



Manual S Compliance Report
Entire House
Hometown Heating and Air

Job: DROTOS-22
 Date: Feb 25, 2022
 By: MATTHEW MCCLELLAN

399 SW Boston Terrace, Fort White, Florida 32038 Phone: 352-316-7273 Email: hometownheatandair@gmail.com

Project Information

For: LERNER LUXURY PROPERTIES- DROTOS
 HERMITAGE GLEN, HIGH SPRINGS, FL 32643

Cooling Equipment

Design Conditions

Outdoor design DB:	90.6°F	Sensible gain:	29616	Btuh	Entering coil DB:	74.8°F
Outdoor design WB:	75.5°F	Latent gain:	6917	Btuh	Entering coil WB:	61.5°F
Indoor design DB:	72.0°F	Total gain:	36532	Btuh		
Indoor RH:	50%	Estimated airflow:	1225	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP	Model:	GSZ140491K+ASPT49C14A
Manufacturer:	Goodman Mfg.		
Actual airflow:	1225	cfm	
Sensible capacity:	34619	Btuh	117% of load
Latent capacity:	7392	Btuh	107% of load
Total capacity:	42011	Btuh	115% of load SHR: 82%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	36479	Btuh	Entering coil DB:	68.4°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP	Model:	GSZ140491K+ASPT49C14A	Capacity balance:	29 °F
Manufacturer:	Goodman Mfg.			Economic balance:	-99 °F
Actual airflow:	1225	cfm			
Output capacity:	45500	Btuh	125% of load		
Supplemental heat required:	0	Btuh			

Backup equipment type:	Elec strip	Model:	n/a+n/a
Manufacturer:	n/a		
Actual airflow:	1225	cfm	
Output capacity:	8.8	kW	83% of load Temp. rise: 19 °F

Meets all requirements of ACCA Manual S.





Residential Plans Examiner Review Form for HVAC System Design (Loads, Equipment, Ducts)

Form
RPER 1
15 Mar 09

COLUMBIA COUNTY, FL Header Information

Contractor: Hometown Heating and Air
Matthew McClellan

Mechanical license:

Building plan #:

Home address (Street or Lot#, Block, Subdivision):

HERMITAGE GLEN, Entire House

REQUIRED ATTACHMENTS

Manual J1 Form (and supporting worksheets):
or MJ1AE Form* (and supporting worksheets):
OEM performance data (heating, cooling, blower):
Manual D Friction Rate Worksheet:
Duct distribution sketch:

ATTACHED

Yes No
Yes No
Yes No
Yes No
Yes No

HVAC LOAD CALCULATION (IRC M1401.3)

Design Conditions

Winter Design Conditions

Outdoor temperature: 33 °F
Indoor temperature: 70 °F
Total heat loss: 36479 Btuh

Summer Design Conditions

Outdoor temperature: 91 °F
Indoor temperature: 72 °F
Grains difference: 51 gr/lb @ 50% RH
Sensible heat gain: 30979 Btuh
Latent heat gain: 7235 Btuh
Total heat gain: 38214 Btuh

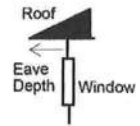
Building Construction Information

Building

Orientation: Front Door faces North
North, East, West, South, Northeast, Northwest, Southeast, Southwest
Number of bedrooms: 3
Conditioned floor area: 2533 ft²
Number of occupants: 3

Windows

Eave overhang depth: 0 ft
Internal shade: none
Blinds, drapes, etc.
Number of skylights: 0



HVAC EQUIPMENT SELECTION (IRC M1401.3)

Heating Equipment Data

Equipment type: Split ASHP
Furnace, Heat pump, Boiler, etc.
Model: Goodman Mfg.
GSZ140491K+ASPT49C14A
Heating output capacity: 0 Btuh
Heat pumps - capacity at winter design outdoor conditions
Aux. heating output capacity: 30175 Btuh

Cooling Equipment Data

Equipment type: Split ASHP
Air Conditioner, Heat pump, etc.
Model: Goodman Mfg.
GSZ140491K+ASPT49C14A
Total cooling capacity: 42011 Btuh
Sensible cooling capacity: 34619 Btuh
Latent cooling capacity: 7392 Btuh

Blower Data

Heating cfm: 1225
Cooling cfm: 1225
Static pressure: 0.35 in H2O
Fan's rated external static pressure for design airflow

HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow: 1225 cfm
Equipment design ESP: 0.35 in H2O
Total device pressure losses: 0 in H2O
Available static pressure (ASP): 0.35 in H2O
Longest supply duct: 209 ft
Longest return duct: 96 ft
Total effective length (TEL): 306 ft
Friction rate: 0.114 in/100ft
Friction Rate = ASP + (TEL x 100)
Duct Materials Used
Trunk duct: Round flex vinyl
Branch duct: Round flex vinyl

I declare the load calculation, equipment, equipment selection and duct design were rigorously performed based on the building plan listed above. I understand the claims made on these forms will be subject to review and verification.

Contractor's printed name: JERRY LERNER

Contractor's signature: [Signature]

Date: 3/23/22

Reserved for County, Town Municipality or Authority having jurisdiction use.

*Home qualifies for MJ1AE Form based on Abridged Edition Checklist



DHW Report
Entire House
Hometown Heating and Air

Job: DROTOS-22
 Date: Feb 25, 2022
 By: MATTHEW MCCLELLAN

399 SW Boston Terrace, Fort White, Florida 32038 Phone: 352-316-7273 Email: hometownheatandair@gmail.com

Project Information

For: LERNER LUXURY PROPERTIES- DROTOS
 HERMITAGE GLEN, HIGH SPRINGS, FL 32643

Design Criteria

Occupants		Not occupied during the day	
Age	Number		
0-5	0	Dishwasher	
6-13	2	Clothes washer	
14-59	2	Additional use (gpd)	0
60+	0	Setpoint (°F)	120
		Daily use (gpd)	62

Electric conventional (50 gal, 0.90 EF)

Manufacturer	Tank size (gal)	50
Trade name	Energy factor	0.90
Model	Input (kWh)	0.0
AHRI ref. number	1st hour (gal)	50
	Recovery eff. (%)	98



