

Designation: E100 - 15a E100 - 17

Standard Specification for ASTM Hydrometers¹

This standard is issued under the fixed designation E100; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

- 1.1 This specification covers glass hydrometers of various scale graduation systems, as required by the ASTM Test Methods in which they are used.
- 1.2 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.
- 1.3 This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 ASTM Standards:²

D287 Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method)

D1250 Guide for Use of the Petroleum Measurement Tables

D3290 Specification for Bond and Ledger Papers for Permanent Records (Withdrawn 2010)³

E1 Specification for ASTM Liquid-in-Glass Thermometers

E77 Test Method for Inspection and Verification of Thermometers

E126 Test Method for Inspection, Calibration, and Verification of ASTM Hydrometers

E344 Terminology Relating to Thermometry and Hydrometry

E2251 Specification for Liquid-in-Glass ASTM Thermometers with Low-Hazard Precision Liquids

E2877 Guide for Digital Contact Thermometers

2.2 Other Standards:

ISO 1768:1975 Glass Hydrometers—Conventional Value for the Thermal Cubic Expansion Coefficient (for Use in the Preparation of Measurement Tables for Liquids)

3. Terminology

- 3.1 Definitions—The definitions given in Terminology E344 apply.
- 3.2 Definitions of Terms Specific to This Standard:
- 3.2.1 *ledger paper*, *n*—a paper characterized by strength, high tearing resistance, eraseability, water resistance, ink receptivity, uniformity of surface, and smoothness.

3.2.1.1 Discussion—

Originally, ledger paper was used especially for pen and ink records. Most ledger papers are surface sized, frequently subjected to appreciable wear, and shall have a high degree of permanence and durability.

¹ This specification is under the jurisdiction of ASTM Committee E20 on Temperature Measurement and is the direct responsibility of Subcommittee E20.05 on Liquid-in-Glass Thermometers and Hydrometers.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.



- 3.2.2 *length of the scale*, *n*—length of the nominal range in the stem, not including graduations extending above and below the nominal limits.
- 3.2.3 relative density (formerly specific gravity), n—ratio of the mass of a given volume of material at a stated temperature to the mass of an equal volume of gas-free distilled water at the same or different temperature. Both reference temperatures shall be explicitly stated.

3.2.3.1 Discussion—

Common reference temperatures include 60°F/60°F, 20°C/20°C, 20°C/4°C. The historic term specific gravity may still be found.

3.2.3.2 Discussion—

The reference temperatures for ASTM hydrometers and thermohydrometers are found in Table 1 under the heading "standard temperature".

3.2.4 specific gravity, n—an historic term, replaced by relative density.

3.2.4.1 Discussion—

hydrometers manufactured to this standard may be marked sp. gr., rel. density, or with both designations. The two terms are both equally acceptable in this standard and are used interchangeably.

- 3.2.5 thermohydrometer, n—glass hydrometer having an integral thermometer.
- 3.2.6 top of the hydrometer, n—top of the finished instrument.
- 3.2.7 *total length*, *n*—overall length of the finished instrument.

4. Specifications

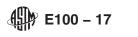
- 4.1 Individual hydrometers shall conform to the detailed specifications in $\frac{\text{Table Table 1}}{\text{Table 1}}$ and to the general requirements specified in Sections 5 15.
- 4.2 Hydrometers shall be subjected to the <u>initial calibration criteria found in Section 14</u>, the inspection criteria found in Section 16, and the <u>standardization calibration and verification criteria</u> found in Section 17.
- 4.3 Hydrometers manufactured to previous revisions of this specification shall retain the same ASTM status as those meeting current specifications.
 - 4.4 At the time of purchase, scale errors shall be within the maximum scale error found in Table 1Table 1.

Note 1—Caution—Users should be aware that both temperature and density indications of thermohydrometers may change with rough handling, shock, exposure to aggressive liquids, and thermal cycling, among other factors. Consequently, test results and performance obtained at the time of manufacture may not necessarily apply throughout an extended period of use. Periodic calibration or verification of these instruments, in accordance with procedures set forth in Test Method E126 (for the hydrometer), or Test Method E77 (for the integral thermometer), is recommended

5. Type

- 5.1 Hydrometers shall be of the constant-mass, variable-displacement type. Hydrometers shall be made of glass, except for the scale, ballast, and the thermometric liquid of thermohydrometers.
- 5.2 The outer surface of the stem and body shall be symmetrical about the vertical axis. There shall be no uneven or unnecessary thickening of the walls, and no abrupt changes or constrictions that would hinder thorough cleaning or tend to trap air bubbles when the instrument is immersed.
 - 5.3 The hydrometer shall always float with its axis vertical in liquids for which it is intended.
- 5.4 The hydrometer shall be thoroughly dry on the inside when sealed. The top of the stem shall be neatly rounded without unnecessary thickening.
- 5.5 The glass shall be smooth, transparent, and free of bubbles, cracks, strain patterns, or other imperfections that might interfere with the use of the hydrometer. The glass shall adequately resist the reaction of chemical agents to which hydrometers may be exposed and shall have suitable thermal properties to permit its use over the range of temperatures to which it may be subjected. In general, glasses suitable for constructing the bulbs of thermometers are satisfactory for hydrometers.
- 5.6 These hydrometers and thermohydrometers shall be fabricated from soda-lime glass tubing having a thermal cubical expansion coefficient of $(25 + /- 2) \times 10^{-6}$ per °C.

Note 2—The value of the thermal cubical expansion coefficient given above is consistent with the conventional value given in ISO 1768:1975.



