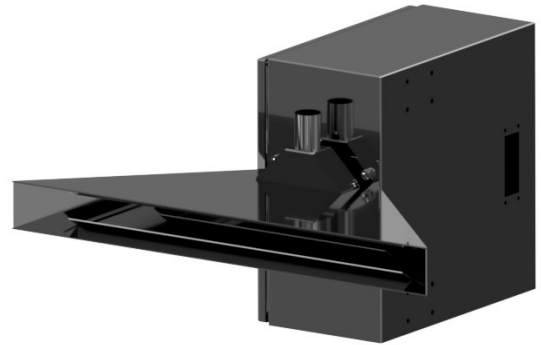


## BENEFITS

- **Thermal monitoring** of mobile torpedo ladles from two sides
- **Precise assessment** of the state of the lining, including an alarm if a maximum temperature threshold is exceeded
- **Optimize** torpedo ladle maintenance cycle
- **Separate trend monitoring / traceability** for individual torpedo ladles – analysis function
- **Event login** (overall and car-specific) and reporting function
- **Interface connection** to customer-side data system through which process parameters are send
- **Visualization** via web server access



## DESCRIPTION

The **IR TP Inspector** system consists of two Fluke MP150 / MP300 stationary IR line scanners, as well as an interface and system PC unit with the SELMATEC TP Inspector software package. The system is designed for the thermal inline monitoring of torpedo ladles aimed at preventing harm to operating equipment and personnel and obtaining accurate statements on the state of the lining.

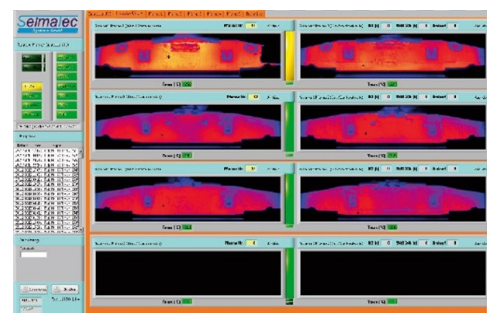
Data capturing and evaluation software acquires the measured results from the IR line scanner and generates an alarm if previously defined measurement limits are exceeded. The IR heat images are stored and made available for subsequent analysis, either locally or on a network on the system PC / server.

As an option, a range of different process parameters for each IR heat image of a torpedo ladle car can be sent to and saved in a database via Ethernet, OPC, ProfibusDP, analogue signals and so on. A web interface visualizes the data capturing and evaluation software within the entire Intranet, and can also be operated.

A robust protective housing made from durable stainless steel means that the IR line scanners can be used at the track-side.