399 SW Boston Terrace, Fort White, Florida 32038 Phone: 352-316-7273 Email: hometownheatandair@gmail.com

Project Information

For: LERNER LUXURY PROPERTIES- DROTOS
 HERMITAGE GLEN, HIGH SPRINGS, FL 32643

Design Information

	Htg	Clg		Infiltration	
Outside db (°F)	33	91	Method		Blower door
Inside db (°F)	70	72	Shielding / stories		1 (no shielding) / 1
Design TD (°F)	37	19	Pressure / AVF		50 Pa / 2414 cfm
Daily range	-	M			
Inside humidity (%)	50	50			
Moisture difference (gr/lb)	33	51			

HEATING EQUIPMENT

Make	Goodman Mfg.
Trade	GOODMAN
Model	GSZ140491K
AHRI ref	201687940
Efficiency	8.2 HSPF
Heating input	
Heating output	45500 Btuh @ 47°F
Temperature rise	34 °F
Actual air flow	1225 cfm
Air flow factor	0.034 cfm/Btuh
Static pressure	0.35 in H2O
Space thermostat	
Capacity balance point = 29 °F	

COOLING EQUIPMENT

Make	Goodman Mfg.
Trade	GOODMAN
Cond	GSZ140491K
Coil	ASPT49C14A
AHRI ref	201687940
Efficiency	12.0 EER, 14 SEER
Sensible cooling	30450 Btuh
Latent cooling	13050 Btuh
Total cooling	43500 Btuh
Actual air flow	1225 cfm
Air flow factor	0.042 cfm/Btuh
Static pressure	0.35 in H2O
Load sensible heat ratio	0.81

Backup: n/a n/a
 Input = 9 kW, Output = 30175 Btuh, 100 AFUE

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
WIC 1	36	1191	540	41	23
GUEST ROOM 1	168	2630	1777	89	74
BATH 1	72	1333	1017	45	42
MASTER SUITE	256	5897	4660	201	194
BATH 2	48	55	74	2	3
PANTRY	64	86	115	3	5
OFFICE	64	74	98	3	4
LAUNDRY	96	2026	1402	69	58
MUDROOM	48	821	311	28	13
KITCHEN/DINING	512	4420	6358	150	265
MASTER WIC	192	3094	1506	105	63
MASTER BATH	184	978	605	33	25
STORAGE	48	1396	489	47	20
HALLWAY	32	0	0	0	0

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

BATH 3	36	767	397	26	17
M WC	24	602	279	20	12
GUEST ROOM 2	204	3042	3402	103	142
GREAT ROOM	448	7596	6349	258	265
Entire House	2532	36006	29377	1225	1225
Other equip loads		473	239		
Equip. @ 0.96 RSM			28313		
Latent cooling			6917		
TOTALS	2532	36479	35229	1225	1225

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Project Information

For: LERNER LUXURY PROPERTIES- DROTOS
 HERMITAGE GLEN, HIGH SPRINGS, FL 32643

Notes: NEW SFH BY LERNER LUXURY PROPERTIES

Design Information

Weather: Gainesville Regional, FL, US

Winter Design Conditions

Outside db 33 °F
 Inside db 70 °F
 Design TD 37 °F

Summer Design Conditions

Outside db 91 °F
 Inside db 72 °F
 Design TD 19 °F
 Daily range M
 Relative humidity 50 %
 Moisture difference 51 gr/lb

Heating Summary

Structure 29621 Btuh
 Ducts 6385 Btuh
 Central vent (12 cfm) 473 Btuh
 Outside air
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 36479 Btuh

Sensible Cooling Equipment Load Sizing

Structure 21109 Btuh
 Ducts 8268 Btuh
 Central vent (12 cfm) 239 Btuh
 Outside air
 Blower 0 Btuh
 Use manufacturer's data n
 Rate/swing multiplier 0.96
 Equipment sensible load 28313 Btuh

Infiltration

Method Blower door
 Shielding / stories 1 (no shielding) / 1
 Pressure / AVF 50 Pa / 2414 cfm

	Heating	Cooling
Area (ft ²)	2533	2533
Volume (ft ³)	24137	24137
Air changes/hour	0.59	0.32
Equiv. AVF (cfm)	238	129

Latent Cooling Equipment Load Sizing

Structure 5059 Btuh
 Ducts 1452 Btuh
 Central vent (12 cfm) 405 Btuh
 Outside air
 Equipment latent load 6917 Btuh
 Equipment Total Load (Sen+Lat) 35229 Btuh
 Req. total capacity at 0.70 SHR 3.4 ton

Heating Equipment Summary

Make Goodman Mfg.
 Trade GOODMAN
 Model GSZ140491K
 AHRI ref 201687940
 Efficiency 8.2 HSPF
 Heating input
 Heating output 45500 Btuh @ 47°F
 Temperature rise 34 °F
 Actual air flow 1225 cfm
 Air flow factor 0.034 cfm/Btuh
 Static pressure 0.35 in H2O
 Space thermostat
 Capacity balance point = 29 °F
 Backup: n/a n/a
 Input = 9 kW, Output = 30175 Btuh, 100 AFUE

