2012 Connecticut Code Summary

(Proposed Adoption Fall 2015)

- 2012 International Building Code. (IBC)
- 2012 International Existing Building Code (IEBC)
- 2012 International Plumbing Code. (IPC)
- 2012 International Mechanical Code. (IMC)
- 2012 International Energy Conservation Code (IECC)
- 2012 International Residential Code. (IRC)
- 2014 National Electrical Code (NFPA-70) (NEC)

2012 International Residential Code

N1101.7 (R102.1.1) Above code programs.
The *building official* or other authority having jurisdiction shall be permitted to deem a national, state or local energy-efficiency program to exceed the energy efficiency required by this code. Buildings *approved* in writing by such an energy-efficiency program shall be considered in compliance with this code. The requirements identified as "mandatory" in Chapters 4 and 5 of this code, as applicable, shall be met.

N1103.1.1 (R403.1.1) Programmable thermostat.
Where the primary heating system is a forced-air furnace, at least one thermostat per dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule to maintain different temperature set points at different times of the day. This thermostat shall include the capability to set back or temporarily operate the system to maintain zone temperatures down to 55°F (13°C) or up to 85°F (29°C). The thermostat shall initially be programmed with a heating temperature set point no higher than 70°F (21°C) and a cooling temperature set point no lower than 78°F (26°C).

N1103.1.2 (R403.1.2) Heat pump supplementary heat (Mandatory).
Heat pumps having supplementary electric-resistance heat shall have controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can meet the heating load.

N1103.2.1 (R403.2.1) Insulation (Prescriptive).
Supply ducts in attics shall be insulated to a minimum of R-8. All other ducts shall be insulated to a minimum of R-6.

Exception: Ducts or portions thereof located completely inside the *building thermal envelope.*

N1103.2.2 (R403.2.2) Sealing (Mandatory).
Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with Section M1601.4.1 of this code.

Exceptions:
1. Air-impermeable spray foam products shall be permitted to be applied without additional joint seals.

2. Where a duct connection is made that is partially inaccessible, three screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.
3. Continuously welded and locking-type longitudinal joints and seams in ducts operating at static pressures less than 2 inches of water column (500 Pa) pressure classification shall not require additional closure systems.

Duct tightness shall be verified by either of the following:

1. Post construction test: Total leakage shall be less than or equal to **4 cfm (113.3 L/min) per 100 square feet** (9.29 m^2) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.
2. Rough-in test: Total leakage shall be less than or equal to **4 cfm (113.3 L/min) per 100 ft^2** (9.29 m^2) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to **3 cfm (85 L/min) per 100 square feet** (9.29 m^2) of conditioned floor area.

Exception: The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope.

N1103.2.2.1 (R403.2.2.1) Sealed air handler.
Air handlers shall have a manufacturer's designation for an air leakage of no more than 2 percent of the design air flow rate when tested in accordance with ASHRAE 193.

N1103.2.3 (R403.2.3) Building cavities (Mandatory).
Building framing cavities shall not be used as ducts or plenums.

N1103.5 (R403.5) Mechanical ventilation (Mandatory).
The building shall be provided with ventilation that meets the requirements of Section M1507 of this code or with other approved means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

> **N1103.5.1 (R403.5.1) Whole-house mechanical ventilation system fan efficacy.**
> Mechanical ventilation system fans shall meet the efficacy requirements of Table N1103.5.1.
>
> **Exception:** Where mechanical ventilation fans are integral to tested and listed HVAC equipment, they shall be powered by an electronically commutated motor.

N1103.6 (R403.6) Equipment sizing (Mandatory). & M1401.3 Sizing.
Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J or other *approved* heating and cooling calculation methodologies.

M1411.6 Locking access port caps.
Refrigerant circuit access ports located outdoors shall be fitted with locking-type tamper-resistant caps or shall be otherwise secured to prevent unauthorized access.

M1507.2 Recirculation of air.

Exhaust air from bathrooms and toilet rooms shall not be recirculated within a residence or to another *dwelling unit* and shall be exhausted directly to the outdoors. Exhaust air from bathrooms and toilet rooms shall not discharge into an *attic,* crawl space or other areas inside the building.

M1507.3 Whole-house mechanical ventilation system.

Whole-house mechanical ventilation systems shall be designed in accordance with Sections M1507.3.1 through M1507.3.3.

M1507.3.1 System design.

The whole-house ventilation system shall consist of one or more supply or exhaust fans, or a combination of such, and associated ducts and controls. Local exhaust or supply fans are permitted to serve as such a system. Outdoor air ducts connected to the return side of an air handler shall be considered to provide supply ventilation.

M1507.3.2 System controls.

The whole-house mechanical ventilation system shall be provided with controls that enable manual override.

M1507.3.3 Mechanical ventilation rate.

The whole-house mechanical ventilation system shall provide outdoor air at a continuous rate of not less than that determined in accordance with Table M1507.3.3(1).

Exception: The whole-house mechanical ventilation system is permitted to operate intermittently where the system has controls that enable operation for not less than 25-percent of each 4-hour segment and the ventilation rate prescribed in Table M1507.3.3(1) is multiplied by the factor determined in accordance with Table M1507.3.3(2).

TABLE M1507.3.3(1) CONTINUOUS WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM AIRFLOW RATE REQUIREMENTS

DWELLING UNIT FLOOR AREA (square feet)	NUMBER OF BEDROOMS				
	0 to 1	2 to 3	4 to 5	6 to 7	> 7
	Airflow in CFM				
< 1,500	30	45	60	75	90
1,501 to 3,000	45	60	75	90	105
3,001 to 4,500	60	75	90	105	120
4,501 to 6,000	75	90	105	120	135
6,001 to 7,500	90	105	120	135	150
> 7,500	105	120	135	150	165

TABLE M1507.3.3(2) INTERMITTENT WHOLE-HOUSE MECHANICAL VENTILATION RATE FACTORS[a, b]

RUN-TIME PERCENTAGE IN EACH 4-HOUR SEGMENT	25%	33%	50%	66%	75%	100%
Factor[a]	4	3	2	1.5	1.3	1.0

a. For ventilation system run time values between those given, the factors are permitted to be determined by interpolation.

b. Extrapolation beyond the table is prohibited.

M1507.4 Local exhaust rates.

Local exhaust systems shall be designed to have the capacity to exhaust the minimum air flow rate determined in accordance with Table M1507.4.