Standard temperature, °F Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Total length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm Stem diameter min, mm		Petroleum Producilar Surface Tension Nominal API Gravity Range, deg -1 to + 11 9 to 21 19 to 31 29 to 41 39 to 51 49 to 61 59 to 71 69 to 81 79 to 91 89 to 101 37 to 49 64 to 76	(Specif	Nominal Rel. Density (Sp. Gr.) Range 0.650 to 0.700 0.700 to 0.750 0.750 to 0.800 0.800 to 0.850 0.850 to 0.900 0.900 to 1.050 1.000 to 1.050 1.050 to 1.100	(Specifi Hydro For Ger ASTM Hydrometer No. For Al 98H-62 For Heav 111H-62 112H-62 113H-62 115H-62 116H-62 117H-62 119H-62 120H-62	05 1 5 05 to 335 to 145
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Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Total length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	ASTM Hydrometer No. 1H-62 2H-62 3H-62 3H-62 4H-62 5H-62 6H-62 7H-62 8H-62 9H-62 10H-62 11H-03 12H-03	nilar Surface Tensio Nominal API Gravity Range, deg -1 to + 11 9 to 21 19 to 31 29 to 41 39 to 51 49 to 61 59 to 71 69 to 81 79 to 91 89 to 101 37 to 49 64 to 76	ASTM Hydrometer No. 82H-62 83H-62 84H-61 85H-62 86H-62 88H-62 89H-62 90H-62 60/60 0.000 0.001 0.005 0.000 325 tc 125 tc 0.002	Nominal Rel. Density (Sp. Gr.) Range 0.650 to 0.700 0.700 to 0.750 0.750 to 0.800 0.800 to 0.850 0.850 to 0.900 0.900 to 1.050 1.000 to 1.050 1.050 to 1.100	ASTM Hydrometer No. For A 98H-62 For Heav 111H-62 112H-62 113H-62 115H-62 116H-62 117H-62 119H-62 120H-62 60/6 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Nominal Rel. Density (Sp. Gr.) Range lcohols ^A 0.950 to 1.00 vy Liquids ^A 1.000 to 1.05 1.050 to 1.10 1.150 to 1.20 1.200 to 1.25 1.250 to 1.30 1.300 to 1.35 1.350 to 1.40 1.400 to 1.45 1.450 to 1.50 0 05 1 5 05 to 335 to 145
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Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Total length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	No. 1H-62 2H-62 3H-62 4H-62 5H-62 6H-62 7H-62 8H-62 9H-62 10H-62 11H-03 12H-03 60 0.1° A 0.5° A 1.0° A 0.1° A 325 to 125 to 0.2° 23 to 2	Range, deg -1 to + 11 9 to 21 19 to 31 29 to 41 39 to 51 49 to 61 59 to 71 69 to 81 79 to 91 89 to 101 37 to 49 64 to 76	82H-62 83H-62 84H-61 85H-62 86H-62 87H-62 89H-62 90H-62	(Sp. Gr.) Range 0.650 to 0.700 0.700 to 0.750 0.750 to 0.800 0.800 to 0.850 0.850 to 0.900 0.900 to 0.950 0.950 to 1.000 1.000 to 1.050 1.050 to 1.100	No. For Al 98H-62 For Heav 111H-62 112H-62 113H-62 115H-62 116H-62 117H-62 119H-62 120H-62 60/6 0.00 0.00 0.00 0.00 325 125 0.00	(Sp. Gr.) Range lcohols ^A 0.950 to 1.00 vy Liquids ^A 1.000 to 1.05 1.050 to 1.10 1.100 to 1.15 1.150 to 1.20 1.250 to 1.30 1.350 to 1.40 1.400 to 1.45 1.450 to 1.50 0 05 1 5 05 to 335 to 145
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Subdivisions Intermediate lines at Main (numbered) lines at Gcale error at any point not to exceed Fotal length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	6H-62 7H-62 8H-62 9H-62 10H-62 11H-03 12H-03 60 0.1° A 0.5° A 1.0° A 0.1° A 325 to 125 to 0.2°	49 to 61 59 to 71 69 to 81 79 to 91 89 to 101 37 to 49 64 to 76	87H-62 88H-62 89H-62 90H-62 60/60 0.000 0.001 0.005 0.000 325 tc 125 tc 0.002 23 to	0.900 to 0.950 0.950 to 1.000 1.000 to 1.050 1.050 to 1.100	113H-62 114H-62 115H-62 116H-62 117H-62 118H-62 120H-62 60/6 0.00 0.00 0.00 0.00 325 125 0.00	1.100 to 1.15 1.150 to 1.20 1.200 to 1.25 1.250 to 1.30 1.300 to 1.35 1.350 to 1.40 1.400 to 1.45 1.450 to 1.50 0 05 1 5 05 to 335 to 145
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Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Fotal length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	8H-62 9H-62 10H-62 11H-03 12H-03 60 0.1° A 0.5° A 1.0° A 0.1° A 325 to 125 to 0.2°	69 to 81 79 to 91 89 to 101 37 to 49 64 to 76	89H-62 90H-62 60/60 0.000 0.001 0.005 0.000 325 tc 125 tc 0.002 23 to	1.000 to 1.050 1.050 to 1.100	115H-62 116H-62 117H-62 118H-62 119H-62 120H-62 60/6 0.00 0.00 0.00 0.00 325 125 0.00	1.200 to 1.25 1.250 to 1.30 1.300 to 1.35 1.350 to 1.40 1.400 to 1.45 1.450 to 1.50 0 05 1 5 05 to 335 to 145
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Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Fotal length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	10H-62 11H-03 12H-03 60 0.1° A 0.5° A 1.0° A 0.1° A 325 to 125 to 0.2°	89 to 101 37 to 49 64 to 76	60/60 0.000 0.001 0.005 0.000 325 tr 125 tr 0.002 23 to	5 5 9 335 9 145 5	117H-62 118H-62 119H-62 120H-62 60/6 0.00 0.00 0.00 325 125 0.00	1.300 to 1.35 1.350 to 1.40 1.400 to 1.45 1.450 to 1.50 0 05 1 5 05 to 335 to 145
Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Fotal length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	60 0.1° A 0.5° A 1.0° A 0.1° A 325 to 125 to 0.2°	37 to 49 64 to 76 API API API API D 3335 D 145	0.000 0.001 0.005 0.000 325 tc 125 tc 0.002	5 5 335 5 145 5	118H-62 119H-62 120H-62 60/6 0.00 0.00 0.00 325 125 0.00	1.350 to 1.40 1.400 to 1.45 1.450 to 1.50 0 05 1 5 05 to 335 to 145
Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Fotal length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	60 0.1° A 0.5° A 1.0° A 0.1° A 325 to 125 to 0.2°	64 to 76 API API API API API API API AP	0.000 0.001 0.005 0.000 325 tc 125 tc 0.002	5 5 335 5 145 5	119H-62 120H-62 60/6 0.00 0.00 0.00 325 125 0.00	1.400 to 1.45 1.450 to 1.50 0 05 1 5 05 to 335 to 145
Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Fotal length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	60 0.1° A 0.5° A 1.0° A 0.1° A 325 to 125 to 0.2°	NPI NPI NPI NPI NPI NPI NPI NPI NPI NPI	0.000 0.001 0.005 0.000 325 tc 125 tc 0.002	5 5 335 5 145 5	120H-62 60/6 0.00 0.00 0.00 0.00 325 125 0.00	1.450 to 1.50 0 05 1 5 05 to 335 to 145
Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Fotal length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	0.1° A 0.5° A 1.0° A 0.1° A 325 to 125 to 0.2°	NPI NPI NPI 0 335 0 145	0.000 0.001 0.005 0.000 325 tc 125 tc 0.002	5 5 335 5 145 5	60/6 0.00 0.00 0.00 0.00 325 125 0.00	0 05 1 5 05 to 335 to 145
Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Total length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Sody diameter, mm	0.1° A 0.5° A 1.0° A 0.1° A 325 to 125 to 0.2°	NPI NPI NPI 0 335 0 145	0.000 0.001 0.005 0.000 325 tc 125 tc 0.002	5 5 335 5 145 5	0.00 0.00 0.00 0.00 325 125 0.00	05 1 5 05 to 335 to 145
ntermediate lines at Main (numbered) lines at Scale error at any point not to exceed Fotal length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	0.5° A 1.0° A 0.1° A 325 to 125 to 0.2°	NPI NPI NPI 0 335 0 145	0.001 0.005 0.000 325 tc 125 tc 0.002 23 to	5 5 335 5 145 5	0.00 0.00 0.00 325 125 0.00	1 5 05 to 335 to 145
Main (numbered) lines at Scale error at any point not to exceed otal length, mm ength of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	1.0° A 0.1° A 325 to 125 to 0.2°	API API 0 335 0 145	0.005 0.000 325 tc 125 tc 0.002 23 to	9 335 9 145 5	0.00 0.00 325 125 0.00	5 05 to 335 to 145
Scale error at any point not to exceed Fotal length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	0.1° A 325 to 125 to 0.2° 23 to 2	API 0 335 0 145	0.000 325 to 125 to 0.002	9 335 9 145 5	0.00 325 125 0.00	05 to 335 to 145
Total length, mm Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	325 to 125 to 0.2° 23 to 2	o 335 o 145	325 to 125 to 0.002 23 to	9 335 9 145 5	325 125 0.00	to 335 to 145
Length of nominal scale, mm Scale extension beyond nominal range limits, max Body diameter, mm	125 to 23 to 2	Teh Sta	125 to 0.002	0 145 5	125 0.00	to 145
Scale extension beyond nominal range limits, max Body diameter, mm	0.2° 23 to 2		0.002 23 to		0.00	
limits, max Body diameter, mm	23 to 2	eh Sta //stand	23 to			
Body diameter, mm		//stanc		27	23 to	
		//stanc				27
1)	nttps:/	//stanc	ONOG		4.0	
	DUC	umen	Nominal API Gravity Range, deg			ominal API Gravity Range, deg
		H-62	0 to 6	31H-62		50 to 56
		H-62 H-62 A GYEN / T	5 to 11	32H-62 33H-62		55 to 61 60 to 66
		H-62 ASTM I	15 to 21	34H-62		65 to 71
		H-62 jst/ac3e90	7_ 20 to 26 0 5 4	3411-02 3411-62 3411-62		70 to 76 7
		H-62	25 to 31	36H-62		75 to 81
		H-62	30 to 36	37H-62		80 to 86
		H-62	35 to 41	38H-62		85 to 91
		H-62	40 to 46	39H-62		90 to 96
		H-62	45 to 51	40H-62		95 to 101
Standard temperature, °F				60		
Subdivision, °API				0.1		
Intermediate lines at, °API				0.5		
Main (numbered) lines at, °API				1.0		
Scale error at any point not to exceed, °/	API			0.2		
Total length, mm				158 to 168		
Length of nominal scale, mm				48 to 61		
Scale extension beyond nominal range li	limits, max			0.2 °API		
Body diameter, mm Stem diameter min, mm				12 to 15		
Sterri diameter min, min				2.5		
		API Gravity The	rmohydrometers			
For Petro	oleum Products and		Similar Surface Tens	ions (33 dynes/cm or les	ss)	
ASTM Hydrome	eter No.	mermometer	ocale III Body	Nominal API Gravit	y Range, deg	
41H-66				15 to 2	:3	
42H-66				22 to 3		
43H-66				29 to 3		
44H-66				36 to 4		
45H-66				43 to 5	1	
		Hydro	374 to 387			
Total length, mm						
Total length, mm Body diameter, mm			18 to 25			

