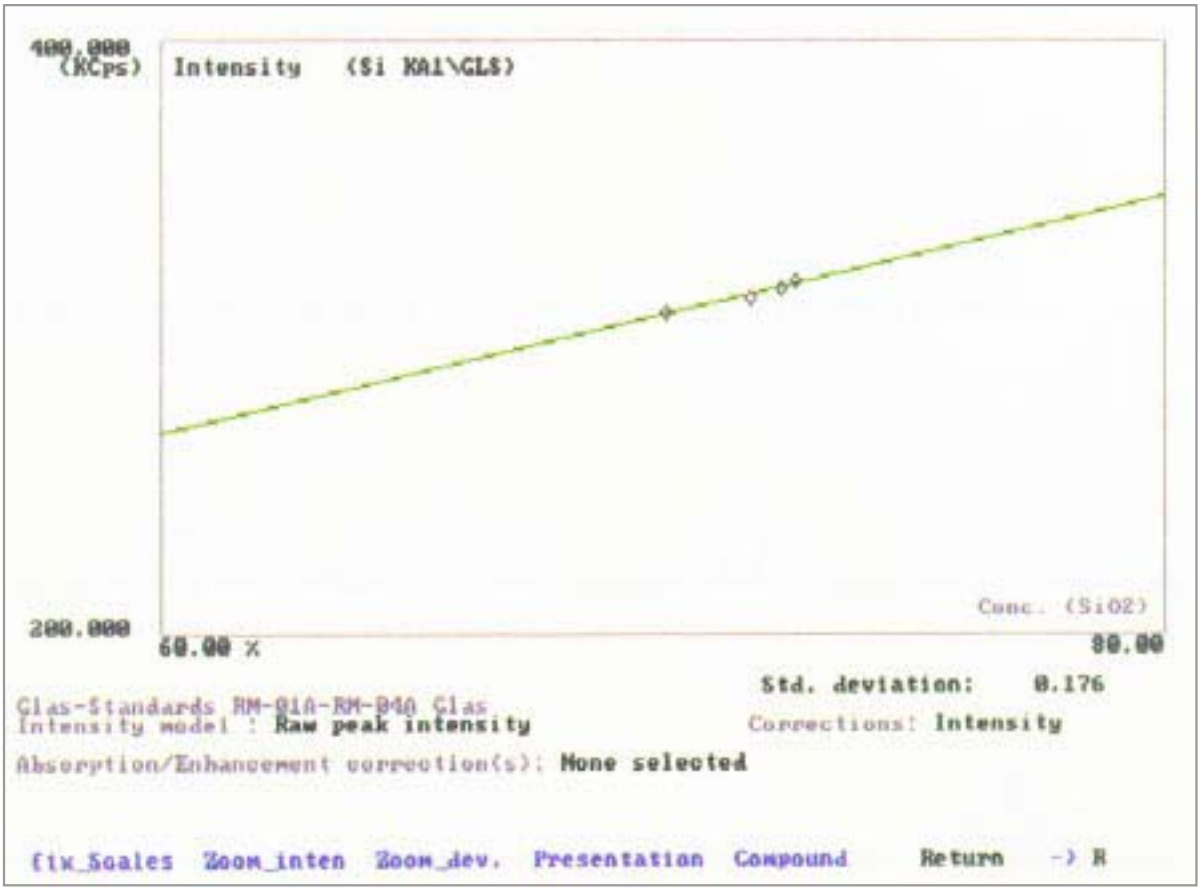
XRF ANALYSIS OF GLASSES

Major and trace elements in remelted glass were determined by X-ray fluorescence analysis (XRF) with the Siemens SRS 3000 sequential X-ray spectrometer in the Siemens application laboratory in Karlsruhe.

Calibration curves and calibration data (correction models, standard deviation, absolute and relative deviation of standard samples) are presented for SiO_2, Na_2O, CaO, K_2O, MgO, Al_2O_3, SO_3, Fe_2O_3, TiO_2, BaO, ZrO_2 and Cr_2O_3.



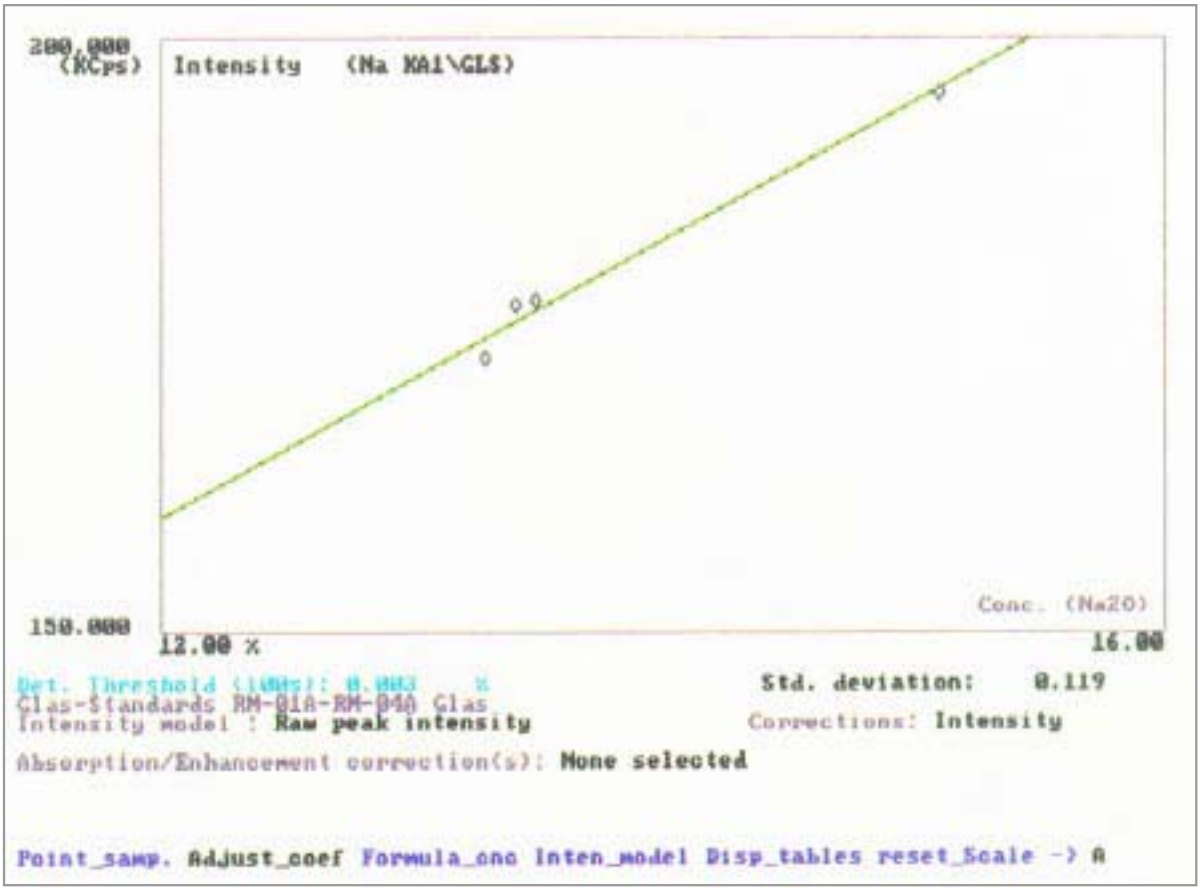
Program : \GLASST\GLASST.QAN
Compound: SiO2