TABLE M1507.4 MINIMUM REQUIRED LOCAL EXHAUST RATES FOR ONE- AND TWO-FAMILY DWELLINGS

AREA TO BE EXHAUSTED	EXHAUST RATES
Kitchens	100 cfm intermittent or 25 cfm continuous
Bathrooms-Toilet Rooms	Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous

M1601.4.1 Joints, seams and connections.

All longitudal and transverse joints, seams and connections in metallic and nonmetallic ducts shall be constructed as specified in SMACNA *HVAC Duct Construction Standards—Metal and Flexible* and NAIMA *Fibrous Glass Duct Construction Standards.* All joints, longitudinal and transverse seams, and connections in ductwork shall be securely fastened and sealed with welds, gaskets, mastics (adhesives), mastic-plus-embedded-fabric systems or tapes.

Closure systems used to seal flexible air ducts and flexible air connectors shall comply with UL 181B and shall be marked "181 B-FX" for pressure-sensitive tape or "181 B-M" for mastic. Duct connections to flanges of air distribution system equipment shall be sealed and mechanically fastened. Mechanical fasteners for use with flexible nonmetallic air ducts shall comply with UL 181B and shall be marked 181B-C. Crimp joints for round metallic ducts shall have a contact lap of not less than 1 inch (25.4 mm) and shall be mechanically fastened by means of not less than three sheet-metal screws or rivets equally spaced around the joint.

Closure systems used to seal metal ductwork shall be installed in accordance with the manufacturer's instructions. Round metallic ducts shall be mechanically fastened by means of at least three sheet metal screws or rivets spaced equally around the joint. Unlisted duct tape shall not be permitted as a sealant on any duct.

Exceptions:
1. Spray polyurethane foam shall be permitted to be applied without additional joint seals.
2. Where a duct connection is made that is partially inaccessible, three screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.
3. Continuously welded and locking-type longitudinal joints and seams in ducts operating at static pressures less than 2 inches of water column (500 Pa) pressure classification shall not require additional closure systems.

M1602.1 Return air.
Return air shall be taken from inside the *dwelling.* Dilution of return air with outdoor air shall be permitted.

M1602.2 Prohibited sources.
Outdoor and return air for a forced-air heating or cooling system shall not be taken from the following locations:

3. A room or space, the volume of which is less than 25 percent of the entire volume served by the system. Where connected by a permanent opening having an area sized in accordance with ACCA Manual D, adjoining rooms or spaces shall be considered as a single room or space for the purpose of determining the volume of the rooms or spaces.

Exception: The minimum volume requirement shall not apply where the amount of return air taken from a room or space is less than or equal to the amount of supply air delivered to the room or space.

ACCA Manual D, Section 4-9: *An engineered, low resistance return path shall be provided for every room or space that receives supply air. This path may be through a ducted return grille, a transfer duct (fitted with two return grilles) to a central return, or a door grille. Air velocity shall not exceed* ***350 FPM****…*

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312.1 Load calculations.
Heating and cooling system design loads for the purpose of sizing systems, appliances and *equipment* shall be determined in accordance with the procedures described in the ASHRAE/ACCA Standard 183. Alternatively, design loads shall be determined by an *approved* equivalent computation procedure, using the design parameters specified in Chapter 3 of the *International Energy Conservation Code.*

401.2 Ventilation required.
Every occupied space shall be ventilated by natural means in accordance with Section 402 or by mechanical means in accordance with Section 403. Where the air infiltration rate in a dwelling unit is less than **5 air changes per hour** when tested with a blower door at a pressure of 0.2-inch water column (50 Pa) in accordance with Section 402.4.1.2 of the *International Energy Conservation Code,* the dwelling unit shall be ventilated by mechanical means in accordance with Section 403.

401.3 When required.
Ventilation shall be provided during the periods that the room or space is occupied.

603.18 Registers, grilles and diffusers.
Duct registers, grilles and diffusers shall be installed in accordance with the manufacturer's installation instructions. Volume dampers or other means of supply air adjustment shall be provided in the branch ducts or at each individual duct register, grille or diffuser. Each volume damper or other means of supply air adjustment used in balancing shall be provided with access.

603.2 Duct sizing.
Ducts installed within a single *dwelling unit* shall be sized in accordance with ACCA Manual D or other *approved* methods. Ducts installed within all other buildings shall be sized in accordance with the ASHRAE *Handbook of Fundamentals* or other equivalent computation procedure.

605.3 Airflow over the filter.
Ducts shall be constructed to allow an even distribution of air over the entire filter.

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R402.4.1.2 Testing.
The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding **5 air changes per hour** in Climate Zones 1 and 2, and **3 air changes per hour** in Climate Zones 3 through 8. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the *code official,* testing shall be conducted by an *approved* third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official.* Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope.* (**NOTE: for IECC, CT is Zone 5A**)

During testing:
1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weather-stripping or other infiltration control measures;
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures;
3. Interior doors, if installed at the time of the test, shall be open;
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and
6. Supply and return registers, if installed at the time of the test, shall be fully open.

R403.1.1 Programmable thermostat.
Where the primary heating system is a forced-air furnace, at least one thermostat per dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule to maintain different temperature set points at different times of the day. This thermostat shall include the capability to set back or temporarily operate the system to maintain *zone* temperatures down to 55°F (13°C) or up to 85°F (29°C). The thermostat shall initially be programmed with a heating temperature set point no higher than 70°F (21°C) and a cooling temperature set point no lower than 78°F (26°C).

R403.1.2 Heat pump supplementary heat (Mandatory).
Heat pumps having supplementary electric-resistance heat shall have controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can meet the heating load.

R403.2.1 Insulation (Prescriptive).
Supply ducts in attics shall be insulated to a minimum of R-8. All other ducts shall be insulated to a minimum of R-6.

Exception: Ducts or portions thereof located completely inside the *building thermal envelope.*

R403.2.2 Sealing (Mandatory).
Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with either the *International Mechanical Code* or *International Residential Code,* as applicable.

Exceptions:
1. Air-impermeable spray foam products shall be permitted to be applied without additional joint seals.
2. Where a duct connection is made that is partially inaccessible, three screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.
3. Continuously welded and locking-type longitudinal joints and seams in ducts operating at static pressures less than 2 inches of water column (500 Pa) pressure classification shall not require additional closure systems.

