July 25, 2016

Kiln Shell Temperature Monitor

Basic Specification

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Purpose of Monitoring Kiln Shell Temperature

- To detect hot spots to protect kiln shell from thermal damage.

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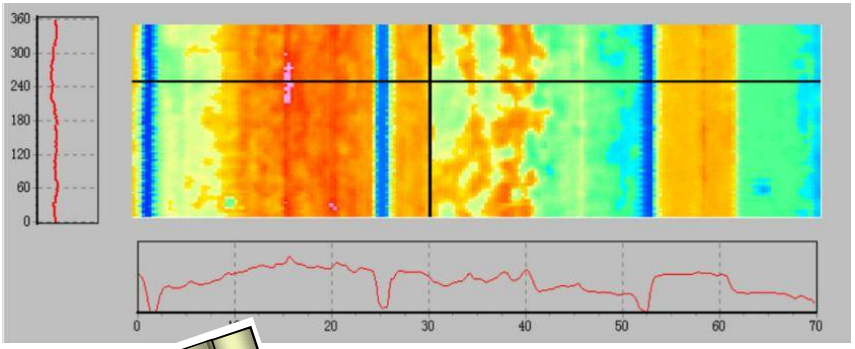
- It leads to improving the life time of lining

System Configuration and Basic Action

- The system consists of scanning type IR-thermometer and Personal computer, which is able to measure whole shell temperature at 1-rotation.
- Temperature data is processed on the PC, and monitoring display shows shell condition at a glance.
- Kiln can be divided longitudinally, then hotspots must be surely detected by alarm in each zones.

