

No. 300-D

# PALMER



**red  
reading  
mercury**

**CARL F. GAST**  
MECHANICAL ENGINEER  
DISTRICT REPRESENTATIVE  
ST. LOUIS

6110 Garesche Ave.    Evergreen 0730

# THERMOMETERS



# THERMOMETERS

For CHEMICAL, OIL and  
VARIOUS INDUSTRIES

TERMS: 30 DAYS NET, F. O. B. FACTORY.  
PRICES SUBJECT TO CHANGE WITHOUT NOTICE

THE PALMER COMPANY  
MANUFACTURERS  
CINCINNATI (NORWOOD), OHIO

Printed in U. S. A.

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Canadian Plant: The Palmer Thermometer Co., Ltd., King and George Streets, Toronto

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THE PALMER CO.  
CINCINNATI, NORWOOD, OHIO, U. S. A.

# FOREWORD . . .



OUR long association in the thermometer industry has established a reputation for extremely accurate thermometers. This statement can be verified by anyone who has used **Palmer** instruments.

It was only through careful study and long years of experimental work that we succeeded in giving to the world the most important discovery ever made in Thermometers . . . "**Red-Reading-Mercury**".

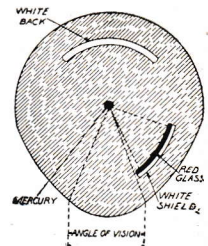
There are colored liquids furnished in thermometers today but these cannot be used where accuracy is essential. Mercury, when introduced into a clean, baked tube, by the latest modern processes, is the only medium known to science today, to produce a satisfactory temperature indicator. "**Red-Reading-Mercury**" is pure mercury to which nothing has been added to disturb its purity. The **Red** color is accomplished by reflection. (Patented in U. S., Canada and many foreign countries.)

A strip of **Red** glass is embodied in the glass tube, to the side of the mercury column and because mercury is a natural mirror, it reflects the **Red** color as it rises in the tube. The idea is basic and novel. This feature is furnished in all **Palmer** thermometers, both *New* and *Repairs*, at no extra charge. And **Palmer** gives you selected glass.

The Thermometer Buyer or User has every right to demand . . .

- 1—A thermometer built for service and long usage.
- 2—Fine Appearance and A-1 quality.
- 3—It must be sensitive and quick-reading.
- 4—Without doubt, it should be easy to read.
- 5—It must be guaranteed permanently accurate.

A **Palmer** thermometer will give you these five points as a full value on your investment. This guarantee is a part of every purchase . . .



## G U A R A N T E E

**We Guarantee** every thermometer of our manufacture to be of the highest grade and to be thoroughly accurate for the life of the thermometer, and will agree to replace any thermometer which does not come up to these standards.

### THE PALMER COMPANY

Manufacturer of

**High-Grade Thermometers Only**

Cincinnati, Norwood, Ohio, U. S. A.



# ENGRAVED THERMOMETERS

With "Red-Reading-Mercury"

Palmer Laboratory Thermometers are thoroughly annealed and treated so as not to change with age or use. Accuracy is guaranteed to 1/2 of 1% of total scale range, for the life of the thermometer.

Stem—Corning lead. Bulb—Corning normal glass. Gas filled. Sealed for Total Immersion.

Packed in round wood box, with rubber cushions inside (top and bottom) for protection when tube is not in use.

Partial Immersion— 6" and 8" tubes . . . . . 2" immersion.  
10", 12", 14" and 16" tubes . . . . . 3" immersion.

For immersion as listed above (must be specified on order) . . . . . No extra  
Special depth immersion (with standard range) . . . . . Add to list 25%

## ROUND FRONT TUBE—"Selected" High-Grade. Total Immersion

No.	Length	Range	Div.	List, Doz.	No.	Length	Range	Div.	List, Doz.
10000	6"	-30 + 120°F.	2°	\$18.90	10100	6"	-30 + 50°C.	1°	\$18.90
10002	6"	0 + 220°F.	2°	20.00	10102	6"	-10 + 110°C.	1°	20.00
10010	8"	-30 + 120°F.	2°	20.00	10110	8"	-30 + 50°C.	1°	20.00
10012	8"	0 + 220°F.	2°	21.10	10112	8"	-10 + 110°C.	1°	21.10
10020	10"	-30 + 120°F.	1°	21.10	10120	10"	-30 + 50°C.	1°	21.10
10022	10"	0 + 220°F.	2°	22.20	10122	10"	-10 + 110°C.	1°	22.20
10024	10"	0 + 300°F.	2°	23.35	10124	10"	-10 + 150°C.	1°	23.35
10040	12"	-30 + 120°F.	1°	22.20	10140	12"	-30 + 50°C.	1°	22.20
10042	12"	0 + 220°F.	2°	23.35	10142	12"	-10 + 110°C.	1°	23.35
10044	12"	0 + 300°F.	2°	24.40	10144	12"	-10 + 150°C.	1°	24.40
10046	12"	0 + 400°F.	2°	33.30	10146	12"	-10 + 200°C.	1°	33.30
10048	12"	0 + 500°F.	2°	34.40	10148	12"	-10 + 250°C.	1°	34.40
10050	12"	0 + 600°F.	2°	35.50	10150	12"	-10 + 300°C.	1°	35.50
10064	14"	0 + 300°F.	2°	25.50	10164	14"	-10 + 150°C.	1°	25.50
10066	14"	0 + 400°F.	2°	34.40	10166	14"	-10 + 200°C.	1°	34.40
10068	14"	0 + 500°F.	2°	35.50	10168	14"	-10 + 250°C.	1°	35.50
10070	14"	0 + 600°F.	2°	36.65	10170	14"	-10 + 300°C.	1°	36.65
10072	14"	0 + 750°F.	2°	44.40	10172	14"	-10 + 400°C.	1°	44.40
10084	16"	0 + 300°F.	2°	26.65	10184	16"	-10 + 150°C.	1°	26.65
10086	16"	0 + 400°F.	2°	35.50	10186	16"	-10 + 200°C.	1°	35.50
10088	16"	0 + 500°F.	2°	36.65	10188	16"	-10 + 250°C.	1°	36.65
10090	16"	0 + 600°F.	2°	37.70	10190	16"	-10 + 300°C.	1°	37.70
10092	16"	0 + 750°F.	2°	45.50	10192	16"	-10 + 400°C.	1°	45.50

## ROUND FRONT TUBE—"Selected" High-Grade Thermometers

Plain Mercury Tube. Borosilicate glass for high-range.

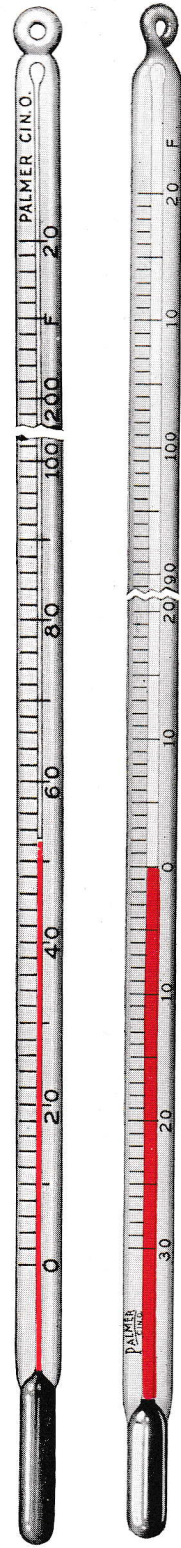
Note—"Red-Reading-Mercury" is not furnished on ranges above 750° F.

No.	Length	Range	Div.	List, Each	No.	Length	Range	Div.	List, Each
10096	16"	0 + 900°F.	5°	\$8.00	10196	16"	-10 + 500°C.	2°	\$8.00
10098	16"	0 + 1000°F.	5°	8.50	10198	16"	-10 + 550°C.	2°	8.50

## LENS FRONT TUBE—"Selected" High-Grade. Total Immersion

Front of tube constructed V-shape to form a lens so as to magnify the mercury column. Gives a wide Red column. (See illustration.)

No.	Length	Range	Div.	List, Doz.	No.	Length	Range	Div.	List, Doz.
10200	6"	-30 + 120°F.	2°	\$20.80	10300	6"	-30 + 50°C.	1°	\$20.80
10202	6"	0 + 220°F.	2°	22.00	10302	6"	-10 + 110°C.	1°	22.00
10210	8"	-30 + 120°F.	2°	22.00	10310	8"	-30 + 50°C.	1°	22.00
10212	8"	0 + 220°F.	2°	23.20	10312	8"	-10 + 110°C.	1°	23.20
10220	10"	-30 + 120°F.	1°	23.20	10320	10"	-30 + 50°C.	1°	23.20
10222	10"	0 + 220°F.	2°	24.40	10322	10"	-10 + 110°C.	1°	24.40
10224	10"	0 + 300°F.	2°	25.70	10324	10"	-10 + 150°C.	1°	25.70
10240	12"	-30 + 120°F.	1°	24.40	10340	12"	-30 + 50°C.	1°	24.40
10242	12"	0 + 220°F.	2°	25.70	10342	12"	-10 + 110°C.	1°	25.70
10244	12"	0 + 300°F.	2°	26.85	10344	12"	-10 + 150°C.	1°	26.85
10246	12"	0 + 400°F.	2°	36.65	10346	12"	-10 + 200°C.	1°	36.65
10248	12"	0 + 500°F.	2°	37.85	10348	12"	-10 + 250°C.	1°	37.85
10250	12"	0 + 600°F.	2°	39.05	10350	12"	-10 + 300°C.	1°	39.05
10264	14"	0 + 300°F.	2°	28.05	10364	14"	-10 + 150°C.	1°	28.05
10266	14"	0 + 400°F.	2°	37.85	10366	14"	-10 + 200°C.	1°	37.85
10268	14"	0 + 500°F.	2°	39.05	10368	14"	-10 + 250°C.	1°	39.05
10270	14"	0 + 600°F.	2°	40.30	10370	14"	-10 + 300°C.	1°	40.30
10272	14"	0 + 750°F.	2°	48.85	10372	14"	-10 + 400°C.	1°	48.85
10284	16"	0 + 300°F.	2°	29.30	10384	16"	-10 + 150°C.	1°	29.30
10286	16"	0 + 400°F.	2°	39.05	10386	16"	-10 + 200°C.	1°	39.05
10288	16"	0 + 500°F.	2°	40.30	10388	16"	-10 + 250°C.	1°	40.30
10290	16"	0 + 600°F.	2°	41.45	10390	16"	-10 + 300°C.	1°	41.45
10292	16"	0 + 750°F.	2°	50.05	10392	16"	-10 + 400°C.	1°	50.05



Round Tube

Lens Tube

A factory certificate can be furnished on any of the above Thermometers. Net Price . . . . . \$1.00

# ENGRAVED THERMOMETERS

## COMPLETE WITH METAL ARMOR



With "Red-Reading-Mercury"

Thoroughly annealed and guaranteed accurate for life of thermometer. Tubes have button top to fit armor. Tested for Total Immersion. For Partial Immersion, see page 4.

Metal armor is made of tubing, nicked finish, with perforated end, and screw top, with ring.

For range up to 750° F. Brass armor is standard. Steel furnished when specified. For range 750° F. and higher, Steel armor is standard. When ordering refills, be sure to specify: "Button Top".

### ROUND FRONT TUBES—"Selected" High-Grade. Total Immersion

No.	Length	Range	Div.	List, Doz.	No.	Length	Range	Div.	List, Doz.
10400	6"	-30+120°F.	2°	\$30.90	10500	6"	-30+50°C.	1°	\$30.90
10402	6"	0+220°F.	2°	32.00	10502	6"	-10+110°C.	1°	32.00
10410	8"	-30+120°F.	2°	34.40	10510	8"	-30+50°C.	1°	34.40
10412	8"	0+220°F.	2°	35.50	10512	8"	-10+110°C.	1°	35.50
10420	10"	-30+120°F.	1°	39.10	10520	10"	-30+50°C.	1°	39.10
10422	10"	0+220°F.	2°	40.20	10522	10"	-10+110°C.	1°	40.20
10424	10"	0+300°F.	2°	41.35	10524	10"	-10+150°C.	1°	41.35
10440	12"	-30+120°F.	1°	43.80	10540	12"	-30+50°C.	1°	43.80
10442	12"	0+220°F.	2°	44.95	10542	12"	-10+110°C.	1°	44.95
10444	12"	0+300°F.	2°	46.00	10544	12"	-10+150°C.	1°	46.00
10446	12"	0+400°F.	2°	54.90	10546	12"	-10+200°C.	1°	54.90
10448	12"	0+500°F.	2°	56.00	10548	12"	-10+250°C.	1°	56.00
10450	12"	0+600°F.	2°	57.10	10550	12"	-10+300°C.	1°	57.10
10464	14"	0+300°F.	2°	49.50	10564	14"	-10+150°C.	1°	49.50
10466	14"	0+400°F.	2°	58.40	10566	14"	-10+200°C.	1°	58.40
10468	14"	0+500°F.	2°	59.50	10568	14"	-10+250°C.	1°	59.50
10470	14"	0+600°F.	2°	60.65	10570	14"	-10+300°C.	1°	60.65
10472	14"	0+750°F.	2°	68.40	10572	14"	-10+400°C.	1°	68.40
10484	16"	0+300°F.	2°	53.05	10584	16"	-10+150°C.	1°	53.05
10486	16"	0+400°F.	2°	61.90	10586	16"	-10+200°C.	1°	61.90
10488	16"	0+500°F.	2°	63.05	10588	16"	-10+250°C.	1°	63.05
10490	16"	0+600°F.	2°	64.10	10590	16"	-10+300°C.	1°	64.10
10492	16"	0+750°F.	2°	71.90	10592	16"	-10+400°C.	1°	71.90

### ROUND FRONT TUBE—"Selected" High-Range Thermometers Complete with Metal Armor

Borosilicate Glass. Plain Mercury Tube. Thoroughly annealed.

Note—"Red-Reading-Mercury" cannot be furnished on ranges above 750° F.

No.	Length	Range	Div.	List, Each	No.	Length	Range	Div.	List, Each
10496	16"	0+900°F.	5°	\$10.20	10596	16"	-10+500°C.	2°	\$10.20
10498	16"	0+1000°F.	5°	10.70	10598	16"	-10+550°C.	2°	10.70

### LENS FRONT TUBE—"Selected" High-Grade. Total Immersion

Complete with Metal armor. Magnified Tube. Wide Red column.