Std. deviation: 0.176

Net intensity model : Raw peak intensity
Dead time correction: ON

Concentration correction model: Intensity Regression weighting: Absolute
Intensity at 100 % : 426.386 KCps - Slope : 0.25062 % / KCps
Intensity at 0.0 % : +27.384 KCps - Offset: -6.8630 %

---	Standard	Status	Measured KCps	Chemical %	Computed %	Deviation %	Rel.
1	RM-01B		315.9872	72.40	72.33	-0.07	-0.10
2	RM-02B		318.1227	72.70	72.87	0.17	0.23
3	RM-03B		307.5582	70.10	70.22	0.12	0.17
4	RM-04B		313.0047	71.80	71.58	-0.22	-0.30



Program : \GLASST\GLASST.QAN
Compound: Na2O

Std. deviation: 0.119

Net intensity model : Raw peak intensity
Dead time correction: ON

Concentration correction model: Intensity Regression weighting: Absolute
Intensity at 100 % : 1185.105 KCps - Slope : 8.57991E-02 % / KCps
Intensity at 0.0 % : +19.591 KCps - Offset: -1.6809 %

---	Standard	Status	Measured KCps	Chemical %	Computed %	Deviation %	Rel.
1	RM-01B		177.8047	13.50	13.57	0.07	0.55
2	RM-02B		195.2425	15.11	15.07	-0.04	-0.26
3	RM-03B		172.8624	13.30	13.15	-0.15	-1.12
4	RM-04B		177.3345	13.42	13.53	0.11	0.85

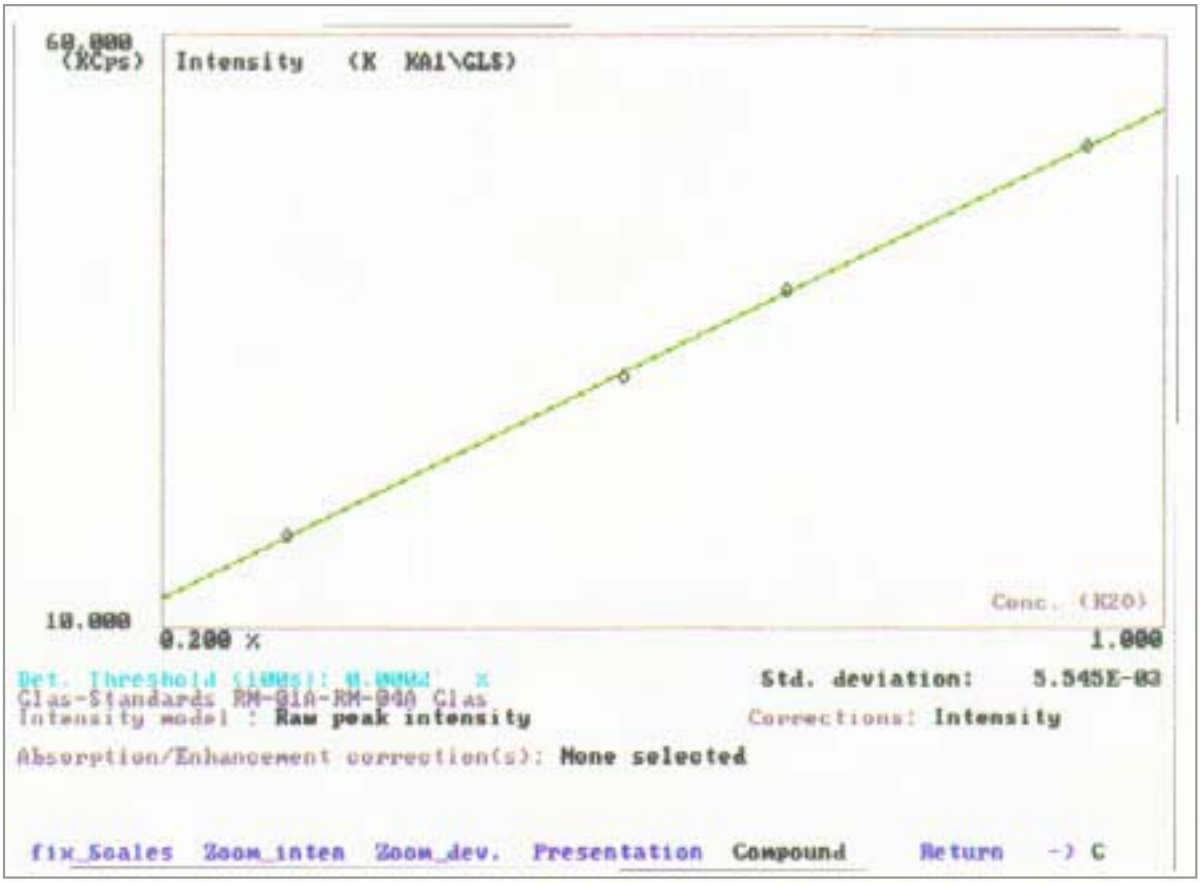
Program : \GLASST\GLASST.QAN
Compound: CaO