Hydrometer Scale



Standard temperature, °F		60		
Subdivisions, ° API		0.1		
Intermediate lines at,° API		0.5		
Main (numbered) lines at, ° API		1.0		
Scale error at any point not to exceed,° API		0.1		
Length of nominal scale, mm		125 to 145		
·	Therm	nometer Scale		
Range, °F ^B			0 to 150 Designation L	
90,			30 to 180 Designation M	1
			60 to 220 Designation H	
Immersion			total	
Subdivisions, °F			2	
Intermediate lines at,° F			10	
Main (numbered) lines at, °F			20	
Scale error at any point not to exceed,° F			1	
Scale length, mm			80 to 110	
		API Gravity Th	ermohydrometers	
-	For Petroleum Pro	nducts and Other Liquids of	Similar Surface Tensions (33 o	dynes/cm or less)
-				-
_	Thermometer	Scale in Body	Thermometer	Scale in Stem
	ASTM Hydrometer No.	Nominal API Gravity	ASTM Hydrometer No.	Nominal API Gravity
	AO I WI LIYUI OI II ELET NO.	Range, deg	ASTIVI FIYUIOITIETEI NO.	Range, deg
	51H-62	-1 to + 11	71H-62	-1 to + 11
	52H-62	9 to 21	72H-62	9 to 21
	53H-62	19 to 31	73H-62	19 to 31
	54H-62	29 to 41	74H-62	29 to 41
	55H-62	39 to 51	- -	
	56H-62	49 to 61		
	57H-62	59 to 71		
	58H-62	69 to 81		
	59H-62	79 to 91		
	60H-62	89 to 101		
	E A	ydrometer		
Total length, mm				374 to 387
		74 to 387		3/4 10 30/
Body diameter, mm				
	18	3 to 25		23 to 27
	tns://sta 18	3 to 25	eh.ai)	
Stem diameter, min, mm	tns://sta 18	3 to 25	eh.ai)	23 to 27
Stem diameter, min, mm Standard temperature, °F	tns://sta 18	3 to 25	<u>eh.ai)</u>	23 to 27
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API	tns://sta 18	3 to 25	0.1	23 to 27
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API	tns://sta 18	3 to 25	0.1 0.5	23 to 27
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API	tns://sta 18	3 to 25	0.1 0.5 1.0	23 to 27
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API	tns://sta 18	3 to 25	0.1 0.5 1.0 0.1	23 to 27
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API	Docume ASTA	ometer Scale A F100-17	0.1 0.5 1.0	23 to 27
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm	Docume ASTA Therm	ometer Scale	0.1 0.5 1.0 0.1	23 to 27
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm	Docume ACT Therm 0 to 150 D	ometer Scale commeter Scale commeter Scale commeter Scale esignation L	0.1 0.5 1.0 0.1	23 to 27 6.0
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm	Docume ASTA Therm O to 150 D 30 to 180 D	ometer Scale Provide the scale of the scale	0.1 0.5 1.0 0.1 125 to 145	23 to 27 6.0
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm	Docume ASTA Therm O to 150 D 30 to 180 D	ometer Scale commeter Scale commeter Scale commeter Scale esignation L	0.1 0.5 1.0 0.1 125 to 145	23 to 27 6.0
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °FC	Therm 0 to 150 D 30 to 180 60 to 220 total	ometer Scale Provide the scale of the scale	0.1 0.5 1.0 0.1 125 to 145	23 to 27 6.0
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °FC Immersion Subdivisions, °F	Therm 0 to 150 D 30 to 180 l 60 to 220 l total 2	ometer Scale Provide the scale of the scale	0.1 0.5 1.0 0.1 125 to 145 30 to total	23 to 27 6.0
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at,° F	Therm 0 to 150 D 30 to 180 60 to 220 total 2 10	ometer Scale Provide the scale of the scale	0.1 0.5 1.0 0.1 125 to 145 30 to 10 total 2 10	23 to 27 6.0
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F	Therm 0 to 150 D 30 to 180 60 to 220 total 2 10 20	ometer Scale Provide the scale of the scale	0.1 0.5 1.0 0.1 125 to 145 30 to total 2 10 20	23 to 27 6.0
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F	Therm 0 to 150 D 30 to 180 to 60 to 220 total 2 10 20 1	ometer Scale Provide the scale of the scale	0.1 0.5 1.0 0.1 125 to 145 30 to 10 total 2 10 20 1	23 to 27 6.0
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F	Therm 0 to 150 D 30 to 180 60 to 220 total 2 10 20	ometer Scale Provide the scale of the scale	0.1 0.5 1.0 0.1 125 to 145 30 to total 2 10 20	23 to 27 6.0
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F	Therm 0 to 150 D 30 to 180 to 60 to 220 total 2 10 20 1	ometer Scale nometer Scale esignation L Designation M Designation H	0.1 0.5 1.0 0.1 125 to 145 30 to 1 total 2 10 20 1 105 to	23 to 27 6.0
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F	Therm 0 to 150 D 30 to 180 to 60 to 220 total 2 10 20 1	ometer Scale Designation L Designation H Relative De	0.1 0.5 1.0 0.1 125 to 145 30 to 10 total 2 10 20 1	23 to 27 6.0 220 220 145 ohydrometer
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F	Therm 0 to 150 D 30 to 180 to 60 to 220 total 2 10 20 1	mometer Scale Previous Previo	0.1 0.5 1.0 0.1 125 to 145 30 to 10 total 2 10 20 1 105 to ensity (Specific Gravity) Thermo-	23 to 27 6.0 220 145 ohydrometer Similar Surface
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F	Therm 0 to 150 D 30 to 180 to 60 to 220 total 2 10 20 1	mometer Scale Previous Previo	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Therm. Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body	23 to 27 6.0 220 145 ohydrometer Similar Surface S)
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F	Therm 0 to 150 D 30 to 180 to 60 to 220 total 2 10 20 1	mometer Scale Previous Previo	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Therm. Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body	23 to 27 6.0 220 145 ohydrometer Similar Surface S)
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F	Therm 0 to 150 D 30 to 180 to 60 to 220 total 2 10 20 1	Designation H Relative De For Petroleum	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Therm. Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F	Therm 0 to 150 D 30 to 180 to 60 to 220 total 2 10 20 1	Designation H Relative De For Petroleum	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Thermore Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ther No. Nominal	23 to 27 6.0 220 145 chydrometer Similar Surface s) al Rel. Density (Sp. Gr.)