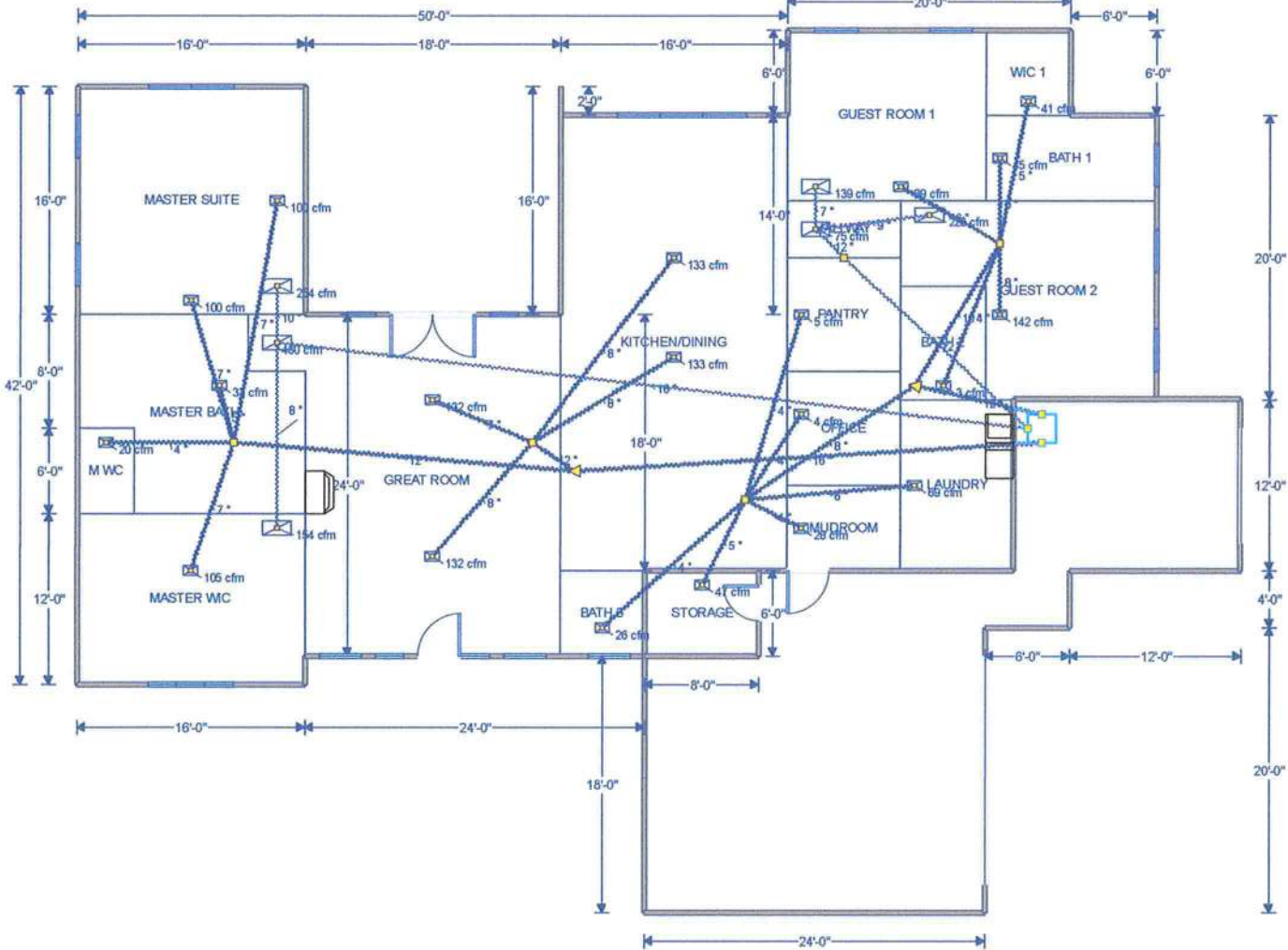
Cooling Equipment Summary

Make Goodman Mfg.
 Trade GOODMAN
 Cond GSZ140491K
 Coil ASPT49C14A
 AHRI ref 201687940
 Efficiency 12.0 EER, 14 SEER
 Sensible cooling 30450 Btuh
 Latent cooling 13050 Btuh
 Total cooling 43500 Btuh
 Actual air flow 1225 cfm
 Air flow factor 0.042 cfm/Btuh
 Static pressure 0.35 in H2O
 Load sensible heat ratio 0.81

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



Level 1



Job #: DRTOS-22
Performed by MATTHEW MCCLELLAN f...
LERNER LUXURY PROPERTIES- DRTOS
HERMITAGE GLEN
HIGH SPRINGS, FL 32643

Hometown Heating and Air

399 SW Boston Terrace
Fort White, Florida 32038
Phone: 352-316-7273
hometownheatandair@gmail.com

Scale: 1 : 152

Page 1
Right-Suite® Universal 2022
22.0.01 RSU64164
2022-Mar-21 23:22:32
...rightsoft HVAC\LERNER-DRTOS.r...



Duct System Summary

Entire House

Hometown Heating and Air

Job: DROTOS-22
 Date: Feb 25, 2022
 By: MATTHEW MCCLELLAN

399 SW Boston Terrace, Fort White, Florida 32038 Phone: 352-316-7273 Email: hometownheatandair@gmail.com

Project Information

For: LERNER LUXURY PROPERTIES- DROTOS
 HERMITAGE GLEN, HIGH SPRINGS, FL 32643

	Heating	Cooling
External static pressure	0.35 in H2O	0.35 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.35 in H2O	0.35 in H2O
Supply / return available pressure	0.240 / 0.110 in H2O	0.240 / 0.110 in H2O
Lowest friction rate	0.114 in/100ft	0.114 in/100ft
Actual air flow	1225 cfm	1225 cfm
Total effective length (TEL)		306 ft

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
BATH 1	h 1333	45	42	0.148	5.0	0x 0	VIFx	26.9	135.0	st4
BATH 2	c 74	2	3	0.144	4.0	0x 0	VIFx	31.7	135.0	st4
BATH 3	h 767	26	17	0.139	4.0	0x 0	VIFx	37.1	135.0	st3
GREAT ROOM	c 3175	129	132	0.131	8.0	0x 0	VIFx	47.3	135.0	st6
GREAT ROOM-A	c 3175	129	132	0.134	7.0	0x 0	VIFx	44.3	135.0	st6
GUEST ROOM 1	h 2630	89	74	0.146	6.0	0x 0	VIFx	28.9	135.0	st4
GUEST ROOM 2	c 3402	103	142	0.149	8.0	0x 0	VIFx	25.9	135.0	st4
KITCHEN/DINING	c 3179	75	133	0.131	8.0	0x 0	VIFx	48.3	135.0	st6
KITCHEN/DINING-A	c 3179	75	133	0.127	8.0	0x 0	VIFx	53.1	135.0	st6
LAUNDRY	h 2026	69	58	0.140	6.0	0x 0	VIFx	35.7	135.0	st3
M W C	h 602	20	12	0.119	4.0	0x 0	VIFx	66.1	135.0	st5
MASTER BATH	h 978	33	25	0.122	5.0	0x 0	VIFx	61.3	135.0	st5
MASTER SUITE	h 2948	100	97	0.118	7.0	0x 0	VIFx	67.6	135.0	st5
MASTER SUITE-A	h 2948	100	97	0.114	7.0	0x 0	VIFx	74.4	135.0	st5
MASTER WIC-A	h 3094	105	63	0.119	7.0	0x 0	VIFx	66.6	135.0	st5
MUDROOM	h 821	28	13	0.147	4.0	0x 0	VIFx	28.1	135.0	st3
OFFICE	c 98	3	4	0.145	4.0	0x 0	VIFx	30.9	135.0	st3
PANTRY	c 115	3	5	0.139	4.0	0x 0	VIFx	37.2	135.0	st3
STORAGE	h 1396	47	20	0.145	5.0	0x 0	VIFx	30.3	135.0	st3
WIC 1	h 1191	41	23	0.144	5.0	0x 0	VIFx	31.1	135.0	st4



Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1	PeakAVF	457	401	0.139	581	12.0	0 x 0	VinIFlx	
st5	PeakAVF	360	294	0.114	458	12.0	0 x 0	VinIFlx	st2
st6	PeakAVF	409	530	0.127	675	12.0	0 x 0	VinIFlx	st2
st2	PeakAVF	768	824	0.114	590	16.0	0 x 0	VinIFlx	
st3	PeakAVF	176	117	0.139	504	8.0	0 x 0	VinIFlx	st1
st4	PeakAVF	281	284	0.144	521	10.0	0 x 0	VinIFlx	st1

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb4	0x 0	213	223	78.6	0.140	504	9.0	0x 0		VIFx	rt3
rb5	0x 0	139	99	73.5	0.150	522	7.0	0x 0		VIFx	rt3
rb7	0x 0	104	154	96.3	0.114	441	8.0	0x 0		VIFx	rt2
rb6	0x 0	254	231	87.3	0.126	466	10.0	0x 0		VIFx	rt2
rb3	0x 0	439	460	63.3	0.174	586	12.0	0x 0		VIFx	rt2
rb2	0x 0	75	58	60.5	0.182	383	6.0	0x 0		VIFx	rt3

Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt3	PeakAVF	428	380	0.140	544	12.0	0 x 0	VinIFlx	rt1
rt1	PeakAVF	428	380	0.140	544	12.0	0 x 0	VinIFlx	
rt2	PeakAVF	797	845	0.114	605	16.0	0 x 0	VinIFlx	





ENERGY STAR Single-Family New Homes National HVAC Design Report, Version 3 / 3.1 (Rev. 11)

HVAC Designer Responsibilities:

- Complete one National HVAC Design Report for each system design for a house plan, created for either the specific plan configuration (i.e., elevation, option, orientation, & county) of the home to be certified or for a plan that is intended to be built with different configurations (i.e., different elevations, options, and/or orientations). Visit www.energystar.gov/newhomeshvacdesign and see Footnote 2 for more information.
- Obtain efficiency features (e.g., window performance, insulation levels, and infiltration rate) from the builder or Rater.³
- Provide the completed National HVAC Design Report to the builder or credentialed HVAC contractor and to the Rater.

1. Design Overview

1.1 Designer name: Matthew McClellan Designer company: Hometown Heating and Air Date: Feb 25, 2022
 1.2 Select which party you are providing these design services to: Builder or Credentialed HVAC contractor
 1.3 Name of company you are providing these design services to (if different than item 1.1):
 1.4 Area that system serves: Whole-house Upper-level Lower-level Other
 1.5 Is cooling system for a temporary occupant load? Yes No
 1.6 House plan: Check box to indicate whether the system design is site-specific or part of a group:
 Site-specific design. Option(s) & elevation(s) modeled:
 Group design. Group #: 0 out of 0 total groups for this house plan. Configuration modeled:

2. Dwelling Unit Mechanical Ventilation System Design ("Vent System") & Inlets in Return Duct

Designer Verified

Airflow:

2.1 Ventilation airflow design rate & run-time meet the requirements of ASHRAE 62.2-2010, 2013 or 2016
 2.2 Ventilation airflow rate required by 62.2 for a continuous system: 12 CFM -
 2.3 Design for this system: Vent. airflow rate: CFM Run-time per cycle: 0 minutes Cycle time: 0 minutes -

System Type & Controls:

2.4 Specified system type: Supply Exhaust Balanced -
 2.5 Specified control location: (e.g., Master bath, utility room) -
 2.6 Specified controls allow the system to operate automatically, without occupant intervention.
 2.7 Specified controls include a readily-accessible ventilation override and a label has also been specified if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that's on the ventilation equipment).
 2.8 For any outdoor air inlet designed to connect to a ducted return of the HVAC system, specified controls automatically restrict airflow using a motorized damper during ventilation off-cycle and occupant override.

Sound:

2.9 The fan of the specified system is rated ≤ 3 sones if intermittent and ≤ 1 sone if continuous, or exempted

Efficiency:

2.10 If Vent System controller operates the HVAC fan, then HVAC fan operation is intermittent and either the fan type in Item 4.7 is ECM / ICM or the controls will reduce the run-time by accounting for HVAC system heating or cooling hours.
 2.11 If bathroom fans are specified as part of the system, then they are ENERGY STAR certified

Air Inlet Location: (Complete this section if system has a specified air inlet location; otherwise check "N/A")

N/A

2.12 Inlet pulls ventilation air directly from outdoors and not from attic, crawlspace, garage, or adjacent dwelling unit
 2.13 Inlet is ≥ 2 ft. above grade or roof deck; ≥ 10 ft. of stretched-string distance from known contamination sources (e.g., stack, vent, exhaust, vehicles) not exiting the roof, and ≥ 3 ft. from known sources exiting the roof

3. Room-by-Room Heating & Cooling Loads

3.1 Room-by-room loads calculated using: Unabridged ACCA Manual J v8 2013 ASHRAE Fundamentals Other per AHJ -
 3.2 Indoor design temperatures used in loads are 70°F for heating and 75°F for cooling
 3.3 Outdoor design temperatures used in loads: (See Footnote 13 and energystar.gov/hvacdesign temps)
 County & State, or US Territory, selected: Alachua, FL Cooling season: 91 °F Heating season: 33 °F -
 3.4 Number of occupants used in loads: 3 -
 3.5 Conditioned floor area used in loads: 2533 Sq. Ft. -
 3.6 Window area used in loads: 281 Sq. Ft. -
 3.7 Predominant window SHGC used in loads: 0.31 -
 3.8 Infiltration rate used in loads: Summer: 0.32 Winter: 0.59 -
 3.9 Mechanical ventilation rate used in loads: 12 CFM -