Std. deviation: 6.946E-02

Net intensity model : Raw peak intensity
Dead time correction: ON

Concentration correction model: Intensity Regression weighting: Absolute
Intensity at 100 % : 3920.857 KCps - Slope : 2.54948E-02 % / KCps
Intensity at 0.0 % : -1.512 KCps - Offset:+3.85456E-02 %

---	Standard	Status	Measured KCps	Chemical %	Computed %	Deviation %	Rel.
1	RM-01B		340.0704	8.61	8.71	0.10	1.14
2	RM-02B		234.2617	6.03	6.01	-0.02	-0.32
3	RM-03B		383.8770	9.89	9.83	-0.06	-0.65
4	RM-04B		285.4101	7.33	7.32	-0.01	-0.20



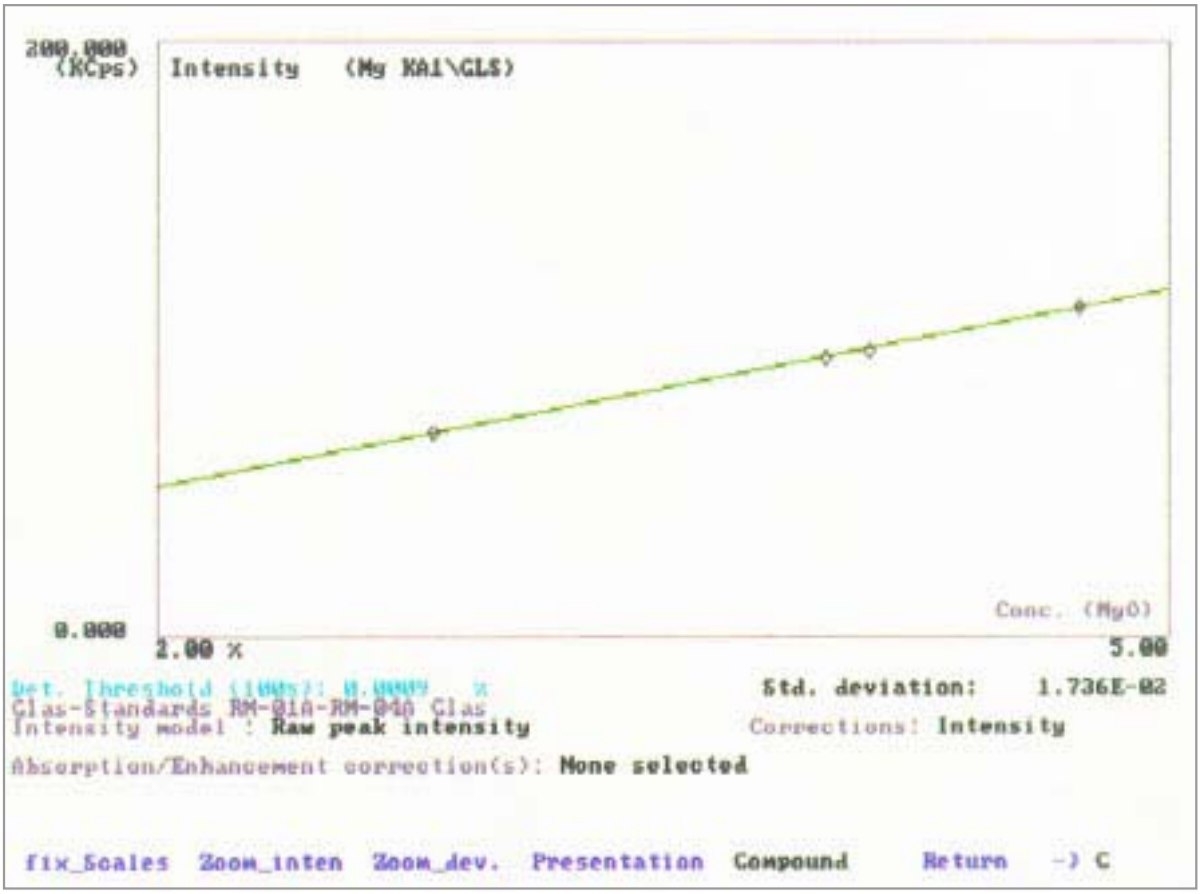

```
Program : \GLASST\GLASST.QAN
Compound: K2O

Std. deviation:    5.545E-03

Net intensity model : Raw peak intensity
Dead time correction: ON

Concentration correction model: Intensity        Regression weighting: Absolute
Intensity at 100 % :  5173.729 KCps - Slope : 1.93356E-02 % / KCps
Intensity at 0.0 % :    +1.927 KCps - Offset:-3.72567E-02 %
```

---	Standard	Status	Measured KCps	Chemical %	Computed %	Deviation %	Rel.
1	RM-01B		17.5707	0.300	0.302	0.002	0.83
2	RM-02B		31.0160	0.570	0.562	-0.008	-1.32
3	RM-03B		50.5247	0.940	0.940	0.000	-0.04
4	RM-04B		38.4082	0.700	0.705	0.005	0.77