Fig.1 Installation of Kiln Shell Monitor

2D Heat image and
real temperature
profile data



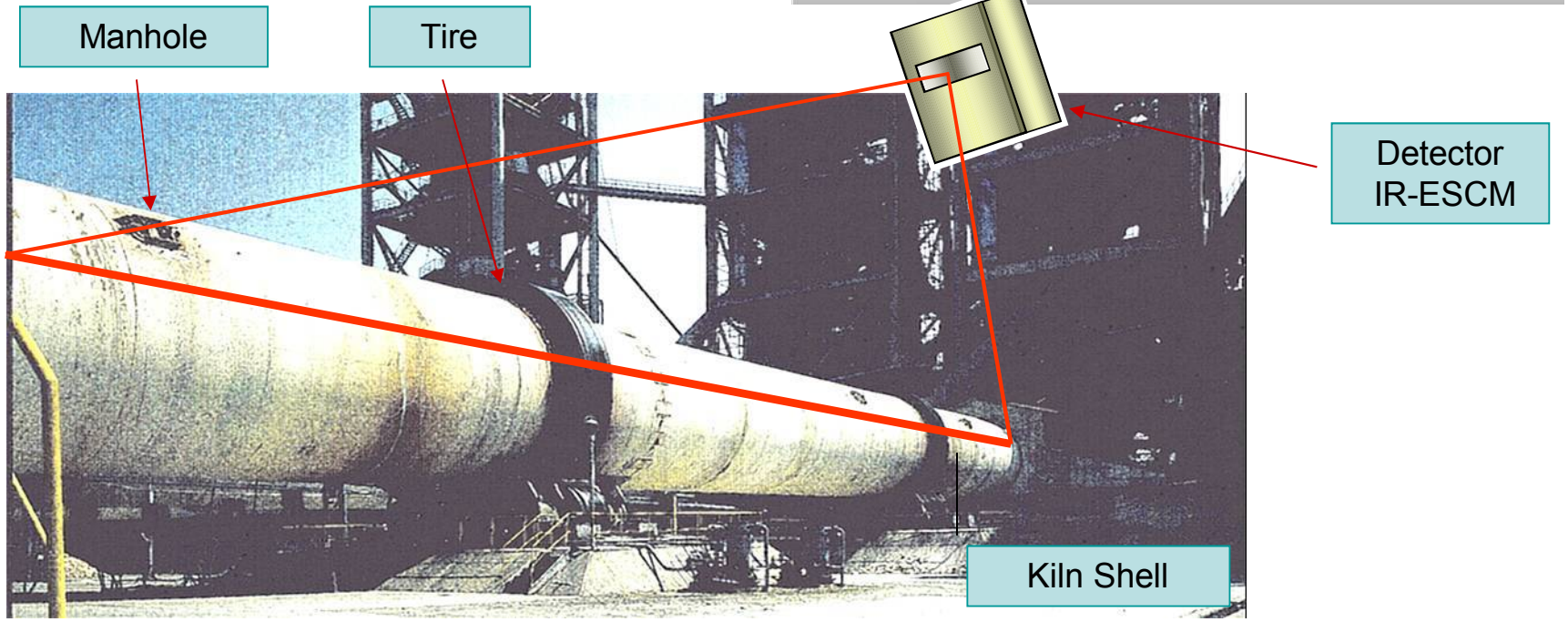


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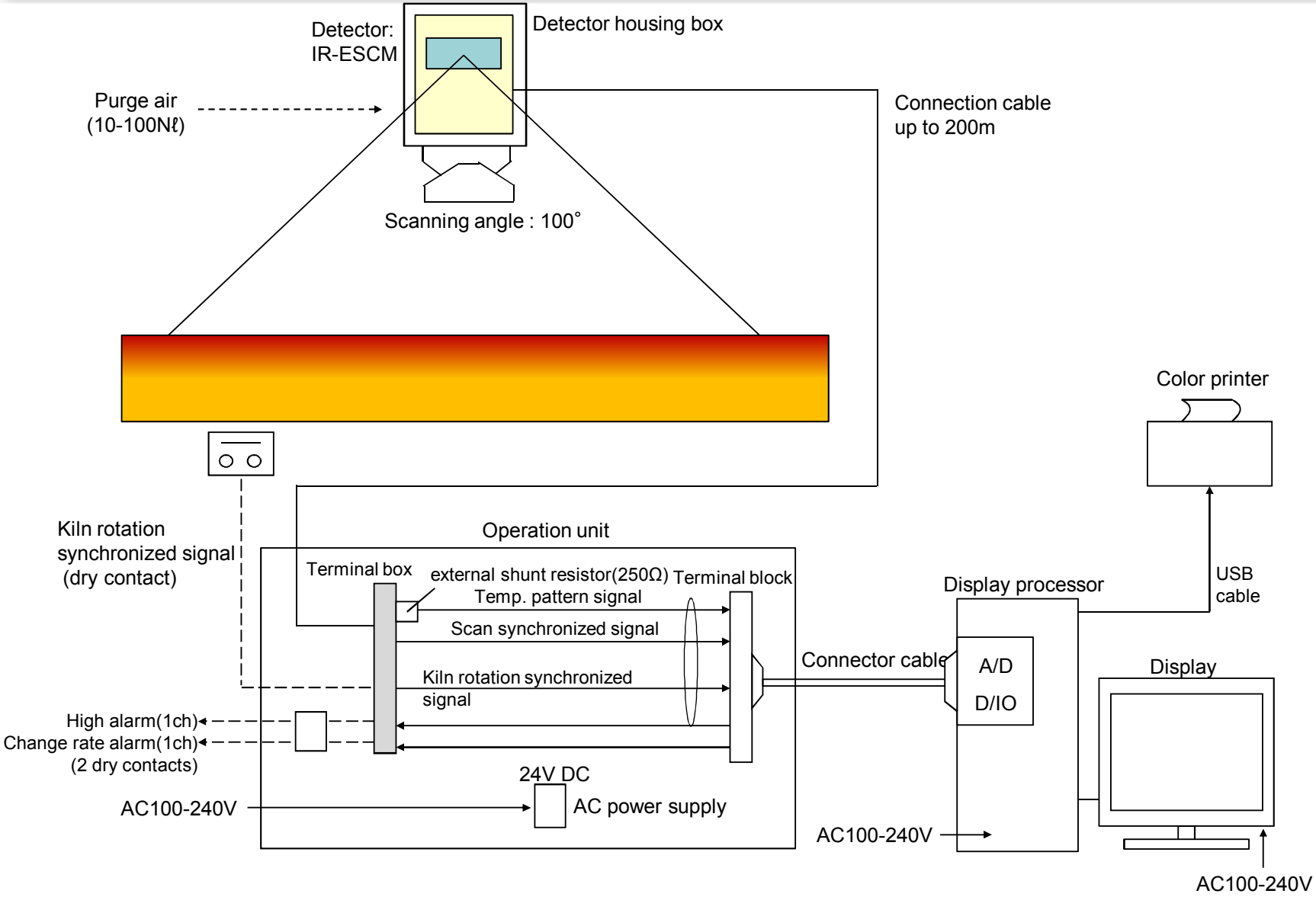
Fig.2 System Configuration



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Specification of Scanner

Scanning system	By rotation mirror
Scanning angle	100°
Scanning speed	10 times/sec
Measuring range	100-600℃
Measuring distance	0.5m to Infinite
Instant view	Measuring distance/distance factor (distance factor : 200)
Measuring accuracy	Temp.<400℃ : ±4 ℃ 400℃≤temp.<600 ℃ : ± 6 ℃
External dimensions	230H×140W×77D mm

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Fig.3 Specification of PC

OS :Windows7 (32bit)
CPU :3.6GHz
RAM :1GB
HDD :500GB
Display :17inch TFT liquid crystal
Expansion slot : PCI slot
(1 A/D board build-in)

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Fig.4 Measuring Distance of Detector

Reference data: Resolution at a distance of 68 m between detector and kiln.