Loads At Design Conditions (kBtuh)

N NE E SE S SW W NW -

Cooling	3.10 Sensible heat gain (By orientation)	28.3	31.1	32.1	30.6	28.1	30.5	31.2	30.5	-	
	3.11 Latent heat gain (Not by orientation)	6.9									-
	3.12 Total heat gain (By orientation)	35.2	38.0	39.0	37.5	35.0	37.4	38.2	37.5	-	
	3.13 Maximum - minimum total heat gain (Item 3.12) across orientations =	4.0 kBtuh				Variation is ≤ 6 kBtuh					<input checked="" type="checkbox"/>
Heating	3.14 Total heat loss (Not by orientation)	36.5									-



ENERGY STAR Single-Family New Homes National HVAC Design Report, Version 3 / 3.1(Rev. 11)

4. Heating & Cooling Equipment Selection				Designer Verified	
4.1 Equipment selected per ACCA Manual S (see Footnote 25 & 26).				<input type="checkbox"/>	
Air Conditioner / Heat Pump (Complete if air conditioner or heat pump will be installed; otherwise check "N/A")				<input type="checkbox"/> N/A	
4.2 Equipment type: <input type="checkbox"/> Cooling-only air conditioner or <input checked="" type="checkbox"/> Cooling & heating heat pump				-	
4.3 Condenser manufacturer & model: Goodman Mfg. GSZ140491K				-	
4.4 Evaporator / fan coil manufacturer & model: Goodman Mfg. ASPT49C14A				-	
4.5 AHRI reference #: 201687940				-	
4.6 AHRI listed efficiency: 12 / 14 EER / SEER Air-source heat pump: 8.2 HSPF Ground-source heat pump: COP				-	
4.7 Evaporator fan type: <input type="checkbox"/> PSC <input type="checkbox"/> ECM / ICM <input checked="" type="checkbox"/> Other:				-	
4.8 Compressor type: <input checked="" type="checkbox"/> Single-speed <input type="checkbox"/> Two-speed <input type="checkbox"/> Variable-speed				-	
4.9 Latent capacity at design conditions, from OEM expanded performance data: 7.4 kBtuh				-	
4.10 Sensible capacity at design conditions, from OEM expanded performance data: 34.6 kBtuh				-	
4.11 Total capacity at design conditions, from OEM expanded performance data: 42.0 kBtuh				-	
4.12 Air-source heat pump capacity: At 17°F: 27.6 kBtuh At 47°F: 45.5 kBtuh <input type="checkbox"/> N/A				-	
4.13 Cooling sizing % = Total capacity (Item 4.11) divided by maximum total heat gain (Item 3.12): 108 %				-	
4.14 Complete this Item if Condition B Climate will be used to select sizing limit in Item 4.15. Otherwise, check "N/A": <input checked="" type="checkbox"/> N/A				-	
4.14.1 Load sensible heat ratio = Max. sensible heat gain (Item 3.10) / Max. total heat gain (Item 3.12) = 82%				-	
4.14.2 HDD / CDD ratio (Visit energystar.gov/hvacdesigntemps to determine this value for the design location) = 0.2				-	
4.15 Check box of applicable cooling sizing limit from chart below:				-	
Equipment Type (Per Item 4.2) & Climate Condition (Per Item 4.14)	Compressor Type (Per Item 4.8)				
	Single-Speed	Two-Speed	Variable-Speed		
For Cooling-Only Equipment or For Cooling Mode of Heat Pump in Condition A Climate	<input checked="" type="checkbox"/> Recommended: 90 – 115% Allowed: 90 – 130%	<input type="checkbox"/> Recommended: 90 – 120% Allowed: 90 – 140%	<input type="checkbox"/> Recommended: 90 – 130% Allowed: 90 – 160%		
For Cooling Mode of Heat Pump in Condition B Climate	<input type="checkbox"/> 90% - 100%, plus 15 kBtuh	<input type="checkbox"/> 90% - 100%, plus 15 kBtuh	<input type="checkbox"/> 90% - 100%, plus 15 kBtuh		
4.16 Cooling sizing % (4.13) is within cooling sizing limit (4.15)				<input checked="" type="checkbox"/>	
Furnace (Complete if furnace will be installed; otherwise check "N/A")				<input checked="" type="checkbox"/> N/A	
4.17 Furnace manufacturer & model:				-	
4.18 Listed efficiency: AFUE				-	
4.19 Total capacity: kBtuh				-	
4.20 Heating sizing % = Total capacity (Item 4.19) divided by total heat loss (Item 3.14): 0%				-	
4.21 Check box of applicable heating sizing limit from chart below:				-	
When Used for Heating Only		When Paired With Cooling			
<input type="checkbox"/> 100 - 140%		<input type="checkbox"/> Recommended: 100 – 140% Allowed: 100 – 400%			
4.22 Heating sizing % (4.20) is within heating sizing limit (4.21)				<input type="checkbox"/>	
5. Duct Design (Complete if heating or cooling equipment will be installed with ducts; otherwise check "N/A")				<input type="checkbox"/> N/A	
5.1 Duct system designed for the equipment selected in Section 4, per ACCA Manual D				<input checked="" type="checkbox"/>	
5.2 Design HVAC fan airflow:		Cooling mode 1225 CFM	Heating mode 1225 CFM	-	
5.3 Design HVAC fan speed setting (e.g., low, medium, high):		Cooling mode Medium	Heating mode Medium	-	
5.4 Design total external static pressure (corresponding to the mode with the higher airflow in Item 5.2):		0.35 IWC		-	
5.5 Room-by-room design airflows documented below (which must sum to the mode with the higher airflow in Item 5.2)				-	
Room Name	Design Airflow (CFM)	Room Name	Design Airflow (CFM)	Room Name	Design Airflow (CFM)
1 BATH 1	42	12 MASTER SUITE	194	23	
2 BATH 2	3	13 MASTER WIC	63	24	
3 BATH 3	17	14 MUDROOM	13	25	
4 GREAT ROOM	265	15 OFFICE	4	26	
5 GUEST ROOM 1	74	16 PANTRY	5	27	
6 GUEST ROOM 2	142	17 STORAGE	20	28	
7 HALLWAY	0	18 WIC 1	23	29	
8 KITCHEN/DINING	265			30	
9 LAUNDRY	58			31	
10 M WC	12			32	
11 MASTER BATH	25				
				Total for all rooms	1225