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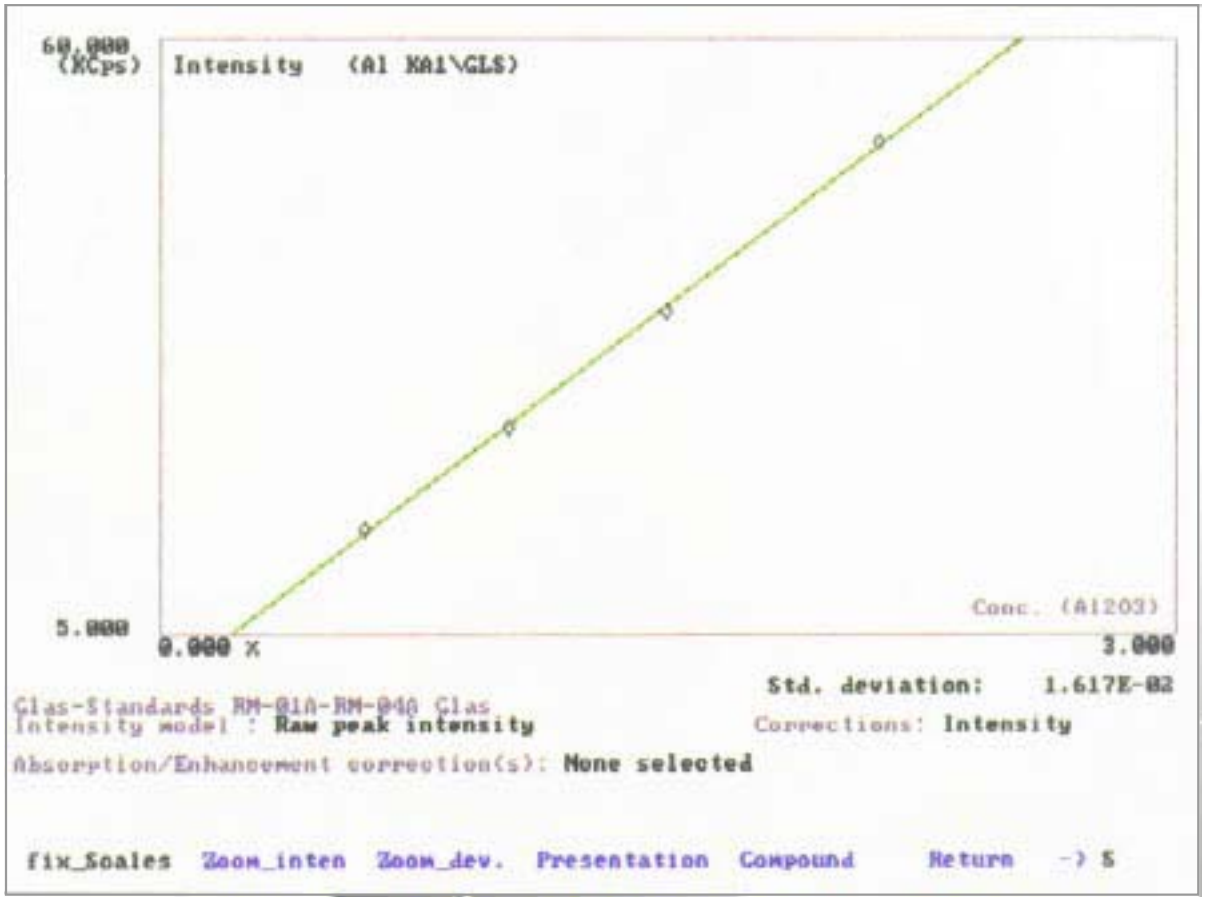
Program : \GLASST\GLASST.QAN
Compound: MgO

Std. deviation:    1.736E-02

Net intensity model : Raw peak intensity
Dead time correction: ON

Concentration correction model: Intensity        Regression weighting: Absolute
Intensity at 100 % :  2210.868 KCps - Slope : 4.53404E-02 % / KCps
Intensity at 0.0 % :    +5.328 KCps - Offset:-0.24157     %
```

---	Standard	Status	Measured KCps	Chemical %	Computed %	Deviation %	Rel.
1	RM-01B		92.9752	3.99	3.97	-0.02	-0.40
2	RM-02B		95.8979	4.12	4.11	-0.01	-0.33
3	RM-03B		67.7691	2.82	2.83	0.01	0.39
4	RM-04B		110.2777	4.74	4.76	0.02	0.39

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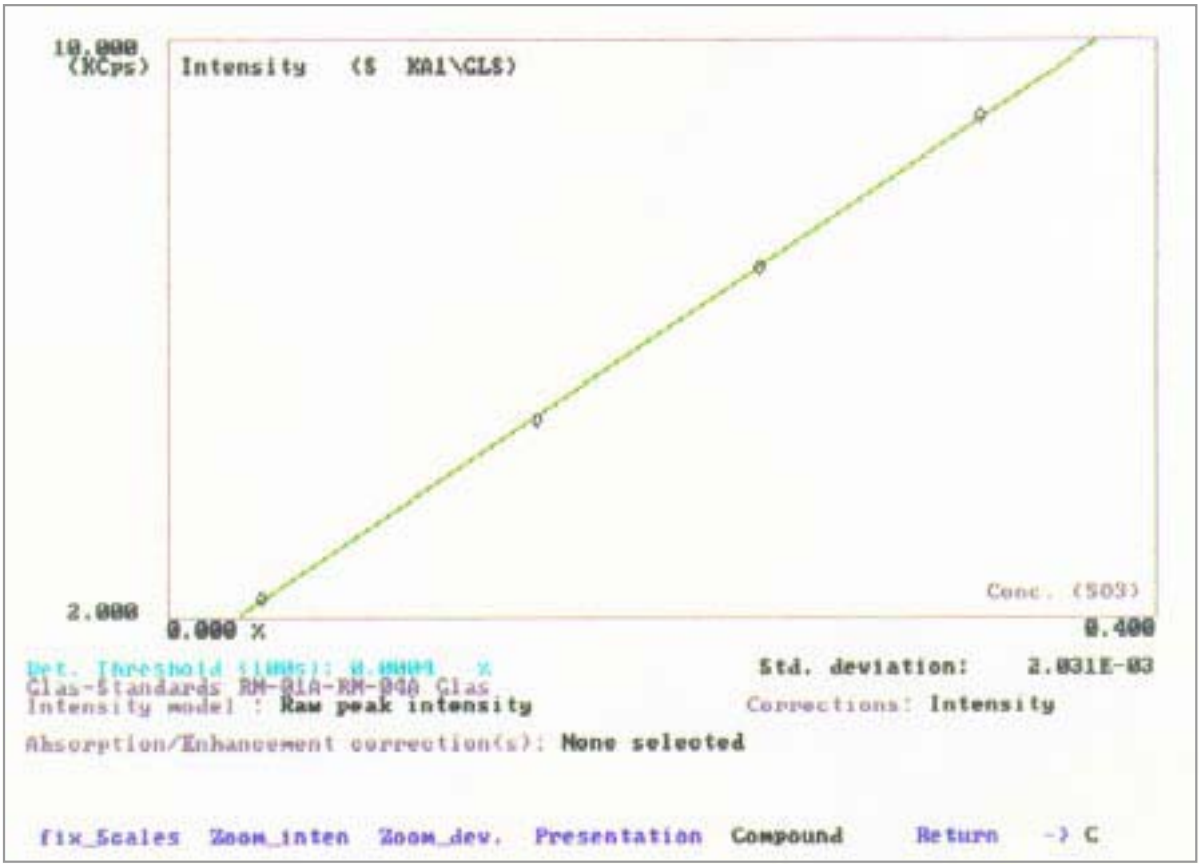
Program : \GLASST\GLASST.QAN
Compound: Al2O3

Std. deviation:    1.617E-02

Net intensity model : Raw peak intensity
Dead time correction: ON

Concentration correction model: Intensity        Regression weighting: Absolute
Intensity at 100 % :  2358.598 KCps - Slope : 4.23933E-02 % / KCps
Intensity at 0.0 % :    -0.263 KCps - Offset:+1.11335E-02 %

--- Standard            Status  Measured Chemical  Computed Deviation     Rel.
                                   KCps      %         %         %
  1 RM-01B                        14.4155    0.610     0.622     0.012     2.01
  2 RM-02B                        23.9371    1.030     1.026    -0.004    -0.40
  3 RM-03B                        50.2881    2.130     2.143     0.013     0.61
  4 RM-04B                        34.6207    1.500     1.479    -0.021    -1.41
```