Duct tightness shall be verified by either of the following:
1. Postconstruction test: Total leakage shall be less than or equal to **4 cfm (113.3 L/min) per 100 square feet** (9.29 m^2) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.
2. Rough-in test: Total leakage shall be less than or equal to **4 cfm (113.3 L/min) per 100 square feet** (9.29 m^2) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to **3 cfm (85 L/min) per 100 square feet** (9.29 m^2) of conditioned floor area.

Exception: The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope.
R403.2.2.1 Sealed air handler.
Air handlers shall have a manufacturer's designation for an air leakage of no more than 2 percent of the design air flow rate when tested in accordance with ASHRAE 193.

R403.2.3 Building cavities (Mandatory).
Building framing cavities shall not be used as ducts or plenums.

R403.6 Equipment Sizing (Mandatory).
Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J or other *approved* heating and cooling calculation methodologies.

Connecticut Location		Connecticut Design Data					ACCA Table 1A (Reference Design Data)						
City	County	Elevation	Winter Heating 99% dB	Summer Cooling 1% dB	Cooling 1% (wB)	Miles To Reference	Design Reference City	State	Elevation	Latitude	Heating 99% (dB)	Cooling 1% (dB)	Cooling 1% (wB)
ABINGTON	WINDHAM	653	5	86	73	20	Norwich	CT	197	41	7	86	73
ANDOVER	TOLLAND	405	5	88	72	19	Hartford Brainard Field	CT	19	41	6	88	72
ANSONIA	NEW HAVEN	90	7	84	73	8	New Haven	CT	14	41	7	84	73
ASHFORD	WINDHAM	698	5	86	73	25	Norwich	CT	197	41	7	86	73
AVON	HARTFORD	287	5	88	72	6	Hartford Brainard Field	CT	19	41	6	88	72
BARKHAMSTED	LITCHFIELD	562	4	88	72	16	Hartford Brainard Field	CT	19	41	6	88	72
BEACON FALLS	NEW HAVEN	133	5	88	72	7	Waterbury	CT	850	41	2	85	71
BERLIN	HARTFORD	161	5	88	72	10	Hartford Brainard Field	CT	19	41	6	88	72
BETHANY	NEW HAVEN	512	5	84	73	8	New Haven	CT	14	41	7	84	73
BETHEL	FAIRFIELD	376	4	87	72	15	Waterbury	CT	850	41	2	85	71
BETHLEHEM	LITCHFIELD	833	2	85	71	10	Waterbury	CT	850	41	2	85	71
BLOOMFIELD	HARTFORD	134	6	88	72	6	Hartford Brainard Field	CT	19	41	6	88	72
BOLTON	TOLLAND	736	6	88	71	15	Windsor Locks Bradley Field	CT	197	42	8	88	71
BOZRAH	NEW LONDON	180	7	86	73	8	Norwich	CT	197	41	7	86	73
BRANFORD	NEW HAVEN	41	7	84	73	7	New Haven	CT	14	41	7	84	73
BRIDGEPORT	FAIRFIELD	28	12	84	72	2	Bridgeport	CT	10	41	12	84	72
BRIDGEWATER	LITCHFIELD	706	3	86	71	11	Waterbury	CT	850	41	2	85	71
BRISTOL	HARTFORD	312	5	88	72	12	Hartford Brainard Field	CT	19	41	6	88	72
BROOKFIELD	FAIRFIELD	498	3	86	72	12	Waterbury	CT	850	41	2	85	71
BROOKLYN	WINDHAM	211	7	86	73	16	Norwich	CT	197	41	7	86	73
BURLINGTON	HARTFORD	750	3	88	71	11	Hartford Brainard Field	CT	19	41	6	88	72
CANAAN	LITCHFIELD	704	4	88	71	33	Hartford Brainard Field	CT	19	41	6	88	72
CANTERBURY	WINDHAM	395	6	86	73	10	Norwich	CT	197	41	7	86	73
CANTON	HARTFORD	695	4	88	71	10	Hartford Brainard Field	CT	19	41	6	88	72
CHAPLIN	WINDHAM	392	6	86	73	18	Norwich	CT	197	41	7	86	73
CHESHIRE	NEW HAVEN	261	4	87	72	13	Waterbury	CT	850	41	2	85	71
CHESTER	MIDDLESEX	225	8	85	72	19	New London	CT	10	41	9	85	72
CLINTON	MIDDLESEX	63	7	84	73	20	New Haven	CT	14	41	7	84	73
COLCHESTER	NEW LONDON	346	6	86	73	16	Norwich	CT	197	41	7	86	73
COLEBROOK	LITCHFIELD	1281	4	88	70	24	Windsor Locks Bradley Field	CT	197	42	8	88	71
COLUMBIA	TOLLAND	497	6	86	73	18	Norwich	CT	197	41	7	86	73
CORNWALL	LITCHFIELD	666	3	86	71	24	Waterbury	CT	850	41	2	85	71
COVENTRY	TOLLAND	514	7	88	71	19	Windsor Locks Bradley Field	CT	197	42	8	88	71
CROMWELL	MIDDLESEX	123	6	88	72	11	Hartford Brainard Field	CT	19	41	6	88	72
DANBURY	FAIRFIELD	380	4	87	72	17	Waterbury	CT	850	41	2	85	71