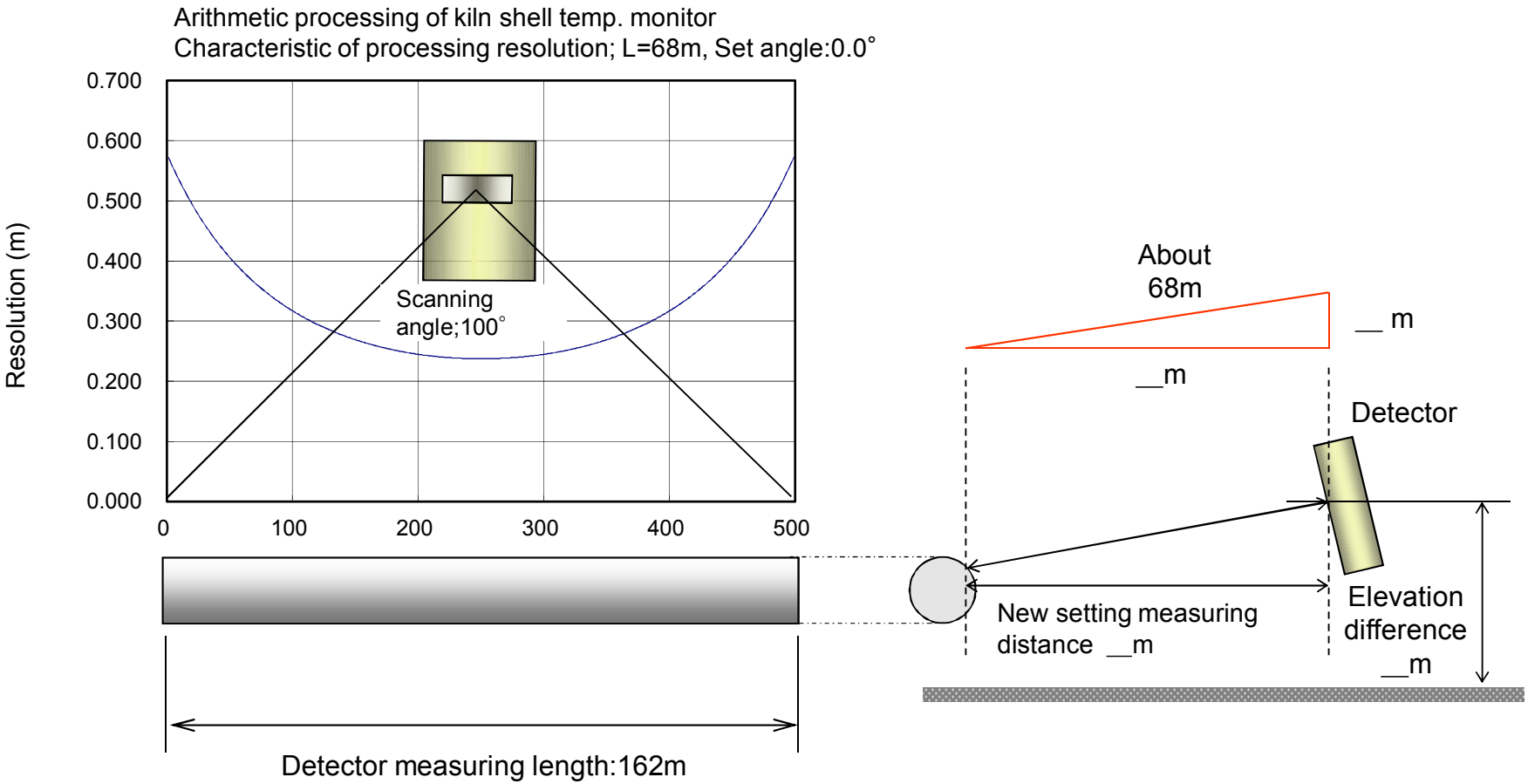

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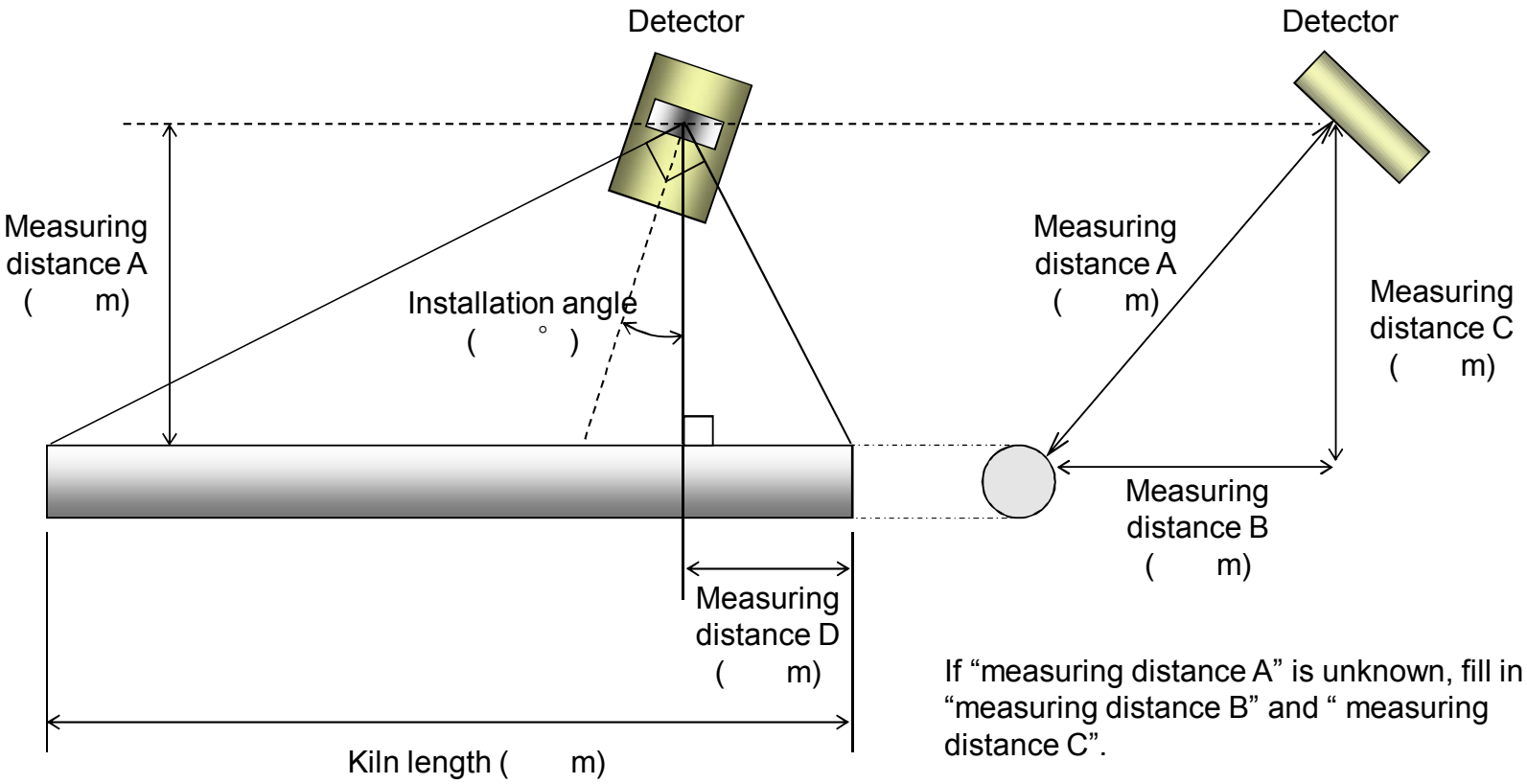
Fig.5 Setting Condition of Detector (for Checking)



If “measuring distance A” is unknown, fill in “measuring distance B” and “ measuring distance C”.

