



# Smart Series Commercial Performance Data

Revised date: 1/12/07

2006-21 Smart-Performance Data



# Performance Data Charts

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## Use Of These Charts Will Determine:

- **Model Of The Indirect-Fired Water Heater**
- **MBH Net Boiler Output Required For Hot Water Generation**
- **Boiler Water Temperature Required**

## To Use The Performance Charts, These Conditions Must Be Known:

- **Domestic Water Temperature Rise**
- **Continuous Draw GPH or First Hour Rating GPH**

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- For the purpose of this manual,  
First Hour Rating GPH = Continuous Draw GPH + Usable Storage\*
  - For hot water requirements greater than those listed, multiple water tanks must be used.
  - Smart Series indirect-fired water heaters will absorb less than 200,000 BTU per hour with boiler supply temperature of 240° F and domestic water outlet temperature of 210° F.
  - The installing contractor assumes responsibility for compliance with state or local codes.

<b>Model</b>	<b>Usable Storage [gal]</b>	<b>Min. Circulator Flow Rate [gpm]</b>	<b>Boiler Head loss at Min. Flow</b>
Smart-60	50 gal	20 gpm	4.0 Ft
Smart-80	60 gal	22 gpm	3.5 Ft
Smart-100	80 gal	24 gpm	4.5 Ft
Smart-120	100 gal	28 gpm	4.0 Ft

\* Approximately 85% of storage capacity

## 200° F Boiler Water Temperature

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	200	200	200	200
75	300	300	300	300
100	400	400	400	400
150	600	600	600	600
200	800	800	800	800
250	1000	1000	1000	1000
300	1200	1200	1200	1200
350	1400	1400	1400	1400
400	1580	1600	1600	1600
450	1580	1730	1800	1800
500	1580	1730	2000	2000
550	1580	1730	2000	2200
600 or More	1580	1730	2000	2345

30° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	150	150	150	150
75	225	225	225	225
100	300	300	300	300
150	450	450	450	450
200	600	600	600	600
250	750	750	750	750
300	900	900	900	900
350	1050	1050	1050	1050
400	1130	1200	1200	1200
450	1130	1240	1350	1350
500	1130	1240	1440	1500
550	1130	1240	1440	1650
600 or More	1130	1240	1440	1685

40° F Domestic Rise

## 200° F Boiler Water Temperature

50° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	120	120	120	120
	75	180	180	180	180
	100	240	240	240	240
	150	360	360	360	360
	200	480	480	480	480
	250	600	600	600	600
	300	720	720	720	720
	350	840	840	840	840
	400	860	940	960	960
	450	860	940	1080	1080
	500	860	940	1090	1200
	550 or more	860	940	1090	1280

60° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	100	100	100	100
	75	150	150	150	150
	100	200	200	200	200
	150	300	300	300	300
	200	400	400	400	400
	250	500	500	500	500
	300	600	600	600	600
	350	690	700	700	700
	400	690	740	800	800
	450 or more	690	740	812	900

70° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	90	90	90	90
	75	130	130	130	130
	100	170	170	170	170
	150	260	260	260	260
	200	345	345	345	345
	250	430	430	430	430
	300	515	515	515	515
	350	550	600	600	600
	400	550	600	666	685
	450 or more	550	600	666	740

## 200° F Boiler Water Temperature

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	75	75	75	75
75	115	115	115	115
100	150	150	150	150
150	225	225	225	225
200	300	300	300	300
250	375	375	375	375
300	450	450	450	450
350	450	500	525	525
400	450	500	560	600
450 or more	450	500	560	640

80° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	70	70	70	70
75	100	100	100	100
100	135	135	135	135
150	200	200	200	200
200	270	270	270	270
250	335	335	335	335
300	360	400	400	400
350	360	450	470	470
400	360	450	500	535
450 or more	360	450	500	560

90° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	60	60	60	60
75	90	90	90	90
100	120	120	120	120
150	180	180	180	180
200	240	240	240	240
250	280	300	300	300
300	280	360	360	360
350	280	360	400	420
400 or More	280	360	400	450

100° F Domestic Rise

## 200° F Boiler Water Temperature

110° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	55	55	55	55
	75	80	80	80	80
	100	110	110	110	110
	150	165	165	165	165
	200	220	220	220	220
	250	220	275	275	275
	300	220	280	311	330
	350 or More	220	280	311	360

120° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	50	50	50	50
	75	75	75	75	75
	100	100	100	100	100
	150	145	150	150	150
	200	145	200	200	200
	250	145	220	244	250
	300 or More	145	220	244	275

130° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	45	45	45	45
	75	70	70	70	70
	100	85	95	95	95
	150	85	140	140	140
	200 or More	85	170	176	185

## 180° F Boiler Water Temperature

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	200	200	200	200
75	300	300	300	300
100	400	400	400	400
150	600	600	600	600
200	800	800	800	800
250	1000	1000	1000	1000
300	1195	1200	1200	1200
350	1195	1345	1400	1400
400	1195	1345	1575	1600
450	1195	1345	1575	1800
500 or more	1195	1345	1575	1860

30° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	150	150	150	150
75	225	225	225	225
100	300	300	300	300
150	450	450	450	450
200	600	600	600	600
250	750	750	750	750
300	850	900	900	900
350	850	955	1050	1050
400	850	955	1120	1200
450 or more	850	955	1120	1320

40° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	120	120	120	120
75	180	180	180	180
100	240	240	240	240
150	360	360	360	360
200	480	480	480	480
250	600	600	600	600
300	640	720	720	720
350	640	720	840	840
400	640	720	840	960
450 or more	640	720	840	995

50° F Domestic Rise

# 180° F Boiler Water Temperature

60° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	100	100	100	100
	75	150	150	150	150
	100	200	200	200	200
	150	300	300	300	300
	200	400	400	400	400
	250	500	500	500	500
	300	500	560	600	600
	350	500	560	640	700
400 or More	500	560	640	720	

70° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	90	90	90	90
	75	130	130	130	130
	100	170	170	170	170
	150	260	260	260	260
	200	345	345	345	345
	250	400	430	430	430
	300	400	460	515	515
	350 or More	400	460	525	590

80° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	75	75	75	75
	75	115	115	115	115
	100	150	150	150	150
	150	225	225	225	225
	200	310	310	310	310
	250	310	375	375	375
	300	310	380	435	450
	350 or More	310	380	435	500



## 180° F Boiler Water Temperature

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	70	70	70	70
75	100	100	100	100
100	135	135	135	135
150	200	200	200	200
200	250	270	270	270
250	250	320	335	335
300	250	320	365	400
350 or More	250	320	365	420

90° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	60	60	60	60
75	90	90	90	90
100	120	120	120	120
150	180	180	180	180
200	200	240	240	240
250	200	260	295	300
300 or More	200	260	295	360

100° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	55	55	55	55
75	80	80	80	80
100	110	110	110	110
150	160	165	165	165
200	160	220	220	220
250	160	220	250	275
300 or More	160	220	250	280

110° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	50	50	50	50
75	60	75	75	75
100	60	100	100	100
150 or More	60	120	127	135

120° F Domestic Rise

# 160° F Boiler Water Temperature

30° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	200	200	200	200
	75	300	300	300	300
	100	400	400	400	400
	150	600	600	600	600
	200	800	800	800	800
	250	875	1000	1000	1000
	300	875	1010	1200	1200
	350	875	1010	1200	1400
	400 or More	875	1010	1200	1430

40° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	150	150	150	150
	75	225	225	225	225
	100	300	300	300	300
	150	450	450	450	450
	200	600	600	600	600
	250	610	710	750	750
	300	610	710	835	900
	350 or More	610	710	835	1000

50° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	120	120	120	120
	75	180	180	180	180
	100	240	240	240	240
	150	360	360	360	360
	200	455	480	480	480
	250	455	525	600	600
	300	455	525	620	720
	350 or More	455	525	620	740

60° F Domestic Rise	Boiler Output (MBH)	Continuous Draw GPH			
		Smart-60	Smart-80	Smart-100	Smart-120
	50	100	100	100	100
	75	150	150	150	150
	100	200	200	200	200
	150	300	300	300	300
	200	340	400	400	400
	250	340	400	465	500
	300 or More	340	400	465	550

## 160° F Boiler Water Temperature

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	90	90	90	90
75	130	130	130	130
100	170	170	170	170
150	260	260	260	260
200	260	310	345	345
250	260	310	378	430
300 or More	260	310	378	450

70° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	75	75	75	75
75	115	115	115	115
100	150	150	150	150
150	180	225	225	225
200	180	230	274	300
250 or More	180	230	274	340