Connecticut Location		Connecticut Design Data					ACCA Table 1A (Reference Design Data)						
City	County	Elevation	Winter Heating 99% dB	Summer Cooling 1% dB	Cooling 1% (wB)	Miles To Reference	Design Reference City	State	Elevation	Latitude	Heating 99% (dB)	Cooling 1% (dB)	Cooling 1% (wB)
DARIEN	FAIRFIELD	81	10	85	72	4	Norwalk	CT	397	41	9	84	71
DEEP RIVER	MIDDLESEX	269	8	85	72	20	New London	CT	10	41	9	85	72
DERBY	NEW HAVEN	79	5	88	72	9	Waterbury	CT	850	41	2	85	71
DURHAM	MIDDLESEX	143	7	84	73	16	New Haven	CT	14	41	7	84	73
EAST GRANBY	HARTFORD	402	7	88	71	5	Windsor Locks Bradley Field	CT	197	42	8	88	71
EAST HADDAM	MIDDLESEX	551	7	85	72	17	New London	CT	10	41	9	85	72
EAST HAMPTON	MIDDLESEX	445	4	88	72	19	Hartford Brainard Field	CT	19	41	6	88	72
EAST HARTFORD	HARTFORD	9	6	88	72	6	Hartford Brainard Field	CT	19	41	6	88	72
EAST HAVEN	NEW HAVEN	100	7	84	73	3	New Haven	CT	14	41	7	84	73
EAST LYME	NEW LONDON	58	9	85	72	7	New London	CT	10	41	9	85	72
EAST WINDSOR	HARTFORD	99	8	88	71	3	Windsor Locks Bradley Field	CT	197	42	8	88	71
EASTFORD	WINDHAM	583	6	86	73	24	Norwich	CT	197	41	7	86	73
EASTON	FAIRFIELD	15	12	84	72	4	Bridgeport	CT	10	41	12	84	72
ELLINGTON	TOLLAND	389	7	88	71	10	Windsor Locks Bradley Field	CT	197	42	8	88	71
ENFIELD	HARTFORD	137	8	88	71	6	Windsor Locks Bradley Field	CT	197	42	8	88	71
ESSEX	MIDDLESEX	223	8	85	72	16	New London	CT	10	41	9	85	72
FAIRFIELD	FAIRFIELD	160	11	84	72	5	Bridgeport	CT	10	41	12	84	72
FARMINGTON	HARTFORD	206	5	88	72	6	Hartford Brainard Field	CT	19	41	6	88	72
FRANKLIN	NEW LONDON	284	7	86	73	7	Norwich	CT	197	41	7	86	73
GLASTONBURY	HARTFORD	203	5	88	72	10	Hartford Brainard Field	CT	19	41	6	88	72
GOSHEN	LITCHFIELD	1335	0	85	71	24	Waterbury	CT	850	41	2	85	71
GRANBY	HARTFORD	246	8	88	71	8	Windsor Locks Bradley Field	CT	197	42	8	88	71
GREENWICH	FAIRFIELD	67	13	88	73	8	White Plains	NY	439	41	12	87	72
GRISWOLD	NEW LONDON	152	7	86	73	4	Norwich	CT	197	41	7	86	73
GROTON	NEW LONDON	22	9	85	72	4	New London	CT	10	41	9	85	72
GUILFORD	NEW HAVEN	69	7	84	73	12	New Haven	CT	14	41	7	84	73
HADDAM	MIDDLESEX	105	9	85	72	23	New London	CT	10	41	9	85	72
HAMDEN	NEW HAVEN	151	7	84	73	5	New Haven	CT	14	41	7	84	73
HAMPTON	WINDHAM	499	6	86	73	15	Norwich	CT	197	41	7	86	73
HARTFORD	HARTFORD	41	6	88	72	5	Hartford Brainard Field	CT	19	41	6	88	72
HARTLAND	HARTFORD	986	5	88	70	16	Windsor Locks Bradley Field	CT	197	42	8	88	71
HARWINTON	LITCHFIELD	679	4	88	71	16	Hartford Brainard Field	CT	19	41	6	88	72
HEBRON	TOLLAND	497	4	88	72	18	Hartford Brainard Field	CT	19	41	6	88	72
KENT	LITCHFIELD	545	3	86	72	22	Waterbury	CT	850	41	2	85	71
KILLINGLY	WINDHAM	535	6	86	73	23	Norwich	CT	197	41	7	86	73

Connecticut Location		Connecticut Design Data					ACCA Table 1A (Reference Design Data)						
City	County	Elevation	Winter Heating 99% dB	Summer Cooling 1% dB	Cooling 1% (wB)	Miles To Reference	Design Reference City	State	Elevation	Latitude	Heating 99% (dB)	Cooling 1% (dB)	Cooling 1% (wB)
KILLINGWORTH	MIDDLESEX	404	*6*	*84*	73	18	New Haven	CT	14	41	7	84	73
LEBANON	NEW LONDON	479	*6*	*86*	73	12	Norwich	CT	197	41	7	86	73
LEDYARD	NEW LONDON	172	*7*	*86*	73	7	Norwich	CT	197	41	7	86	73
LISBON	NEW LONDON	328	*7*	*86*	73	4	Norwich	CT	197	41	7	86	73
LITCHFIELD	LITCHFIELD	1081	*1*	*85*	71	17	Waterbury	CT	850	41	2	85	71
LYME	NEW LONDON	26	*9*	*85*	72	13	New London	CT	10	41	9	85	72
MADISON	NEW HAVEN	120	*7*	*84*	73	16	New Haven	CT	14	41	7	84	73
MANCHESTER	HARTFORD	189	*5*	*88*	72	11	Hartford Brainard Field	CT	19	41	6	88	72
MANSFIELD	TOLLAND	371	*6*	*86*	73	18	Norwich	CT	197	41	7	86	73
MARLBOROUGH	HARTFORD	462	*4*	*88*	72	17	Hartford Brainard Field	CT	19	41	6	88	72
MERIDEN	NEW HAVEN	90	*6*	*88*	72	16	Hartford Brainard Field	CT	19	41	6	88	72
MIDDLEBURY	NEW HAVEN	632	*3*	*86*	71	3	Waterbury	CT	850	41	2	85	71
MIDDLEFIELD	MIDDLESEX	346	*5*	*88*	72	17	Hartford Brainard Field	CT	19	41	6	88	72
MIDDLETOWN	MIDDLESEX	145	*6*	*88*	72	15	Hartford Brainard Field	CT	19	41	6	88	72
MILFORD	NEW HAVEN	34	*12*	*84*	72	5	Bridgeport	CT	10	41	12	84	72
MONROE	FAIRFIELD	436	*10*	*84*	72	12	Bridgeport	CT	10	41	12	84	72
MONTVILLE	NEW LONDON	175	*8*	*85*	72	7	New London	CT	10	41	9	85	72
MORRIS	LITCHFIELD	1029	*1*	*85*	71	13	Waterbury	CT	850	41	2	85	71
NAUGATUCK	NEW HAVEN	272	*4*	*87*	72	5	Waterbury	CT	850	41	2	85	71
NEW BRITAIN	HARTFORD	164	*5*	*88*	72	7	Hartford Brainard Field	CT	19	41	6	88	72
NEW CANAAN	FAIRFIELD	319	*9*	*84*	71	3	Norwalk	CT	397	41	9	84	71
NEW FAIRFIELD	FAIRFIELD	783	*2*	*85*	71	17	Waterbury	CT	850	41	2	85	71
NEW HARTFORD	LITCHFIELD	571	*4*	*88*	72	15	Hartford Brainard Field	CT	19	41	6	88	72
NEW HAVEN	NEW HAVEN	55	*7*	*84*	73	0	New Haven	CT	14	41	7	84	73
NEW LONDON	NEW LONDON	13	*9*	*85*	72	0	New London	CT	10	41	9	85	72
NEW MILFORD	LITCHFIELD	348	*4*	*87*	72	15	Waterbury	CT	850	41	2	85	71
NEWINGTON	HARTFORD	88	*6*	*88*	72	5	Hartford Brainard Field	CT	19	41	6	88	72
NEWTOWN	FAIRFIELD	483	*3*	*86*	72	11	Waterbury	CT	850	41	2	85	71
NORFOLK	LITCHFIELD	1281	*1*	*88*	71	28	Hartford Brainard Field	CT	19	41	6	88	72
NORTH BRANFORD	NEW HAVEN	192	*6*	*84*	73	8	New Haven	CT	14	41	7	84	73
NORTH CANTON	HARTFORD	731	*3*	*88*	71	12	Hartford Brainard Field	CT	19	41	6	88	72
NORTH HAVEN	NEW HAVEN	51	*7*	*84*	73	6	New Haven	CT	14	41	7	84	73
NORTH STONINGTON	NEW LONDON	374	*6*	*86*	73	10	Norwich	CT	197	41	7	86	73
NORWALK	FAIRFIELD	90	*10*	*85*	72	3	Norwalk	CT	397	41	9	84	71
NORWICH	NEW LONDON	297	*7*	*86*	73	0	Norwich	CT	197	41	7	86	73