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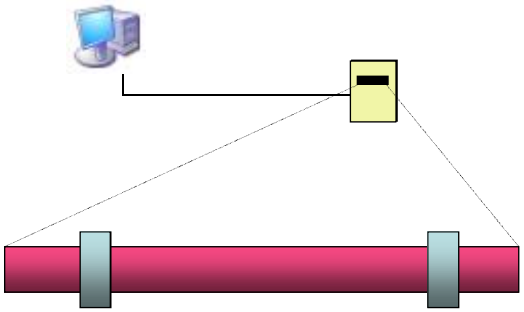
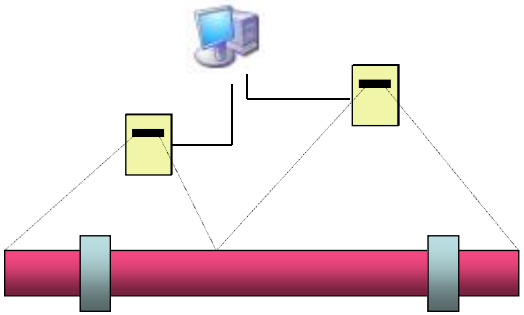
Fig.6 System Configuration (Extendable)

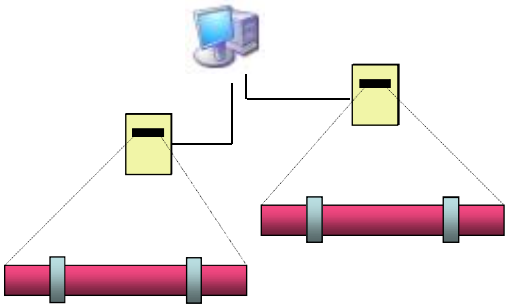
1-kiln 1-scanner (type K11)



1-kiln 2-scanner (type K12)



2-kiln 2-scanner (type K21)



3-kiln 3-scanner (type K31)