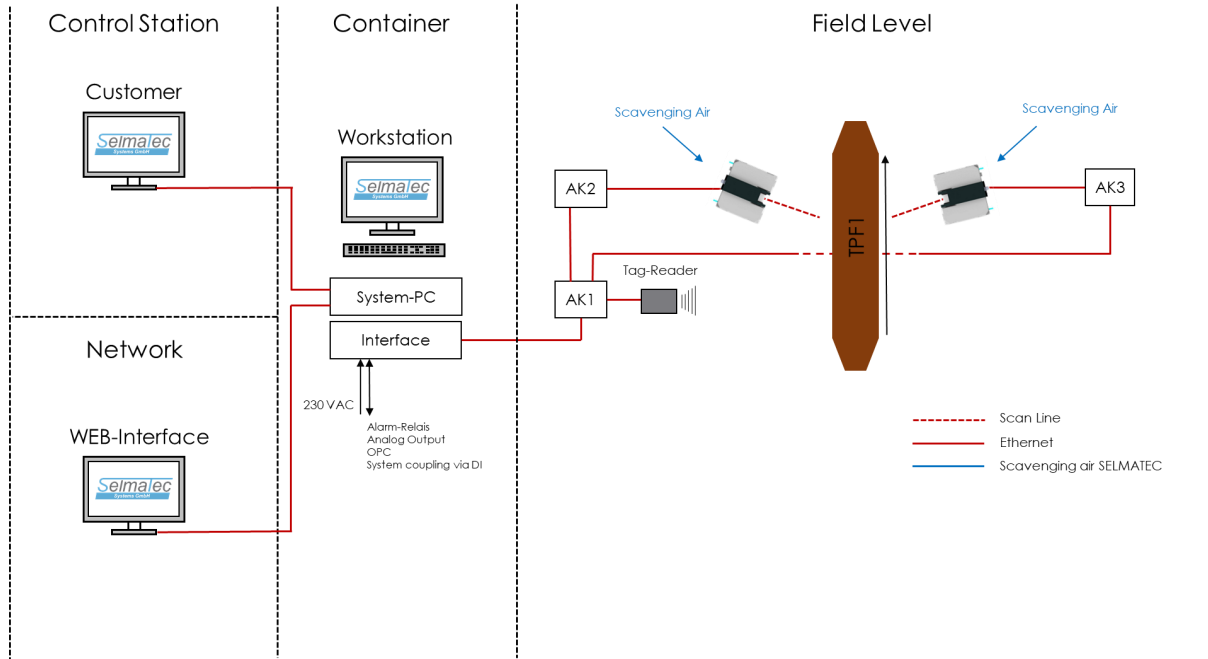
## MEASUREMENT PARAMETERS

<b>Temperature Range</b>	20 .. 350 °C
<b>Line Frequency</b>	300 Hz, 150 Hz, 108 Hz, 75 Hz, 48 Hz, 36 Hz, 20 Hz
<b>Spectral Range</b>	3,9 µm (quantum detector)
<b>Emissivity</b>	0,1 ... 1,0 digital adjustable
<b>Bandage Speed</b>	2 ... 12 km/h
<b>Data Transmission</b>	Ethernet
<b>Interfaces</b>	OPC, TCP, Profibus, Profinet, Analog-Digital I/O...
<b>Power Supply</b>	110/230 VAC
<b>Scope of Delivery</b>	Complete system incl. 2 IR linescanners, system PC/SQL server, interface unit, control cabinets, air purge unit, protective housings, RFID-tag reader



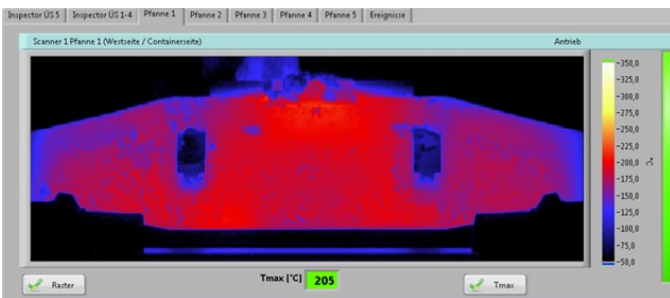
### EXAMPLE LAYOUT

- There are a **variety of options**
- The system is **flexible and easily expandable** and therefore well adaptable to individual needs



### SOFTWARE

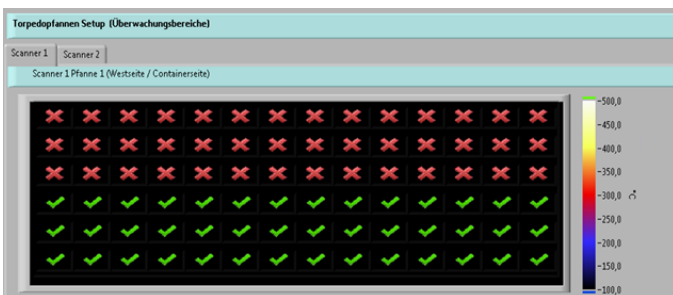
Continuous Display



Profile Monitoring



Zone Monitoring



Alarm Protocol

Datum	Zeit	Klasse	Ereignis
17.10.2013	04:31:20	Temp. Warnung	Tpf. Nr. 43 Tmax: 251°C (Sc.1)
16.10.2013	01:17:33	Temp. Warnung	Tpf. Nr. 57 Tmax: 262°C (Sc.2)
16.10.2013	01:17:32	Temp. Warnung	Tpf. Nr. 57 Tmax: 252°C (Sc.1)
15.10.2013	22:31:32	Temp. Warnung	Tpf. Nr. 57 Tmax: 261°C (Sc.2)
15.10.2013	15:34:23	Temp. Warnung	Tpf. Nr. 57 Tmax: 250°C (Sc.1)
15.10.2013	12:19:21	Temp. Warnung	Tpf. Nr. 57 Tmax: 254°C (Sc.2)
15.10.2013	12:19:20	Temp. Warnung	Tpf. Nr. 57 Tmax: 253°C (Sc.1)
13.10.2013	13:23:01	Temp. Warnung	Tpf. Nr. 57 Tmax: 251°C (Sc.2)
12.10.2013	03:05:53	Temp. Warnung	Tpf. Nr. 57 Tmax: 251°C (Sc.2)
12.10.2013	03:05:53	Temp. Warnung	Tpf. Nr. 36 Tmax: 256°C (Sc.1)