

# Energy Dispersive X-ray Fluorescence Spectrometer

## OUR TEX 101FA

### Features

1. Non-destructive quick composition analysis
2. Non-contact analysis of large and / or irregular samples
3. High sensitive analysis of chloride amount in the concrete
4. Small and light weight portable type ,good for on-site analysis
5. No liquid nitrogen / no cooling water , only 100V power for analysis

## Specific analysis for salt contents in concrete



### Application

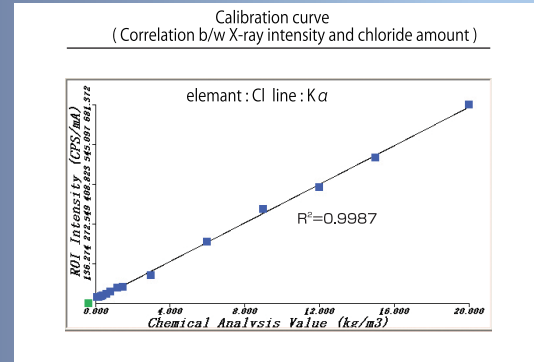
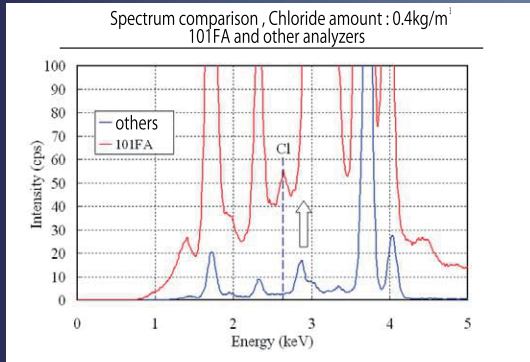
- Chloride analysis on the surface of the concrete
- Research analysis of salt permeation in the concrete core
- Chloride analysis of the concrete drilled powder
- Analysis of the cement
- Post waste disposal component analysis (waste disposal regulation)
- Archaeological survey / analysis
- Material study / analysis in university etc...

| Energy value (keV) |            |                     |        |        |        |        |        |        |        | Element signal |        |        |        |        |        |        |        |  |  |
|--------------------|------------|---------------------|--------|--------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|--------|--------|--------|--|--|
| 1.041              | 1.253      |                     |        |        |        |        |        |        |        |                |        | 1.486  | 1.740  | 2.013  | 2.307  | 2.621  | 2.956  |  |  |
| 11 Na              | 12 Mg      |                     |        |        |        |        |        |        |        |                |        | 13 Al  | 14 Si  | 15 P   | 16 S   | 17 Cl  | 18 Ar  |  |  |
| 3.312              | 3.690      | 4.088               | 4.508  | 4.949  | 5.411  | 5.894  | 6.399  | 6.924  | 7.471  | 8.039          | 8.629  | 9.241  | 9.875  | 10.530 | 11.206 | 11.907 | 12.631 |  |  |
| 19 K               | 20 Ca      | 21 Sc               | 22 Ti  | 23 V   | 24 Cr  | 25 Mn  | 26 Fe  | 27 Co  | 28 Ni  | 29 Cu          | 30 Zn  | 31 Ga  | 32 Ge  | 33 As  | 34 Se  | 35 Br  | 36 Kr  |  |  |
| 13.373             | 14.140     | 14.931              | 15.744 | 16.581 | 17.441 | 18.325 | 19.233 | 20.165 | 21.122 | 22.102         | 23.107 | 24.137 | 25.191 | 26.272 | 27.378 | 28.509 | 29.667 |  |  |
| 37 Rb              | 38 Sr      | 39 Y                | 40 Zr  | 41 Nb  | 42 Mo  | 43 Tc  | 44 Ru  | 45 Rh  | 46 Pd  | 47 Ag          | 48 Cd  | 49 In  | 50 Sn  | 51 Sb  | 52 Te  | 53 I   | 54 Xe  |  |  |
| 30.852             | 4.464      | Lanthanoid<br>57-71 | 7.893  | 8.139  | 8.390  | 8.644  | 8.903  | 9.166  | 9.433  | 9.703          | 9.978  | 10.257 | 10.540 | 10.826 | 11.118 | 11.413 | 11.712 |  |  |
| 55 Cs              | 56 Ba      |                     | 72 Hf  | 73 Ta  | 74 W   | 75 Re  | 76 Os  | 77 Ir  | 78 Pt  | 79 Au          | 80 Hg  | 81 Tl  | 82 Pb  | 83 Bi  | 84 Po  | 85 At  | 86 Rn  |  |  |
| 12.015             | 12.324     | Actinoid<br>89-103  | 104 Rf | 105 Db | 106 Sg | 107 Bh | 108 Hs | 109 Mt |        |                |        |        |        |        |        |        |        |  |  |
| 87 Fr              | 88 Ra      |                     | 4.648  | 4.837  | 5.031  | 5.227  | 5.430  | 5.632  | 5.842  | 6.053          | 6.269  | 6.490  | 6.715  | 6.943  | 7.174  | 7.409  | 7.649  |  |  |
|                    | Lanthanoid |                     | 57 La  | 58 Ce  | 59 Pr  | 60 Nd  | 61 Pm  | 62 Sm  | 63 Eu  | 64 Gd          | 65 Tb  | 66 Dy  | 67 Ho  | 68 Er  | 69 Tm  | 70 Yb  | 71 Lu  |  |  |
|                    | Actinoid   |                     | 12.635 | 12.951 | 13.271 | 13.595 |        |        |        |                |        |        |        |        |        |        |        |  |  |
|                    |            |                     | 89 Ac  | 90 Th  | 91 Pa  | 92 U   | 93 Np  | 94 Pu  | 95 Am  | 96 Cm          | 97 Bk  | 98 Cf  | 99 Es  | 100 Fm | 101 Md | 102 No | 103 Lr |  |  |