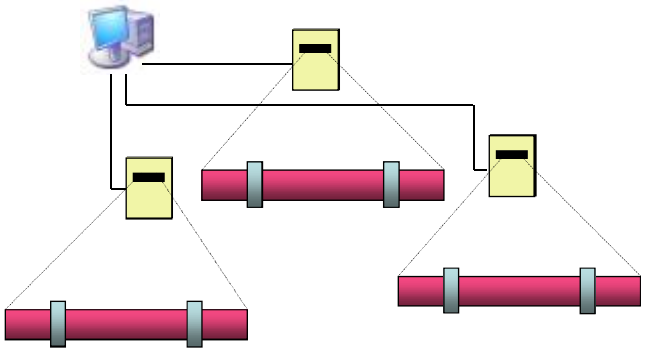
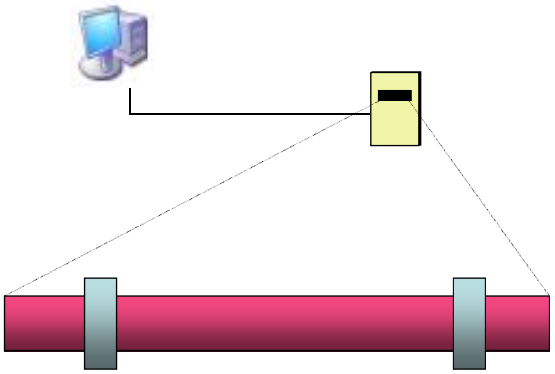
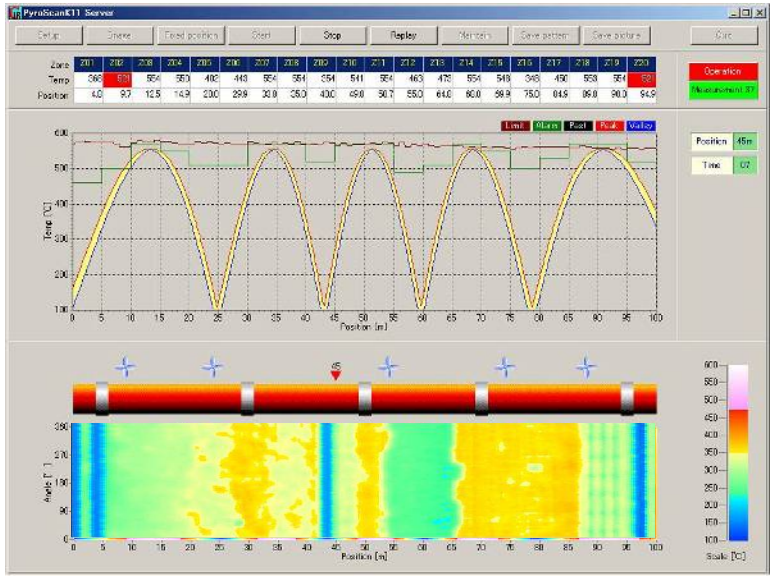


Fig.7 Specification of Software (K11)

Name: Kiln shell monitoring software
Software code : IR-VXK11
Detector model: IR-ESCM
Application: Kiln shell temp. management (100-600℃)
Features: Kiln shell hot spot detection
Temperature pattern display
Heat image display
Zone management



<<Starting screen>>



Function:
High Alarm, Change rate alarm,
Temperature pattern graph,
Zone temp. management,
Real time heat image &
Historical heat image display,
CSV file store and replay,
Trend graph, Pattern data display
Heat image replay,
Temperature distribution analysis

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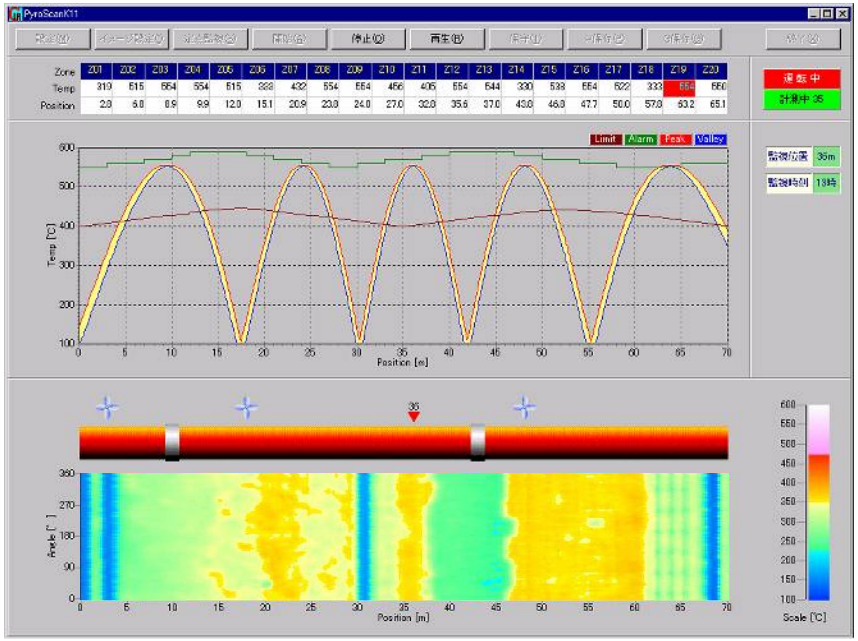
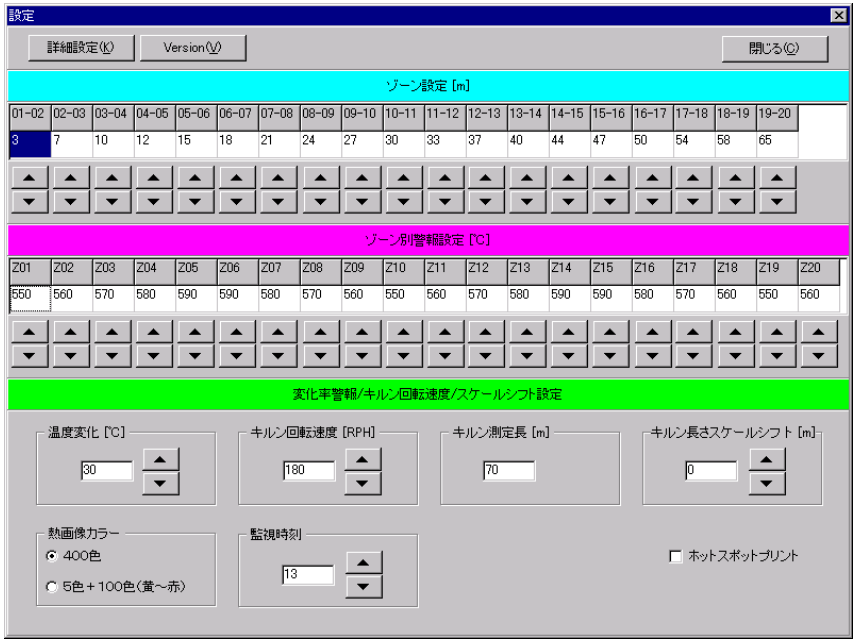
Fg.7-1 Specification of Software (Operating Screen)