ANSI / RESNET / ACCA 310 HVAC Design Report (1,2)

1. Design Basis & Architectural Scope											
1.1 Design description (optional):											
1.2 Design company:		Hometown Heating and Air		Designer name:		Matthew McClellan		Date:		Feb 25, 2022	
1.3 Software name and version used to complete design:				Right-Suite® Universal 2022 22.0.01 RSU64164				N/A			
For a Dwelling, Townhouse, or Dwelling / Sleeping Unit Within (i.e. duplex):											
1.4 Architectural plan name or address of property:											
1.5 Architectural options used in the design:(3):											
1.6 Other architectural options that the design can be used with:(4)											
For a Dwelling / Sleeping Unit Not Within a Dwelling or Townhouse (e.g. condo, apartment):											
1.7 Unique ID for bldg. that the dwelling / sleeping unit is in:(5)											
1.8 Architectural plan used in design (e.g. dwelling unit model):											
1.9 Other architectural plans that the design can be used with:(6)											
1.10 Architectural options used in the design:(3)											
1.11 Other architectural options that the design can be used with:(4)											
1.12 Dwelling / sleeping unit location used in design:(7)											
2. Dwelling-Unit Mechanical Ventilation System Design											
Ventilation System Type & Control Location:		System 1		System 2		System 2					
2.1 Unique name or ID for each system:(8)											
2.2 Vent. equipment manufacturer & model #:(9)											
2.3 Specified system type:(10)		Balanced w/o Recovery									
2.4 Specified control location:(11)											
2.5 Ventilation zone name(s) served by system:(12)		Entire House									
Ventilation Zone Served by Ventilation System:		Zone 1		Zone 2		Zone 3					
2.6 Ventilation zone name:(12)		Entire House									
2.7 Design basis:(13)		Other									
2.8 Floor area (sq. ft.) and # bedrooms in vent. zone:		2533 3									
2.9 Ventilation design airflow rate (CFM):(14)											
2.10 Vent. runtime per cycle & cycle time (mins):		0 of every 0									
2.11 Time-averaged mechanical vent. rate (CFM):(15)											
3. Heat Gain & Heat Loss Loads											
3.1 Design basis for the loads:(16)		ACCA Manual J 8th Edition		3.2 Load methodology:(17)		Room-by-Room					
3.3 Indoor design temperatures used in loads (°F):		Heating Season:		70		Cooling Season:		72			
3.4 Outdoor design temperatures used in loads (°F):(18)		Heating Season:		33		Cooling Season:		91			
3.5 Outdoor design temperature location & data source:(19)		Alachua, FL		Data Source:		ASHRAE 2017					
Zone-Specific Inputs & Loads at Design Conditions		Zone 1		Zone 2		Zone 3					
3.6 Name of heated or cooled zone:(20)		Entire House									
3.7 Occupants & total occup. internal gains (Btuh):(21)		3 690									
3.8 Total non-occupant internal gains (Btuh):		3400									
3.9 Conditioned floor area (sq. ft.):(22)		2533									
3.10 Window area (sq. ft.):(23)		281									
3.11 Predominant window SHGC:(24)		0.3									
3.12 Predominant insulation nominal R-value:(24,25)		Wall: 13.0 Ceiling: 38.0		Wall: Ceiling:		Wall: Ceiling:		Wall: Ceiling:			
3.13 Infiltration rate (Qualitative or ACH50):(26)		6.0									
3.14 Time-averaged mechanical vent. rate (CFM):		12									
3.15 Heat gain (kBtuh):(27)		Sensible	Latent	Total	Sensible	Latent	Total	Sensible	Latent	Total	
	N	28.3	6.9	35.2							
	NE	31.1	6.9	38.0							
	E	32.1	6.9	39.0							
	SE	30.6	6.9	37.5							
	S	28.1	6.9	35.0							
	SW	30.5	6.9	37.4							
	W	31.2	6.9	38.2							
	NW	30.5	6.9	37.5							
3.16 Maximum – minimum total heat gain (kBtuh):(28)				4.0							
3.17 Total heat loss (kBtuh):		36.5									

ANSI / RESNET / ACCA 310 HVAC Design Report (1,2)

