

In accordance with ACCA Manual J

Report Prepared By:

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Florida Mechanical Air Conditioning

For: Sample House
123 Any St
Newville, Iowa

Design Conditions: Newville

Indoor:		Outdoor:	
Summer temperature:	75	Summer temperature:	105
Winter temperature:	70	Winter temperature:	-25
Relative humidity:	55	Summer grains of moisture:	100
		Daily temperature range:	Medium

Building Component		Sensible Gain (BTUH)	Latent Gain (BTUH)	Total Heat Gain (BTUH)	Total Heat Loss (BTUH)
Whole House	2,957 sq.ft.	27,485	3,518	31,003 (2.5 tons)	63,259
First Floor		24,172	3,327	27,499	45,135
Living Room	294 sq.ft.	5,770	1,075	6,845	8,525
Infiltration		645	385	1,030	3,572
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Duct		0	0	0	406
- Supply above 120; Enclosed in unheated space; R-8					
People	3	900	690	1,590	0
Floor	294 sq.ft.	0	0	0	0
- Over conditioned space					
W Wall	128 sq.ft.	344	0	344	973
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
Window	40 sq.ft.	3,040	0	3,040	2,094
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					
Ceiling	294 sq.ft.	841	0	841	1,480
- Under ventilated attic; R-19 (4 - 6.5 inch); Dark					
Dining Room	126 sq.ft.	2,607	883	3,490	5,077
Infiltration		322	193	515	1,786
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Duct		0	0	0	242
- Supply above 120; Enclosed in unheated space; R-8					
People	3	900	690	1,590	0
Floor	126 sq.ft.	0	0	0	0

Building Component		Sensible Gain (BTUH)	Latent Gain (BTUH)	Total Heat Gain (BTUH)	Total Heat Loss (BTUH)
- Over conditioned space					
W Wall	56 sq.ft.	151	0	151	426
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
N Wall	124 sq.ft.	333	0	333	942
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
Window	20 sq.ft.	540	0	540	1,047
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					
Ceiling	126 sq.ft.	361	0	361	634
- Under ventilated attic; R-19 (4 - 6.5 inch); Dark					
Laundry	77 sq.ft.	945	164	1,109	3,337
Infiltration		274	164	438	1,518
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Duct		0	0	0	159
- Supply above 120; Enclosed in unheated space; R-8					
Floor	77 sq.ft.	0	0	0	0
- Over conditioned space					
N Wall	88 sq.ft.	237	0	237	669
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
E Wall	39 sq.ft.	105	0	105	296
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
Door	17 sq.ft.	109	0	109	307
- Metal; Urethane; No storm					
Ceiling	77 sq.ft.	220	0	220	388
- Under ventilated attic; R-19 (4 - 6.5 inch); Dark					
Kitchen	121 sq.ft.	2,766	106	2,872	2,890
Infiltration		177	106	283	982
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Duct		0	0	0	138
- Supply above 120; Enclosed in unheated space; R-8					
Miscellaneous		1,200	0	1,200	0
Floor	121 sq.ft.	0	0	0	0
- Over conditioned space					
E Wall	77 sq.ft.	207	0	207	585
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
Window	11 sq.ft.	836	0	836	576
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					
Ceiling	121 sq.ft.	346	0	346	609
- Under ventilated attic; R-19 (4 - 6.5 inch); Dark					
Bathroom	99 sq.ft.	1,192	77	1,269	2,223
Infiltration		129	77	206	714

Building Component		Sensible Gain (BTUH)	Latent Gain (BTUH)	Total Heat Gain (BTUH)	Total Heat Loss (BTUH)
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Duct		0	0	0	106
- Supply above 120; Enclosed in unheated space; R-8					
Floor	99 sq.ft.	0	0	0	0
- Over conditioned space					
E Wall	64 sq.ft.	172	0	172	486
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
Window	8 sq.ft.	608	0	608	419
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					
Ceiling	99 sq.ft.	283	0	283	498
- Under ventilated attic; R-19 (4 - 6.5 inch); Dark					
Bedroom	110 sq.ft.	2,511	212	2,723	4,326
Infiltration		354	212	566	1,965
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Duct		0	0	0	206
- Supply above 120; Enclosed in unheated space; R-8					
Floor	110 sq.ft.	0	0	0	0
- Over conditioned space					
E Wall	57.8 sq.ft.	155	0	155	439
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
Window	22.2 sq.ft.	1,687	0	1,687	1,162
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					
Ceiling	110 sq.ft.	315	0	315	554
- Under ventilated attic; R-19 (4 - 6.5 inch); Dark					
Bedroom (2)	140 sq.ft.	3,046	270	3,316	6,213
Infiltration		451	270	721	2,500
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Duct		0	0	0	296
- Supply above 120; Enclosed in unheated space; R-8					
Floor	140 sq.ft.	0	0	0	0
- Over conditioned space					
E Wall	95 sq.ft.	255	0	255	722
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
Window	17 sq.ft.	1,292	0	1,292	890
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					
S Wall	69 sq.ft.	185	0	185	524
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
Window	11 sq.ft.	462	0	462	576
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					