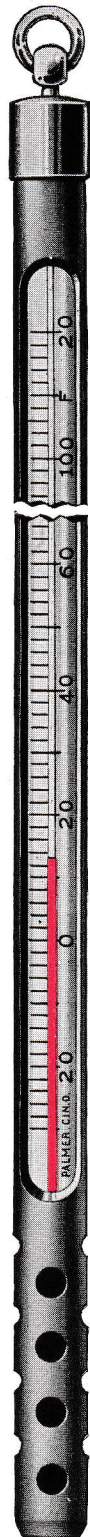
No.	Length	Range	Div.	List, Doz.	No.	Length	Range	Div.	List, Doz.
10600	6"	-30+120°F.	2°	\$32.80	10700	6"	-30+50°C.	1°	\$32.80
10602	6"	0+220°F.	2°	34.00	10702	6"	-10+110°C.	1°	34.00
10610	8"	-30+120°F.	2°	36.40	10710	8"	-30+50°C.	1°	36.40
10612	8"	0+220°F.	2°	37.60	10712	8"	-10+110°C.	1°	37.60
10620	10"	-30+120°F.	1°	41.20	10720	10"	-30+50°C.	1°	41.20
10622	10"	0+220°F.	2°	42.40	10722	10"	-10+110°C.	1°	42.40
10624	10"	0+300°F.	2°	43.70	10724	10"	-10+150°C.	1°	43.70
10640	12"	-30+120°F.	1°	46.00	10740	12"	-30+50°C.	1°	46.00
10642	12"	0+220°F.	2°	47.30	10742	12"	-10+110°C.	1°	47.30
10644	12"	0+300°F.	2°	48.45	10744	12"	-10+150°C.	1°	48.45
10646	12"	0+400°F.	2°	58.25	10746	12"	-10+200°C.	1°	58.25
10648	12"	0+500°F.	2°	59.45	10748	12"	-10+250°C.	1°	59.45
10650	12"	0+600°F.	2°	60.65	10750	12"	-10+300°C.	1°	60.65
10664	14"	0+300°F.	2°	52.05	10764	14"	-10+150°C.	1°	52.05
10666	14"	0+400°F.	2°	61.85	10766	14"	-10+200°C.	1°	61.85
10668	14"	0+500°F.	2°	63.05	10768	14"	-10+250°C.	1°	63.05
10670	14"	0+600°F.	2°	64.30	10770	14"	-10+300°C.	1°	64.30
10672	14"	0+750°F.	2°	72.85	10772	14"	-10+400°C.	1°	72.85
10684	16"	0+300°F.	2°	55.70	10784	16"	-10+150°C.	1°	55.70
10686	16"	0+400°F.	2°	65.45	10786	16"	-10+200°C.	1°	65.45
10688	16"	0+500°F.	2°	66.70	10788	16"	-10+250°C.	1°	66.70
10690	16"	0+600°F.	2°	67.85	10790	16"	-10+300°C.	1°	67.85
10692	16"	0+750°F.	2°	76.45	10792	16"	-10+400°C.	1°	76.45

### PERFORATED END METAL ARMORS ONLY

Made of 3/8" O.D. tubing, nicked finish. German-silver ring at top. On range 750° F. and higher, steel armor is furnished. On ranges below 750° F. brass armor is standard and steel armor furnished when specified.

No.	Length	List, Each	
		Brass or Steel	Stainless Steel
13850	6"	\$1.00	\$3.50
13852	8"	1.20	3.50
13854	10"	1.50	3.50
13856	12"	1.80	3.60
13858	14"	2.00	4.00
13860	16"	2.20	4.40
13862	18"	2.75	5.00
13866	24"	4.40	6.00

Note—Monel-metal armors not carried in stock. Write for prices.



Illustrating Partial Immersion Thermometer in Armor

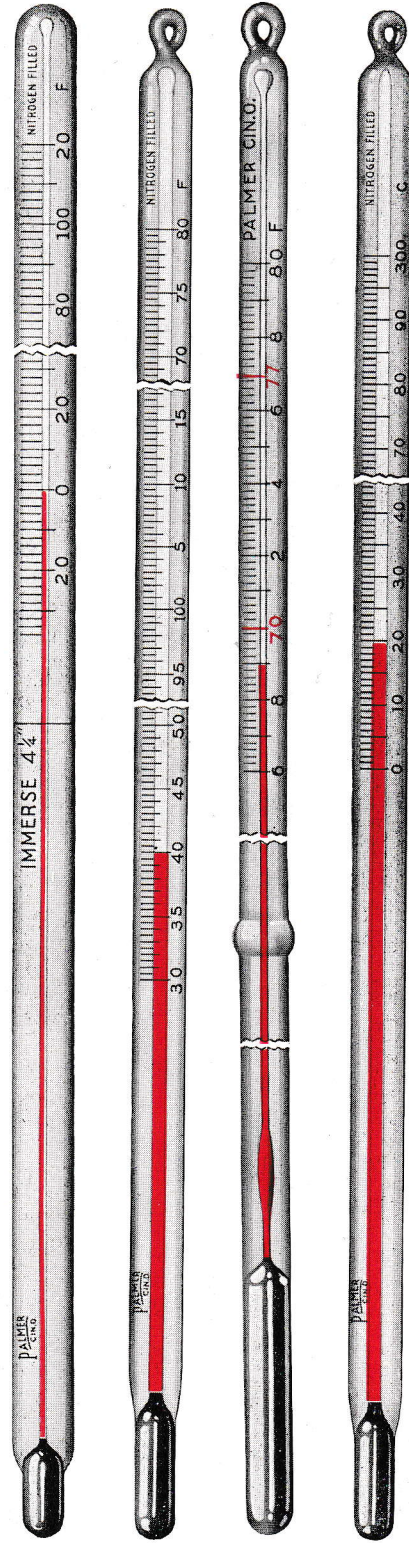


# A. S. T. M. AND PRECISION STYLE ENGRAVED THERMOMETERS

The American Society for Testing Materials has compiled definite specifications on certain standard types of Thermometers. There are also other such specifications recognized in the trade. We guarantee to furnish Thermometers, made according to these specifications for dimensions and accuracy. Thermometers with "Red-Reading-Mercury" feature are accepted by the U. S. Bureau of Standards for test and certification. You can see from illustrations herewith that the red column is very easy to read. There is no extra charge for this new feature, so be sure to specify:

## "RED-READING-MERCURY"

(Note—Round glass tube is standard; lens glass may be specified by the user at no extra cost)							
Round Glass	Lens Glass	Description	Range	Div.	Immer-sion	Length	List. Doz.
<b>Cloud and Pour Test</b>							
12000	12100	Cold test.....	-36 +120°F.	2°	4.25"	8.75"	\$31.10
12001	12101	Cold test.....	-38 + 50°C.	1°	103mm	222mm	31.10
12004	12104	Low (cold test)*.....	-70 + 70°F.	2°	3"	9"	48.00
12005	12105	Low (cold test)*.....	-60 + 20°C.	1°	76mm	230mm	48.00
*Not mercury.							
<b>Pitch and Tar Melting</b>							
12020	12120	Low Softening Point.....	+30 +180°F.	½°	total	15"	50.00
12021	12121	Low Softening Point.....	-2 + 80°C.	1/5°	total	381mm	50.00
12030	12130	High Softening Point.....	+85 +392°F.	1°	total	15"	55.50
12031	12131	High Softening Point.....	+30 +200°C.	½°	total	381mm	55.50
<b>Paraffine &amp; Wax Melting Point</b>							
12040	12140	.....	+100 +180°F.	1/5°	3-1/8"	14 ½"	66.65
12041	12141	.....	+38 + 82°C.	1/10°	79mm	368mm	66.65
<b>Naphthalene Melting Point</b>							
12045	12145	B-S 340.....	+74 +102°C.	1/10°	total	340 mm	88.80
12050	12150	Butane N.G.A.A.....	-40 +120°F.	1°	3"	12"	31.10
<b>Saybolt Viscosity</b>							
12060	12160	Test Points 70° and 77°F.....	+66 + 80°F.	1/5°	total	10"	38.85
12061	12161	Test Point 25°C. and 21.1.....	+19 + 27°C.	1/10°	total	254mm	38.85
12064	12164	Test Point 100°F.....	+94 +108°F.	1/5°	total	10"	38.85
12065	12165	Test Point 37.8.....	+34 + 42°C.	1/10°	total	254mm	38.85
12068	12168	Test Points 122° and 130°F.....	+120 +134°F.	1/5°	total	10"	38.85
12069	12169	Test Point 50°C. and 54.4.....	+49 + 57°C.	1/10°	total	254mm	38.85
12070	12170	Test Point 140°F.....	+134 +148°F.	1/5°	total	10"	38.85
12071	12171	Test Point 60°C.....	+57 + 65°C.	1/10°	total	254mm	38.85
12072	12172	Test Point 210°F.....	+204 +218°F.	1/5°	total	10"	38.85
12073	12173	Test Point 98.9°C.....	+95 +103°C.	1/10°	total	254mm	38.85
12074	12174	Test Point 180°F.....	+174 +188°F.	1/5°	total	10"	38.85
12075	12175	Test Point 82.2°C.....	+79 + 87°C.	1/10°	total	254mm	38.85
<b>Reid Vapor Pressure</b>							
Use No. 12064 Thermometer listed above.							
<b>Engler Viscosity with Brass Ferrule—(Not A.S.T.M.)</b>							
12081	12181	.....	+10 + 50°C.	1/2°	3-3/4"	230mm	50.00
12083	12183	.....	+10 +150°C.	1°	3-3/4"	230mm	50.00
12085	12185	.....	+10 +200°C.	1°	3-3/4"	265mm	61.10
12087	12187	.....	+50 +100°C.	1/2°	3-3/4"	230mm	50.00
(A.S.T.M.)							
12091	12191	Test Point 25°C.....	+18 + 28°C.	1/5°	90mm	204mm	50.00
12093	12193	Test Points 40° and 50°C.....	+39 + 54°C.	1/5°	90mm	229mm	60.00
12095	12195	Test Point 100°C.....	+95 +105°C.	1/5°	90mm	204mm	50.00
<b>Specific Gravity</b>							
12200	12300	.....	-5 +215°F.	1/2°	total	16"	55.50
12201	12301	.....	-20 +102°C.	1/5°	total	406mm	55.50



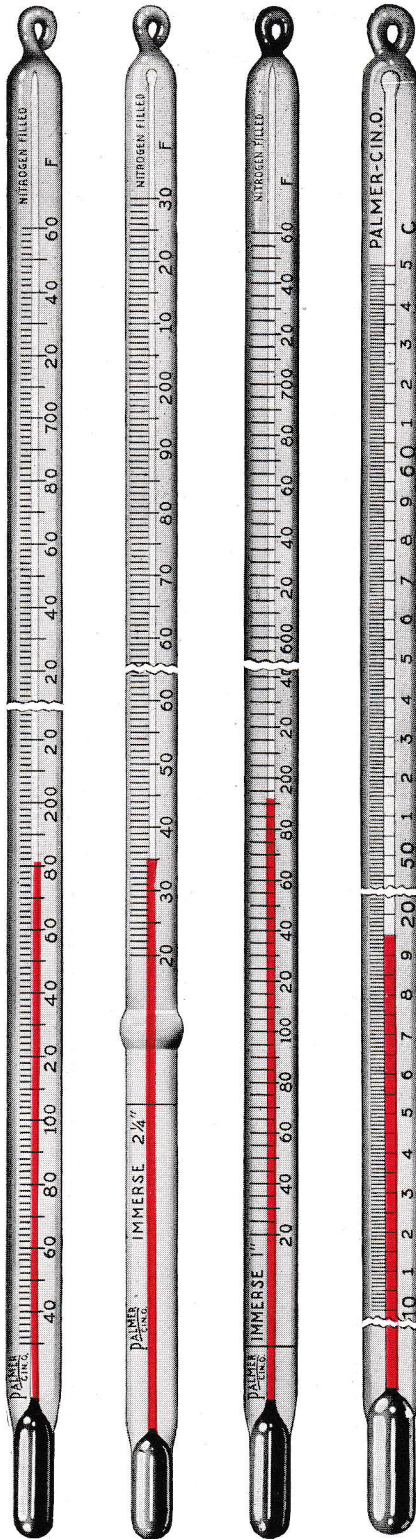
No. 12000      No. 12120      No. 12060      No. 12325

For Factory Certificate furnished on any of these Thermometers, add to Net Price.....\$1.00 each

# A. S. T. M. PRECISION, TITER TEST AND FRACTIONAL DIVISION THERMOMETERS



"RED-READING-MERCURY"



