



## SPARK DIRECT READING SPECTROMETER (BASIC TYPE) CODE OES-T350



printer (included)



filter element (included)



AC voltage regulator  
(included)



calibration sample  
(included)



electrode brush (included)



pressure valve (included)



spectral sample grinder  
(optional)



argon purifier  
(optional)

- Widely used in metallurgy, casting, scientific research, commodity inspection, automobile, shipbuilding, aviation, nuclear power, etc.
- Ability to analyze trace elements such as carbon (C), phosphorus (P), sulfur (S), etc.
- The analysis speed is fast, and the element composition of all channels is measured within 20 seconds
- Paschen-Runge structure with full wavelength coverage, the most concise and stable optical system structure
- Perfect aberration correction, so that the spectrometer has excellent resolution, minimize the cross interference of different elements
- Argon-filled optical chamber, effectively reducing the attenuation of P and S rays in the far ultraviolet region
- The software has automatic spectrum correction technology, can store database, trace historical data, output and print reports
- Report format can be customized, data can be sent out

### STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
Software	1 pc
Printer	1 pc
Calibration sample	1 pc
Electrode brush (OES-T350-BR)	2 pcs
Filter element	2 pcs
AC voltage regulator	1 pc
Pressure valve	1 pc

### OPTIONAL ACCESSORY

Spectral standard sample	MSS series	select standard sample based on the test material
Spectral sample grinder	OES-MY100	Ø350mm, 380V
Argon purifier	OES-T350-PURIFIER	220V

## SPECIFICATION

Curves	standard curve	low alloy steel (A1), cast iron (A2), plain stainless steel (A3)
	customized curve	curves can be added or customized for special base materials (Ti, Pb, Sn, Co, etc.)
Optical system	optical structure	paschen-runge structure
	rowland circle of diameter	350mm
	wavelength range	160~510nm
	detector	multi high resolution CCD detectors
	pixel resolution	20pm
	full spectrum	cover the full range of element analysis
	light room temperature	34±0.5°C (be controlled automatically)
Spark source	type	digital arc and spark source/new plasma generator
	spark frequency	100~1000Hz
	plasma current	1~80A
	Ignition voltage	>7000V
Spark stand	spray discharge electrode technology reduces argon consumption and improves argon use efficiency good heat dissipation, continuous excitation for 100 times, the temperature of the excitation table does not rise more than 5°C	
Operation temperature	10~30°C, 23±2°C is recommended	
Argon quality	99.999% high purity argon, argon pressure≥4MPa	
Argon consumption	5L/min during spark mode	
Operation humidity	20%~80%RH	
Power supply	AC220V, 50Hz	
Power consumption	excitation: 300W, stand by: 40W	
Dimension (L×W×H)	700×660×340mm	
Weight	30kg	

## IRON BASE CURVES

Curve number	A1	A2	A3	A4	A5	A6	A7
Elemental content (%)	Low alloy steel	Cast iron*	stainless steels	High Mn steel	High Cr * cast iron	High speed tool steel	High Ni * cast iron
C	0.006-1.19	1.75-4.04	0.0035-1.0	0.0085-2.38	1.16-3.43	0.003-2.94	1.75-4.04
Si	0.013-3.86	0.2-3.88	0.095-2.41	0.091-1.69	0.055-2.48	0.014-0.967	0.2-3.88
Mn	0.034-2.2	0.08-1.67	0.131-16.13	5.3-22.96	0.201-1.95	0.018-0.846	0.08-6.72
P	0.0019-0.13	0.021-0.699	0.0057-0.065	0.0064-0.188	0.024-0.369	0.0038-0.098	0.0067-0.699
S	0.0009-0.364	0.003-0.22	0.0006-0.095	0.0047-0.108	0.0047-0.123	0.0005-0.076	0.003-0.22
Cr	0.016-4.83	0.021-2.48	6.8-32.58	0.084-29.22	1.17-33.9	0.023-14.16	0.021-2.56
Ni	0.0082-4.4	0.013-1.89	0.09-32.3	0.045-15.34	0.129-2.57	0.07-0.436	0.013-21.26
Mo	0.004-4.19	0.0018-1.08	0.026-6.09	0.0095-3.15	0.086-3.53	0.022-8	0.0011-1.08
Al	0.0021-1.27	0.0073-0.214	0.0057-0.403	0.009-0.403	-	0.032-0.128	0.0073-0.214
Cu	0.0032-0.8	0.018-1.83	0.014-4.22	0.025-1.9	0.154-1.57	0.018-0.364	0.018-7.46
Co	0.004-0.504	0.008-0.034	0.0067-0.69	0.007-0.107	-	0.014-12.3	0.0063-0.034
Ti	0.001-1.18	0.024-0.51	0.002-2.11	0.0041-0.545	0.08-0.3	0.003-1.47	0.024-0.51
Nb	0.004-1.04	0.023-0.576	0.024-2.41	0.0006-0.613	0.01-0.686	0.003-2.33	0.0006-0.576
V	0.0082-0.9	0.014-0.701	0.015-1.4	0.024-0.837	0.059-1.01	0.01-7.54	0.0085-0.701
W	0.005-2.07	0.023-0.574	0.0065-2.2	0.002-1.45	0.015-1.99	0.01-18.68	0.0002-0.574
Pb	0.003-0.26	0.002-0.105	0.0001-0.0037	0.0005-0.002	-	-	0.0022-0.105
Mg	-	0.0006-0.104	-	-	-	-	0.0006-0.104
B	0.0003-0.019	0.012-0.086	0.0007-0.016	0.0007-0.017	0.015-0.177	-	0.012-0.086
Sn	0.0016-0.039	0.0018-0.3	0.0007-0.054	0.0007-0.023	-	0.001-0.005	0.0003-0.3
Zn	-	0.0009-0.0045	0.0011-0.0084	-	-	-	0.0009-0.0045
As	0.007-0.174	0.0021-0.035	0.0013-0.03	0.0013-0.0116	-	-	0.0021-0.035
Bi	0.0019-0.021	-	0.00004-0.0029	0.0013-0.0029	-	-	-
Zr	0.004-0.57	-	-	-	-	0.003-0.01	-
Ca	0.0004-0.0015	-	0.0004-0.0010	0.0004-0.001	-	-	0.00035-0.2
Fe	REF	REF	REF	REF	REF	REF	REF

