with special plug, 3 pcs. earthing screw, (one at the bottom of the searchlight case, second at the plug-in unit) air pressure joint, drain cock, safety valve (0,25 bar).

### **Art. 29 – Bridge Wing Projectors:**

Bridge wing projectors on either side of the bridge must be fitted. To show the Canal banks clearly during the transit and mooring operation, it must have following characteristics:

- Power approx. 4 LUX at an atmospheric transmission factor of  $T=0,74$  and minimum range 200m

Seematz offers the following searchlight as a bridge wing projector:

**DS 351 HGS 230 V - 650 W**

## TOWER VERSION

All Seematz electrically operated (EF) searchlights can be implemented in tower version if desired. The lower case of the searchlight is increased by 250mm - 1000mm, depending on the situation on board.

This makes the searchlight higher and can, for example, shine over obstacles (such as a railing) without additional adjustments on board.

### Advantages of the Tower

- Significantly shorter installation time of the searchlight (XBO)
- The ballast is placed in the base cabinet (from the EFNT500) instead of a separate unit (XBO only)
- Easier cabling (only 2 cables, control and power cable)
- Obstacles such as railings are easier to bridge



## DAYLIGHT SIGNALING

In addition to the halogen, LED and xenon searchlights, the German manufacturer Pesch also has daytime lights in its range. The Seematz daylight lamps are made of seawater resistant, glass reinforced plastic (GRP), have an aluminum hand bracket and are built according to SOLAS requirements. The viewfinder of the lamp is equipped with a protected eyecup.

### Characteristics

- Range: 500m
- Visibility: 12km during the day, 30km during the night
- 50 or 100W lamp (12V and 24V possible, 7Ah or 15 Ah)
- Incl. battery, carrying case and standard 3m cable

### Technical data

- 15 Ah battery (including charger, power supply 220VAC)
- Light weight: 1.8 kg. (complete set: 5.5 kg)
- Polycarbonate housing, anodised aluminum (99.99% pure) reflector, Bi-velvet
- IP56 classification

### Options

- 15 Ah battery
- Filter glass red / green
- 3 pole socket for example for the bridge wing
- AC / DC converter for direct connection to the power supply on board





## FOCUS CONTROL

All Seematz electrically operated (EF) searchlights (Halogen and Xenon types) can be equipped with so-called 'Focus control'. This means that the light emission angle can be influenced, resulting in a narrower or wider light cone. By making the searchlight sharper, a more intense amount of light can be created and the searchlight can be directed to a specific obstacle.

Focus control is particularly interesting for stronger lamp types, which in principle have a narrow beam, such as the XBO 1000 / 2000W. By applying the 'focus' option to the relatively narrow beam of a xenon search light, this type of search light can also be used for illuminating parts of the ship or the space directly around the ship (including man over board).

The choice of Focus control also depends on the use on board. We are happy to advise you on the functionality of this option.





## SEEMATZ WINDOW WIPERS

The many years of experience with Seematz searchlights were taken into account with the development of the straight line window wipers. Nowadays, with more than 45 years of experience gained in the maritime sector, Seematz offers searchlights and straight line window wipers of unparalleled quality and reliability. Theunissen Technical Trading is representing the Seematz searchlights and window wipers for the Benelux area since 1984.

Seematz straight line window wipers offer a perfect performance under all weather conditions. The perfect choice for owners of high performance vessels with high reliability demands. Type approved by Lloyds Register of Shipping and highly appreciated by our satisfied customers all around the world. If you choose Seematz window wipers you can be sure to get a one off system, tailor made to your vessel.

### Why SEEMATZ window wipers?

- Maximum window surface coverage
- Very low maintenance
- Robust technology
- Proven durability
- Housing of seawater resistant aluminium
- 45 years of experience