No. 12234, No. 12260, No. 12268, No. 12581

Round Glass	Lens Glass	Description	Range	Div.	Immer- sion	Length	List, Doz.
<b>Distillation</b>							
12224	12324	Low.....	+30+580°F.	2°	total	15"	\$46.65
12225	12325	Low.....	0+300°C.	1°	total	381mm	46.65
12234	12334	High.....	+30+760°F.	2°	total	15"	55.50
12235	12335	High.....	0+400°C.	1°	total	381mm	55.50
12241	12341	Turpentine Distillation.....	+145+200°C.	1/5°	total	305mm	66.65
12245	12345	Loss on Heat.....	+155+170°C.	1/2°	total	152mm	84.00
<b>Flash and Fire</b>							
12260	12360	P. M. and Tag. Closed Tester.	+20+230°F.	1°	2-1/4"	10 3/4"	50.00
12261	12361	P. M. and Tag. Closed Tester.	-7+110°C.	1/2°	57mm	275mm	50.00
12264	12364	Pensky Martin.....	+200+700°F.	5°	2-1/4"	10 3/4"	66.65
12265	12365	Pensky Martin.....	+90+370°C.	2°	57mm	275mm	66.65
<b>Cleveland Open-cup Tester</b>							
12268	12368	.....	+20+760°F.	5°	1"	12"	55.50
12269	12369	.....	-6+400°C.	2°	25mm	305mm	55.50
<b>Junkers Style Gas Calorimeter</b>							
12280	12380	Recommended by A. G. I. (in rd. wood box).....	+45+100°F.	1/10°	total	18"	144.00
12282	12382	Recommended by A. G. I. (in rd. wood box).....	+60+110°F.	1/10°	total	18"	144.00
Note—With felt-lined metal case, No. 13892 add to list..... 42.00							
<b>A. S. T. M. General Use</b>							
12410	12510	E1 (1F-39).....	0+300°F.	2°	3"	12"	44.40
12411	12511	E1 (1C-39).....	-20+150°C.	1°	76mm	305mm	44.40
12414	12514	E1 (2F-39).....	+20+580°F.	2°	3"	15"	55.50
12415	12515	E1 (2C-39).....	-5+300°C.	1°	76mm	381mm	55.50
12418	12518	E1 (3F-39).....	+20+760°F.	2°	3"	16"	66.65
12419	12519	E1 (3C-39).....	-5+400°C.	1°	76mm	406mm	66.65
12439	12539	Titer Test (not A.S.T.M.)....	-20+ 0°C.	1/10°	37mm	250mm	55.50
12441	12541	Titer Test (not A.S.T.M.)....	0+ 20°C.	1/10°	37mm	250mm	55.50
12445	12545	Titer Test (not A.S.T.M.)....	+10+ 30°C.	1/10°	37mm	250mm	55.50
12447	12547	Titer Test (not A.S.T.M.)....	+15+ 35°C.	1/10°	37mm	250mm	55.50
12449	12549	Titer Test (not A.S.T.M.)....	+20+ 40°C.	1/10°	37mm	250mm	55.50
12451	12551	Titer Test (not A.S.T.M.)....	+25+ 45°C.	1/10°	37mm	250mm	55.50
12453	12553	Titer Test (not A.S.T.M.)....	+30+ 50°C.	1/10°	37mm	250mm	55.50
12459	12559	Titer Test (not A.S.T.M.)....	+45+ 65°C.	1/10°	37mm	250mm	55.50
12481	12581	Titer Test (not A.S.T.M.)....	+10+ 65°C.	1/10°	total	16"	86.65
<b>Research Testing</b>							
12483	12583	MCA-G-1.....	-20+150°C.	1°	76mm	303mm	44.40
12485	12585	MCA-G-2.....	-5+400°C.	1°	76mm	406mm	66.65
12487	12587	MCA-G-3.....	-5+300°C.	1°	76mm	380mm	55.50
12493	12593	MCA-R-1.....	-36+ 54°C.	1/5°	76mm	406mm	74.00
12495	12595	MCA-R-2.....	-10+ 80°C.	1/5°	76mm	406mm	74.00
12497	12597	MCA-R-3.....	+70+160°C.	1/5°	76mm	406mm	74.00
12499	12599	MCA-R-4.....	+140+230°C.	1/5°	76mm	406mm	74.00
<b>Fractional Division—Precision Style</b>							
12610	12710	.....	-20+120°F.	1/2°	total	12"	List, Each 4.50
12612	12712	.....	+30+220°F.	1/2°	total	12"	5.50
12630	12730	.....	-20+100°F.	1/5°	total	16"	7.50
12632	12732	.....	+20+120°F.	1/5°	total	16"	7.50
12634	12734	.....	+30+220°F.	1/2°	total	16"	6.50
12651	12751	.....	-30+ 50°C.	1/2°	total	12"	4.50
12653	12753	.....	-10+110°C.	1/2°	total	12"	5.50
12671	12771	.....	-30+ 30°C.	1/10°	total	16"	7.50
12673	12773	.....	0+ 50°C.	1/10°	total	16"	7.50
12675	12775	.....	0+110°C.	1/5°	total	16"	7.50
12680	12780	.....	+20+120°F.	1/10°	total	24"	13.00
12682	12782	.....	0+220°F.	1/5°	total	24"	13.00
12692	12792	.....	0+110°C.	1/10°	total	24"	13.00
12696	12796	.....	0+200°C.	1/5°	total	24"	14.00

For Factory Certificate furnished on any of these Thermometers, add to Net Price.....\$1.00 each





## POCKET THERMOMETERS

This type of thermometer is used for making quick tests and being light weight, can easily be carried in vest pocket, handy for tests at all times. The complete thermometer, including metal case and ring at top, measures 6". (Illustrations are full-size.) The Glass tube is engraved and is strong and durable. Metal case is made of brass tubing, white-nickel finish, with polished nickel cap and German-silver ring. Black spring pocket clip attached to case. Cap is constructed so that new tube can be inserted easily. Rubber cushion at bottom inside of case to protect the bulb.

The "Red-Reading-Mercury" style is very reliable and easy to read. It is sensitive and quick-acting. The red-spirit tube is guaranteed to be non-fading.

**Reversible Cap**—A different style of cap can be furnished on Pocket thermometers, whereby the ring is eliminated and this section of cap (at top) is threaded. The bottom part of case is screwed to the cap and this extension then acts as a handle. No extra charge for this style. Specify on order: "With Reversible Cap."

### REGULAR INDICATING THERMOMETER

No.	Feature	Style	Range	Div.	Complete Thermometer List, Each	No.	Tube only (Refill) List, Each
13200	"Red-Reading-Mercury"	Lens	-20+120°F.	2°	\$1.75	13300	\$1.50
13202	"Red-Reading-Mercury"	Lens	0+120°F.	1°	1.75	13302	1.50
13204	"Red-Reading-Mercury"	Lens	0+220°F.	2°	1.75	13304	1.50
13208	"Red-Reading-Mercury"	Lens	+50+500°F.	5°	2.50	13308	2.25
13220	Red Spirit	Lens	-20+120°F.	2°	1.50	13320	1.25
13222	Red Spirit	Lens	0+120°F.	1°	1.50	13322	1.25
13224	Red Spirit	Lens	0+220°F.	2°	1.50	13324	1.25
13240	"Red-Reading-Mercury"	Round	-20+120°F.	2°	1.50	13340	1.25
13242	"Red-Reading-Mercury"	Round	0+120°F.	1°	1.50	13342	1.25
13244	"Red-Reading-Mercury"	Round	0+220°F.	2°	1.50	13344	1.25
13248	"Red-Reading-Mercury"	Round	+50+500°F.	5°	2.25	13348	2.00
13260	Red Spirit	Round	-20+120°F.	2°	1.25	13360	1.00
13262	Red Spirit	Round	0+120°F.	1°	1.25	13362	1.00
13264	Red Spirit	Round	0+220°F.	2°	1.25	13364	1.00

### POINTED BULB POCKET THERMOMETER

This thermometer is used where the bulb must pierce the outer surface, such as fruit, etc., or when testing yeast, loaf-bread, etc., where the hole left after testing must be as small as possible. The bulb is drawn from the stem and is made strong and sturdy. Sensitive and quick-acting. The **Red** column is very easy to read.

No.	Style	Range	Div.	Complete Thermometer List, Each	No.	Tube Only (Refill) List, Each
13400	Lens	-20+120°F.	2°	\$2.75	13500	\$2.50
13402	Lens	0+120°F.	1°	2.75	13502	2.50
13404	Lens	0+220°F.	2°	2.75	13504	2.50
13420	Round	-20+120°F.	2°	2.50	13520	2.25
13422	Round	0+120°F.	1°	2.50	13522	2.25
13424	Round	0+220°F.	2°	2.50	13524	2.25

### MAXIMUM-REGISTERING THERMOMETERS

These engraved tubes are constructed with a contraction in the bore of tube (between bulb and the graduation) which will allow the mercury to rise and remain at the maximum temperature indicated, until shaken down. (This action is the same as that in a Fever Thermometer.) The mercury is shaken down before using again, by a downward swinging motion. Where it is necessary to take the temperature and remove the tube to read same, we would recommend a Maximum-Registering style thermometer with the **Red** column.

### MAXIMUM-REGISTERING POCKET THERMOMETERS

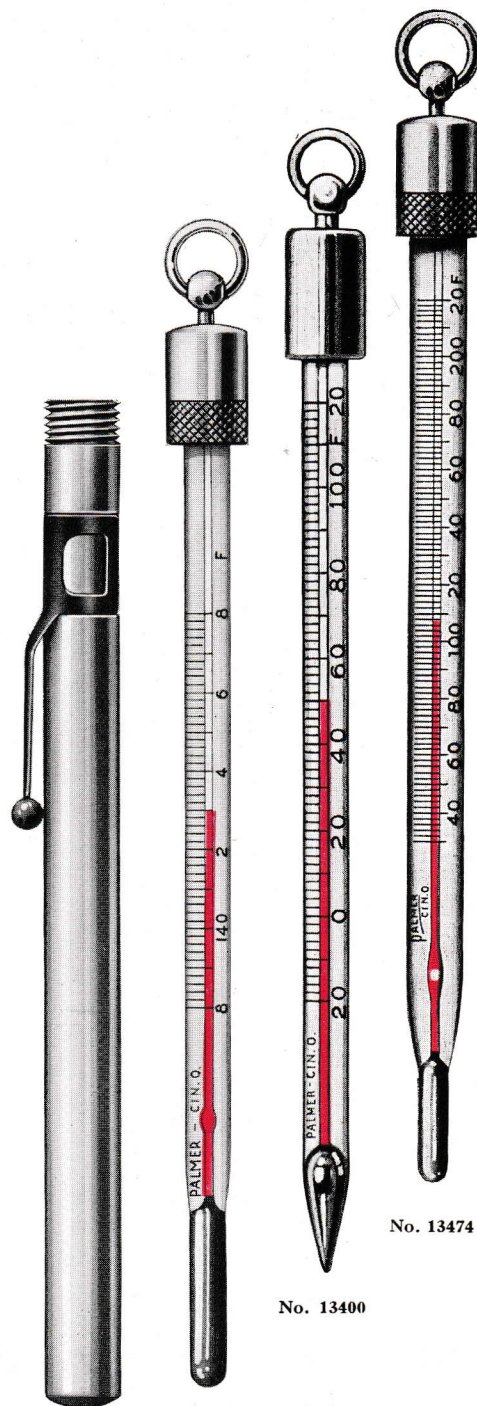
No.	Style	Range	Div.	Complete Thermometer List, Each	No.	Tube Only (Refill) List, Each
13472	Round	+30+120°F.	1°	\$3.50	13572	\$3.25
13474	Round	+30+220°F.	2°	3.75	13574	3.50
13482	Round	0+50°C.	1°	3.50	13582	3.25
13484	Round	0+110°C.	1°	3.75	13584	3.50

(For Lens Glass, add 25c list, each extra.)

### MAXIMUM-REGISTERING THERMOMETER FOR METAL ARMOR (Perforated End)

No.	Style	Length	Range	Div.	Complete in Armor, List, Each	No.	Tube Only (Refill) List, Each
13100	Round	6"	+30+120°F.	1°	\$4.50	13000	\$3.50
13102	Round	6"	+100+220°F.	1°	4.75	13002	3.75
13104	Round	6"	+100+360°F.	2°	5.00	13004	4.00
13110	Round	8"	+30+120°F.	1°	5.20	13010	4.00
13112	Round	8"	+100+220°F.	1°	5.45	13012	4.25
13114	Round	8"	+100+360°F.	2°	5.70	13014	4.50
13120	Round	6"	0+50°C.	1°	4.50	13020	3.50
13122	Round	6"	+30+100°C.	1°	4.75	13022	3.75
13124	Round	6"	+30+180°C.	1°	5.00	13024	4.00
13130	Round	8"	0+50°C.	1°	5.20	13030	4.00
13132	Round	8"	+30+100°C.	1°	5.45	13032	4.25
13134	Round	8"	+30+180°C.	1°	5.70	13034	4.50

(For Lens Glass, add 25c list each, extra.)



No. 13240

No. 13400

No. 13474

# SKEWER TYPE THERMOMETER



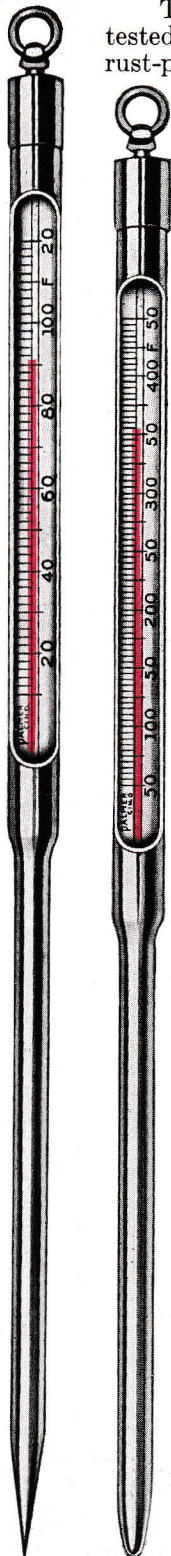
## MEAT TESTING

Cold or Frozen Meat; Baked or Roasted Meat; Hot-Bread, Dough, Fruit, Pulp, etc.

The bottom of metal armor has a pointed or skewer end, used for piercing the object to be tested. This armor is made of one-piece 18-8 stainless steel, with a polished surface, which is rust-proof. Can be kept clean and sanitary.

Length, 11"; stem section,  $4\frac{3}{4}$ " under shoulder. The tube is tested for  $4\frac{3}{4}$ " immersion. Diameter of Stem section,  $\frac{9}{32}$ ". Tube is nitrogen filled and thoroughly annealed.

"Red-Reading-Mercury" feature makes this thermometer ideal for many purposes.



No. 13610

No. 13662

No. 13800

No.	Style	Range	Div.	Complete Thermometer List, Each	No.	Tube Only (Repair) List, Each
13600	Lens	+20+120°F.	2°	\$5.50	13700	\$3.25
13604	Lens	+100+220°F.	2°	5.50	13704	3.25
13606	Lens	+20+220°F.	2°	5.50	13706	3.25
13610	Round	+20+120°F.	2°	5.25	13710	3.00
13614	Round	+100+220°F.	2°	5.25	13714	3.00
13616	Round	+20+220°F.	2°	5.25	13716	3.00

Note—When repairing above style thermometer, the metal armor must be returned to the factory for assembly.

## ASPHALT TESTING

For Asphalt, Tar, Pitch, Hot Lead, Solder, Sand, etc.

This metal armor is similar in construction to the above Meat-Testing Thermometer, with the exception that only the stem section is made of stainless steel and that the bottom point is rounded somewhat.

11" tube; Nitrogen filled and thoroughly annealed; tested for  $4\frac{3}{4}$ " immersion, under shoulder; diameter of stem,  $\frac{9}{32}$ ". Has the easy-reading "Red-Reading-Mercury" feature.



No. 13800

No.	Style	Range	Div.	Complete Thermometer List, Each	No.	Tube Only (Repair) List, Each
13650	Lens	+200+450°F.	5°	\$7.50	13750	\$4.75
13652	Lens	+50+450°F.	5°	7.50	13752	4.75
13654	Lens	+100+600°F.	5°	7.50	13754	4.75
13660	Round	+200+450°F.	5°	7.25	13760	4.50
13662	Round	+50+450°F.	5°	7.25	13762	4.50
13664	Round	+100+600°F.	5°	7.25	13764	4.50

Note—Metal armor must be returned to the factory for assembly on repairs.