\* Cast iron samples need to be whitened samples



**NICKEL BASE CURVES**

Curve number	D1	D2	D3	D4	D5	D6
Elemental content (%)	Monel Alloy	Inconel Alloy	Hastelloy Alloy	GH30 Alloy	GH4169 Alloy	DZ125 Alloy
C	0.0494-0.13	0.01-0.169	0.01-0.169	0.137-0.241	-	0.0322-0.152
Si	0.146-2.52	0.036-0.85	0.2-0.85	0.311-0.895	-	0.016-0.042
Mn	0.993-1.437	0.05-1.19	0.249-1.19	0.156-0.777	-	0.0022-0.024
P	0.0106-0.019	0.0004-0.038	0.007-0.038	0.001-0.0152	-	0.0023-0.0024
S	0.0006-0.023	0.0002-0.034	0.0086-0.034	0.0034-0.0145	-	0.0005-0.0006
Cr	0.0057-0.2	14.86-29.5	15.42-19.71	16.81-20.56	14.87-22.21	6.57-19.62
Mo	0.0024-0.102	0.0025-20.91	15.59-20.91	-	2.29-4.03	0.63-4.32
Fe	1.053-2	1.2-18.51	2.6-7.3	0.229-1.780	-	0.022-1.023
W	-	0.0011-12.7	0.09-0.498	-	-	0.041-8.8
V	-	0.005-0.498	0.03-0.72	-	-	-
Al	0.0231-1.399	0.03-0.72	0.159-2.6	0.065-0.267	0.14-0.68	1.476-6.13
Co	0.032-0.156	0.0056-2.6	0.046-0.642	-	1.02-1.04	0.024-14.79
Cu	21.53-33	0.0072-0.642	-	0.082-0.245	0.0015-0.002	-
Nb	-	0.0039-5.16	-	-	3.85-6.79	0.028-2.04
Sn	-	-	-	-	-	-
Ta	-	-	-	-	-	2.74-4.82
Ti	0.064-1.005	0.017-0.93	0.06-0.264	-	0.59-1.42	0.62-5.1
B	-	0.0001-0.01	-	-	-	0.0062-0.0242
Mg	0.0026-0.0217	0.0021-0.022	-	-	-	-
Zr	-	0.0018-0.004	-	-	-	0.014-0.06
Pb	0.0004-0.02	-	-	-	-	-
Ni	REF	REF	REF	REF	43.89-60	REF

**ZINC BASE CURVES**

Curve number	E1	E2
Elemental content (%)	Pure Zn	Zn-Al Alloy
Al	0.00036-0.007	0.00036-27.4
Cd	0.00044-0.0132	0.00044-0.3
Cu	0.00012-0.004	0.00012-6.05
Fe	0.00012-0.004	0.00053-0.1
Mg	-	0.0014-0.179
Mn	-	0.001-1.39
Ni	-	0.0019-0.06
Pb	0.00045-0.0152	0.00045-2.87
Sb	-	0.0012-0.309
Sn	0.0004-0.0033	0.0004-2.38
Ti	-	0.0008-0.278
Si	-	0.0013-0.0191
Cr	-	0.0007-0.142
Ag	-	-
Bi	-	0.0027-0.027
Fe	REF	REF

**MAGNESIUM BASE CURVES**

Curve number	F1	F2
Elemental content (%)	Pure Mg	Mg/Al/Mn/ Zn Alloy
Al	0.005-1.06	1.09-11.02
Zn	0.00044-0.0132	0.0068-4.1
Mn	0.017-0.148	0.02-0.61
Si	0.012-0.062	0.019-1.83
Fe	0.0069-0.027	0.0012-0.033
Cu	0.00097-0.025	0.00072-0.291
Ni	0.00026-0.0052	0.00042-0.02
Be	-	0.00011-0.0029
Ti	0.0001-0.0025	-
Pb	0.0011-0.037	-
Mg	REF	REF