


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

 <p><b>UKAS</b> CALIBRATION</p> <p><b>0659</b></p> <p>Accredited to <b>ISO/IEC 17025:2005</b></p>	<p><b>Starna Scientific Ltd</b></p> <p><b>Issue No: 009    Issue date: 26 January 2012</b></p>	
	<p><b>52/54 Fowler Road</b> <b>Hainault</b> <b>Essex</b> <b>IG6 3UT</b></p>	<p><b>Contact: Mr J P Hammond, CSci CChem FRSC</b> <b>Tel: +44 (0)20-8500 1264</b> <b>Fax: +44 (0)20-8500 1955</b> <b>E-Mail: tech@starna.com</b> <b>Website: www.starna.com</b></p>
<p><b>Calibration performed at the above address only</b></p>		

### DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ( $k = 2$ )	Remarks
<p>OPTICAL DENSITY (ABSORBANCE)</p> <p>Sealed liquid cells containing nicotinic acid solution prepared from AR grade material</p>	<p>Absorbance in the range 0.050 A to 1.090 A, dependent on concentration and wavelength</p> <p><i>At 213 and 261 nm:</i> Solution concentration 6 mg/l 12 mg/l 18 mg/l 24 mg/l</p>	<p>0.0037 A 0.0037 A 0.0037 A 0.0037 A</p>	
<p>Sealed liquid cells containing potassium dichromate solution prepared from NIST SRM 935a</p>	<p>Absorbance in the range 0.096 A to 3.552 A, dependent on concentration and wavelength</p> <p><i>At 235 nm, 257 nm, 313 nm and 350 nm:</i> Solution concentration 20 mg/l 40 mg/l 60 mg/l 80 mg/l 100 mg/l 120 mg/l 140 mg/l 160 mg/l 180 mg/l 200 mg/l 240 mg/l</p>	<p>0.0037 A 0.0045 A 0.0049 A 0.0058 A 0.0068 A 0.0084 A 0.0091 A 0.0098 A 0.011 A 0.012 A 0.013 A</p>	
<p>Sealed liquid cell containing potassium dichromate solution prepared from NIST SRM 935a</p>	<p>Absorbance value in the range 0.948 A to 0.960 A</p> <p><i>At 430 nm:</i> Solution concentration 600 mg/l</p>	<p>0.0043 A</p>	



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OPTICAL DENSITY (ABSORBANCE) (cont'd)			
Sealed liquid cells containing DNACON 260/280®	<i>At 260 nm, 280 nm and 330 nm:</i> Absorbance value in the range 0.0 A to 1.0 A	0.0043 A	
Sealed liquid cells containing Toluene/Hexane	<i>At peak/trough values in the range 265 nm to 270 nm:</i> Absorbance values in the range 0.1 A to 0.5 A	0.0049 A	
Neutral density glass filters	<i>At 440 nm, 465 nm, 546.1 nm, 590 nm and 635 nm:</i> Nominal transmittance, T		
	92 % (0.063 A)	0.0027 A	
	79 % (0.100 A)	0.0027 A	
	73 % (0.137 A)	0.0027 A	
	60 % (0.222 A)	0.0027 A	
	56.5 % (0.148 A)	0.0027 A	
	50 % (0.301 A)	0.0027 A	
	30 % (0.523 A)	0.0027 A	
	25 % (0.602 A)	0.0027 A	
	20 % (0.699 A)	0.0027 A	
	10 % (1.000 A)	0.0027 A	
	6 % (1.222 A)	0.0052 A	
	3 % (1.523 A)	0.0052 A	
	1.5 % (1.824 A)	0.0052 A	
	1.0 % (2.000 A)	0.0059 A	
	0.3 % (2.523 A)	0.011 A	
	0.1 % (3.000 A)	0.019 A	
Neutral density glass filters	<i>At 1100 nm, 1700 nm, 2210 nm, 2500 nm and 2850 nm:</i> Nominal transmittance, T		
	61% to 19 % (0.215 A to 0.721 A)	0.0035 A	
	5.7 % (1.244 A)	0.0046 A	
	2.9 % (1.538 A)	0.0072 A	
	1.5 % (1.824 A)	0.011 A	



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WAVELENGTH			
Sealed liquid cells containing "Rare Earth" (RE) solution. Multiple peak wavelengths reported.	200 nm to 300 nm	0.18 nm	
Sealed liquid cells containing Rare Earth solution. Multiple peak wavelengths reported.	240 nm to 870 nm	0.11 nm	
Rare Earth glass filters. Multiple peak wavelengths reported.	240 nm to 880 nm	0.10 nm	
Sealed liquid cells containing TS5 Organic matrix solution. Multiple peak wavelengths reported.	990 nm to 2540 nm	0.44 nm	
Sealed liquid cells containing inorganic "cut-off" solutions with reference transition wavelengths. Transition wavelength at 1.0 T% reported.	190 nm to 385 nm	0.10 nm	
Glass "cut-off" filters with reference transition wavelengths. Transition wavelength at 1.0 T% reported.	275 nm to 700 nm	0.10 nm	
END			