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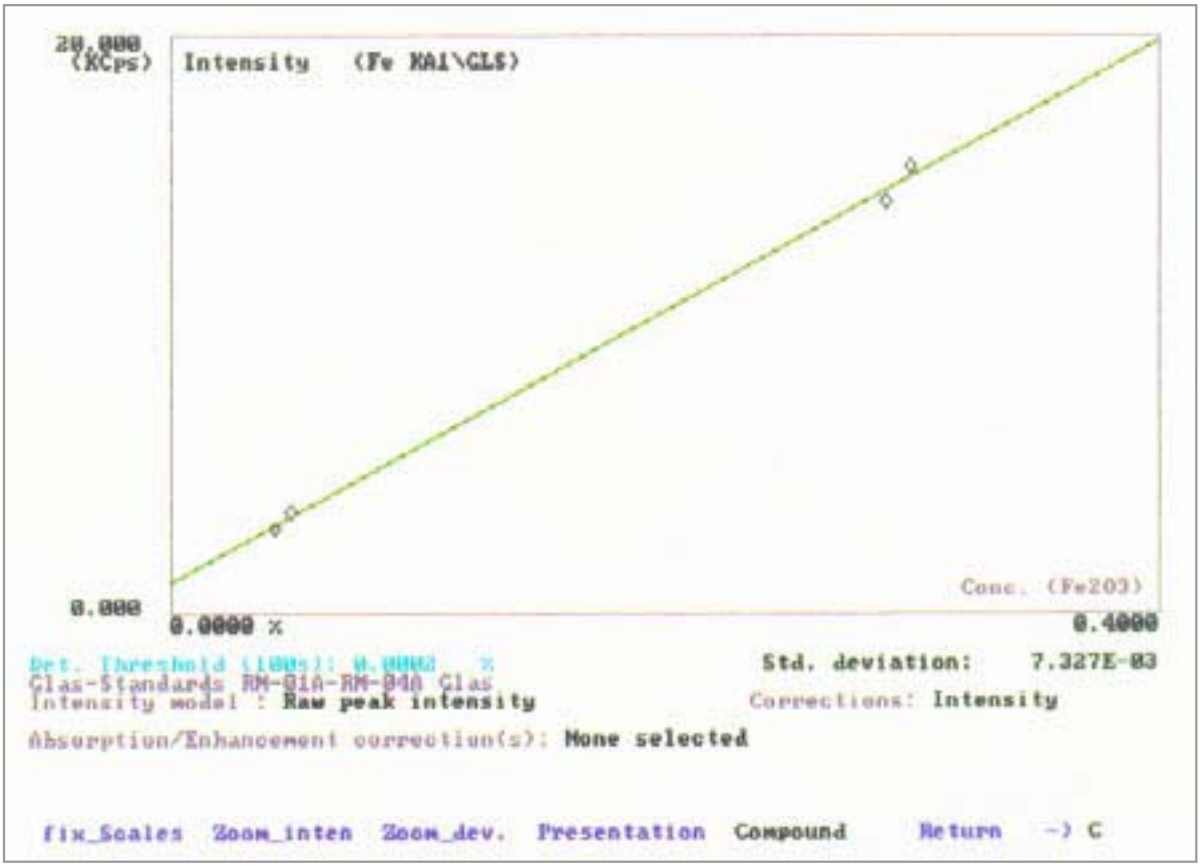
Program : \GLASST\GLASST.QAN
Compound: SO3

Std. deviation:    2.031E-03

Net intensity model : Raw peak intensity
Dead time correction: ON

Concentration correction model: Intensity        Regression weighting: Absolute
Intensity at 100 % :  2301.609 KCps - Slope : 4.34728E-02 % / KCps
Intensity at 0.0 % :    +1.320 KCps - Offset:-5.73711E-02 %

