

ARL iSpark 8820

Optical Emission Spectrometer

Iron and Steel



The latest Thermo Scientific™ ARL iSpark™ 8820 combines cost effectiveness with high quality, performance and reliability. It is configured to optimally address the needs of companies analyzing a **wide range of steel grades and cast iron** samples.

Designed to meet your needs

With an installed base of over 10,000 units worldwide, the Thermo Scientific ARL OES spectrometers are the reference in terms of performance, stability, reliability and lifetime. The ARL iSpark 8820 is the worthy successor to the ARL 3460 and ARL 4460, by including the famous 1m vacuum PMT optics and most of the attributes that have made their reputation. Thanks to improved spark source, analytical stand, argon management, and various other innovative hardware and software features (see ARL iSpark brochure), it offers performance and stability of its predecessors with reduced cost of ownership and increased functionality.

Your benefits

- True calibration and thorough performance testing in our factory as your best guarantee of accuracy and performance
- Optimal control of costly alloying and matrix elements and critical trace elements, thanks to outstanding analysis of all the elements at all concentrations
- Unequaled stability for highest confidence in the results with minimal recalibration operations
- Minimal maintenance in complete safety thanks to dedicated maintenance management software
- High instrument availability thanks to low-frequency of maintenance and recalibration
- Low cost of ownership, thanks to significant argon savings and low usage of SUS samples
- Fast learning curve of operators and managers
- Exceptional lifetime with continuous upgrade possibilities
- Short payback thanks to superior productivity and savings

The ARL iSpark 8820 provides an immediate cost-effective and high performance “turnkey” solution, ready to analyze on the installation day.



Iron and steel calibrations available with the ARL iSpark 8820 (Fe13)