Main Screen



Zone & Parameter Setting

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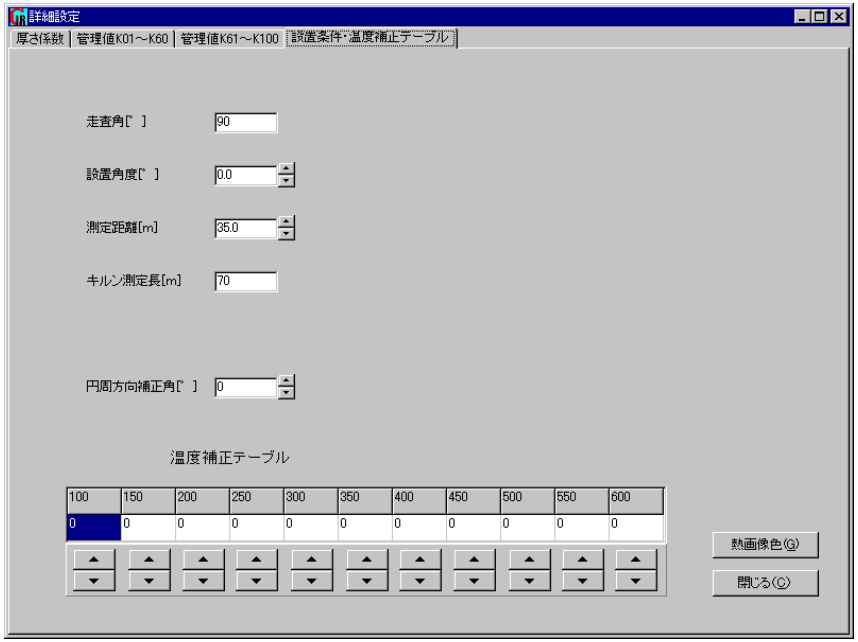
Fig.7-2 Specification of Software (Operating Screen)