--- Standard            Status  Measured Chemical  Computed Deviation     Rel.
                                   KCps      %         %         %
  1 RM-01B                         6.8164    0.240     0.239    -0.001    -0.43
  2 RM-02B                         8.9470    0.330     0.332     0.002     0.48
  3 RM-03B                         4.7161    0.150     0.148    -0.002    -1.57
  4 RM-04B                         2.2355    0.038     0.040     0.002     4.77
```



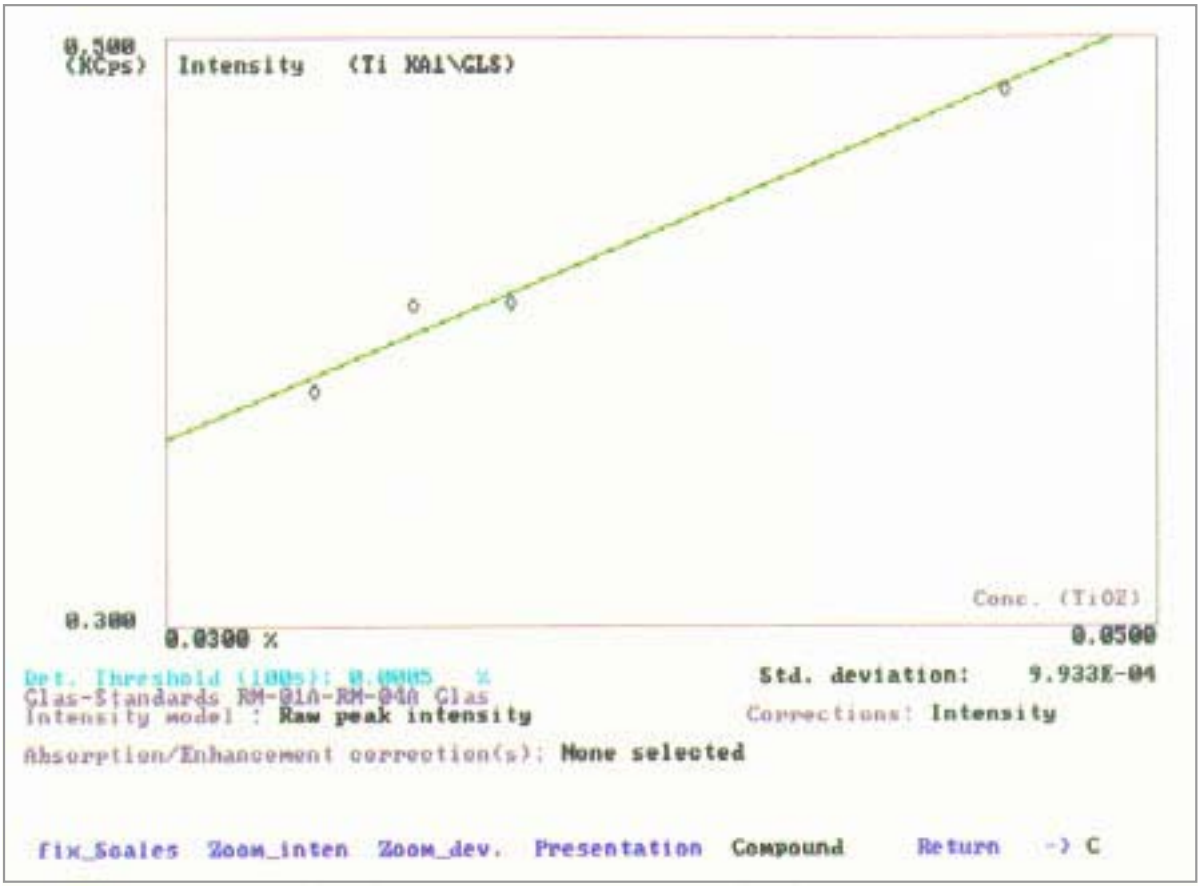

```
Program : \GLASST\GLASST.QAN
Compound: Fe2O3

Std. deviation:    7.327E-03

Net intensity model : Raw peak intensity
Dead time correction: ON

Concentration correction model: Intensity        Regression weighting: Absolute
Intensity at 100 % :  4687.725 KCps - Slope : 2.13369E-02 % / KCps
Intensity at 0.0 % :    +1.002 KCps - Offset:-2.13751E-02 %
```

---	Standard	Status	Measured KCps	Chemical %	Computed %	Deviation %	Rel.
1	RM-01B		2.8577	0.0420	0.0396	-0.0024	-5.71
2	RM-02B		3.4607	0.0490	0.0525	0.0035	7.07
3	RM-03B		14.1724	0.2900	0.2810	-0.0090	-3.10
4	RM-04B		15.4329	0.3000	0.3079	0.0079	2.64



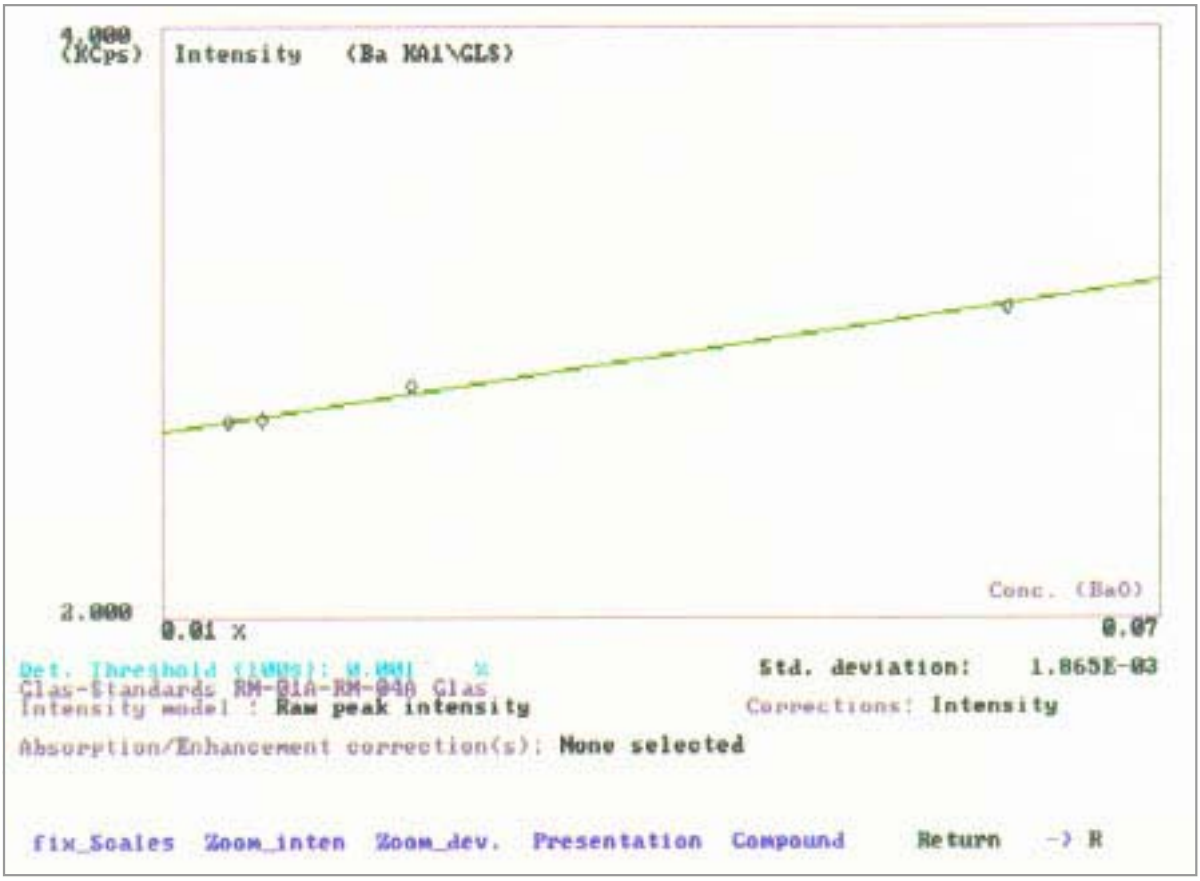