4. Heating & Cooling Equipment Selection	1		2		3		
Air Conditioners, Heat Pumps, & Other Cooling Equipment (If none of these will be installed, check "N/A")							N/A
4.1 Unique name or ID for each system:	Entire House						
4.2 Zone that system serves (See Item 3.6):	Entire House						
4.3 Equipment type:(29)	HP						
4.4 Evaporator / fan coil mfr. & model #:(30)	GOOD ASPT49C14A						
4.5 Condenser mfr. & model #:(30)	GOOD GSZ140491K		N/A		N/A		
4.6 AHRI ref. #, or check box for alt. OEM doc.:(31)	201687940		OEM		OEM		
4.7 If AC / HP, rated cooling efficiency:(32)	14 SEER		N/A		N/A		
4.8 If HP, rated heating efficiency:(33)	8.2 HSPF		N/A		N/A		
4.9 If HP, ratio of max. to min. rated capacity:	1.6		N/A		N/A		
4.10 If AC / HP, blower fan motor & speed type:(34)	Other Single		N/A		N/A		
4.11 If AC / HP, compressor speed type:(35)	Single		N/A		N/A		
4.12 If AC / HP, meter device type:(36)			N/A		N/A		
4.13 If TXV or EEV, OEM subcooling target (°F):(37)	0.0		N/A		N/A		
4.14 Filter performance metric and rating:(38)			N/A		N/A		
Furnaces, Boilers, & Other Heating Equipment (If none of these will be installed, check "N/A")							N/A
4.15 Unique name or ID for each system:							
4.16 Zone that system serves (See Item 3.6):							
4.17 Equipment type:(39)							
4.18 Equipment manufacturer & model #:							
4.19 AHRI ref. #, or check box for alt. OEM doc.:(31)			OEM		OEM		
4.20 If furnace or boiler, rated heating efficiency:			N/A		N/A		
4.21 If furnace, blower fan motor & speed type:(34)			N/A		N/A		
4.22 If furnace or boiler, heating capacity type:(40)			N/A		N/A		
4.23 If furnace or boiler, venting type:(41)			N/A		N/A		
4.24 Filter performance metric and rating:(38)			N/A		N/A		
5. Duct Design (Complete if duct system will be installed; otherwise check "N/A")							N/A
5.1 Unique name or ID for each system:	Entire House						
5.2 Zone that system serves (See Item 3.6):	Entire House						
Design Values for Cooling and Heating Mode	Cooling	Heating	Cooling	Heating	Cooling	Heating	
5.3 Design blower fan airflow (CFM):(42)	1225	1225					
5.4 Design blower fan speed setting:(43)	Medium	Medium					
5.5 Design external static pressure (IWC):(44)	0.35						
5.6 Room-by-room design airflows (CFM):	Room Name	Airflow	Room Name	Airflow	Room Name	Airflow	
Total Design Airflow:	[All rooms]	1225	[All rooms]		[All rooms]		
1.	BATH 1	42					
2.	BATH 2	3					
3.	BATH 3	17					
4.	GREAT ROOM	265					
5.	GUEST ROOM 1	74					
6.	GUEST ROOM 2	142					
7.	HALLWAY	0					
8.	KITCHEN/DINING	265					
9.	LAUNDRY	58					
10.	M WC	12					
11.	MASTER BATH	25					
12.	MASTER SUITE	194					
13.	MASTER WIC	63					
14.	MUDROOM	13					
15.	OFFICE	4					
16.	PANTRY	5					
17.	STORAGE	20					
18.	WIC 1	23					
19.							
20.							

ANSI / RESNET / ACCA 310 HVAC Design Report (1,2)

5.6 Room-by-room design airflows (Continued):	Room Name	Airflow	Room Name	Airflow	Room Name	Airflow
21.						
22.						
23.						
24.						
25.						
26.						
27.						
28.						
29.						
30.						
31.						
32.						
33.						
34.						
35.						

Footnotes

1. The purpose of this report is to document the design information required by ANSI / RESNET / ACCA 310 – a standard for grading the installation of HVAC systems - for a dwelling, townhouse, or dwelling / sleeping unit. The HVAC designer should complete one report per dwelling, townhouse, or dwelling / sleeping unit that encompasses all HVAC systems (e.g., for a dwelling with two zones, the HVAC system for each zone should be documented in the same report).
2. Note that this report will be reviewed by users of the standard (e.g., a rater) to ensure that the design meets the tolerances defined in Section 4.3 of ANSI / RESNET / ACCA 310. The HVAC systems will not be eligible to earn recognition for proper installation unless all tolerances are met.
3. If the HVAC design documented in this report incorporated one or more options (e.g., media room option), then list those options.
4. If this same HVAC design could be used with other options (e.g., bonus room, balcony with sliding glass door), then list those option(s).
5. For example, the name of the development or the building's address.
6. If this same HVAC design could be used with other plans (e.g., other dwelling unit models) in the building, then list those plan(s).
7. Because the loads are dependent on the dwelling / sleeping unit's location in the building, indicate whether the design is for the Top-Floor, a Mid-Level-Floor, or the Bottom-Floor of the building; and either a Corner Unit or Middle Unit that is between two other units.
8. For example, the unique ID might be "Powder Bath Fan" or "Whole-House ERV".
9. The ventilation equipment manufacturer and model number are required to be reported for dwelling / sleeping units not within a dwelling or townhouse; and are optional for dwellings, townhouses, and sleeping / dwelling units within (i.e., duplex).
10. Ventilation system types are: Supply - a supply-only system, Exhaust - an exhaust-only system, Balanced w/o Recov. - a balanced system without energy or heat recovery, ERV - an energy recovery ventilator, HRV - a heat recovery ventilator, Vent. Dehumidifier - a ventilation system with integrated dehumidifier, or Other - any other system type.
11. For example, common ventilation control locations include a bathroom or utility room.
12. For example, the ventilation zone name may be "Whole Dwelling", "Upper Level", "Lower Level", or "Basement".
13. Design basis options are: 62.2-2010 - ASHRAE 62.2-2010, 62.2-2013 - ASHRAE 62.2-2013, 62.2-2016 - ASHRAE 62.2-2016, 62.2-2019 - ASHRAE 62.2 - 2019, or Other - any other ventilation standard.
14. Enter the airflow rate of the ventilation system when operating (e.g., a 50 CFM cycled bath fan has a ventilation airflow rate of 50 CFM).
15. The following formula shall be used to determine the time-averaged ventilation airflow rate: Time Averaged Vent Rate = Vent Rate * Runtime Per Cycle / Cycle Time Where : • Time Averaged Vent Rate = The time - averaged ventilation airflow rate. • Vent Rate = The design's ventilation airflow rate reported in Item 2.9. • Runtime Per Cycle = The runtime per cycle reported in Item 2.10. • Cycle Time = The cycle time reported in Item 2.10.
16. Design basis options for the heat gain and heat loss loads are: ACCA Manual J v8 2013 - ACCA Manual J v8, 2013 edition; ACCA Manual J v8 2016 - ACCA Manual J v8, 2016 edition; 2017 ASHRAE Fund. - 2017 ASHRAE Fundamentals; or Per AHJ - a design basis prescribed by the Authority Having Jurisdiction.
17. Load methodology options are: Room-by-Room or Single Block. Note that for dwellings, townhouses, and dwelling / sleeping units within (i.e., duplex), the room - by - room load methodology must be used. See Fn. 2 for details.
18. Note that the outdoor design temperatures must meet the limits defined in ANSI / RESNET / ACCA 310 Appendix A for the county or U.S. Territory where the project will be constructed. See Fn. 2 for details.
19. The location shall include the city or weather station and the state. The data source options are: ACCA - ACCA Manual J, ASHRAE - ASHRAE Handbook of Fundamentals, or AHJ - design conditions prescribed by the Authority Having Jurisdiction.
20. For example, the heated or cooled zone name may be "Upper Level", "Master Suite", or "Basement".