Connecticut Location		Connecticut Design Data					ACCA Table 1A (Reference Design Data)						
City	County	Elevation	Winter Heating 99% dB	Summer Cooling 1% dB	Cooling 1% (wB)	Miles To Reference	Design Reference City	State	Elevation	Latitude	Heating 99% (dB)	Cooling 1% (dB)	Cooling 1% (wB)
OLD LYME	NEW LONDON	63	9	85	72	11	New London	CT	10	41	9	85	72
OLD SAYBROOK	MIDDLESEX	35	9	85	72	15	New London	CT	10	41	9	85	72
ORANGE	NEW HAVEN	184	6	84	73	6	New Haven	CT	14	41	7	84	73
OXFORD	NEW HAVEN	711	2	85	71	5	Waterbury	CT	850	41	2	85	71
PLAINFIELD	WINDHAM	171	7	86	73	10	Norwich	CT	197	41	7	86	73
PLAINVILLE	HARTFORD	186	5	88	72	9	Hartford Brainard Field	CT	19	41	6	88	72
PLYMOUTH	LITCHFIELD	787	2	85	71	13	Waterbury	CT	850	41	2	85	71
POMFRET	WINDHAM	455	7	85	70	25	Worcester	MA	986	42	5	83	69
PORTLAND	MIDDLESEX	238	5	88	72	14	Hartford Brainard Field	CT	19	41	6	88	72
PRESTON	NEW LONDON	293	7	86	73	3	Norwich	CT	197	41	7	86	73
PROSPECT	NEW HAVEN	796	2	85	71	9	Waterbury	CT	850	41	2	85	71
PUTNAM	WINDHAM	448	7	85	70	24	Worcester	MA	986	42	5	83	69
REDDING	FAIRFIELD	419	9	84	71	12	Norwalk	CT	397	41	9	84	71
RIDGEFIELD	FAIRFIELD	793	8	84	71	11	Norwalk	CT	397	41	9	84	71
ROCKY HILL	HARTFORD	172	5	88	72	8	Hartford Brainard Field	CT	19	41	6	88	72
ROXBURY	LITCHFIELD	689	3	86	71	8	Waterbury	CT	850	41	2	85	71
SALEM	NEW LONDON	348	8	85	72	13	New London	CT	10	41	9	85	72
SALISBURY	LITCHFIELD	730	0	88	72	35	Kingston	NY	149	42	2	88	72
SCOTLAND	WINDHAM	369	6	86	73	10	Norwich	CT	197	41	7	86	73
SEYMOUR	NEW HAVEN	345	4	87	72	9	Waterbury	CT	850	41	2	85	71
SHARON	LITCHFIELD	1096	3	88	71	27	Poughkeepsie	NY	165	41	6	88	72
SHELTON	FAIRFIELD	544	10	84	72	8	Bridgeport	CT	10	41	12	84	72
SHERMAN	FAIRFIELD	440	3	86	72	19	Waterbury	CT	850	41	2	85	71
SIMSBURY	HARTFORD	294	5	88	72	9	Hartford Brainard Field	CT	19	41	6	88	72
SOMERS	TOLLAND	254	8	88	71	11	Windsor Locks Bradley Field	CT	197	42	8	88	71
SOUTH WINDSOR	HARTFORD	77	8	88	71	7	Windsor Locks Bradley Field	CT	197	42	8	88	71
SOUTHBURY	NEW HAVEN	249	4	87	72	4	Waterbury	CT	850	41	2	85	71
SOUTHINGTON	HARTFORD	169	5	88	72	12	Hartford Brainard Field	CT	19	41	6	88	72
SPRAGUE	NEW LONDON	74	7	86	73	5	Norwich	CT	197	41	7	86	73
STAFFORD	TOLLAND	584	7	88	71	19	Windsor Locks Bradley Field	CT	197	42	8	88	71
STAMFORD	FAIRFIELD	38	10	85	72	7	Norwalk	CT	397	41	9	84	71
STERLING	WINDHAM	474	6	86	73	16	Norwich	CT	197	41	7	86	73
STONINGTON	NEW LONDON	14	9	85	72	10	New London	CT	10	41	9	85	72
STRATFORD	FAIRFIELD	40	12	84	72	0	Bridgeport	CT	10	41	12	84	72
SUFFIELD	HARTFORD	188	8	88	71	4	Windsor Locks Bradley Field	CT	197	42	8	88	71