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F	Therm Therm To to 150 D 30 to 180 0 60 to 220 1 total 2 10 20 1 80 to 110	Relative De For Petroleum ASTM Hydrome 101H-03	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Thermore Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ther No. Nominal	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale length, mm	Therm Therm To to 150 D 30 to 180 0 60 to 220 1 total 2 10 20 1 80 to 110	nometer Scale Previous Astronometer Scale Relative De For Petroleum ASTM Hydrome	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Thermore Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ther No. Nominal	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °FC Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale length, mm	Therm Therm To to 150 D 30 to 180 0 60 to 220 1 total 2 10 20 1 80 to 110	Relative De For Petroleum ASTM Hydrome 101H-03	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Thermore Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ster No. Nomina	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °FC Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale length, mm Total length, mm Body diameter, mm	Therm Therm To to 150 D 30 to 180 0 60 to 220 1 total 2 10 20 1 80 to 110	Relative De For Petroleum ASTM Hydrome 101H-03	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Therm Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ster No. Nomina 354 to 387 19 to 22	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Stam diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °FC Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale length, mm Total length, mm Body diameter, mm Stem diameter min, mm	Therm Therm To to 150 D 30 to 180 0 60 to 220 1 total 2 10 20 1 80 to 110	Relative De For Petroleum ASTM Hydrome 101H-03	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Therm. Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ster No. Nomina 354 to 387 19 to 22 10.5	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Stem diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °FC Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale length, mm Total length, mm Body diameter, mm	Therm Therm O to 150 D 30 to 180 I 60 to 220 I total 2 10 20 1 80 to 110	Relative De For Petroleum ASTM Hydrometer Suden de Sudrometer Scale esignation H	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Therm Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ster No. Nomina 354 to 387 19 to 22	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Stam diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale length, mm Total length, mm Body diameter, mm Stem diameter min, mm Working pressure min, psi	Therm Therm O to 150 D 30 to 180 I 60 to 220 I total 2 10 20 1 80 to 110	Relative De For Petroleum ASTM Hydrome 101H-03	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Therm. Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ster No. Nomina 354 to 387 19 to 22 10.5	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Stam diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °FC Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale length, mm Total length, mm Body diameter, mm Stem diameter min, mm	Therm Therm O to 150 D 30 to 180 I 60 to 220 I total 2 10 20 1 80 to 110	Relative De For Petroleum ASTM Hydrometer Suden de Sudrometer Scale esignation H	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Thermore Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ster No. Nomina 354 to 387 19 to 22 10.5 200	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Stam diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °F ^C Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale length, mm Total length, mm Body diameter, mm Stem diameter min, mm Working pressure min, psi Standard temperature, °F	Therm Therm O to 150 D 30 to 180 I 60 to 220 I total 2 10 20 1 80 to 110	Relative De For Petroleum ASTM Hydrometer Suden de Sudrometer Scale esignation H	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Thermore Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body leter No. Nomina 354 to 387 19 to 22 10.5 200 60/60	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Stam diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °FC Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale length, mm Total length, mm Stem diameter, mm Stem diameter min, mm Working pressure min, psi Standard temperature, °F Subdivisions	Therm Therm O to 150 D 30 to 180 I 60 to 220 I total 2 10 20 1 80 to 110	Relative De For Petroleum ASTM Hydrometer Suden de Sudrometer Scale esignation H	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Therm Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ster No. Nomina 354 to 387 19 to 22 10.5 200 60/60 0.001	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Stam diameter, min, mm Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °FC Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale length, mm Total length, mm Stem diameter, mm Stem diameter min, mm Working pressure min, psi Standard temperature, °F Subdivisions Intermediate lines at	Therm Therm O to 150 D 30 to 180 I 60 to 220 I total 2 10 20 1 80 to 110	Relative De For Petroleum ASTM Hydrometer Suden de Sudrometer Scale esignation H	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Therm Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ster No. Nomina 354 to 387 19 to 22 10.5 200 60/60 0.001 0.005	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Stamdard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °FC Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale length, mm Total length, mm Stem diameter min, mm Working pressure min, psi Standard temperature, °F Subdivisions Intermediate lines at Main (numbered) lines at Main (numbered) lines at Main (numbered) lines at	Therm Therm O to 150 D 30 to 180 I 60 to 220 I total 2 10 20 1 80 to 110	Relative De For Petroleum ASTM Hydrometer Suden de Sudrometer Scale esignation H	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Therm Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body eter No. Nomina 354 to 387 19 to 22 10.5 200 60/60 0.001 0.005 0.010	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °FC Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale length, mm Total length, mm Body diameter, mm Stem diameter min, mm Working pressure min, psi Standard temperature, °F Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed	Therm Therm O to 150 D 30 to 180 60 to 220 total 2 10 20 1 80 to 110 Hydre	Relative De For Petroleum ASTM Hydrometer Suden de Sudrometer Scale esignation H	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Therm Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ter No. Nomina 354 to 387 19 to 22 10.5 200 60/60 0.001 0.005 0.010 0.001	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range
Standard temperature, °F Subdivisions, °API Intermediate lines at, °API Main (numbered) lines at, °API Scale error at any point not to exceed, °API Length of nominal scale, mm Range, °FC Immersion Subdivisions, °F Intermediate lines at, °F Main (numbered) lines at, °F Scale error at any point not to exceed, °F Scale error at any point not to exceed, °F Scale length, mm Body diameter, mm Stem diameter min, mm Working pressure min, psi Standard temperature, °F Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed	Therm Therm O to 150 D 30 to 180 60 to 220 total 2 10 20 1 80 to 110 Hydre	Relative De For Petroleum ASTM Hydrometer Scale asydrometer Scale Ometer Scale Relative De For Petroleum ASTM Hydrometer Scale	0.1 0.5 1.0 0.1 125 to 145 total 2 10 20 1 105 to ensity (Specific Gravity) Therm Products and Other Liquids of Tensions (33 dynes/cm or less Thermometer Scale in Body ter No. Nomina 354 to 387 19 to 22 10.5 200 60/60 0.001 0.005 0.010 0.001	23 to 27 6.0 220 145 ohydrometer Similar Surface s) al Rel. Density (Sp. Gr.) Range