# High sensitive and accurate analyzer

## Joint development with the Institute of Industrial Science, the University of Tokyo

Accurate detection of chloride ions less than  $1.0\text{kg/m}^3$  was not attained hitherto with conventional analyzers. Our model 101FA can achieve high sensitive and accurate detection up to  $0.1\text{kg/m}^3$ , by the joint development with the Institute of Industrial Science, the University of Tokyo. Sensitivity has improved and advanced not only for chloride, but also for the element of Al, Si, S, Ca, etc.

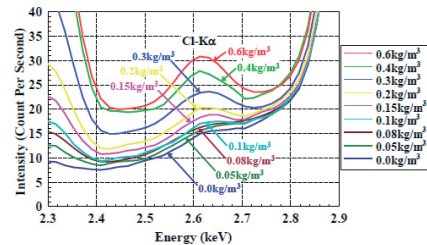


### Analysis example



Analysis of the surface of bridge pier

### Spectrum of low-concentration of chloride (less than $0.6\text{kg/m}^3$ )



### Specifications

|                           |  |                          |  |
|---------------------------|--|--------------------------|--|
| Measurement principle     | Energy dispersive X-ray fluorescence analysis method   | CPU                      | Laptop PC (PC/AT compatible)   |
| Measuring object          | Solid, powder, liquid, thin film, biological sample  | Other option             | Color printer, mouse, carrying case, portable generator, tripod for measuring head retention (with pointer feature), sample cap for vacuum, irradiation box, shielding box, etc...   |
| Measuring elements        | 12Mg to 92U  | Use conditions           | Temperature: 5 to 27 °C<br>Humidity: 20 to 80 %<br>Power: AC100V to 240V, 500W<br>Grounding: D-class grounding<br>※No need of liquid nitrogen, cooling water, analytical gas, etc... |
| Sample shape              | MAX 35mm φ × 35mm(H), when sealed, N/A when not sealed   | Outline dimensions, mass | Measuring heat part: 133 × 170 × 252mm, 3.9kg<br>XG part: 265 × 340 × 80mm, 5.4kg<br>Controller part: 320 × 340 × 80mm, 4.0kg<br>Vacuum pump: 1.0kg                                  |
| Sample chamber atmosphere | Air (vacuum: optional)   |                          |  |
| X-ray radiation radius    | To 3mm φ   |                          |  |
| X-ray tube target         | Pd   |                          |  |
| X-ray rated power         | 40kV - 1.75mA, 50W   |                          |  |
| Detector                  | Silicon drift detector (SDD)   |                          |  |
| Counting circuit          | Digital signal processor (DSP)   |                          |  |
| Scaling software          | Automatic qualitative analysis, calibration curve method quantitative analysis, FP method quantitative analysis (optional) |                          |  |

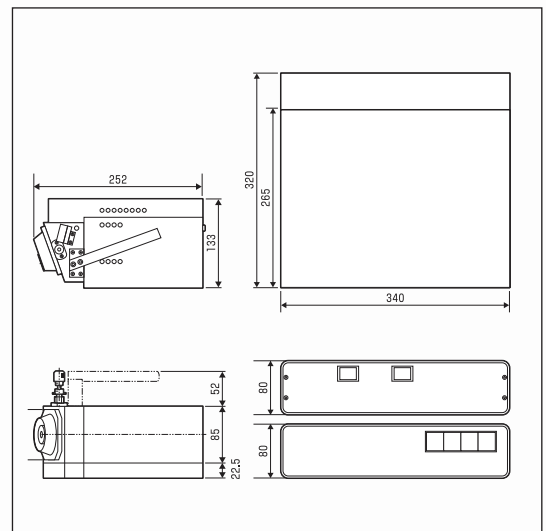
### Configuration

- Measuring part ● XG part ● Controller part ● Vacuum pump ● Accessories

Before an implementation of OURSTEX101FA, a notification to Labor Standards Supervision Office is required.

⚠ For your correct and safe use, please be sure to read the operation manual in advance.

### Dementional drawing



# OURSTEX

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