Connecticut Location		Connecticut Design Data					ACCA Table 1A (Reference Design Data)						
City	County	Elevation	Winter Heating 99% dB	Summer Cooling 1% dB	Cooling 1% (wB)	Miles To Reference	Design Reference City	State	Elevation	Latitude	Heating 99% (dB)	Cooling 1% (dB)	Cooling 1% (wB)
THOMASTON	LITCHFIELD	407	*4*	*87*	72	11	Waterbury	CT	850	41	2	85	71
THOMPSON	WINDHAM	634	*6*	*84*	70	19	Worcester	MA	986	42	5	83	69
TOLLAND	TOLLAND	629	*6*	*88*	71	15	Windsor Locks Bradley Field	CT	197	42	8	88	71
TORRINGTON	LITCHFIELD	753	*3*	*88*	71	16	Hartford Brainard Field	CT	19	41	6	88	72
TRUMBULL	FAIRFIELD	289	*11*	*84*	72	6	Bridgeport	CT	10	41	12	84	72
UNION	TOLLAND	864	*6*	*88*	70	20	Windsor Locks Bradley Field	CT	197	42	8	88	71
VERNON	TOLLAND	527	*7*	*88*	71	11	Windsor Locks Bradley Field	CT	197	42	8	88	71
VOLUNTOWN	NEW LONDON	275	*7*	*86*	73	8	Norwich	CT	197	41	7	86	73
WALLINGFORD	NEW HAVEN	88	*7*	*84*	73	12	New Haven	CT	14	41	7	84	73
WARREN	LITCHFIELD	1292	*0*	*85*	71	22	Waterbury	CT	850	41	2	85	71
WASHINGTON	LITCHFIELD	847	*2*	*85*	71	12	Waterbury	CT	850	41	2	85	71
WATERBURY	NEW HAVEN	588	*3*	*86*	71	7	Waterbury	CT	850	41	2	85	71
WATERFORD	NEW LONDON	78	*9*	*85*	72	2	New London	CT	10	41	9	85	72
WATERTOWN	LITCHFIELD	619	*3*	*86*	71	7	Waterbury	CT	850	41	2	85	71
WEST HARTFORD	HARTFORD	176	*5*	*88*	72	1	Hartford Brainard Field	CT	19	41	6	88	72
WEST HAVEN	NEW HAVEN	70	*7*	*84*	73	3	New Haven	CT	14	41	7	84	73
WESTBROOK	MIDDLESEX	30	*9*	*85*	72	19	New London	CT	10	41	9	85	72
WESTON	FAIRFIELD	310	*9*	*84*	71	7	Norwalk	CT	397	41	9	84	71
WESTPORT	FAIRFIELD	25	*10*	*85*	72	5	Norwalk	CT	397	41	9	84	71
WETHERSFIELD	HARTFORD	70	*6*	*88*	72	5	Hartford Brainard Field	CT	19	41	6	88	72
WILLINGTON	TOLLAND	768	*6*	*88*	71	20	Windsor Locks Bradley Field	CT	197	42	8	88	71
WILTON	FAIRFIELD	333	*9*	*84*	71	5	Norwalk	CT	397	41	9	84	71
WINCHESTER	LITCHFIELD	1324	*1*	*88*	71	22	Hartford Brainard Field	CT	19	41	6	88	72
WINDHAM	WINDHAM	310	*7*	*86*	73	11	Norwich	CT	197	41	7	86	73
WINDSOR	HARTFORD	55	*9*	*89*	71	5	Windsor Locks Bradley Field	CT	197	42	8	88	71
WINDSOR LOCKS	HARTFORD	130	*8*	*88*	71	0	Windsor Locks Bradley Field	CT	197	42	8	88	71
WOLCOTT	NEW HAVEN	605	*3*	*86*	71	11	Waterbury	CT	850	41	2	85	71
WOODBRIDGE	NEW HAVEN	332	*6*	*84*	73	6	New Haven	CT	14	41	7	84	73
WOODBURY	LITCHFIELD	269	*4*	*87*	72	5	Waterbury	CT	850	41	2	85	71
WOODSTOCK	WINDHAM	572	*6*	*84*	70	23	Worcester	MA	986	42	5	83	69

Residential Heat Loss and Heat Gain Calculation

In accordance with ACCA Manual J

Report Prepared By:

For:

WEST HAVEN, CT

Design Conditions: Easton

Indoor:		**Outdoor:**	
Summer temperature:	70	Summer temperature:	100
Winter temperature:	72	Winter temperature:	-10
Relative humidity:	50	Summer grains of moisture:	84
		Daily temperature range:	High

Building Component		Sensible Gain (BTUH)	Latent Gain (BTUH)	Total Heat Gain (BTUH)	Total Heat Loss (BTUH)
Whole House	**894.8 sq.ft.**	**12,789**	**3,707**	**16,496 (1.5 tons)**	**23,268**
Apt #3 - End Unit - Middle & Top Floors		12,789	3,707	16,496	23,268
Dining / Living Room	314 sq.ft.	3,845	1,409	5,254	9,092
Infiltration - Tightness: Avg.; Winter ACH: 1.1 ; Summer ACH: .5		817	489	1,306	4,923
Duct - Supply below 120; Enclosed in unheated space; R-6		0	0	0	433
People	4	1,200	920	2,120	0
Floor - Over conditioned space	314.3 sq.ft.	0	0	0	0
N Wall - Wood frame, with sheathing, siding or brick, R-19 5 1/2 in.; none	78.8 sq.ft.	135	0	135	388
Glassdoor - Sliding glass door; Double pane; Wood or vinyl frame; Clear glass - Draperies or blinds; Coating: None (clear glass); No outside shading.	44 sq.ft.	878	0	878	1,983
Ceiling - Under ventilated attic; R-19 (4 - 6.5 inch); Dark	314 sq.ft.	815	0	815	1,365
Kitchen	100 sq.ft.	2,060	460	2,520	457
Infiltration - Tightness: Avg.; Winter ACH: 1.1 ; Summer ACH: .5		0	0	0	0
Duct - Supply below 120; Enclosed in unheated space; R-6		0	0	0	22
People	2	600	460	1,060	0
Miscellaneous		1,200	0	1,200	0

Residential Heat Loss and Heat Gain Calculation

In accordance with ACCA Manual J

Report Prepared By:

For:

WEST HAVEN, CT

Design Conditions: New Haven

Indoor:		**Outdoor:**	
Summer temperature:	70	Summer temperature:	84
Winter temperature:	72	Winter temperature:	0
Relative humidity:	50	Summer grains of moisture:	84
		Daily temperature range:	Medium