Subdivisions, °F

Subdivisions, °F			_			
Intermediate lines at, °F	5					
Main (numbered) lines at, °F			10			
Scale error at any point not to exceed, °F Scale length, mm	0.5 50 to 70					
Coalo longal, Illin			00.00.0			
	For Petroleum Products	Relative Density (Specand Other Liquids of Similar	ific Gravity) Hydrometers			
		33 dynes/cm or less)	For G	eneral Use		
	ASTM	Nominal	ASTM	Nominal		
	Hydrometer No.	Rel. Density	Hydrometer No.	Rel. Density		
		(Sp. Gr.) Range		(Sp. Gr.) Range		
	102H-62 103H-62	0.650 to 0.700 0.700 to 0.750	125H-62 126H-62	1.000 to 1.050 1.050 to 1.100		
	104H-62	0.750 to 0.800	127H-62	1.100 to 1.150		
	105H-62	0.800 to 0.850	128H-62	1.150 to 1.200		
	106H-62	0.850 to 0.900	129H-62	1.200 to 1.250		
	107H-62	0.900 to 0.950	130H-62	1.250 to 1.300		
	108H-62	0.950 to 1.000	131H-62	1.300 to 1.350		
			132H-62	1.350 to 1.400		
			133H-62	1.400 to 1.450		
			134H-62 135H-62	1.450 to 1.500 1.500 to 1.550		
			136H-62	1.550 to 1.600		
			137H-62	1.600 to 1.650		
			138H-62	1.650 to 1.700		
			139H-62	1.700 to 1.750		
			140H-62	1.750 to 1.800		
			141H-62	1.800 to 1.850		
Standard temperature, °F)/60			
Subdivisions			001			
Intermediate lines at			005			
Main (numbered) lines at Scale error at any point not to exceed		randard.	010 001			
Total length, mm		0.	50 to 270			
Length of nominal scale, mm) to 85			
Scale extension beyond nominal	tus://stai		005			
range limits, max						
Body diameter, mm) to 24			
Stem diameter min, mm	4.0 Soil Hydrometers (55 dynes/cm or less)					
	ASTM Hydrometer Nominal ASTM Hydrometer No. Nominal Range					
			710 1111 119 010 11010 11101	. roa lange		
	No. ASTI	Rel. Density				
	No. ASTI	(Sp. Gr.) Range	18e_6d1/39////5a	7/actm_e100_17		
	No. ASTI	VI E I I I I / ·	18e-6d 14394445a	7/astm- -5 to + 60 g/L		
Standard temperature, °F	No. ASTI standa _{151H-05} / ac36	(Sp. Gr.) Range 2902 0.995 to 1.038 sp gr	6	8/68		
Standard temperature, °F Divisions	No. ASTI 2/standa _{151H-05} 1/ac3 68 0.00	(Sp. Gr.) Range 2004 / 0.995 to 1.038 - 9 sp gr 8/68 11 sp gr	66	8/68 g/L		
Standard temperature, °F Divisions ntermediate lines at	No. AST standar _{151H-05} Vac3d 68 0.00 0.00	(Sp. Gr.) Range 0.995 to 1.038 sp gr 9/68 11 sp gr 95 sp gr	6i 1 5	8/68 g/L g/L		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at	No. AST standa _{151H-05} Vac3d 68 0.00 0.00 0.00 0.00	(Sp. Gr.) Range 0.995 to 1.038 sp gr 6/68 11 sp gr 15 sp gr 0 sp gr	6i 1 5 10	8/68 g/L g/L) g/L		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed	No. ASTI Standa 151H-05 68 0.00 0.00 0.00 0.00	(Sp. Gr.) Range 200 / 0.995 to 1.038 sp gr 3/68 11 sp gr 15 sp gr 0 sp gr 11 sp gr	6i 1 5 10	8/68 g/L g/L		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale	No. ASTI 51H-05 68 0.00 0.00 0.00 See	(Sp. Gr.) Range 0.995 to 1.038 sp gr 6/68 11 sp gr 15 sp gr 0 sp gr	66 1 5 10 1 1 Se	8/68 g/L g/L o g/L g/L		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter	No. ASTI Standa 151H-05 68 0.00 0.00 0.00 0.00 Sec 278 Sec	(Sp. Gr.) Range 2004 / 0.995 to 1.038	66 1 5 10 1 Se 278 Se	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter	No. ASTI Standa 151H-05 68 0.00 0.00 0.00 0.00 Sec 278 Sec	(Sp. Gr.) Range 200 / 0.995 to 1.038	6i 1 5 10 1 Se 278 Se Se	8/68 g/L g/L) g/L) g/L g/L e Fig. 2 3 to 282		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter	No. AST Standa 151H-05 68 0.00 0.00 0.00 0.00 See 278 See See	(Sp. Gr.) Range 0.995 to 1.038	66 1 5 10 1 Se 278 Se Se Se	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter	No. AST Standa 151H-05 68 0.00 0.00 0.00 0.00 See 278 See See	(Sp. Gr.) Range 200 / 0.995 to 1.038	66 1 5 10 1 Se 278 Se Se Se allon Hydrometers	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter	No. 4511 68 0.00 0.00 0.00 See 278 See See For Petroleum F ASTM Number	(Sp. Gr.) Range 0.995 to 1.038 sp gr 0/68 01 sp gr 05 sp gr 0 sp gr 01 sp gr 0 sp gr 01 sp gr 0 Fig. 2 Nominal	66 1 5 10 1 Se 276 Se Se allon Hydrometers Similar Surface Tensions (3 Range,	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter	No. 451 68 0.00 0.00 0.00 See 278 See See For Petroleum F ASTM Number	(Sp. Gr.) Range 900 / 0.995 to 1.038 - Sp gr 1/68 1/1 sp gr 1/5 sp gr 1/6	66 1 55 10 1 1 Se 276 Se Se allon Hydrometers 5 Similar Surface Tensions (3 Range,	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter	For Petroleum F ASTM Number 293H-68 294H-68	(Sp. Gr.) Range 200 / 0.995 to 1.038	66 1 5 10 1 1 Se 278 Se 278 Se Se Se Se Se Se Se Se Se Se Se Se Se	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter	For Petroleum F ASTM Number 293H-68 295H-68 295H-68	(Sp. Gr.) Range 0.995 to 1.038 sp gr 668 01 sp gr 05 sp gr 01 sp gr 05 pg gr 01 sp gr 05 Fig. 2 