Detail Settings

Selection of Replay Mode

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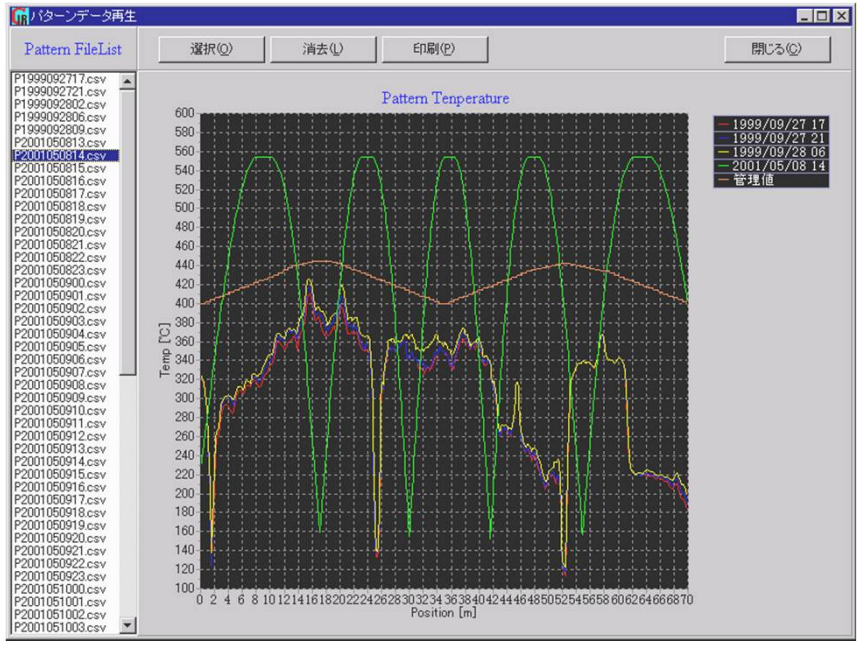
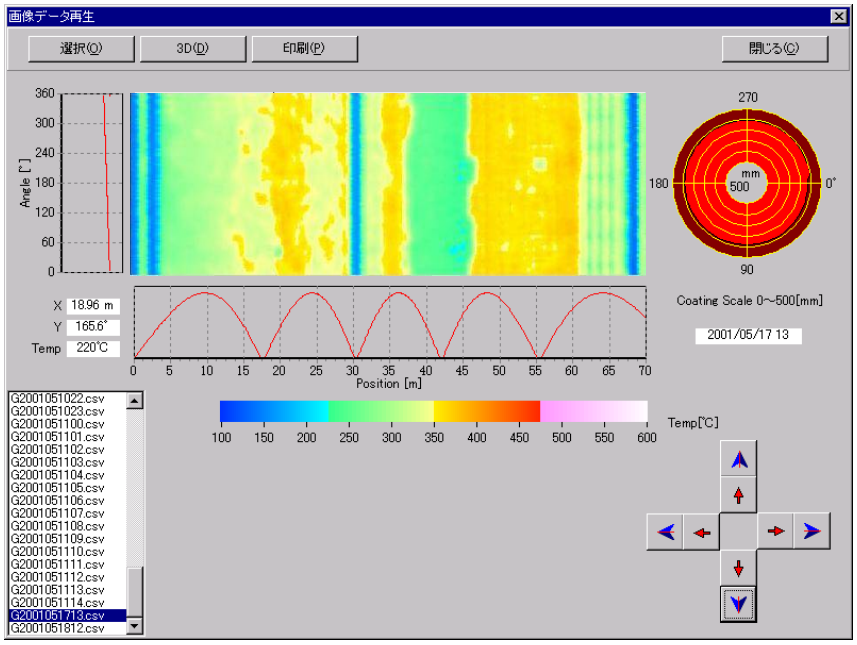
Fig.7-3 Specification of Software (Operating screen)



Temperature Pattern Replay



Heat Image Replay

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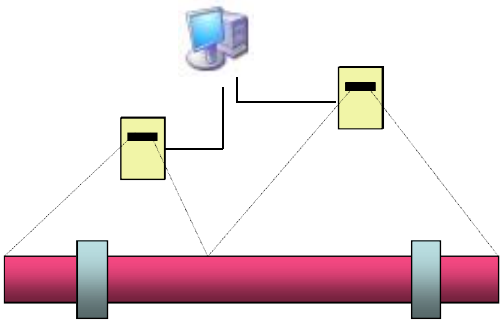
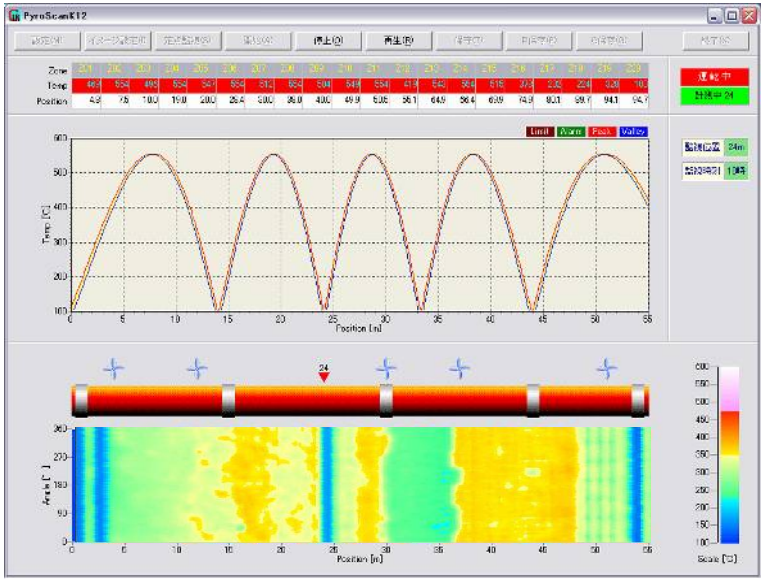
Fig.8 Specification of software (K12)

Name : Kiln shell monitoring software
Software code : IR-VXK12
Detector model: IR-ESCM
Application: Kiln shell temp management (100-600℃)
Features: Kiln shell hot spot detection
Temperature pattern display
Heat image display
Zone management



<<starting screen>>



Functions:
High alarm, Change rate alarm output
Temperature pattern graph,
Zone temp. management,
Real time heat image &
Historical heat image display,
CSV file store and replay,
Pattern data display,
Heat image replay,
Temperature distribution analysis

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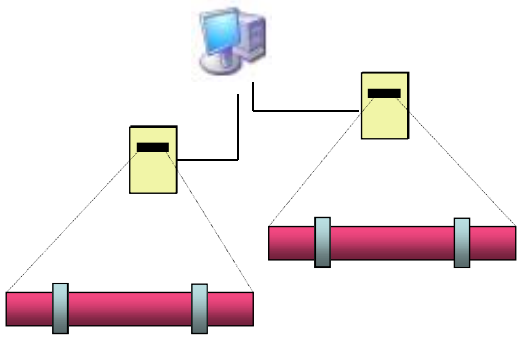
Fig.9 Specification of software (K21)