Building Component		Sensible Gain (BTUH)	Latent Gain (BTUH)	Total Heat Gain (BTUH)	Total Heat Loss (BTUH)
Whole House	**581 sq.ft.**	**8,102**	**2,832**	**10,934 (1 tons)**	**22,165**
Second Floor		8,102	2,832	10,934	22,165
Bathroom	40 sq.ft.	132	0	132	291
Infiltration - Tightness: Poor; Winter ACH: 2.01 ; Summer ACH: .8		0	0	0	0
Duct - Supply above 120; Enclosed in unheated space; R-4		6	0	6	38
Floor - Over conditioned space	40 sq.ft.	0	0	0	0
Ceiling - Under ventilated attic; R-11 (3 - 3.5 inch); Dark	40 sq.ft.	126	0	126	253
Bedroom	216 sq.ft.	2,401	918	3,319	8,408
Infiltration - Tightness: Poor; Winter ACH: 2.01 ; Summer ACH: .8		358	458	816	4,630
Duct - Supply above 120; Enclosed in unheated space; R-4		114	0	114	1,097
People	2	600	460	1,060	0
Floor - Over conditioned space	216 sq.ft.	0	0	0	0
S Wall - Wood frame, with sheathing, siding or brick; R-11 3 1/2 in.; none	72.4 sq.ft.	115	0	115	469
Window - Double pane; Vinyl frame; Clear glass - Draperies or blinds; Coating: None (clear glass); No outside shading.	23.6 sq.ft.	533	0	533	843
Ceiling - Under ventilated attic; R-11 (3 - 3.5 inch); Dark	216 sq.ft.	681	0	681	1,369

Equipment Sizing Code Review

1. **Load Calculations - Manual J**
    a. Software Vendor: AddTek / CarmelSoft / EnergyGauge / Avenir / Elitesoft / Wrightsoft / Other: _____ Manual J-8 Compliant? TRUE / FALSE
    b. Indoor Conditions (70°F Heating/75°F Cooling): TRUE / FALSE
    c. Outdoor Conditions Weather City: _____
        i. Winter Dry-Bulb: _____°F
        ii. Summer Dry-Bulb: _____°F
        iii. Elevation: _____ °F
    d. Conditioned Area: _____square feet
        i. Area consistent with building file?: TRUE / FALSE
    e. Calculated Loads:
        i. Heating: _____ btuh
        ii. Cooling:
            1. Total:_____ btuh
            2. Sensible:_____ btuh
            3. Latent: _____ btuh
            4. SHR: _____ (Leaky .75 - .80 / Tight .80 - .92)
        iii. Heating BTUH/s.f.: _____ btuh/s.f.
        iv. Cooling area/nominal ton: _____ s.f./ton
    f. Orientation (i.e. front door faces): N / NE / E / SE / S / SW / W / NW
    g. Infiltration Poor / Loose / Average / Semi-tight / Tight
    h. Ducts:
        i. Locations: Attic / Basement / Crawlspace / Conditioned / Other: _____
        ii. Duct R-value: _____
    i. Internal Gains:
        i. Number of people: _____ (# Bedrooms + 1)
        ii. Other: _____ sensible _____latent (1200/600 for average home)
    j. Glazing:
        i. Any skylights: TRUE / FALSE
        ii. Window Type (i.e. DBL-Hung Low-E): _____
        iii. Has Insect screens: TRUE / FALSE
        iv. Has blinds on openable windows: TRUE / FALSE
    k. Other:
        i. High or vaulted ceilings: TRUE / FALSE

2. Equipment Selection - Manual S

a. Method: OEM Document / OEM Calculator / Integrated Software / Other: _____

b. Specifies capacity(ies) at local outdoor design temperature(s): TRUE / FALSE

c. Heating Capacity: _____ btuh

d. Cooling Capacity:

i. Total:_____ btuh

ii. Sensible:_____ btuh

iii. Latent: _____ btuh

iv. SHR: _____

e. Heating Capacity Factor: _____ (1.0 to 1.4 with deviation to 2.0)

f. Cooling Capacity Factor: _____ (.90 to 1.35[1])

General Cooling Capacity Factors			
Equipment Tested and Rated by AHRI	Single Speed Compressors	Multi/Variable Speed Compressors	GWHP
Total Maximum sizing factor	1.15	1.20 (multi), 1.30 (variable)	1.25(single), 1.30(multi), 1.35(variable)
Latent	Minimum = 1.0 (may go to 1.50 or higher if needed to meet sensible minimum)		
Sensible	Minimum = 0.90		
General Heating Capacity Factors[2]			
Minimum	1.0		
Maximum	1.4 (up to 2.0 allowed)		

[1] Depends on equipment type

[2] Sizing for Heat Pumps is based on Cooling Loads. Balance of heating must be provided by a secondary sorce

DETAILED COOLING CAPACITIES

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES deg F																	
		75			85			95			105			115			125		
CFM	EWB	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**	Capacity MBtuh†		Total System KW**
		Total	Sens ‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡		Total	Sens‡	
123ANA018–A Outdoor Section With CAP**1814A** Indoor Section																			
525	72	20.46	10.76	1.21	19.55	10.41	1.36	18.59	10.05	1.53	17.62	9.69	1.71	16.57	9.30	1.91	15.40	8.88	2.13
	67	18.79	13.26	1.22	17.95	12.90	1.37	17.05	12.52	1.53	16.12	12.14	1.72	15.13	11.74	1.92	14.03	11.30	2.13
	62	17.27	15.73	1.22	16.49	15.36	1.37	15.68	14.97	1.54	14.83	14.55	1.72	14.00	14.00	1.92	13.15	13.15	2.13
	57	16.78	16.78	1.23	16.15	16.15	1.37	15.48	15.48	1.54	14.77	14.77	1.72	14.00	14.00	1.92	13.15	13.15	2.13
600	72	20.79	11.28	1.24	19.83	10.92	1.39	18.83	10.55	1.56	17.83	10.19	1.74	16.76	9.80	1.94	15.55	9.37	2.16
	67	19.11	14.10	1.25	18.23	13.73	1.40	17.30	13.36	1.56	16.35	12.97	1.74	15.33	12.57	1.94	14.20	12.12	2.16
	62	17.66	16.88	1.25	16.87	16.49	1.40	16.06	16.06	1.56	15.32	15.32	1.75	14.51	14.51	1.94	13.61	13.61	2.16
	57	17.46	17.46	1.25	16.79	16.79	1.40	16.07	16.07	1.56	15.32	15.32	1.75	14.51	14.51	1.94	13.61	13.61	2.16
675	72	21.03	11.77	1.27	20.02	11.40	1.42	18.99	11.03	1.58	17.97	10.67	1.77	16.88	10.28	1.97	15.65	9.85	2.18
	67	19.33	14.90	1.27	18.43	14.54	1.42	17.48	14.15	1.59	16.51	13.77	1.77	15.48	13.35	1.97	14.33	12.89	2.19
	62	18.01	17.91	1.28	17.30	17.30	1.43	16.54	16.54	1.59	15.76	15.76	1.77	14.92	14.92	1.97	13.97	13.97	2.19
	57	18.01	18.01	1.28	17.30	17.30	1.43	16.55	16.55	1.59	15.76	15.76	1.77	14.92	14.92	1.97	13.97	13.97	2.19