```
Program : \GLASST\GLASST.QAN
Compound: BaO

Std. deviation:    1.865E-03

Net intensity model : Raw peak intensity
Dead time correction: ON

Concentration correction model: Intensity        Regression weighting: Absolute
Intensity at 100 % :    854.123 KCps - Slope : 0.11743     % / KCps
Intensity at 0.0 % :     +2.536 KCps - Offset:-0.29781     %
```

---	Standard	Status	Measured KCps	Chemical %	Computed %	Deviation %	Rel.
1	RM-01B		2.6516	0.01	0.01	0.00	-3.07
2	RM-02B		2.6596	0.02	0.01	0.00	-9.33
3	RM-03B		3.0488	0.06	0.06	0.00	-1.30
4	RM-04B		2.7721	0.03	0.03	0.00	10.87



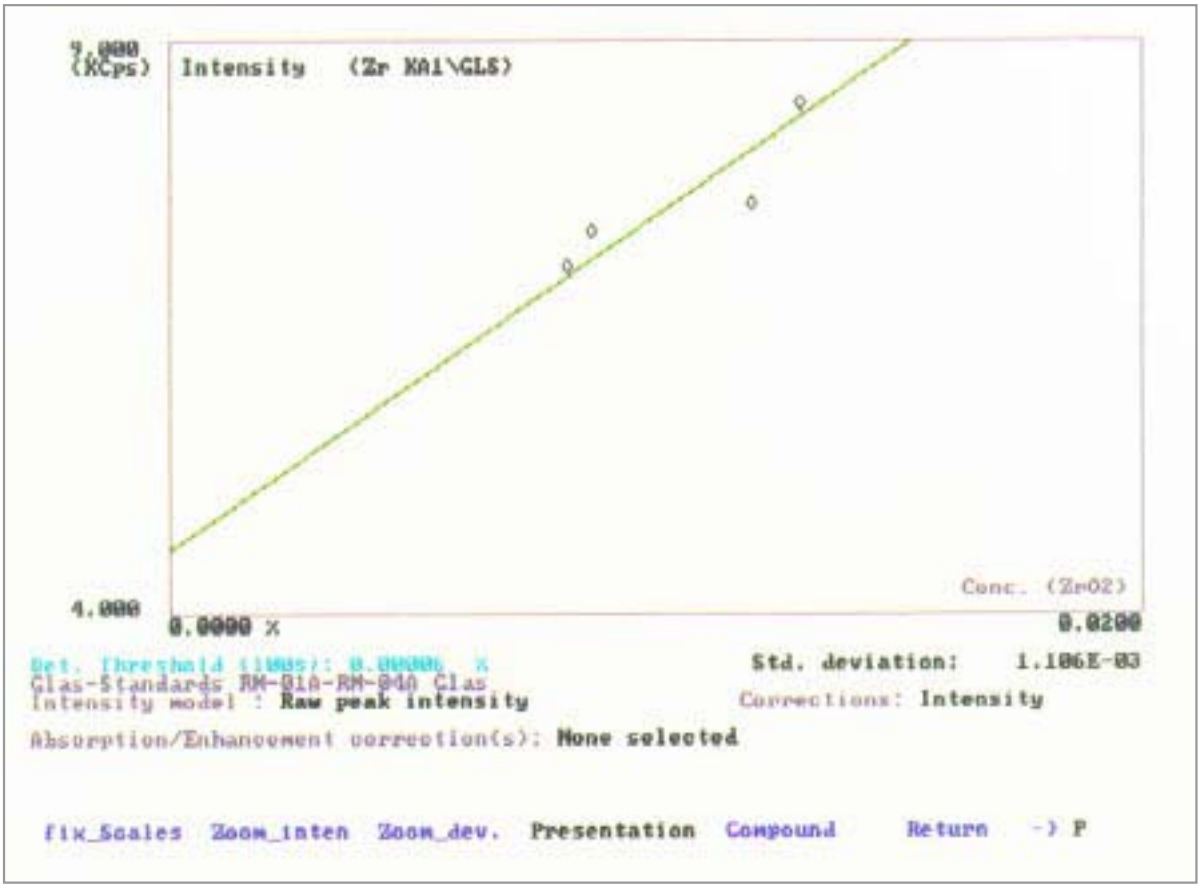