Name: Kiln shell monitoring software
Software code: IR-VXK21
Detector model: IR-ESCM
Application: Kiln shell temp. management (100-600℃)
Features: Kiln shell hot spot detection
Temp. pattern display
Heat image display, Zone management



<<starting screen>>

Functions:
High alarm, Change rate alarm output,
Temperature pattern graph,
Zone temp. management
Real time heat image &
Historical heat image display
CSV file store and replay,
Pattern data display, Heat image replay,
Temperature distribution analysis

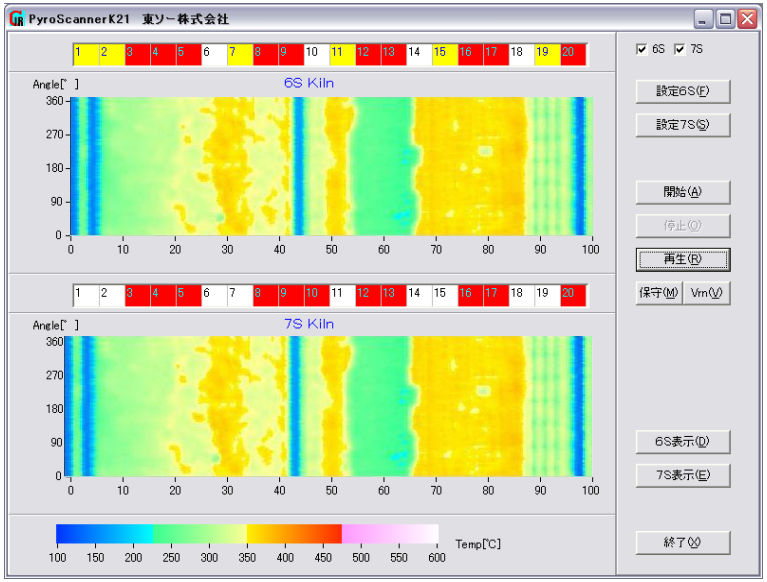


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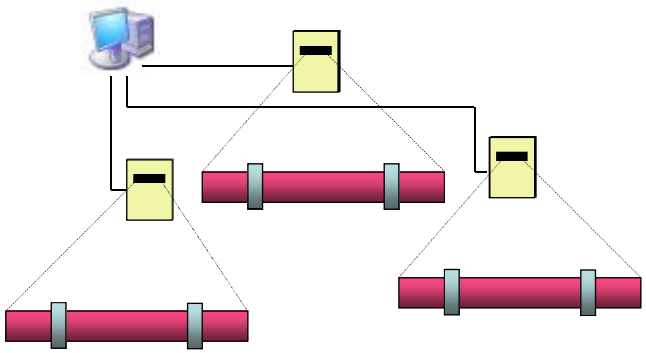
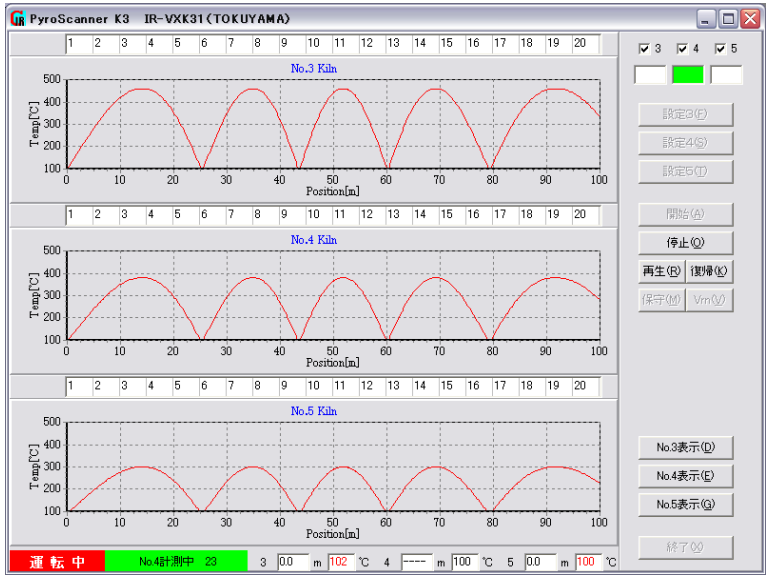
Fig.10 Specification of software (K31)

Name: Kiln shell monitoring software
Software code : IR-VXK31
Detector model : IR-ESCM
Application: Kiln shell temp. management (100-600℃)
Features: Kiln shell hot spot detection
Temp. pattern display,
Heat image display, Zone management



<<starting screen>>



Functions:
High alarm, Change rate alarm output
Temperature pattern graph,
Zone temp. management,
Real time heat image &
Historical heat image display
CSV file store and replay,
Pattern data display, Heat image replay
Temperature distribution analysis

CHINO