Multipliers for Determining the Performance With Other Indoor Sections

Cooling Indoor Model	Capacity	Power	Furnace Model
*CAP**1814A**	1.00	1.00	
CAP**2414A**	1.01	1.01	
CAP**2417A**	1.01	1.01	
CNPF*2418A**	1.00	1.00	
CNPH*2417A**	1.00	1.00	
CNPV*1814A**	0.99	0.99	
CNPV*2414A**	1.00	1.00	
CNPV*2417A**	1.00	1.00	
CSPH*2412A**	0.97	0.97	
FE4ANF002	1.02	0.93	
FF1ENP018	0.99	0.99	
FF1ENP024	1.01	1.01	
FV4BNF002	1.02	0.93	
FX4CNF018	1.01	0.95	
FX4CNF024	1.02	0.96	
FY4ANF018	0.99	0.99	
FY4ANF024	1.00	1.00	

Cooling Indoor Model	Capacity	Power	Furnace Model
CAP**1814A**	0.98	0.92	315(A,J)AV036070
CAP**2414A**	1.00	0.94	315(A,J)AV036070
CNPH*2417A**	0.99	0.93	315(A,J)AV036070
CNPV*1814A**	0.98	0.92	315(A,J)AV036070
CNPV*2414A**	0.99	0.93	315(A,J)AV036070
CSPH*2412A**	0.95	0.89	315(A,J)AV036070
CAP**2417A**	1.01	0.95	315(A,J)AV048090
CNPH*2417A**	0.99	0.93	315(A,J)AV048090
CNPV*2417A**	0.99	0.93	315(A,J)AV048090
CSPH*2412A**	0.95	0.90	315(A,J)AV048090
CNPH*2417A**	0.99	0.93	355AAV042040
CSPH*2412A**	0.95	0.90	355AAV042040
CAP**2417A**	1.00	0.94	355AAV042060
CNPH*2417A**	0.99	0.93	355AAV042060
CNPV*2417A**	0.99	0.93	355AAV042060
CSPH*2412A**	0.95	0.90	355AAV042060
CNPH*2417A**	0.99	0.93	355AAV042080
CSPH*2412A**	0.95	0.90	355AAV042080

See notes on pg. 21

Case Summary Report

Roltay Inc. Energy Services

Job: #Bryant1 12/13/2014

98 Ovebrook Road, Madison, CT 06443 Phone: 2036721330 Email: buck@roltay.com Web: www.roltay.com

Case 1

Outdoor: 123ANA018000BC Indoor:CNPVP2414ALA

Type: Dom SplitAC, 208/230, 1ø

SODB (°F)	SIDB (°F)	SIRH	SIWB (°F)	WODB (°F)	WIDB (°F)	Elev (ft)	Suction line loss (ft)	AVF (cfm)
84.0	75.2	53.5	63.7	7.0	70.0	0	1.4	587

	Unit AVF (cfm)	Net Cool Sensible (Btuh)	Net Cool Latent (Btuh)	Net Cool Capacity (Btuh)	SEER	Cool kW	Net Heat Capacity (Btuh)	HSPF	Heat kW
AHRI Rated:	600	0	0	17500	13.00	0.00	0	0	0
Adjusted:	587	13059	4295	17354		1.38	0		0

Case Details Report

Roltay Inc. Energy Services

Job: #Bryant1 12/13/2014

98 Ovebrook Road, Madison, CT 06443 Phone: 2036721330 Email: buck@roltay.com Web: www.roltay.com

Case 1

Equipment Cooling Data Table

Outdoor: 123ANA018000BC Indoor:CNPVP2414ALA

	ODB (°F)	75			85			95			105			115			125		
		Total	Sens	Pwr	Total	Sens	Pwr	Total	Sens	Pwr	Total	Sens	Pwr	Total	Sens	Pwr	Total	Sens	Pwr
AVF (cfm)	EWB (°F)	(Btuh)		(kW)	(Btuh)		(kW)	(Btuh)		(kW)	(Btuh)		(kW)	(Btuh)		(kW)	(Btuh)		(kW)
525	57	16780	16780	1.23	16150	16150	1.37	15480	15480	1.54	14770	14770	1.72	14000	14000	1.92	13150	13150	2.13
	62	17270	15730	1.22	16490	15360	1.37	15680	14970	1.54	14830	14550	1.72	14000	14000	1.92	13150	13150	2.13
	67	18790	13260	1.22	17950	12900	1.37	17050	12520	1.53	16120	12140	1.72	15130	11740	1.92	14030	11300	2.13
	72	20460	10760	1.21	19550	10410	1.36	18590	10050	1.53	17620	9690	1.71	16570	9300	1.91	15400	8880	2.13
600	57	17460	17460	1.25	16790	16790	1.40	16070	16070	1.56	15320	15320	1.75	14510	14510	1.94	13610	13610	2.16
	62	17660	16880	1.25	16870	16490	1.40	16060	16060	1.56	15320	15320	1.75	14510	14510	1.94	13610	13610	2.16
	67	19110	14100	1.25	18230	13730	1.40	17300	13360	1.56	16350	12970	1.74	15330	12570	1.94	14200	12120	2.16
	72	20790	11280	1.24	19830	10920	1.39	18830	10550	1.56	17830	10190	1.74	16760	9800	1.94	15550	9370	2.16
675	57	18010	18010	1.28	17300	17300	1.43	16550	16550	1.59	15760	15760	1.77	14920	14920	1.97	13970	13970	2.19
	62	18010	17910	1.28	17300	17300	1.43	16540	16540	1.59	15760	15760	1.77	14920	14920	1.97	13970	13970	2.19
	67	19330	14900	1.27	18430	14540	1.42	17480	14150	1.59	16510	13770	1.77	15480	13350	1.97	14330	12890	2.19
	72	21030	11770	1.27	20020	11400	1.42	18990	11030	1.58	17970	10670	1.77	16880	10280	1.97	15650	9850	2.18

ODB:	Outdoor dry bulb	Total:	Total capacity
EWB:	Indoor wet bulb	Sens:	Sensible capacity
AVF:	Air volumetric flow	Pwr:	kW input