## Pocket Style Asphalt Testing Thermometer

With "Red-Reading-Mercury"

With removable Guard. Overall length, 7". Bulb is pointed, as illustrated, and can be furnished plain or with copper-plating. Guard is removed when making tests. Complete thermometer can be carried around by road men, making tests of asphalt, tar, pitch, etc.

No.	Style	Range	Div.	Complete Thermometer List, Each	Bulb	No.	Tube Only (Repair) List, Each
13800	Lens	+200+450°F.	5°	\$7.50	Coppered	13900	\$4.75
13802	Lens	+200+450°F.	5°	6.50	Plain	13902	3.75
13810	Round	+200+450°F.	5°	7.25	Coppered	13910	4.50
13812	Round	+200+450°F.	5°	6.25	Plain	13912	3.50



# ENCLOSED ARMORED STYLE THERMOMETERS

Used by a great many Inspectors because of its extreme accuracy and "Red-Reading-Mercury" feature and because tube is protected against breakage.

Visible portion of tube.....	8"	Depth of immersion.....	2"
Bulb chamber.....	2"	Overall length.....	13 3/4"

The bulb chamber (at bottom) contains a bath of mercury, surrounding the bulb, tightly sealed, so that thermometer registers quickly and accurately. Additional metal carrying-case can be secured for protection when thermometer is not in use. Note spring clip inside, to eliminate free play.

No.	Range	No.	Range	Tube	Feature	List, Each
14060	0+120°F.	14062	0+220°F.	Lens	In metal armor	\$7.75
14070	0+120°F.	14072	0+220°F.	Lens	With carrying case	8.50
14080	0+120°F.	14082	0+220°F.	Lens	Tube only	4.00
14090	0+120°F.	14092	0+220°F.	Round	In metal armor	7.50
14100	0+120°F.	14102	0+220°F.	Round	With carrying case	8.25
14110	0+120°F.	14112	0+220°F.	Round	Tube only	3.75

Note—When ordering Tube only (on repairs) it is necessary to return the metal armor to the factory for assembly.

## FELT-LINED CASES

Brass case, with felt lining, for Precision and Special Test Thermometers. Inside diameter,  $\frac{5}{16}$ ".

No.	Length	List, Each	No.	Length	List, Each
13880	6"	\$2.00	13889	15"	\$3.25
13882	8"	2.25	13890	16"	3.25
13884	10"	2.50	13892	18"	3.50
13886	12"	2.75	13894	20"	3.75
13888	14"	3.00	13898	24"	4.00

## MISCELLANEOUS INFORMATION

### SPECIAL RANGES—(Thermometers Pages 4 and 5)

The range must start at a point which will not allow the mercury to recede into the bulb at zero. Where this is not possible, a reservoir is placed in the tube, between the bulb and first graduation. Special Ranges (with standard subdivision) without bottom reservoir..... Add to list, 25%  
 Special Ranges (with standard subdivision) with bottom reservoir..... Add to list, 50%  
 Combination Fahrenheit and Centigrade range..... Add to list, 25%  
 Where 1° subdivision is standard and 1/2° is wanted..... Add to list, 25%  
 If 2° is standard and 1° is wanted..... Add to list, 25%

If special range is ordered and Fahrenheit and Centigrade are also wanted, then add only the extra charge for special range. This applies also for special subdivision as we do not charge extra twice.

## TEST WELLS

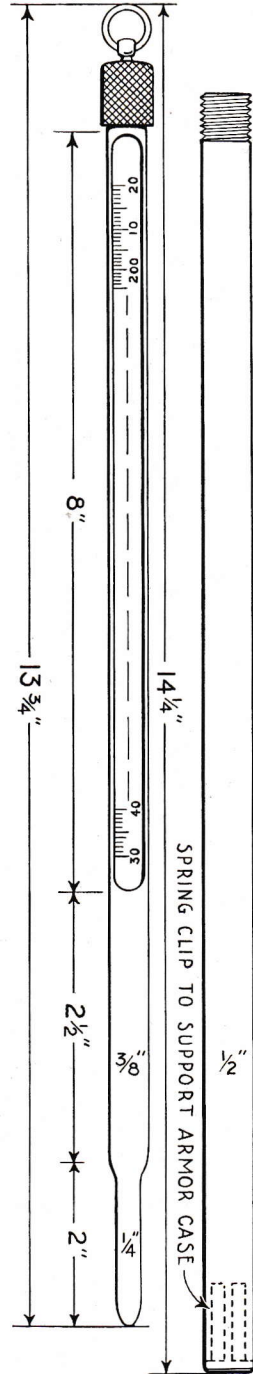
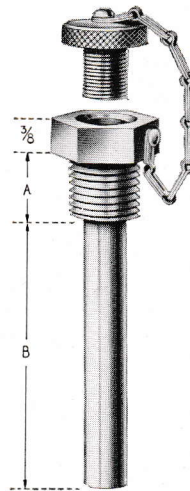
For use with Engraved All-glass Thermometers. Fitted with Plug and Chain, to keep out dirt, when not in use. Polished machined finish, with white nickel plate.

### DIMENSIONS (I. P. S. Thread)

	1/2" Thread	3/4" Thread	1" Thread	
Hexagon nut.....	3/8" x 1 1/8"	3/8" x 1 1/8"	3/8" x 1 1/2"	
Length of thread "A"...	3/4"	1"	1"	
Inside diameter.....	13/32"	7/16"	7/16"	
Outside diameter.....	1/2"	11/16"	11/16"	
O. D.—Extension Stem.....	.....	1 1/16"	1 5/16"	

No.	"B" Stem Length (Under Thread)	List, Each			
		1/2" and 3/4" Thread		1" Thread	
		Steel	Stainless Steel	Steel	Stainless Steel
13950	1 1/2"	\$2.50	\$6.00	\$2.90	\$6.95
13952	2 1/2"	2.75	6.95	3.15	8.00
13954	2 1/2"	3.00	7.90	3.40	9.05
13956	3 1/2"	3.30	8.85	3.70	10.10
13958	3 1/2"	3.60	9.80	4.00	11.15
13960	4 1/2"	4.00	10.75	4.40	12.20
13962	4 1/2"	4.40	11.75	5.00	13.30
13964	5 1/2"	4.80	12.80	5.40	14.40

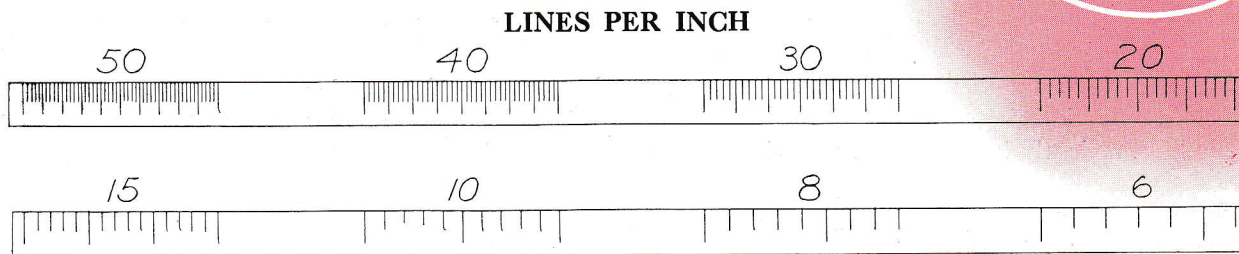


No. 14102

For Longer Length Test Well, 1/2" and 3/4" thread, figure 80% of list price for separable sockets and for 1" thread, figure 90% of list price for sockets, see page 15.

For Extension Neck Test Wells, these are made up, at no extra cost. Standard extension, 2 1/2" between hexagon and first thread. Order must specify: "Extension neck, 2 1/2". Stem below thread.....". Price is figured for total length of stem including extension neck.

# LINE SPACING ON ENGRAVED THERMOMETERS



Length	Approximate Scale Length	Range, °F.	Sub-divisions	Lines per Inch	Range, °C	Sub-divisions	Lines per Inch
5" Pocket	3 <sup>3</sup> / <sub>8</sub> "	-20+120	2°	21	-30+ 50	1°	24
5" "	3 <sup>3</sup> / <sub>8</sub> "	0+220	2°	33	-10+110	1°	36
5 <sup>1</sup> / <sub>2</sub> " "	3 <sup>3</sup> / <sub>4</sub> "	-20+120	2°	18	-30+ 50	1°	21
5 <sup>1</sup> / <sub>2</sub> " "	3 <sup>3</sup> / <sub>4</sub> "	0+220	2°	29	-10+110	1°	32
6" "	4"	-20+120	2°	17	-30+ 50	1°	20
6" "	4"	0+220	2°	27	-10+110	1°	30
6" Regular	4 <sup>1</sup> / <sub>4</sub> "	-20+120	2°	16	-30+ 50	1°	19
6" "	4 <sup>1</sup> / <sub>4</sub> "	0+220	2°	26	-10+110	1°	28
8" "	5 <sup>3</sup> / <sub>4</sub> "	-20+120	2°	12	-30+ 50	1°	14
8" "	5 <sup>3</sup> / <sub>4</sub> "	0+220	2°	19	-10+110	1°	21
10" "	7 <sup>1</sup> / <sub>2</sub> "	-20+120	1°	18	-30+ 50	1°	11
10" "	7 <sup>1</sup> / <sub>2</sub> "	0+220	2°	15	-10+110	1°	16
10" "	7 <sup>1</sup> / <sub>2</sub> "	0+300	2°	20	-10+150	1°	21
12" "	9 <sup>3</sup> / <sub>4</sub> "	-20+120	1°	14	-30+ 50	1°	8
12" "	9 <sup>3</sup> / <sub>4</sub> "	0+220	2°	11	-10+110	1°	12
12" "	9 <sup>3</sup> / <sub>4</sub> "	0+300	2°	15	-10+150	1°	16
12" "	9 <sup>3</sup> / <sub>4</sub> "	0+400	2°	20	-10+200	1°	22
12" "	9 <sup>3</sup> / <sub>4</sub> "	0+500	2°	26	-10+250	1°	27
12" "	9 <sup>3</sup> / <sub>4</sub> "	0+600	2°	31	-10+300	1°	32
14" "	11 <sup>1</sup> / <sub>2</sub> "	0+300	2°	13	-10+150	1°	14
14" "	11 <sup>1</sup> / <sub>2</sub> "	0+400	2°	17	-10+200	1°	18
14" "	11 <sup>1</sup> / <sub>2</sub> "	0+500	2°	22	-10+250	1°	23
14" "	11 <sup>1</sup> / <sub>2</sub> "	0+600	2°	26	-10+300	1°	27
14" "	11 <sup>1</sup> / <sub>2</sub> "	0+750	2°	32	-10+400	1°	35
16" "	13 <sup>1</sup> / <sub>2</sub> "	0+300	2°	11	-10+150	1°	12
16" "	13 <sup>1</sup> / <sub>2</sub> "	0+400	2°	15	-10+200	1°	16
16" "	13 <sup>1</sup> / <sub>2</sub> "	0+500	2°	18	-10+250	1°	19
16" "	13 <sup>1</sup> / <sub>2</sub> "	0+600	2°	22	-10+300	1°	23
16" "	13 <sup>1</sup> / <sub>2</sub> "	0+750	2°	26	-10+400	1°	30

The above chart gives you the approximate length of graduations on various standard Engraved Thermometers and the number of lines per inch. In this way, you can get some idea of how close together the graduations will be. Actual illustration of the number of lines per inch will be found at the top. For thermometers not listed here, you can figure out approximately the number of graduations that would be wanted and then figure out the space this would take on various lengths of thermometers and in this way figure out just how the graduations would appear. Many times a customer orders a range of temperature that is impractical to make in the space wanted. Use the above as your guide.

Note—Where tube must fit armor, reduce the space for engraving by approximately 1<sup>1</sup>/<sub>2</sub>".

## Mercury Separation

Mercury separation occurs occasionally in shipping when the shipment receives rough handling, and can be joined very easily in this manner:

**Where reservoir is at top of tube:** Place the bulb of thermometer in a warm mixture or over a flame, sufficient to allow the mercury to rise slowly in the tube, until it enters the reservoir or enlargement. Remove the bulb at once from the flame, as the mercury will continue to rise a little, and if this reservoir is allowed to fill completely, the internal pressure will cause the tube to break. (Keep thermometer in upright position.) Then give the tube a sideway motion or jar and the small particle of entrapped gas will rise above the mercury, and when the mercury recedes it will be joined.

**Where reservoir is at bottom of tube:** Cool the thermometer bulb in shaved ice so as to draw the mercury to the lower part of this reservoir. (Add more ice and salt to lower the temperature if necessary.) Then tap the bottom of bulb (with thermometer in upright position) on a padded piece of paper or cloth, when the entrapped gas will rise to the top of the mercury. Test can be made with a standard thermometer to be sure that the mercury is entirely joined.



## CUP STYLE THERMOMETERS

With "Red-Reading-Mercury"

This style thermometer has a closed bottom, forming a cup, which retains some of the liquid being tested, thus preventing a change in temperature around the bulb, sufficiently long enough to obtain a more accurate reading.

### CYLINDRICAL STYLE

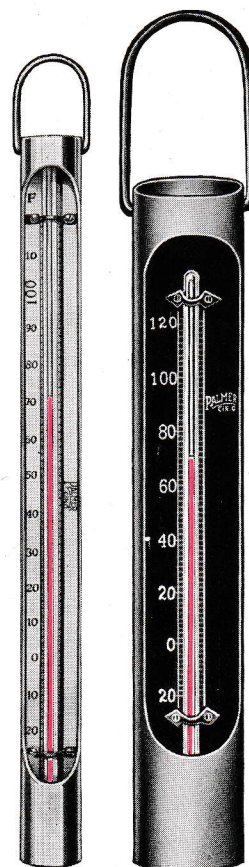
This type of case is made of Brass Tubing, closed at bottom, nickel-plated finish, is sturdy and built for long usage. Lens tube; graduated V-shaped metal scale; tube and scale are removable in case of breakage.

**Wide cup case measurement:** 1 3/4" diameter by 12" length.

**Narrow cup case measurement:** 1" diameter by 12" length.

(Length does not include bail at top.)