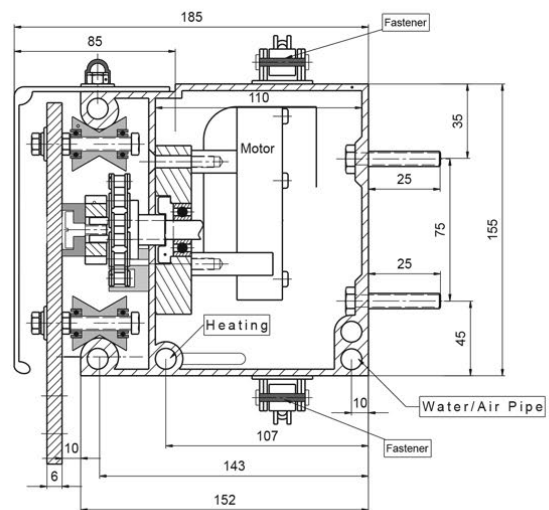
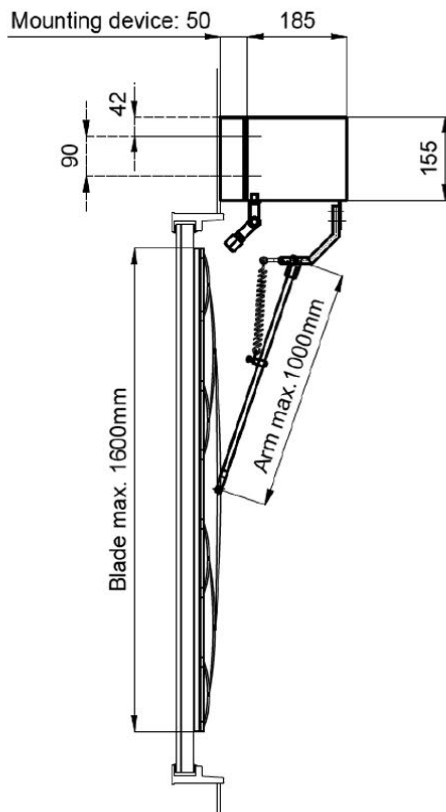
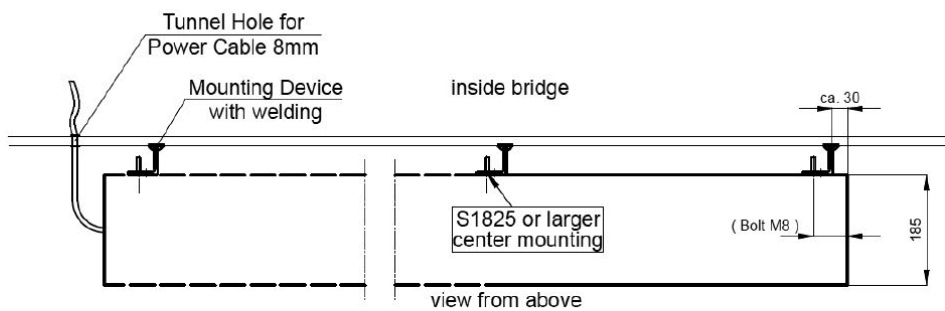
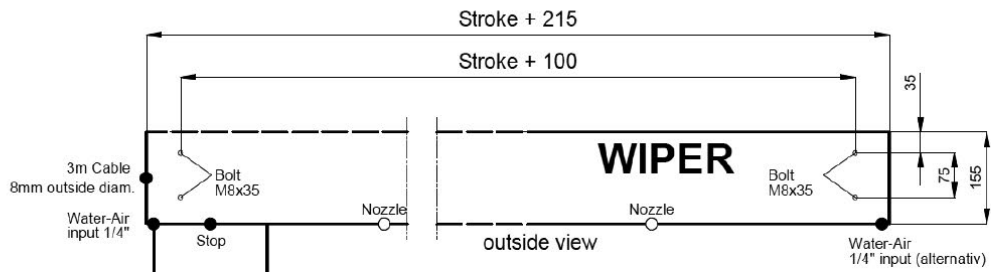
## Characteristics of Seematz window wipers:

- Seawater resistant aluminium housing - standard white powder coated
- Stainless Steel transport system
- Two 24VDC motors for maximum torque
- Park position switch – inductive
- Railway heater for safe operation in cold areas
- Arms up to 1000mm length
- Wiper blades up to 1600mm length
- Housings up to 3600mm length
- Designed for input powers of 24VDC or 110/230VAC. Other input powers on request
- Different Multi-Speed controllers incl. BUS-Steering or Bridge-COM control
- Water/air spray system available (optional)
- Wiper housing available in all RAL colors
- Type approval by Lloyds Register
- Tested up to -60° Celsius

## Seematz window wiper design

The Seematz wiper housing consists of seawater resistant aluminium Almg 3. All other metal parts are made of stainless steel or brass. All colored parts are powder coated. The transporter inside the housing is moved by two 24VDC motors. These motors are installed in a separate chamber of the wiper housing, so completely outside the wheelhouse.

As standard, the housing is fitted with a park switch, a 100W heating system and an overload protection. All wiper systems include the wiper arm, blade including rubber, 3m connection cable, D-Sub panel cable, power supply and control panel.



## Different types

Seematz window wipers are available in three control types. The 'Atlantic' type is the basic version, commonly used in applications where a few control options are sufficient. The 'Ocean' type is the most popular type out of the three. It comes standard with a spray system, thermostat controlled heating and five interval and continuous speed options. The 'Pacific' type is the most extensive type and is often used on large vessels where a lot of control options are desirable.