Element	Low Alloy Steel	Free Cutting Steel	Cr Steel	CrNi Steel	Mn Steel	Cast & Nodular Iron, Ni Hard	Cast and Nodular Iron	High Alloy Cast Iron	Ni Resist	Low Alloy Steel for small samples	CrNi Steel for small samples
Fe	89.6 - 99.9	91.5 - 99.9	62.5 - 89.5	40.1 - 89.3	77.5 - 87.2	79.4 - 95.1	79.4 - 95.1	53.2 - 90	52.6 - 79.3	89.6 - 99.9	40.1 - 89.3
Al	0.0006 - 1.9	0.001 - 0.12	0.002 - 0.35	0.005 - 1	0.004 - 0.1	0.003 - 0.16	0.003 - 0.16	-	-	0.0006 - 1.9	0.005 - 1
As	0.001 - 0.15	0.015 - 0.08	-	0.004 - 0.025	-	0.002 - 0.16	0.002 - 0.16	-	-	0.002 - 0.15	0.004 - 0.025
B	0.0003 - 0.012	0.0015 - 0.012	-	0.0005 - 0.025	-	0.0005 - 0.1	0.0005 - 0.1	-	-	0.0005 - 0.012	0.001 - 0.025
Bi	0.002 - 0.1	-	-	-	-	0.003 - 0.025	0.003 - 0.025	-	-	0.002 - 0.1	-
C	0.0025 - 1.5	0.03 - 1.3	0.035 - 2.3	0.007 - 2	0.6 - 1.8	1.4 - 4.5	1.4 - 4.5	1.3 - 4	0.4 - 3.2	0.0025 - 1.5	0.007 - 2
Ca	0.00015 - 0.014	0.0002 - 0.014	-	0.0005 - 0.006	-	-	-	-	-	0.001 - 0.014	0.001 - 0.006
Ce	0.002 - 0.06	-	-	-	-	0.0025 - 0.06	0.0025 - 0.06	-	0.003 - 0.04	0.003 - 0.06	-
Co	0.0005 - 0.7	0.005 - 0.23	0.018 - 0.3	0.02 - 0.6	0.01 - 0.8	0.004 - 0.45	0.004 - 0.45	-	0.03 - 0.1	0.002 - 0.7	0.02 - 0.6
Cr	0.0015 - 2.5	0.006 - 2.5	9 - 30	4 - 35	0.15 - 4	0.02 - 10	0.02 - 2.2	12 - 35	0.2 - 4	0.0015 - 2.5	4 - 35
Cu	0.002 - 1.5	0.006 - 0.7	0.025 - 2.3	0.015 - 6	0.01 - 0.6	0.01 - 2.7	0.01 - 2.7	0.02 - 2.2	0.1 - 8	0.002 - 1.5	0.02 - 6
La	0.0005 - 0.02	-	-	-	-	0.002 - 0.02	0.002 - 0.02	-	-	0.0005 - 0.02	-
Mg	-	-	-	-	-	0.001 - 0.1	0.001 - 0.1	-	0.02 - 0.13	-	-
Mn	0.001 - 2.4	0.05 - 1.9	0.2 - 2.7	0.025 - 12.5	8 - 20	0.06 - 1.9	0.06 - 1.9	0.5 - 2.3	0.3 - 7.5	0.001 - 2.4	0.025 - 12.5
Mo	0.001 - 1.6	0.002 - 1	0.03 - 2.8	0.01 - 6.8	0.03 - 2	0.003 - 2	0.003 - 2	0.25 - 4	0.005 - 1	0.004 - 1.6	0.01 - 6.8
Nb	0.001 - 0.8	0.006 - 0.07	0.01 - 2.5	0.015 - 3.5	-	0.003 - 0.55	0.003 - 0.55	-	0.09 - 0.4	0.001 - 0.8	0.015 - 3.5
Ni	0.001 - 2.2	0.007 - 2.2	0.1 - 7	3 - 38	0.04 - 3.8	0.02 - 7.5	0.02 - 2.5	0.15 - 18	12 - 36	0.005 - 2.2	3 - 38
P	0.001 - 0.12	0.009 - 0.08	0.01 - 0.05	0.004 - 0.05	0.02 - 0.1	0.003 - 1.2	0.003 - 1.2	0.025 - 0.45	0.01 - 0.23	0.002 - 0.12	0.005 - 0.05
Pb	0.0008 - 0.2	0.0015 - 0.35	-	0.0008 - 0.004	-	0.0015 - 0.06	0.0015 - 0.06	-	-	0.002 - 0.2	0.0015 - 0.004
S	0.0005 - 0.14	0.009 - 0.35	0.0015 - 0.07	0.001 - 0.07	0.01 - 0.07	0.0015 - 0.22	0.0015 - 0.22	0.007 - 0.1	0.005 - 0.1	0.002 - 0.14	0.001 - 0.07
Sb	0.0015 - 0.25	-	-	0.005 - 0.2	-	0.0015 - 0.29	0.0015 - 0.29	-	-	0.002 - 0.25	0.005 - 0.2
Si	0.0015 - 3.3	0.002 - 1.8	0.2 - 2.8	0.04 - 4.2	0.1 - 1.9	0.25 - 4	0.25 - 4	0.3 - 1.8	0.5 - 5.7	0.0015 - 3.3	0.04 - 4.2
Sn	0.0008 - 0.25	0.001 - 0.13	0.003 - 0.06	0.002 - 0.12	0.01 - 0.06	0.002 - 0.4	0.002 - 0.4	-	-	0.002 - 0.25	0.003 - 0.12
Ta	0.006 - 0.2	-	-	0.01 - 0.12	-	-	-	-	-	0.006 - 0.2	0.01 - 0.12
Ti	0.0005 - 0.6	0.002 - 0.12	0.002 - 0.2	0.002 - 2.1	-	0.0015 - 0.3	0.0015 - 0.3	-	-	0.001 - 0.6	0.005 - 2.1
V	0.002 - 1.1	0.002 - 0.6	0.02 - 0.85	0.01 - 1	0.015 - 0.35	0.002 - 0.7	0.002 - 0.7	-	-	0.005 - 1.1	0.01 - 1
W	0.005 - 1.7	0.05 - 0.35	0.02 - 0.75	0.025 - 4.5	-	0.005 - 0.2	0.005 - 0.2	-	-	0.005 - 1.7	0.025 - 4.5
Zn	0.001 - 0.04	-	-	-	-	0.001 - 0.03	0.001 - 0.03	-	-	0.003 - 0.04	-
Zr	0.001 - 0.25	0.006 - 0.08	-	-	-	0.001 - 0.05	0.001 - 0.05	-	-	0.003 - 0.25	-

- Notes:**
- Determination of Al, B, Ca and Ti soluble/insoluble in low alloy steel in option
 - Inclusion analysis methods in option
 - Thermo Fisher Scientific reserves the right to modify the calibration ranges according to the availability of certified reference materials.

Find out more at thermofisher.com/ispark

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