No.	Description	Range	List, Doz.
G-2165	Wide Cup Case . . . . .	-20+120°F.	\$54.00
G-2166	Wide Cup Case . . . . .	-20+220°F.	54.00
G-2167	Narrow Cup Case . . . . .	-20+120°F.	36.00
G-2168	Narrow Cup Case . . . . .	-20+220°F.	36.00
G-2165TS	Refills (Wide) . . . . .	-20+120°F.	21.00
G-2166TS	Refills (Wide) . . . . .	-20+220°F.	21.00
G-2167TS	Refills (Narrow) . . . . .	-20+120°F.	21.00
G-2168TS	Refills (Narrow) . . . . .	-20+220°F.	21.00



No. 2167—Cup Thermometer      No. 2165—Cup Thermometer

### WOODBACk STYLE

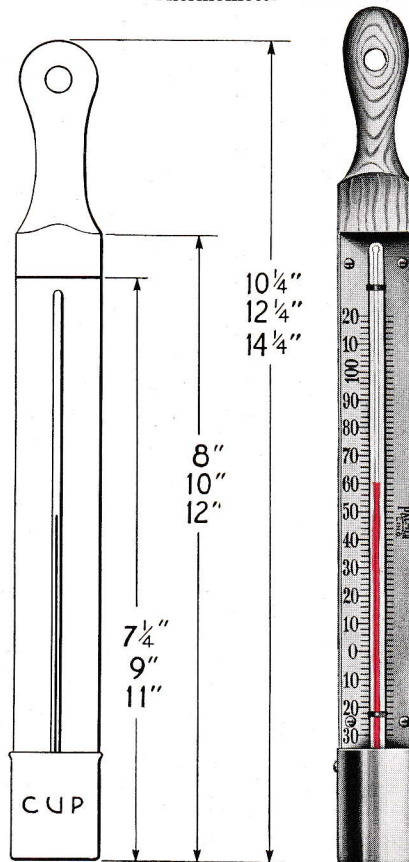
One-piece woodback, with seamless brass cup at bottom; graduated V-shaped metal scale; lens tube; 2" wood handle at top. See sketch for measurements of three sizes. Also furnished with engraved tube and plain scale.

Size No.	Graduated Metal Scale			Engraved Tube-Blank Scale		
	No.	Range	List, Doz.	No.	Range	List, Doz.
8"	2180	-20+120°F.	\$21.50	2181	-20+120°F.	\$26.50
8"	2182	-20+220°F.	21.50	2183	-20+220°F.	26.50
10"	2185	-20+120°F.	24.00	2186	-20+120°F.	29.50
10"	2187	-20+220°F.	24.00	2188	-20+220°F.	29.50
12"	2190	-20+120°F.	27.00	2191	-20+120°F.	33.00
12"	2192	-20+220°F.	27.00	2193	-20+220°F.	33.00

Note—Above sizes do not include handle (see sketch).

With metal bail thru wood handle, add to Net price . . . . . 10c each  
 With lead weight in cup, add to Net price . . . . . 25c each

Sizes 8", 10", 12' Woodback Cup Thermometers



No. 2185

# WALL and HAND style THERMOMETERS



With "Red-Reading-Mercury"

## "DURO" COPPER-CASE STYLE

For a strong and well-made thermometer, for testing solution by dipping or for use by hanging on the wall, we recommend the **Duro** style Copper-case thermometer. The case was designed by **Palmer** to give extra long service. Has a sturdy handle at top, shaped so it can be held firmly by the hand. Lens tube; graduated metal scale; polished copper case; guard over bulb; tube and scale removable and interchangeable with tin-case style (listed below). The tube shows a wide **Red** Column.

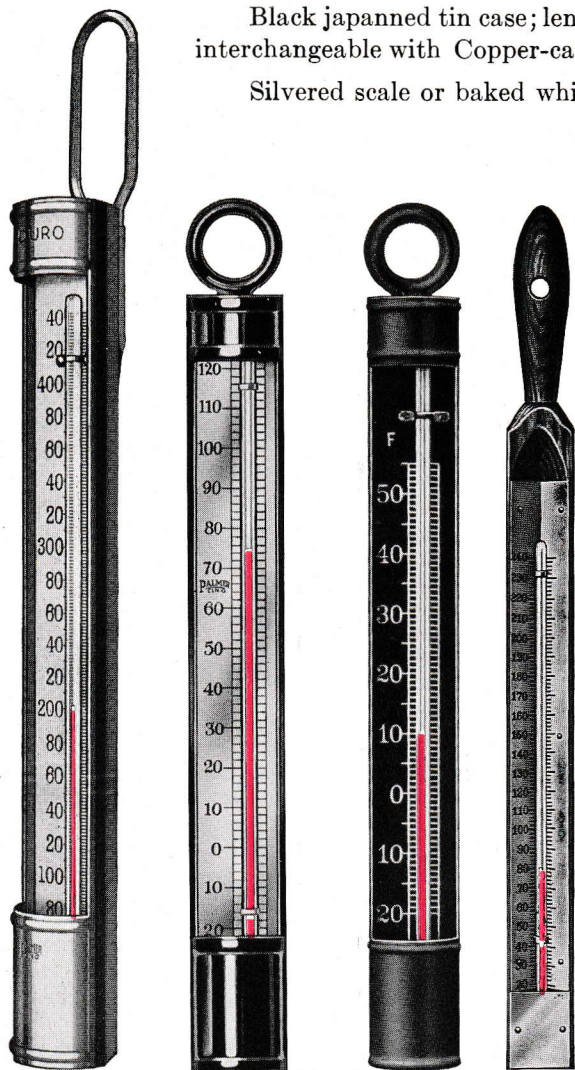
Can be furnished with hanger at back of case, for hanging to the side of kettle. (Specify this on order).....No extra.

## TIN-CASE STYLE

Light weight thermometer, designed for use on wall to test temperature of drying ovens, cooling rooms, freight cars, etc. A good idea is to have a number of these thermometers placed in various parts of your plant to check the air-conditioning system or to watch results of the heating system. **Red** column is easy to read and guaranteed accurate.

Black japanned tin case; lens tube; graduated metal scale; tube and scale removable and interchangeable with Copper-case (listed above).

Silvered scale or baked white enamel. Black oxidized scale furnished only on quantities of twelve or more.



No. 2114

No. 2100

No. 2102

No. 2150

## HAM BOILING OR COOKING THERMOMETER

This thermometer is often used to stir as well as test. One-piece wood back, with handle at top; lens tube; graduated metal scale; guard over bulb; the **Red** column is easy to read, even though the tube is covered with the solution you are testing. Overall length, 18".

No.	Size	Description	Range	List, Doz.
2110	12"	Duro copper case	-20+120°F.	\$24.50
2111	12"		+20+220°F.	24.50
2112	12"		-20+55°F.	29.00
2113	12"		-20+70°F.	29.00
2114	12"		+40+440°F.	34.00
2100	12"	Tin-case style	-20+120°F.	20.00
2101	12"		+20+220°F.	20.00
2102	12"		-20+55°F.	24.50
2103	12"		-20+70°F.	24.50
2104	12"		+40+440°F.	29.50
2100TS	12"	Tube and scale (refills) for Copper and Tin-case styles	-20+120°F.	16.50
2101TS	12"		+20+220°F.	16.50
2102TS	12"		-20+55°F.	21.00
2103TS	12"		-20+70°F.	21.00
2104TS	12"		+40+440°F.	26.00
2150	18"	Ham-boiling style	+20+280°F.	30.00

Note—On these thermometers, if other than standard range is ordered, thermometer is considered special and price charged accordingly.



# WET and DRY BULB HYGROMETER, for Testing Humidity

With "Red-Reading-Mercury"

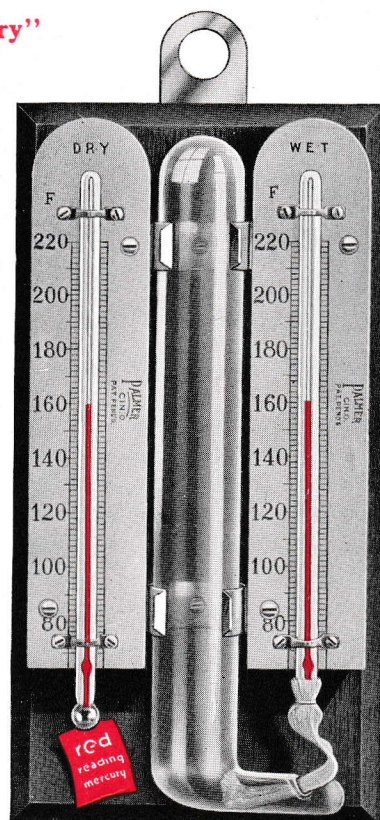
If the air is exceedingly dry, it may be necessary to add moisture to bring it down to normal. You can determine this by using a Hygrometer. A chart is furnished with this instrument, which will determine the actual humidity of the air from the temperatures registered by both thermometer tubes.

The glass reservoir in center will feed a supply of water, over the silk wicking to the wet bulb thus giving you the two readings.

The Palmer Hygrometer was designed so that both tubes and scales are separate units mounted on the board and in case only one tube becomes broken, the entire instrument does not have to be returned to the factory. Just order new tube and scale and you can make your own repairs. The glass water reservoir is held by spring clamps and it can also be removed to fill or to make replacement in case of breakage.

Polished mahogany finish wood back, 8 3/4" x 4 1/2" x 1/8". Lens tube; graduated metal scale, extending 3/4" away from wood. Free circulation of air around bulb. Tube fastened top and bottom with screw-loops, and nib at top of tube. Substantial well-built instrument, constructed to give satisfactory service for a long time. Silk wicking and chart furnished.

No.	Description	Range	List, Each
6305	Complete Hygrometer.....	+30 +120°F.	\$5.00
6306	Complete Hygrometer.....	+80 +220°F.	5.00
6305TS	One Tube and Scale.....	+30 +120°F.	2.00
6306TS	One Tube and Scale.....	+80 +220°F.	2.00
WR	Water Reservoir.....	.....	.75
WK	Extra Wicking.....	.....	List, Doz. \$0.75



No. 6306  
Wet and Dry Bulb Hygrometer

## WALL TYPE THERMOMETERS

Here are two very good Wall Thermometers, which will answer many purposes.

No. 2120 was designed originally for use inside of Chillrooms. It is constructed to be non-corrosive and can be used for outdoor use as well as inside. Case and guard made of one-piece cast bronze with white duco finish. Lens Tube. Graduated metal scale. Case will stand 1 1/2" away from wall, to give free circulation of air around bulb. The wide Red column can be seen at a great distance. Can be installed outside of a window and outdoor temperature read from the inside.

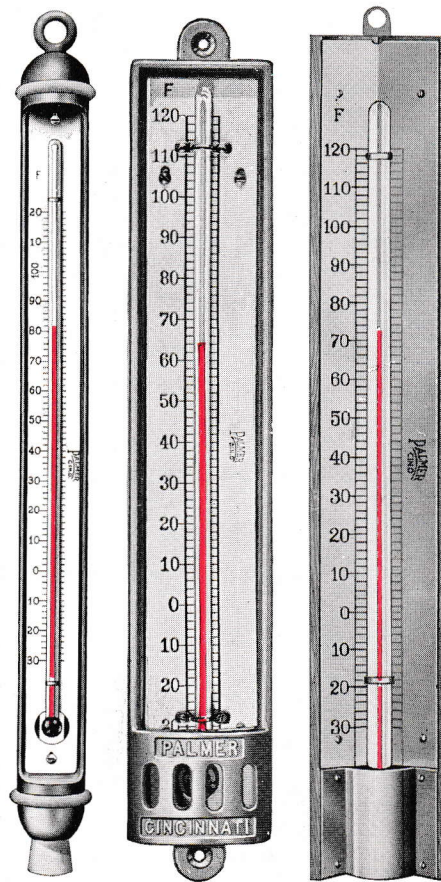
No. 2140 is a woodback, with V-shaped graduated metal scale and lens tube. Protective guard over bulb. Fine for indoor use. Can be read very easily, with bright Red column.

## SHIPHOLD THERMOMETERS

Made slender for dropping down into pipes, or other small spaces to get temperature of brine mixtures, etc. Cast-iron mounting; galvanized finish; Rubber bumpers top and bottom. Lens tube; graduated metal scale; bright Red column.

No.	Description	Range	List, Doz.
2130	Shiphold style.....	-20 +120°F.	\$30.00
2131	Shiphold style.....	+20 +220°F.	30.00
2120	Chillroom style.....	-20 +120°F.	40.00
2140	V-Woodback style.....	-20 +120°F.	24.00
2130TS	Refill (Tube and Scale only).....	-20 +120°F.	21.00
2131TS	Refill (Tube and Scale only).....	+20 +220°F.	21.00
2120TS	Refill.....	-20 +120°F.	21.00
2140TS	Refill.....	-20 +120°F.	21.00

If other than standard ranges are specified on above, this is considered special and price is charged accordingly.