Building Component		Sensible Gain (BTUH)	Latent Gain (BTUH)	Total Heat Gain (BTUH)	Total Heat Loss (BTUH)
Ceiling	140 sq.ft.	401	0	401	705
- Under ventilated attic; R-19 (4 - 6.5 inch); Dark					
Bathroom (2)	25 sq.ft.	623	77	700	1,577
Infiltration		129	77	206	714
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Duct		0	0	0	75
- Supply above 120; Enclosed in unheated space; R-8					
Floor	25 sq.ft.	0	0	0	0
- Over conditioned space					
S Wall	32 sq.ft.	86	0	86	243
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
Window	8 sq.ft.	336	0	336	419
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					
Ceiling	25 sq.ft.	72	0	72	126
- Under ventilated attic; R-19 (4 - 6.5 inch); Dark					
Bedroom (3)	210 sq.ft.	3,354	270	3,624	6,903
Infiltration		451	270	721	2,500
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Duct		0	0	0	329
- Supply above 120; Enclosed in unheated space; R-8					
Floor	210 sq.ft.	0	0	0	0
- Over conditioned space					
S Wall	101 sq.ft.	271	0	271	768
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
Window	11 sq.ft.	462	0	462	576
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					
W Wall	103 sq.ft.	277	0	277	783
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
Window	17 sq.ft.	1,292	0	1,292	890
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					
Ceiling	210 sq.ft.	601	0	601	1,057
- Under ventilated attic; R-19 (4 - 6.5 inch); Dark					
Hall	112 sq.ft.	889	193	1,082	3,197
Infiltration		322	193	515	1,786
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Duct		0	0	0	152
- Supply above 120; Enclosed in unheated space; R-8					
Floor	112 sq.ft.	0	0	0	0
- Over conditioned space					
W Wall	44 sq.ft.	118	0	118	334

Building Component		Sensible Gain (BTUH)	Latent Gain (BTUH)	Total Heat Gain (BTUH)	Total Heat Loss (BTUH)
- Wood frame, with sheathing, siding or brick; R-113 1/2 in.; R-1.81/2 in. Bead board					
Door	20 sq.ft.	128	0	128	361
- Metal; Urethane; No storm					
Ceiling	112 sq.ft.	321	0	321	564
- Under ventilated attic; R-19 (4 - 6.5 inch); Dark					
Interior Hall	164 sq.ft.	469	0	469	867
Infiltration		0	0	0	0
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Duct		0	0	0	41
- Supply above 120; Enclosed in unheated space; R-8					
Floor	164 sq.ft.	0	0	0	0
- Over conditioned space					
Ceiling	164 sq.ft.	469	0	469	826
- Under ventilated attic; R-19 (4 - 6.5 inch); Dark					
Basement		3,312	193	3,505	18,122
Rec Room	783 sq.ft.	2,084	154	2,238	10,157
Infiltration		258	154	412	1,429
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Floor	783 sq.ft.	0	0	0	1,785
- Basement floor, 2' or more below grade; Concrete; Not applicable					
E Wall	73 sq.ft.	276	0	276	999
- Masonry, above grade; R-51 in.; 8 or 12 in. Block					
Window	8 sq.ft.	608	0	608	419
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					
S Wall	79 sq.ft.	299	0	299	1,081
- Masonry, above grade; R-51 in.; 8 or 12 in. Block					
Window	8 sq.ft.	336	0	336	419
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					
W Wall	81 sq.ft.	307	0	307	1,108
- Masonry, above grade; R-51 in.; 8 or 12 in. Block					
E Wall BelowGr	135 sq.ft.	0	0	0	949
- Block or brick, extends to 5' below grade; R-51 in.; 8 or 12 in. Block					
S Wall BelowGr	145 sq.ft.	0	0	0	1,019
- Block or brick, extends to 5' below grade; R-51 in.; 8 or 12 in. Block					
W Wall BelowGr	135 sq.ft.	0	0	0	949
- Block or brick, extends to 5' below grade; R-51 in.; 8 or 12 in. Block					
Shop & Utility	696 sq.ft.	1,228	39	1,267	7,965
Infiltration		64	39	103	357
- Tightness: Avg.; Winter ACH: .7 ; Summer ACH: .4					
Floor	696 sq.ft.	0	0	0	1,587

Building Component		Sensible Gain (BTUH)	Latent Gain (BTUH)	Total Heat Gain (BTUH)	Total Heat Loss (BTUH)
- Basement floor, 2' or more below grade; Concrete; Not applicable					
E Wall	68 sq.ft.	258	0	258	930
- Masonry, above grade; R-51 in.; 8 or 12 in. Block					
Window	4 sq.ft.	304	0	304	209
- Double pane; Wood frame; Clear glass					
- No inside shading; Coating: None (clear glass); No outside shading.					
W Wall	72 sq.ft.	273	0	273	985
- Masonry, above grade; R-51 in.; 8 or 12 in. Block					
N Wall	87 sq.ft.	329	0	329	1,190
- Masonry, above grade; R-51 in.; 8 or 12 in. Block					
E Wall BelowGr	120 sq.ft.	0	0	0	844
- Block or brick, extends to 5' below grade; R-51 in.; 8 or 12 in. Block					
W Wall BelowGr	120 sq.ft.	0	0	0	844
- Block or brick, extends to 5' below grade; R-51 in.; 8 or 12 in. Block					
N Wall BelowGr	145 sq.ft.	0	0	0	1,019
- Block or brick, extends to 5' below grade; R-51 in.; 8 or 12 in. Block					
Whole House	2,957 sq.ft.	27,485	3,518	31,003 (2.5 tons)	63,259