80° F Domestic Rise

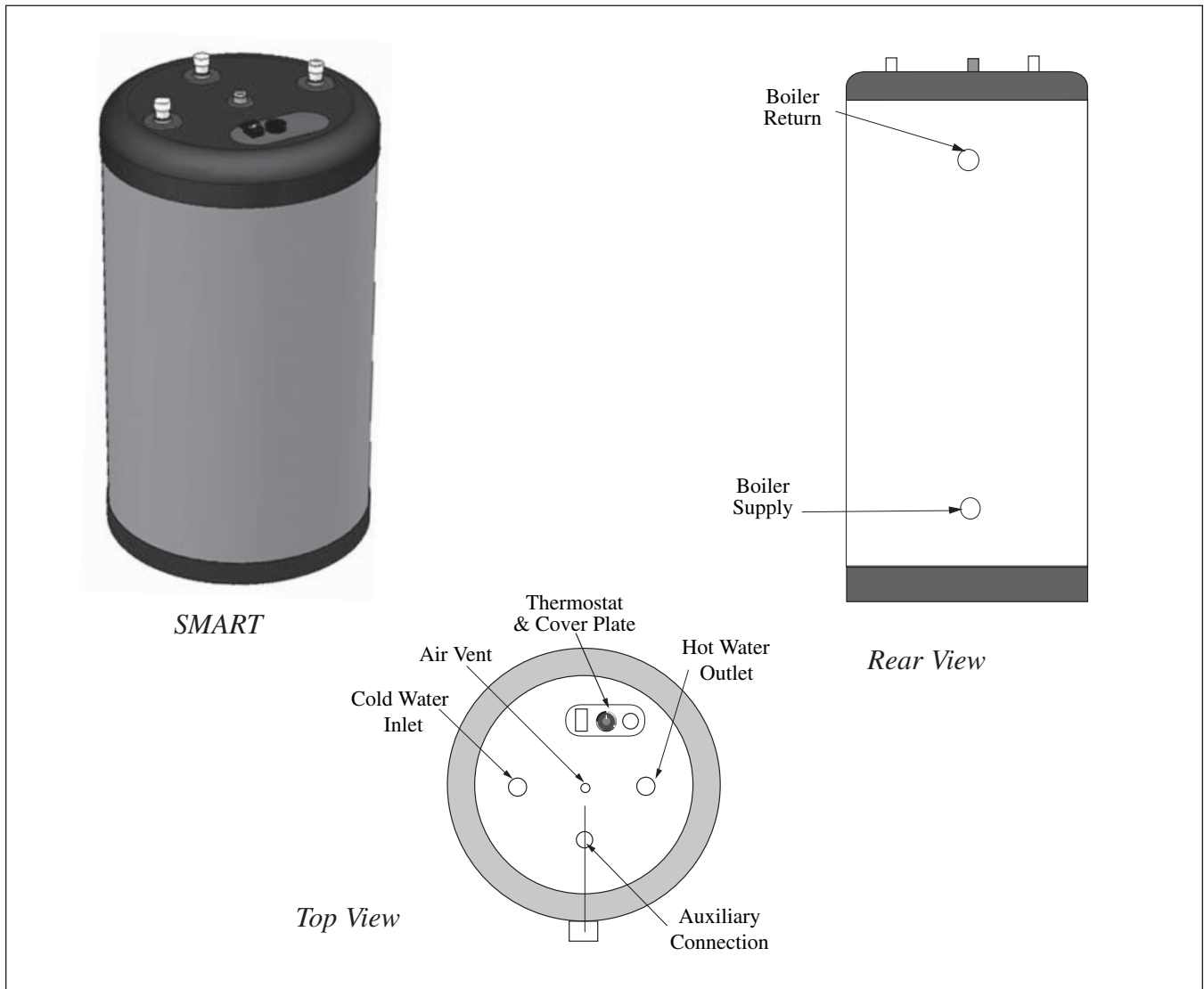
Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	70	70	70	70
75	100	100	100	100
100	130	135	135	135
150	130	170	200	200
200 or More	130	170	210	260

90° F Domestic Rise

Boiler Output (MBH)	Continuous Draw GPH			
	Smart-60	Smart-80	Smart-100	Smart-120
50	60	60	60	60
75	70	90	90	90
100	70	120	120	120
150	70	120	155	180
200 or More	70	120	155	200

100° F Domestic Rise

# Construction



# Specifications

Model No.	Diameter	Height	Boiler/Supply Return	Domestic Inlet/Outlet	Auxiliary Connection	Domestic Capacity (gal.)	Heating Water Capacity (gal.)	Heat Surface (sq. ft.)	Empty Weight (lbs)
Smart 60	22"	66"	1 1/4"	3/4"	3/4"	56	8	24	190
Smart 80	26"	61"	1 1/2"	1 1/2"	1 1/2"	70	14	29	315
Smart 100	26"	78"	1 1/2"	1 1/2"	1 1/2"	95	25	36	362
Smart 120	32"	72"	2"	1 1/2"	1 1/2"	119	43	40	479



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