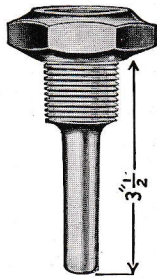


No. 2130

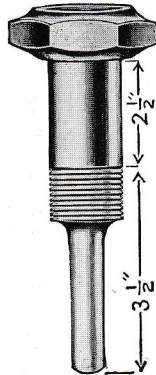
No. 2120

No. 2140

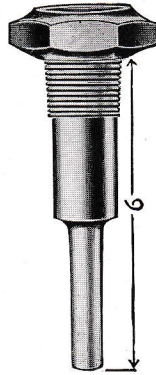
# SEPARABLE SOCKETS



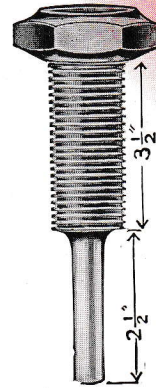
No. 1  
Regular Style



No. 2  
Extension Neck  
Style

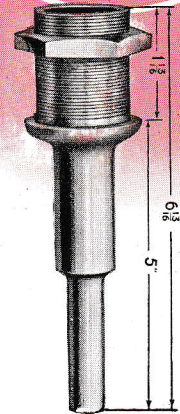


No. 3  
Regular Style



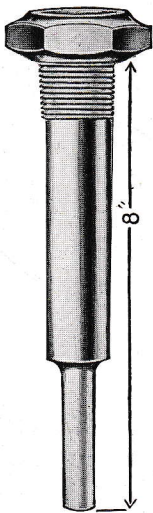
No. 4

With Wood Thread  
for Wood Tanks  
1 1/8" Thread for  
1 1/4" Hole in Tank

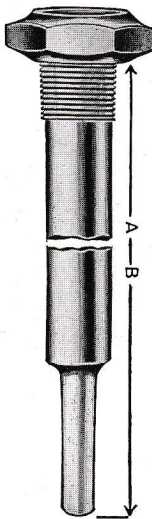


No. 13

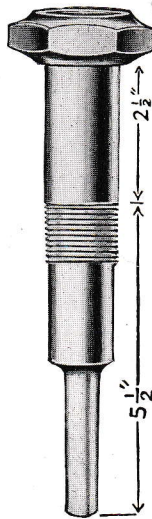
For Glass-lined Tank  
1 1/8" Thread  
(Figure 6" stem price)



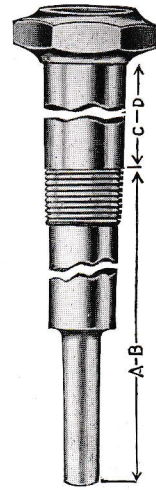
No. 5  
Regular Style



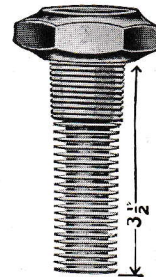
No. 7  
Regular Style  
Misc. Length



No. 8  
Extension Neck  
Style

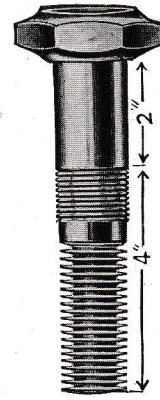


No. 9  
Extension Neck Style  
Misc. Length



No. 11

Multiple-Disc Styles  
Regular Style for  
Super-heated Steam



No. 12

Extension Neck Style  
For Super-  
heated Steam

Note: 1 1/4" swivel nut is standard on all Palmer Separable Socket Thermometers; 1 3/8" size, however, can be furnished whenever specified, at no extra cost. Adaptor, to change 1 1/4" size to be 1 3/8" size, \$1.00 each, net. Standard extension-neck sizes, 2 1/2" and 3 1/2". (Measure under hexagon to beginning of thread.)

Separable Sockets Only. ALL PRICES—List, Each.						
	Styles Nos. 1 to 9, inclusive, and No. 13				Styles Nos. 11 and 12	
	Brass or Steel	Lead Coated	Cast-Iron, Aluminum or Copper	Stainless Steel, Monel Metal or Acid Bronze	Multiple-Disc Styles	
					Brass or Steel	Stainless Steel
3 1/2".....	\$5.00	\$12.00	\$10.00	\$12.00	\$12.00	\$20.00
6".....	6.00	16.00	13.00	16.00	16.00	26.00
12".....	9.00	24.00	19.00	24.00	24.00	38.00
Each 6" thereafter.....	3.00	8.00	6.00	8.00	8.00	12.00

Larger Thread Size Sockets Nos. 1 to 9 (excluding Nos. 4 and 13). Add to List, Extra, Each.				
	Brass or Steel		Stainless Steel or Monel Metal	
	1 1/4" (thread)	1 1/2"	1 1/4" (thread)	1 1/2"
	Up to 6" inclusive.....	\$3.50	\$4.50	\$5.50
Not over 12".....	6.00	7.00	9.00	11.00

Cast-iron sockets: Standard thread size, 1" I. P. S. for 3 1/2" length and 1 1/4" I. P. S. for longer length sockets. All other sockets, excepting No. 4 and No. 13, are furnished with 3/4" or 1" I. P. S. thread. 1/2" I. P. S. can be furnished but we do not recommend it. Cap and chain furnished on sockets, when requested, at no extra charge. Sockets made of special mixture stainless steel, write for prices.





# INDUSTRIAL THERMOMETERS

With "Red-Reading-Mercury"

Palmer thermometers have been improved in many different ways since the first thermometer was made in 1872. Today, these thermometers are second to none in quality and accuracy. The finest materials are used and highly skilled workmen produce these thermometers. Each person in our factory is trained in the Palmer methods of manufacture which means only A-1 work must be turned out.

## How "Palmer" Thermometers Are Made

**Tube**—Selected, heavy lens glass.

All tubes are treated and high-range tubes are electrically annealed, assuring permanent accuracy.

Pure mercury is used, free from moisture. (Our special process for cleaning mercury insures absolute purity.)

Every tube is baked to remove any trace of moisture before sealing.

Wherever necessary, the tubes are nitrogen filled.

We have a double-check system in our Testing Department.

Our "Red-Reading-Mercury" glass is supplied on all thermometers with range up to 750° F. (No extra charge.)

**Scale**—Each tube has its own respective scale.

These metal scales are made of special-formula strip brass and are graduated (not stamped) by a special machine designed especially for this work.

The scales are numbered so that they will be assembled with the tube having the same number. Large easily read numbers on scales.

Two standard scale finishes: Satin silver, with baked black lines and numbers and a Durable white enamel with black lines and numbers.

A black oxidized scale with white lines and numbers can also be furnished.

**Metal Mounting**—The entire mounting is very sturdily built, so as to give long service and stand up under considerable usage.

Case is V-shaped, with glass-front protection.

Castings are made of bronze, of high-tensile strength (86% copper).

Iron or aluminum castings furnished when specified.

Special clear glass used in door.

"Shatterproof Glass" can be furnished, when specified.

Various types of fittings are supplied to suit different requirements:

Fixed taper thread fitting.

Union thread connection.

Separable Socket.

With fixed flange, adjustable flange or Union flange.

With parallel thread fitting and locknut.

With clamp hook.

Plain shank (no fitting).

And other special fittings.

Standard IPS threads furnished.

Strong hexagon nut on all mountings, for use in installing.

Separable Sockets are made tapered so that there is a perfect fit between socket and stem on thermometer. We follow U. S. Government specifications.

Sockets are made of various materials depending on the solution they come in contact with.

Standard materials are brass and steel.

Other metals are: Iron, 18-8 stainless steel, lead, copper, acid bronze, etc.

**Bulb Chambers**—The glass bulb on thermometer tube is enclosed in a bulb chamber, containing mercury, which insures quick contact.

Where slow contact is wanted, chambers are filled with graphite and sometimes sand.

All bulb chambers on Industrial Thermometers are positively non-corrosive.

**Finish**—Standard finish is Nickel-plate, with polished front of Mounting; back of case, gray Duco.

Fittings have a polished surface on those parts that are visible, after thermometer is installed; balance—satin nickel.

Polished brass finish can be substituted when specified.

Other finishes:

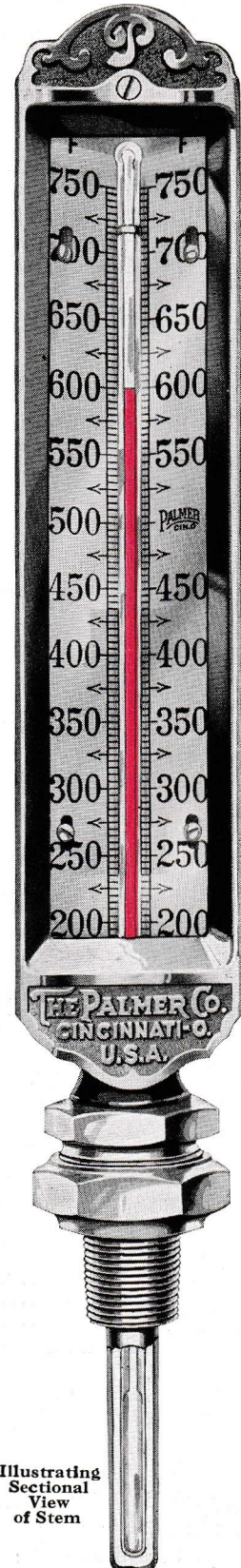
Chromium-plate, Instrument-black, etc.

**Assembly**—All bulb chambers are lock-tight so that mercury or other filling will not leak.

Long stem thermometers are packed with asbestos wicking and asbestos tubing, making a snug fit for protection of tube.

Insulation between case and fitting is recommended wherever necessary.

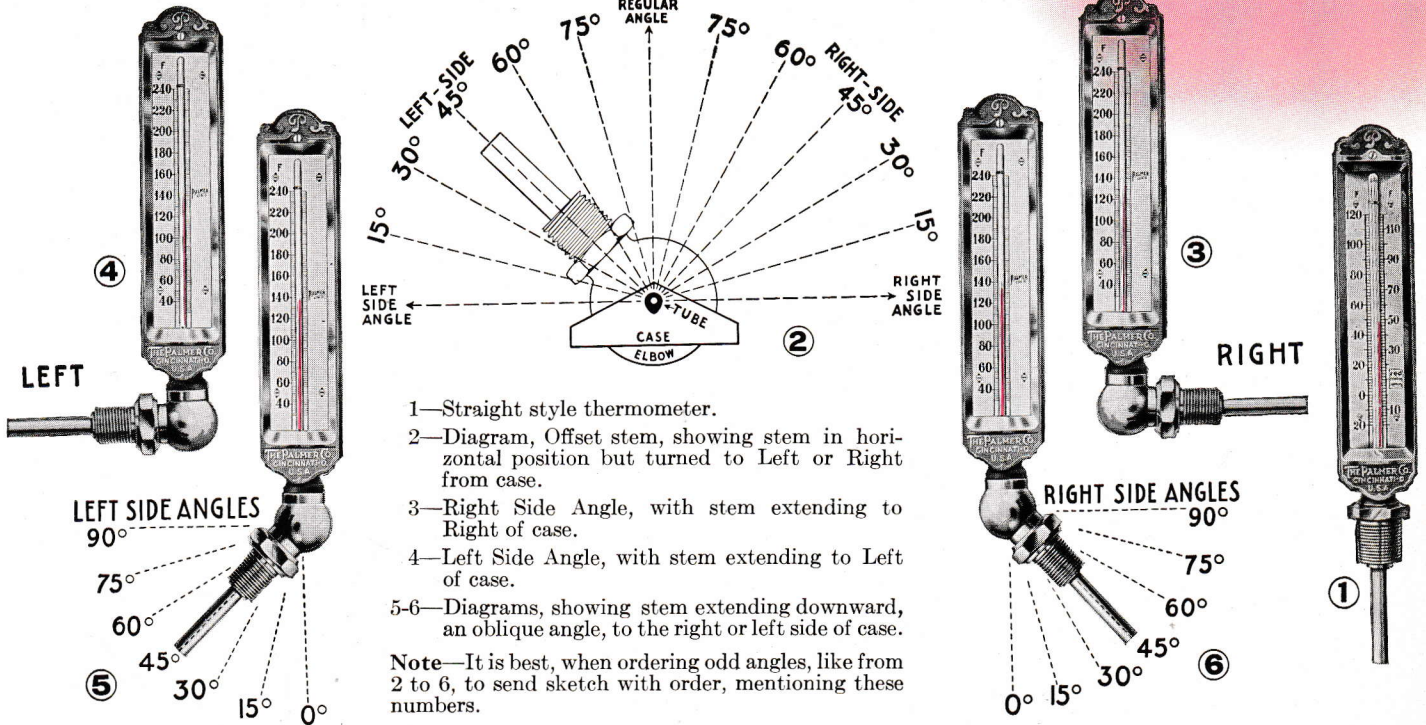
**Final Test**—Before each thermometer is packed for shipment, the thermometer is given a final inspection by a very capable person.



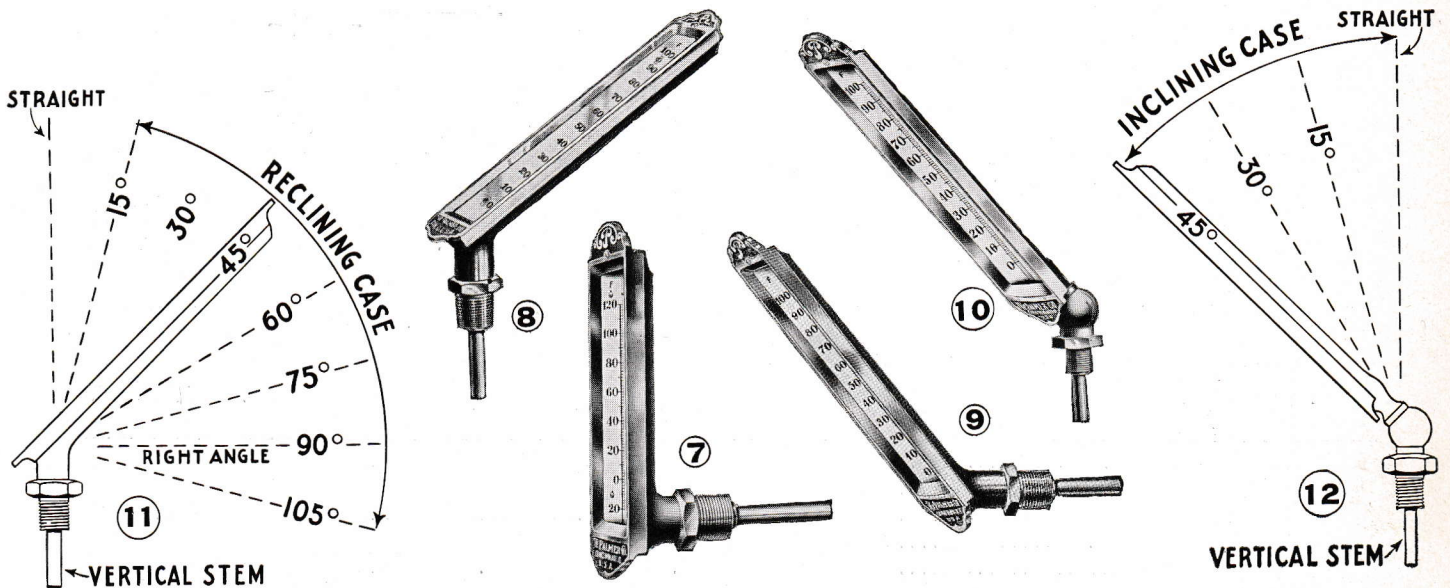
Illustrating  
Sectional  
View  
of Stem

Palmer — "Red-Reading-Mercury" Thermometer  
(Pat. No. 1,819,919—Aug. 18, 1931)

# VARIOUS FORMS . . . INDUSTRIAL THERMOMETERS



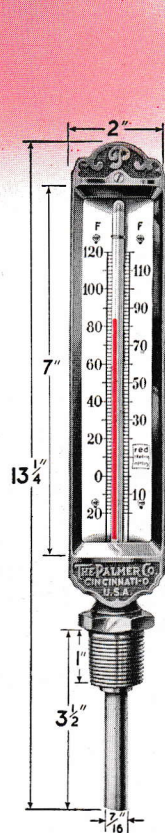
**REPAIR WORK**—We have a very quick service on repairs to all makes of Thermometers—putting these broken instruments in A-1 condition at a nominal charge. **Remember**—we equip these thermometers with our **“RED-READING-MERCURY”** at no extra.