to 282 Fig. 2 Fig. 2 Fig. 2 Froducts and Other Liquids of Nominal lb/g 5.83 to 6.24 to 6.66 to	66 1 5 10 1 1 Se 278 Se 278 Se Se Se Se Se Se Se Se Se Se Se Se Se	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions ntermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter	For Petroleum F ASTM Number 293H-68 294H-68	(Sp. Gr.) Range 200 / 0.995 to 1.038	66 1 1 5 10 1 1 Se 278 Se 278 Se Se Se Se Se Se Se Se Se Se Se Se Se	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions ntermediate lines at Main (numbered) lines at Scale error at any point not to exceed ength of nominal scale Total length, mm Sody diameter Stem diameter	For Petroleum F ASTM Number 293H-68 296H-68 296H-68	(Sp. Gr.) Range 900 / 0.995 to 1.038 - 9 sp gr 1/68 11 sp gr 15 sp gr 0 sp gr 11 sp gr 12 to 282 12 Fig. 2 15 Fig. 2 16 Pounds Per Gr 17 roducts and Other Liquids of Nominal 18 18 18 18 18 18 18 19 18 18 19 18 18 10 19 18 10 10 18 11 18 12 18 13 18 14 16 15 16 16 16 17 16 17 17 18 19 19 10	66 1 5 10 1 Se 276 Se 276 Se Se Se Mallon Hydrometers Similar Surface Tensions (Se Range, Ial 6.24 6.66 9.7.08 9.7.08 9.7.91	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter Stem diameter	For Petroleum F ASTM Number 293H-68 295H-68 296H-68 297H-68	(Sp. Gr.) Range 900 / 0.995 to 1.038 - 9 sp gr 668 11 sp gr 15 sp gr 0 sp gr 11 sp gr 12 Fig. 2 15 to 282 15 Fig. 2 16 roducts and Other Liquids of Nominal 16/0 5.83 to 6.24 to 6.66 to 7.08 to 7.50 to 7.91 to 60°F	66 1 5 10 1 Se 276 Se 276 Se Se Se Mallon Hydrometers Similar Surface Tensions (Se Range, Ial 6.24 6.66 9.7.08 9.7.08 9.7.91	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter Stem diameter Standard temperature, °F Subdivisions	For Petroleum F ASTM Number 293H-68 295H-68 296H-68 297H-68	(Sp. Gr.) Range 90 / 0.995 to 1.038	66 1 5 10 1 Se 276 Se 276 Se Se Se Mallon Hydrometers Similar Surface Tensions (Se Range, Ial 6.24 6.66 9.7.08 9.7.08 9.7.91	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter Stem diameter Standard temperature, °F Subdivisions Intermediate lines at	For Petroleum F ASTM Number 293H-68 295H-68 296H-68 297H-68	(Sp. Gr.) Range 200 / 0.995 to 1.038	66 1 5 10 1 Se 276 Se 276 Se Se Se Mallon Hydrometers Similar Surface Tensions (Se Range, Ial 6.24 6.66 9.7.08 9.7.08 9.7.91	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter Stem diameter Stem diameter Standard temperature, °F Subdivisions Intermediate lines at Main (numbered) lines at	For Petroleum F ASTM Number 293H-68 295H-68 296H-68 297H-68	(Sp. Gr.) Range 200 / 0.995 to 1.038	66 1 5 10 1 Se 276 Se 276 Se Se Se Mallon Hydrometers Similar Surface Tensions (Se Range, Ial 6.24 6.66 9.7.08 9.7.08 9.7.91	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter Stem diameter Stem diameter Standard temperature, °F Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed	For Petroleum F ASTM Number 293H-68 295H-68 296H-68 297H-68	(Sp. Gr.) Range 200 / 0.995 to 1.038	66 1 5 10 1 Se 276 Se 276 Se Se Se Mallon Hydrometers Similar Surface Tensions (Se Range, Ial 6.24 6.66 9.7.08 9.7.08 9.7.91	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter Stem diameter Stem diameter Standard temperature, °F Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Total length, mm	For Petroleum F ASTM Number 293H-68 295H-68 296H-68 297H-68	(Sp. Gr.) Range 900 / 0.995 to 1.038 - 9 sp gr 668 11 sp gr 15 sp gr 0 sp gr 11 sp gr 12 Fig. 2 15 to 282 15 Fig. 2 16 roducts and Other Liquids of Nominal 16 lb/g 5.83 to 6.24 to 6.66 to 7.08 to 7.91 to 7.91 to 60°F 0.005 0.01 0.05 0.005 325 to 335	66 1 5 10 1 Se 276 Se 276 Se Se Se Mallon Hydrometers Similar Surface Tensions (Se Range, Ial 6.24 6.66 9.7.08 9.7.08 9.7.91	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Standard temperature, °F Divisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Length of nominal scale Total length, mm Body diameter Stem diameter Standard temperature, °F Subdivisions Intermediate lines at Main (numbered) lines at Scale error at any point not to exceed Total length, mm Length of nominal scale, mm	For Petroleum F ASTM Number 293H-68 295H-68 296H-68 297H-68	(Sp. Gr.) Range 200 / 0.995 to 1.038	66 1 5 10 1 Se 276 Se 276 Se Se Se Mallon Hydrometers Similar Surface Tensions (Se Range, Ial 6.24 6.66 9.7.08 9.7.08 9.7.91	8/68 g/L g/L) g/L) g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		
Attps://standards.iteh.ai/catalog	For Petroleum F ASTM Number 293H-68 295H-68 296H-68 297H-68	(Sp. Gr.) Range 900 / 0.995 to 1.038 - 9	66 1 5 10 1 Se 276 Se 276 Se Se Se Mallon Hydrometers Similar Surface Tensions (Se Range, Ial 6.24 6.66 9.7.08 9.7.08 9.7.91	8/68 g/L g/L) g/L g/L e Fig. 2 3 to 282 e Fig. 2 e Fig. 2		