Regardless of the wiper type, the wipers blades, arms and other parts of the wiper system are identical. The differences between the types are in the controlling possibilities as well as the number of wipers that can be connected to the system.

## MODBUS

The control panels are made of well tested and heavy-duty buttons and connections. This allows for a simple connection and an easy and intuitive operation of the system.

All control panels for the wipers can be tailor made for your vessel/bridge layout. The 'Pacific' type also offers a connection to the bridge-COM system, this means that all connected wipers are controllable from the main control & monitoring panel on the bridge. This MODBUS connection is also tailor made for your vessel.

	ATLANTIC	OCEAN	PACIFIC
Individual wiper control	Standard	Standard	Standard
Group steering		Standard	Standard
'Single sweep'		Standard	Standard
Intermittend mode's	3x	5x	6x
Continuous speed's	2	2	2
Water/air spray system	Optional	Standard	Standard
Thermostat heating	Standard (not controllable)	Standard (controllable)	Standard (controllable)
Status LED	Standard	Standard	Standard
CVS and window heating	Optional	Optional	Optional
Max wipers per panel	10	12*	24

\*Additional wipers possible on request

## ATLANTIC TYPE

At customer request, Seematz designed the 'Atlantic' type. It is a economical combination of the reliable Seematz wipers with a relatively simple steering. The 'Atlantic' is therefore often used on smaller vessels where a reliable wiper system is required but fewer control options are sufficient. The 'Atlantic' version includes a three step interval (5, 10, 15 sec.), two continous speed levels and status control with LED's. Optional for this type is a water/air spray system (CSV) and thermostat control for the heating elements in the housing.

### Control panels

For the 'Atlantic' type there are four standard control panels. The type of control panel depends on the number of controlled wipers.

1 wiper	72 x 72 mm
2 wipers	144 x 72 mm
3-6 wipers	144 x 144 mm
7-9 wipers	216 x 144 mm
10 wipers	288 x 144 mm



\* Example of a controle panel, type 'Atlantic'



## OCEAN TYPE

The 'Ocean' type is the most used type of Seematz window wiper control, it comes standard with a water/air spray system and thermostat heating for the wiper housing. For controlling the wiper, 'grouping' functions are available and a 'single sweep' function is also standard on the 'Ocean' wipers.

Five intermittent speed levels are available, next to the two different continuous speeds. The built-in lightmeter automatically dims the LED's for optimal use and comfort in the dark.

### Control panels

For the 'Ocean' type there are four standard control panel. The type of control panel depends on the number of controlled wipers.

1 - 3 wipers	144 x 72 mm
4 - 8 wipers	144 x 144 mm
7 - 10 wipers	216 x 144 mm
8 - 12 wipers	288 x 144 mm



\* Example of a controle panel, type 'Ocean'

## PACIFIC TYPE

The 'Pacific' type is the most advanced type of Seematz wipers. It comes standard with individual wiper control, group steering, water/air spray system, controlled thermostat heating and six intermittent speed levels as well as two continuous speed modes.

'Pacific' wipers can be controlled from a control panel or via a network connection (MODBUS). The MODBUS connector allows for connecting the Seematz control panel to your own monitor steering interface in the wheelhouse.

### Control panels

- Easy connection to the control panel with one "patch" cable
- Connection of additional control panel with one additional 'patch' cable
- Up to 24 wipers on one control panel
- Panel sizes: 144 x 72mm or 144 x 144mm
- Up to 10 special functions operable
- Self-dimming LED's
- Different panel colors available on request



\* Example of a control panel, type 'Pacific'



## HERKULES XVII/XVIII

<b>Ship's name:</b>	<b>Herkules XVII / XVIII</b>
<b>Type of schip</b>	<b>Inland vessel/barge</b>
<b>Supplied:</b>	<b>2 XBO searchlights 2000W, 1 XBO light 1000W</b>
<b>Owner:</b>	<b>Imperial Shipping Group</b>
<b>Shipyard:</b>	<b>Werkina Werkendam B.V.</b>
<b>Installation:</b>	<b>Werkina Werkendam B.V.</b>

The Herkules XVII / XVIII barges are 44m long and 18m wide and both sailing under the Dutch flag.

For each of these inland vessels, TTT supplied thee xenon searchlights, two of 2000W and one of 1000W. In inland shipping, searchlights are used for illuminating the dock when the ship moors, in man overboard situations and for illuminating objects at great distances.