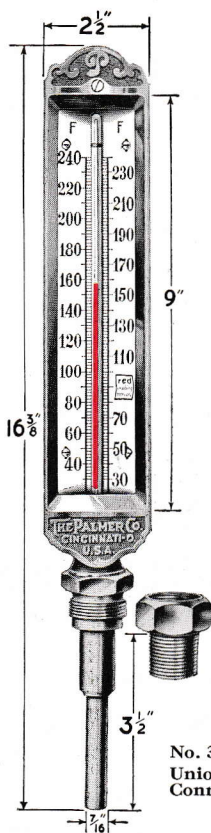


# INDUSTRIAL THERMOMETERS

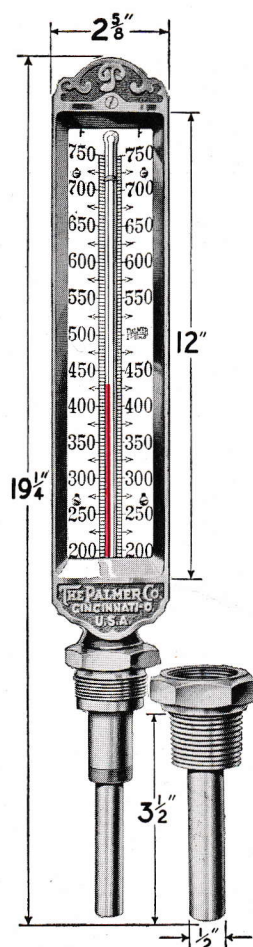
With "Red-Reading-Mercury"



No. 405  
Fixed  
Taper  
Thread



No. 307  
Union  
Connection



No. 209  
Separable  
Socket

Net Weight—STRAIGHT and ANGLE Style Thermometer with Standard 3 1/2" Stem Length			
Case Size	Fixed Thread	Union Connection	With Socket
7"	2 lbs.	2 3/4 lbs.	3 lbs.
9"	3 lbs.	3 3/4 lbs.	4 lbs.
12"	4 1/4 lbs.	5 lbs.	5 1/4 lbs.

**Fixed Thread Fitting**—Necessitates turning the entire mounting when installing.

**Union Connection Fitting**—Can be installed by turning swivel nut only.

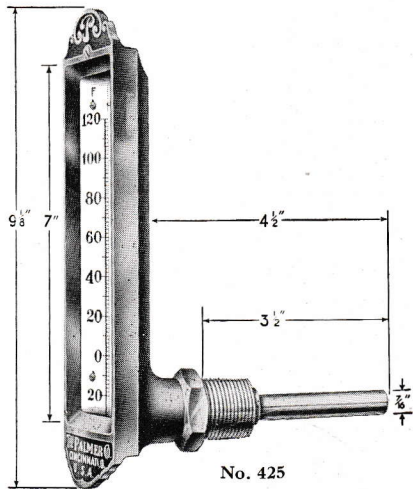
**Separable Socket Fitting**—Socket remains in the tank, when thermometer is removed, thus eliminating necessity of emptying tank or vat. Socket protects the stem of thermometer and is constructed to be sensitive and quick-reading. Sockets can be made of various metals, according to the solution being tested. Brass or steel are standard. 1 1/4" swivel nut is standard but 1 9/16" can be furnished, when specified. Sockets are interchangeable with sockets of similar length. When ordering thermometers, to fit other sockets, be sure to mention inside diameter of other socket.

ALL PRICES—List, Each

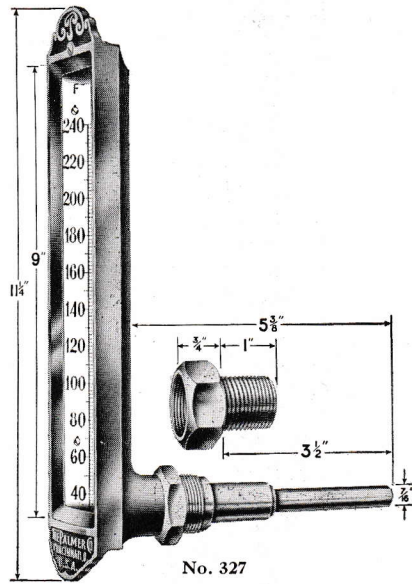
No.	Case	Form	Fitting	Stem Length				No.	With Guard, Extra, Each
				3 1/2"	6"	12"	Each 6" Extra		
205	12"	Straight.....	Fixed Thread	\$21.00	\$22.00	\$24.00	\$2.00	206	\$3.00
225	12"	90° Angle.....		24.00	25.00	27.00	2.00	226	3.00
245	12"	Reclining or Inclining.....						246	
264	12"	Side Angle.....		265					
305	9"	Straight.....	Fixed Thread	17.00	18.00	20.00	2.00	306	3.00
325	9"	90° Angle.....		20.00	21.00	23.00	2.00	326	3.00
345	9"	Reclining or Inclining.....						346	
364	9"	Side Angle.....		365					
405	7"	Straight.....	Fixed Thread	14.00	15.00	17.00	2.00	406	3.00
425	7"	90° Angle.....		17.00	18.00	20.00	2.00	426	3.00
445	7"	Reclining or Inclining.....						446	
464	7"	Side Angle.....		465					

# INDUSTRIAL THERMOMETERS

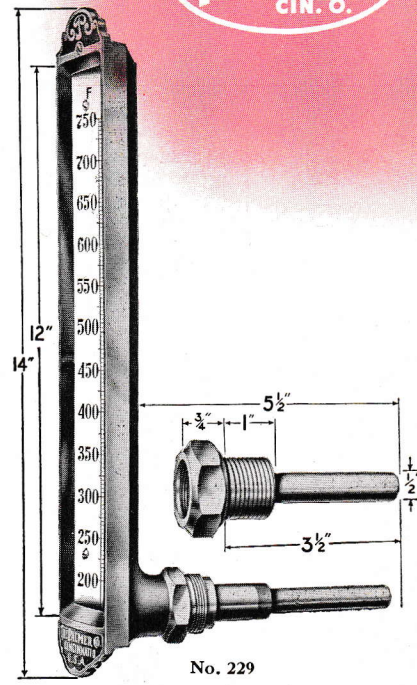
With "Red-Reading-Mercury"



No. 425  
Fixed Taper Thread



No. 327  
Union Connection



No. 229  
Separable Socket

ALL PRICES—List, Each

No.	Case	Form	Fitting	Stem Length				No.	With Guard, Extra, Each
				3 1/2"	6"	12"	Each 6" Extra		
207	12"	Straight.....	Union Connection	\$24.00	\$25.00	\$27.00	\$2.00	208	\$3.00
227	12"	90° Angle.....		27.00	28.00	30.00	2.00	228	
247	12"	Reclining or Inclining....		20.00	21.00	23.00	2.00	248	
266	12"	Side Angle.....		23.00	24.00	26.00	2.00	267	
307	9"	Straight.....	Union Connection	17.00	18.00	20.00	2.00	308	3.00
327	9"	90° Angle.....		20.00	21.00	23.00	2.00	328	
347	9"	Reclining or Inclining....		21.00	22.00	24.00	2.00	348	
366	9"	Side Angle.....		22.00	23.00	25.00	2.00	367	
407	7"	Straight.....	Union Connection	28.00	30.00	34.00	4.00	408	3.00
427	7"	90° Angle.....		31.00	33.00	37.00	4.00	428	
447	7"	Reclining or Inclining....		24.00	26.00	30.00	4.00	448	
466	7"	Side Angle.....		27.00	29.00	33.00	4.00	467	
209	12"	Straight.....	Separable Socket	21.00	23.00	27.00	4.00	No Guard needed on socket installation	
229	12"	90° Angle.....		24.00	26.00	30.00	4.00		
249	12"	Reclining or Inclining....		27.00	29.00	33.00	4.00		
268	12"	Side Angle.....	Separable Socket	21.00	23.00	27.00	4.00		
309	9"	Straight.....		24.00	26.00	30.00	4.00		
329	9"	90° Angle.....		27.00	29.00	33.00	4.00		
349	9"	Reclining or Inclining....	Separable Socket	21.00	23.00	27.00	4.00		
368	9"	Side Angle.....		24.00	26.00	30.00	4.00		
409	7"	Straight.....		27.00	29.00	33.00	4.00		
429	7"	90° Angle.....	Separable Socket	21.00	23.00	27.00	4.00		
449	7"	Reclining or Inclining....		24.00	26.00	30.00	4.00		
468	7"	Side Angle.....		27.00	29.00	33.00	4.00		

Note: For Testing liquids, specify: "Bulb Chamber."  
 For Air Temperature, specify: "With bare bulb and perforated stem."  
 For extra protection, specify: "With guard and Bulb Chamber."

\*Above price includes thermometer with brass or steel socket. For socket of other material, see page 15. Figure difference in price of brass or steel socket and socket of other material and add to above prices.

Bulb chamber on socket style thermometer is made tapered to fit the socket. Stem of Union Connection thermometer will not fit into socket. Standard ranges, see page 22.



# Comparative Fahrenheit and Centigrade Scales ... Concluded



F	C	F	C	F	C	F	C	F	C	F	C	F	C	F	C
527	275	587	308.33	647	341.67	707	375	767	408.33	827	441.67	887	475	947	508.33
528	275.56	588	308.89	648	342.22	708	375.56	768	408.89	828	442.22	888	475.56	948	508.89
529	276.11	589	309.44	649	342.78	709	376.11	769	409.44	829	442.78	889	476.11	949	509.44
530	276.67	590	310	650	343.33	710	376.67	770	410	830	443.33	890	476.67	950	510
531	277.22	591	310.56	651	343.89	711	377.22	771	410.56	831	443.89	891	477.22	951	510.56
532	277.78	592	311.11	652	344.44	712	377.78	772	411.11	832	444.44	892	477.78	952	511.11
533	278.33	593	311.67	653	345	713	378.33	773	411.67	833	445	893	478.33	953	511.67
534	278.89	594	312.22	654	345.56	714	378.89	774	412.22	834	445.56	894	478.89	954	512.22
535	279.44	595	312.78	655	346.11	715	379.44	775	412.78	835	446.11	895	479.44	955	512.78
536	280	596	313.33	656	346.67	716	380	776	413.33	836	446.67	896	480	956	513.33
537	280.56	597	313.89	657	347.22	717	380.56	777	413.89	837	447.22	897	480.56	957	513.89
538	281.11	598	314.44	658	347.78	718	381.11	778	414.44	838	447.78	898	481.11	958	514.44
539	281.67	599	315	659	348.33	719	381.67	779	415	839	448.33	899	481.67	959	515
540	282.22	600	315.56	660	348.89	720	382.22	780	415.56	840	448.89	900	482.22	960	515.56
541	282.78	601	316.11	661	349.44	721	382.78	781	416.11	841	449.44	901	482.78	961	516.11
542	283.33	602	316.67	662	350	722	383.33	782	416.67	842	450	902	483.33	962	516.67
543	283.89	603	317.22	663	350.56	723	383.89	783	417.22	843	450.56	903	483.89	963	517.22
544	284.44	604	317.78	664	351.11	724	384.44	784	417.78	844	451.11	904	484.44	964	517.78
545	285	605	318.33	665	351.67	725	385	785	418.33	845	451.67	905	485	965	518.33
546	285.56	606	318.89	666	352.22	726	385.56	786	418.89	846	452.22	906	485.56	966	518.89
547	286.11	607	319.44	667	352.78	727	386.11	787	419.44	847	452.78	907	486.11	967	519.44
548	286.67	608	320	668	353.33	728	386.67	788	420	848	453.33	908	486.67	968	520
549	287.22	609	320.56	669	353.89	729	387.22	789	420.56	849	453.89	909	487.22	969	520.56
550	287.78	610	321.11	670	354.44	730	387.78	790	421.11	850	454.44	910	487.78	970	521.11
551	288.33	611	321.67	671	355	731	388.33	791	421.67	851	455	911	488.33	971	521.67
552	288.89	612	322.22	672	355.56	732	388.89	792	422.22	852	455.56	912	488.89	972	522.22
553	289.44	613	322.78	673	356.11	733	389.44	793	422.78	853	456.11	913	489.44	973	522.78
554	290	614	323.33	674	356.67	734	390	794	423.33	854	456.67	914	490	974	523.33
555	290.56	615	323.89	675	357.22	735	390.56	795	423.89	855	457.22	915	490.56	975	523.89
556	291.11	616	324.44	676	357.78	736	391.11	796	424.44	856	457.78	916	491.11	976	524.44
557	291.67	617	325	677	358.33	737	391.67	797	425	857	458.33	917	491.67	977	525
558	292.22	618	325.56	678	358.89	738	392.22	798	425.56	858	458.89	918	492.22	978	525.56
559	292.78	619	326.11	679	359.44	739	392.78	799	426.11	859	459.44	919	492.78	979	526.11
560	293.33	620	326.67	680	360	740	393.33	800	426.67	860	460	920	493.33	980	526.67
561	293.89	621	327.22	681	360.56	741	393.89	801	427.22	861	460.56	921	493.89	981	527.22
562	294.44	622	327.78	682	361.11	742	394.44	802	427.78	862	461.11	922	494.44	982	527.78
563	295	623	328.33	683	361.67	743	395	803	428.33	863	461.67	923	495	983	528.33
564	295.56	624	328.89	684	362.22	744	395.56	804	428.89	864	462.22	924	495.56	984	528.89
565	296.11	625	329.44	685	362.78	745	396.11	805	429.44	865	462.78	925	496.11	985	529.44
566	296.67	626	330	686	363.33	746	396.67	806	430	866	463.33	926	496.67	986	530
567	297.22	627	330.56	687	363.89	747	397.22	807	430.56	867	463.89	927	497.22	987	530.56
568	297.78	628	331.11	688	364.44	748	397.78	808	431.11	868	464.44	928	497.78	988	531.11
569	298.33	629	331.67	689	365	749	398.33	809	431.67	869	465	929	498.33	989	531.67
570	298.89	630	332.22	690	365.56	750	398.89	810	432.22	870	465.56	930	498.89	990	532.22
571	299.44	631	332.78	691	366.11	751	399.44	811	432.78	871	466.11	931	499.44	991	532.78
572	300	632	333.33	692	366.67	752	400	812	433.33	872	466.67	932	500	992	533.33
573	300.56	633	333.89	693	367.22	753	400.56	813	433.89	873	467.22	933	500.56	993	533.89
574	301.11	634	334.44	694	367.78	754	401.11	814	434.44	874	467.78	934	501.11	994	534.44
575	301.67	635	335	695	368.33	755	401.67	815	435	875	468.33	935	501.67	995	535
576	302.22	636	335.56	696	368.89	756	402.22	816	435.56	876	468.89	936	502.22	996	535.56
577	302.78	637	336.11	697	369.44	757	402.78	817	436.11	877	469.44	937	502.78	997	536.11
578	303.33	638	336.67	698	370	758	403.33	818	436.67	878	470	938	503.33	998	536.67
579	303.89	639	337.22	699	370.56	759	403.89	819	437.22	879	470.56	939	503.89	999	537.22
580	304.44	640	337.78	700	371.11	760	404.44	820	437.78	880	471.11	940	504.44	1000	537.78
581	305	641	338.33	701	371.67	761	405	821	438.33	881	471.67	941	505		
582	305.56	642	338.89	702	372.22	762	405.56	822	438.89	882	472.22	942	505.56		
583	306.11	643	339.44	703	372.78	763	406.11	823	439.44	883	472.78	943	506.11		
584	306.67	644	340	704	373.33	764	406.67	824	440	884	473.33	944	506.67		
585	307.22	645	340.56	705	373.89	765	407.22	825	440.56	885	473.89	945	507.22		
586	307.78	646	341.11	706	374.44	766	407.78	826	441.11	886	474.44	946	507.78		