	Thermohydrometers			
	ASTM Hydrometer No.	API°		
	255H-03	37 to 49		
	258H-03	64 to 76		
	Hydrometer			
Total length, mm	385 to 405			
Body diameter, mm	18 to	25		
Nominal stem diameter, mm	>4	.		
	Hydrometer Scale			
Standard temperature, °F	60)		
Subdivisions, API	0.1	1		
Intermediate lines at, API	3.0	5		
Main (numbered) lines at, API	1			
Scale error at any point not to exceed, API	0.1			
Length of nominal scale, mm	125 to	125 to 145		
	Thermometer Scale			
Range, °F	0 to 1	00°		
Immersion	tota	al		
Subdivisions, °F	0.5			
Short intermediate lines at, °F	1			
Long intermediate lines at, °F	5			
Main (numbered) lines at, °F	10)		
Scale error at any point not to exceed, °F	3.0	5		
Scale length, mm	110 to	110 to 140		

	Thermohydrometers			
	ASTM Hydrometer No.	Density, Range, kg/m ³		
	300H-82	600 to 650		
	301H-82	650 to 700		
	302H-82	700 to 750		
	303H-82	750 to 800		
	303H-82 304H-82	800 to 850		
	305H-82	850 to 900		
	00011.00	900 to 950		
	ST9 In 19 IT 307H-82 TA 19	950 to 1000		
	308H-82	1000 to 1050		
	309H-82	1050 to 1100		
- Ancii	Hydrometer	1000 to 1100		
Total length, mm	Trydrometer	374 to 387		
Body diameter, mm		18 to 25		
Stem diameter, min, mm		4.0		
otom diamotol, min, min	A Hydrometer Scale			
Standard temperature °C. Iteh.ai/catalog/standards/s	ist/2220027 falls 4055 0192 6d1	4394445a7/ 15 tm-e100-17		
Subdivisions, kg/m ³		0.5		
Short intermediate lines at, kg/m ³		1		
Long intermediate lines at, kg/m ³		5		
Main (numbered) lines at kg/m ³		10		
Scale error at any point not to exceed, kg/m ³		0.5		
Length of nominal scale, mm		125 to 145		
Scale extension beyond nominal range limits, kg/m ³	TI	2.5		
	Thermometer Scale			
Range, °C	d	esignation		
5 ,	- -	20 to + 65 L		
	0	to + 85 M		
	+ 20 to + 105 H			
	Thermometer Scale			
Immersion	to	otal		
Subdivisions, °C	1.			
Intermediate lines at, °C	5			
Main (numbered) lines at, °C	11			
Scale error at any point not to exceed, °C		.0		
Scale length, mm		.0 0 to 100		
<u> </u>		0 10 100		
	Thermohydrometer (Pressure) ASTM Hydrometer No.	Density Range, kg/m ³		
	310H	500–650		
	Hydrometer			
	•			
Nominal length, mm		387		
Body diameter, mm		16 to 22		
Nominal stem diameter, mm		10.5		
Working pressure, kPa		1400		