## HELIOS

<b>Ship's name:</b>	<b>Helios</b>
<b>Type of schip:</b>	<b>Suction Cutter Dredger</b>
<b>Supplied:</b>	<b>2X XBO 450W Tagefa</b>
<b>Owner:</b>	<b>Koninklijke Boskalis Westminster N.V.</b>
<b>Shipyard:</b>	<b>IHC</b>
<b>Installation:</b>	<b>IHC Drives and Automation BV</b>

The 152m long new megacutter Helios can operate up to a depth of 35 meters, at a minimum dredging depth of 6 meters. This makes the ship suitable for the making of landings for pipelines. Two cutters with different heights can be used, which are able to cut extremely hard ground. The cutter capacity lies between 4,200 and 7,000 kW, the pump capacity is 3 x 5200 kW.

For the Helios, TTT supplied two 450W Xenon searchlights, used for example in man overboard situations and for illuminating objects at long distances.





## MINERVA

<b>Ship's name:</b>	<b>Minerva</b>
<b>Type of schip:</b>	<b>Trailing Suction Hopper Dredger (TSHD)</b>
<b>Supplied:</b>	<b>7x type ocean</b>
<b>Owner:</b>	<b>DEME</b>
<b>Shipyard:</b>	<b>IHC Nederland</b>
<b>Installation:</b>	<b>IHC</b>

Commissioning of the dredger 'Minerva' took place end of 2016, making it the first dredger to be equipped with dual fuel engines. Along with its sister ship, DEME's "Scheldt River"

Like the Scheldt River, also the Minerva is built as a "green" design, which among other things has led to the fact that both ships are registered with a Green Passport and Clean Design notation. The ships are equipped with dual fuel engines and LNG tanks, in order to meet both ecological (stricter emission standards) and economic (fluctuating oil prices) challenges.

Minerva and the Scheldt River are both equipped with linear wipers from Seematz. The straight wipers are not only strong and very durable, but also ensure a maximum wiping surface, so that the view from the wheelhouse remains optimal in bad weather.



<b>Ship's name:</b>	<b>P 303 (2016)</b>
<b>Type of schip:</b>	<b>Patrol Vessel</b>
<b>Supplied:</b>	<b>1x HGS 500W 700mm Grey</b>
<b>Owner:</b>	<b>Iraq Navi</b>
<b>Shipyard:</b>	<b>Damen Shipyards Gorinchem</b>
<b>Installation:</b>	<b>Damen Shipyards Gorinchem</b>

The P303 patrol boat of Iraq Navi is a defense patroller which is deployed to patrol along the coastline.

Aboard the patrol vessel TTT delivered a 500W halogen searchlight, mainly used for the detection and scanning of suspicious activity in territorial waters.





## BONA FIDE WR-289

<b>Ship's name:</b>	<b>Bona Fide WR-289</b>
<b>Type of schip:</b>	<b>Garnalenkotter</b>
<b>Supplied:</b>	<b>1x EFA463LED230V 114W with CP</b>
<b>Owner:</b>	<b>Cees van eekelen</b>
<b>Shipyard:</b>	<b>Damen SRF Friesland</b>
<b>Installation:</b>	<b>Faber Elektro Service B.V.</b>

The Bona Fide WR-289 is a 24m long shrimp trawler made for the Dutch shrimp fishery in the North Sea. It is the first shrimp trawler with an indoor processing deck. Aboard shrimps are already sorted according to size, packed / sealed and optionally frozen. This approach represents a major innovation for shrimp fishing.

TTT supplied a LED searchlight (230V/115W) witch is front mounted in the mast. By means of a control panel it can be controlled from the wheelhouse. With the choice for a LED searchlight, the owner enjoys multiple advantages compared to a conventional halogen searchlight. LED searchlights are more resistant to vibration, are very energy efficient and have a much longer lifespan.



<b>Ship's name:</b>	<b>Rotra Vente</b>
<b>Type of schip:</b>	<b>Cargo Vessel</b>
<b>Supplied:</b>	<b>1x XBO 450W, 2x HGS 1000W with CP</b>
<b>Owner:</b>	<b>Concordia</b>
<b>Shipyard:</b>	<b>Holland Shipyards</b>
<b>Installation:</b>	<b>Holland Ship Electric B.V.</b>

The Rotra Vente is a 141 meters long and over 20 meters wide cargo vessel. The Rotra Vente is made for the wind turbine industry in the North Sea, with the main purpose of transporting turbine heads for wind turbines (and rotor blades). The bow of the Rotra Vente is specifically designed to utilize maximum space for transporting the wind turbine head. The specially developed bow is fitted with a retractable "ramp" (driveway) are put in motion by means of hydraulic systems. The ship will get the "roll-on / roll-off " feature: the load can be driven in and out of the ship.

For the Rotra Vente TTT supplied two 1000W halogen searchlights with control panel and one 450W Xenon light. The searchlights are used to illuminate the dock when the ship moors, in man overboard situations and illuminating objects at long distances.