```
Program : \GLASST\GLASST.QAN
Compound: BaO

Std. deviation:    1.865E-03

Net intensity model : Raw peak intensity
Dead time correction: ON

Concentration correction model: Intensity        Regression weighting: Absolute
Intensity at 100 % :   854.123 KCps - Slope : 0.11743     % / KCps
Intensity at 0.0 % :    +2.536 KCps - Offset:-0.29781     %
```

---	Standard	Status	Measured KCps	Chemical %	Computed %	Deviation %	Rel.
1	RM-01B		2.6516	0.01	0.01	0.00	-3.07
2	RM-02B		2.6596	0.02	0.01	0.00	-9.33
3	RM-03B		3.0488	0.06	0.06	0.00	-1.30
4	RM-04B		2.7721	0.03	0.03	0.00	10.87



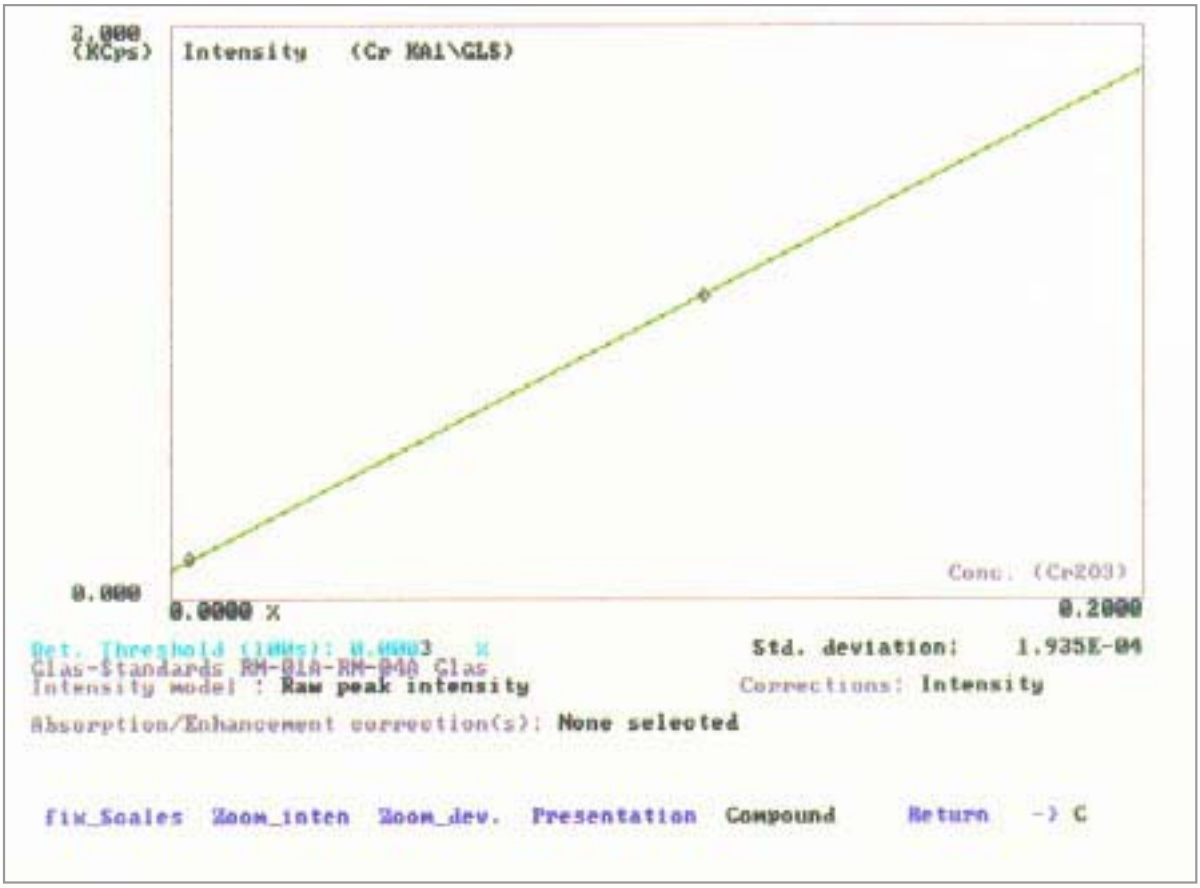
Program : \GLASST\GLASST.QAN
Compound: ZrO2

Std. deviation: 1.106E-03

Net intensity model : Raw peak intensity
Dead time correction: ON

Concentration correction model: Intensity Regression weighting: Absolute
Intensity at 100 % : 29173.041 KCps - Slope : 3.42836E-03 % / KCps
Intensity at 0.0 % : +4.536 KCps - Offset:-1.55507E-02 %

---	Standard	Status	Measured KCps	Chemical %	Computed %	Deviation %	Rel.
1	RM-01B		7.5656	0.0120	0.0104	-0.0016	-13.44
2	RM-02B		7.0149	0.0082	0.0085	0.0003	3.64
3	RM-03B		8.4502	0.0130	0.0134	0.0004	3.23
4	RM-04B		7.3344	0.0087	0.0096	0.0009	10.28




```
Program : \GLASST\GLASST.QAN
Compound: Cr2O3

Std. deviation:    1.935E-04

Net intensity model : Raw peak intensity
Dead time correction: ON

Concentration correction model: Intensity        Regression weighting: Absolute
Intensity at 100 % :   879.145 KCps - Slope : 0.11376     % / KCps
Intensity at 0.0 % :    +0.090 KCps - Offset:-1.02392E-02 %
```

---	Standard	Status	Measured KCps	Chemical %	Computed %	Deviation %	Rel.
1	RM-01B		0.0963	0.0009	0.0007	-0.0002	-20.02
2	RM-02B		0.0981	0.0010	0.0009	-0.0001	-8.15
3	RM-03B		1.0569	0.1100	0.1100	0.0000	-0.01
4	RM-04B		0.1275	0.0040	0.0043	0.0003	6.76

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