## RULES FOR CONVERTING SCALES INTO EACH OTHER

- To reduce Fahrenheit readings to Centigrade, subtract 32 degrees and multiply the remainder by 5/9.
- To reduce Fahrenheit readings to Reaumur, subtract 32 degrees and multiply the remainder by 4/9.
- To reduce Centigrade readings to Fahrenheit, multiply by 9/5 and add 32 degrees.
- To reduce Reaumur readings to Fahrenheit, multiply by 9/4 and add 32 degrees.
- To reduce Centigrade to Reaumur, multiply by 4/5.
- To reduce Reaumur to Centigrade, multiply by 5/4.

**Special Instructions:** It is for your own best interests to test each thermometer when received. If thermometer fails to register, the damage should be reported to the transportation company immediately, and a "Bad Order" receipt obtained. Do not let any shipment lay around, without examining same promptly. If the "Bad Order" receipt is sent to us, we will file claim for you.

When thermometer appears to have a mercury separation, it is best to have this examined also, as in many instances, an apparent separation may mean a broken thermometer tube. Damage must be examined by the consignee where thermometer is received, so be sure to watch this. Claim will be allowed, if thermometer is found to be broken altho shipping container is not damaged. This is called "concealed" damage. Damage may occur if the shipment is dropped. So please cooperate with us.



# MISCELLANEOUS INFORMATION

## Standard Ranges (Industrial Thermometers)

0+100°F.    +30+180°F.    +170+270°F. & P.    +50+400°F.  
 -20+120°F.    +30+240°F.    +150+350°F. & P.    +200+550°F.    +200+750°F.

Equivalent scale in Centigrade also furnished.

All standard ranges are not carried in stock but quicker delivery can be given.

Orders for thermometers with special ranges or special construction cannot be cancelled, without paying for the work done. Thermometers cannot be returned for credit, without writing us first.

## High Range: Over 750°F. and not exceeding 1000°F.

Borosilicate Glass. Plain mercury tube    Add to list, each.....\$10.00

Note—"Red-Reading-Mercury" is not supplied on ranges above 750°F.

## Bulb Chamber

Standard length: 1 1/8", 1 1/4", 1 1/2", 2", 2 1/2".

Brass, with steel-liner.....Standard

Stainless steel or monel.....No extra

Other sizes, not exceeding 3".....\$1.00  
 Add to List, Each  
 To fit sockets.....Must be tapered  
 Specify on order....."To fit socket"

## Thermometer Stem

Diameter:                    12" case    9" case    7" case

Brass or steel..... 1"                    7/8"                    3/4"

Cast-iron..... 1 3/16"                    1 3/16"                    1"

Minimum short stem, under thread.....1 1/8"

Brass stem.....Standard

Steel or copper.....No extra

For Brine.....Specify Brass Stem

For Ammonia.....Specify Steel Stem

Tinned stem, up to 24".....\$2.50 each, net

Larger diameter, up to 1 1/2".....\$1.00 each 6"  
 Add to List, Each  
 Heavy 1/8" lead coating on stem:  
 Stem up to 6"..... 6.00  
 Over 6" and up to 18"..... 6.00 each 6"  
 Additional length..... 4.00 each 6"  
 Aluminum stem......50 each 6"  
 Cast-iron stem..... 1.50 each 6"  
 Stainless steel or monel..... 2.00 each 6"  
 Tinned stem, over 24".....\$0.50 each ft., Net

## Case and Door-frame

Bronze.....Standard

Aluminum.....No extra

Gaskets (for air-tight case).....No extra

Shatter-proof glass.....\$0.75 each, Net

Handle (top of case).....\$1.00 each, List

Add to List, Each  
 12"    10"    9"    7"  
 Cast-iron case.....\$3.50    \$3.25    \$3.00    \$2.50  
 Cast-iron frame..... 2.50    2.25    2.00    1.50  
 Stainless steel case..... 6.00    5.75    5.50    5.00  
 Stainless steel frame..... 4.50    4.25    4.00    3.50  
 Steel case and frame.....Write for price

## Finish

Polished Nickel-plate (back of case painted gray).....Standard

Polished brass or Instrument Black.....No extra

Chromium-plate (when specified). Add to list, each.....\$1.00

Scales—Silvered or durable white enamel (black filling).....Standard

Black oxidized finish (white filling).....No extra

Chromium-plate (when specified). Add to list, each.....\$0.50

Stainless-Steel.....Add to list, each..... 2.50

Aluminum.....Add to list, each..... 1.00

## Insulated Stem

Insulation, placed between fitting and case, where temperature is below 32°F. prevents frost creeping over thermometer scale. Add to list, each.....\$3.00

## "E" Extension Neck

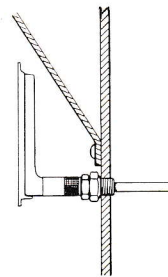
When thermometer case must extend beyond the fitting to miss some obstruction, "E" extension neck is placed between case and fitting. For this style (not exceeding 3") Add to list, each.....\$3.00

## "Regular" Extension Stem

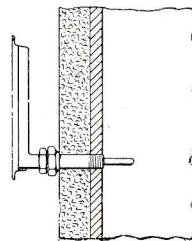
When thermometer stem must pass thru insulation or pipe covering, it is necessary to have an Extension Stem **between fitting and pipe thread.**

Standard lengths are: 2 1/2" and 3 1/2".

For price, figure total stem length, from under fitting and including extension stem. Example: 2 1/2" extension stem, 1" of thread, 2 1/2" stem beyond thread. Total stem length. 6". When ordering, specify: "Stem to go thru....." insulation. Total stem length to be ....."

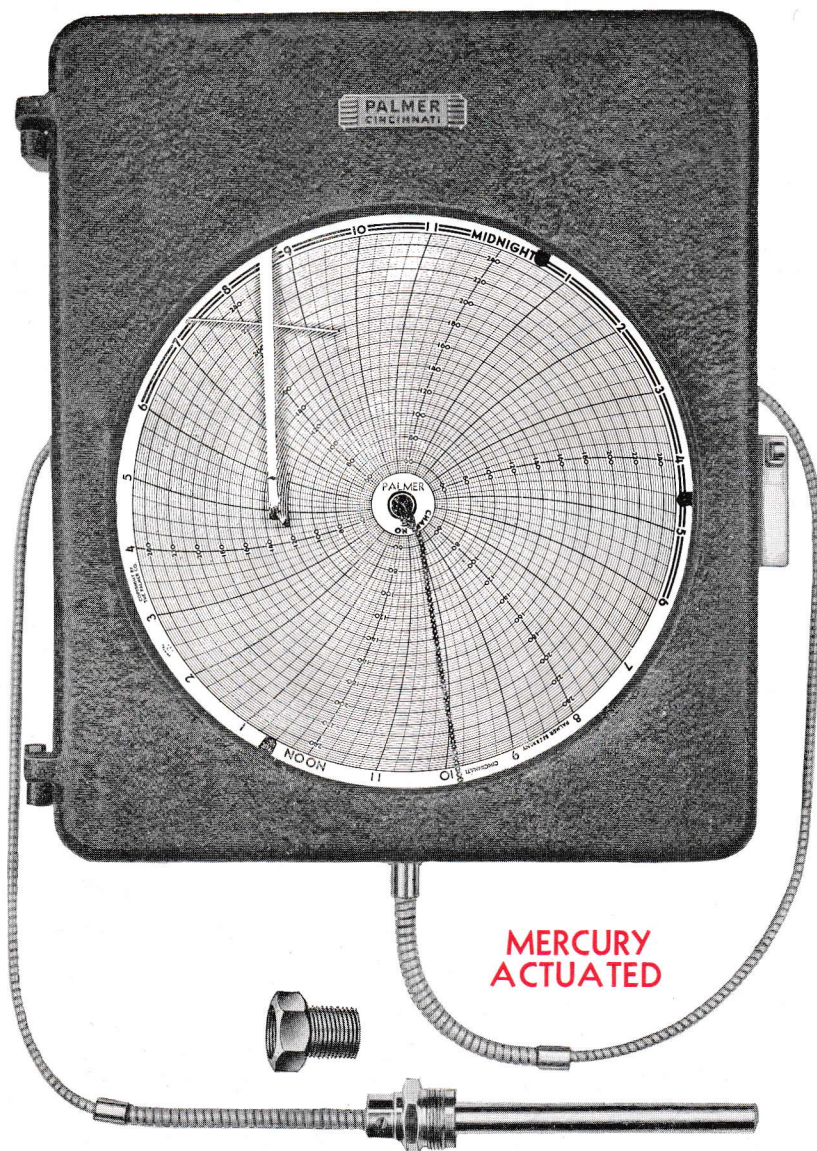


"E" Extension Neck with Insulation



"Regular" Extension Stem (thru insulation)

# PALMER "SUPERIOR" RECORDING THERMOMETER



This Recording Thermometer has been tried and tested for many months until we felt certain it was worthy of the name of **Palmer** and that it was ready to give the service and accuracy demanded of it. We are proud to announce that this is one of the finest instruments ever placed on the market.

## SPECIFICATIONS:

**Size:** Standard 12" Chart.

**Case:** Modern streamlined die-cast aluminum.

Black "Wrinkle" finish . . . standard.

Satin-smooth Black finish . . . on request.

White smooth finish . . . Dairy instruments.

Wall or flush mounting.

**Connection:** Bottom of case. Also back.

**Clock:** 12-hour, 24-hour or 7-day spring-wound clock, especially designed for Palmer Recorders. (Electric Clock optional.)

**Tubing:** Each Recorder is equipped with 5 ft. stainless-steel flexible connecting tubing as standard. Additional tubing may be ordered, up to 100 ft. Consists of mercury-filled capillary and special design stainless-steel spiral armor.

**Bulb:** Stainless-steel mercury filled. Size of bulb is determined by range. Constructed to be extra sensitive and quick-acting. Bulb should be immersed full length, up to threaded portion.

**Compensation:** Invar Metal used to compensate for room temperature.

**Pen:** Special design easy-filling pen, made of stainless steel.

**Door-Latch:** Patent pending door catch, which holds door firmly and operates with minimum pressure.

**Charts:** Very easy to insert and made especially for Palmer Recorder.

**Construction:** All joints are Atomic Hydrogen welded (not soldered). All parts are rust-proof. Bourdon spring designed by Palmer and treated for long wear.

**Range:** All standard ranges: -40 to 800°F. (or C. equivalent).  
+200 to 1000°F. (or C. equivalent).

**Fittings:** Plain bulb; Union connection; Separable-socket; Adjustable or Union Flange.  
Bulb length up to 12" . . . . . 3/4" IPS thread.  
Bulb length 12" and longer . . . . . 1" IPS thread.

**Accessories:** Each Recorder supplied with 100 charts, Bottle Recorder Ink with filler and key for clock.

**Accuracy Guaranteed.** Constructed to give Long Service.

(Write for price sheet)





# PALMER "SUPERIOR" DIAL THERMOMETER

This Dial Thermometer is the result of careful laboratory tests after many months. It has also been placed in the field and found to give very satisfactory results. It is one of the finest Dial Thermometers ever produced for registering accurate temperatures. Being mercury-filled, this instrument responds quickly to temperature changes.

## SPECIFICATIONS:

**Size:** 8" dial.

**Case:** Strong round case, with baked black rubberized finish. Can be furnished also in polished brass, nickel or chrome-plate, etc.

Wall or flush mounting.

Gaskets supplied to make case air-tight.

Ring is screwed to case.

**Dial:** Non-reflecting white dial, with large black figures and easy-to-read graduations. Glass front protects dial. Shatter-proof glass can be supplied.

**Indicator:** The pointer is carefully balanced to register quickly and accurately. Minor adjustments can be made, without taking instrument apart.

**Spring:** Designed by Palmer and thoroughly treated to give long wear.

**Ranges:** All standard ranges: -20 to 800°F. (or C. equivalent).  
+200 to 1000°F. (or C. equivalent).

**Tubing:** Stainless-steel flexible connecting tubing with stainless-steel spiral armor, constructed to stand much usage and hard wear.

Bottom or back connection.

**System:** Atomic welded joints throughout.

**Bulb:** Stainless-steel bulb, mercury-filled to register instant changes in temperature. Bulbs of other metal furnished when necessary.

**Fittings:** Plain bulb, Union connection, Separable-socket and Adjustable or Union flange.

Bulb length up to 12"..... $\frac{3}{4}$ " IPS thread.

12" bulb or longer length..... 1" IPS thread.

**Construction:** Carefully assembled by skilled workmen and tested for accurate registration.

**Accuracy Guaranteed.** Built for long life.

(Write for price sheet)