ANSI / RESNET / ACCA 310 HVAC Design Report (1,2)

21. To determine the number of occupants, calculate the number of bedrooms in the zone and add one. ANSI / RESNET / ACCA 310 defines a "bedroom" for one - and two - family dwellings and townhouses as a room or space 70 square feet of floor area or greater, with egress window or skylight, and doorway to the main body of the dwelling unit, that can be used for sleeping. For all other Dwelling Units, a room or space that can be used for sleeping. For all dwelling or sleeping units, the number of bedrooms shall not be less than one. ANSI / RESNET / ACCA 310 defines an "egress window" as an operable window that provides for a means of escape and access for rescue in the event of an emergency and with the following attributes : • Has a sill height of not more than 44 inches above the floor; and, • Has a minimum net clear opening of 5.7 sq.ft., opening height of 24 in., and opening width of 20 in.; and, • Is operational from the inside of the room without the use of keys, tools or special knowledge. The number of occupants must fall within the tolerance specified in ANSI / RESNET / ACCA 310. See Fn. 2 for details.
22. The difference between the Conditioned Floor Area (CFA) used in the design and the actual dwelling, townhouse, or dwelling / sleeping unit must fall within the tolerance specified in ANSI / RESNET / ACCA 310. See Fn. 2 for details. Be advised, the CFA will be evaluated using the definition in ANSI / RESNET / ACCA 310, which defines this value, in part, as the floor area of the Conditioned Space Volume within a building or dwelling unit, not including the floor area of attics, crawlspaces, and basements below air sealed and insulated floors.
23. The difference between the window area used in the design and the actual dwelling, townhouse, or dwelling / sleeping unit must fall within the tolerance specified in ANSI / RESNET / ACCA 310. See Fn. 2 for details. Be advised, the window area will be evaluated by calculating it using the on - site inspection protocol provided in Normative Appendix B of ANSI / RESNET / ICC 301, which instructs the user to measure the width and height of the rough opening for the window and round to the nearest inch, and then to use these measurements to calculate window area, rounding to the nearest tenth of a square foot. See <https://codes.iccsafe.org/content/chapter/16191/> for the complete protocol.
24. "Predominant" is defined as the SHGC or R-value used in the greatest amount of window, wall, or ceiling area in the zone.
25. If both cavity and continuous insulation are used, report the sum of the nominal R-value of the cavity and continuous insulation.
26. The infiltration rate shall be reported using a qualitative input (i.e., Tight, Semi-Tight, Average, Semi-Leaky, Leaky) or in units of ACH50.
27. Provide loads for the orientation(s) that the design is intended to be used in (e.g., N, S, E, W), where orientation is defined as the direction that the front door of the dwelling is facing. For example, if a site - specific design has been completed for a single project, only the loads for the single orientation of that project need to be provided.
28. If the heat gain has been provided for multiple orientations, then the difference between the max. and min. total heat gain across the orientations specified must be reported and fall within the tolerance specified in ANSI / RESNET / ACCA 310. See Fn. 2 for details.
29. Equipment type options are: AC - Air Conditioner, HP - Heat Pump, MNAC - Mini-Split Air Conditioner, MNHP - Mini-Split Heat Pump, MTAC - Multi - Split Air Conditioner, MTHP - Multi - Split Heat Pump, and Other - any other cooling equipment type.
30. For single-package systems or systems without a condenser (e.g., evaporative cooler), provide manufacturer and model number in Item 4.4 and select "N / A" for Item 4.5.
31. If an AHRI Reference Number is not available, OEM-provided documentation shall be collected with the rated efficiency of the equipment. If the equipment contains multiple components, the rated efficiency shall reflect the specific combination of indoor and outdoor components, along with confirmation from the OEM that the two components are designed to be used together.
32. For example, if the metric for the rated efficiency of the equipment is SEER, then its SEER rating shall be reported; if the metric is EER, then its EER rating shall be reported; if both SEER and EER, then both rated values shall be reported.
33. For example, if the metric for the rated efficiency of the equipment is HSPF, then its HSPF rating shall be reported; if the metric is COP, then its COP rating shall be reported; if both HSPF and COP, then both rated values shall be reported.
34. Blower fan motor type options are: PSC - Permanent Split Capacitor, ECM - Electronically Commutated Motor, or Other - any other motor type. For blower fan speed type, while equipment typically has multiple speed settings to select from during installation, this parameter is related to the number of operational speeds that the blower fan is capable of : Single - a system that operates at no more than one speed setting each for heating mode and cooling mode, Two - a system that can operate at no more than two speeds each for heating mode and cooling mode, Variable - a system that can operate at more than two speeds.
35. The compressor speed type is related to the number of operational speeds that the compressor is capable of: Single - a system that operates at no more than one speed setting each for heating mode and cooling mode, Two - a system that can operate at no more than two speeds each for heating mode and cooling mode, Variable - a system that can operate at more than two speeds.
36. Meter device type options are: Piston/Cap - piston / capillary tube, TXV - thermal expansion valve, or EEV - electronic expansion valve.
37. If the meter device type is TXV or EEV, then provide then the OEM-specified subcooling target at the service valve.
38. For example, MERV or FPR.
39. Equipment type options are: Furnace, Boiler, or Other - any other heating equipment type.
40. Heating capacity type options are: Single-Stage, Two-Stage, or Modulating.
41. Vent. type options are: Natural Draft - natural draft system, Mech. Draft - mechanical draft system, or Direct Vent - direct-vent appliance.
42. Provide design airflow in cubic feet per minute of air with a density of 0.075 pounds per cubic feet. Airflow at this air density is often referred to as Standard CFM (SCFM) and represents air at 68 °F, 50 % relative humidity, and at a barometric pressure of 29.92" Hg.
43. This is the OEM setting that corresponds with the design blower fan airflow. Common examples include low, medium-low, medium, medium - high, and high, but also may be defined in terms of dip - switch settings or other classifications