

Refrigeration Load Estimate Form (for rooms below 32°F) Bulletin Below32-05

Estimate for:

Estimate by:

Date:

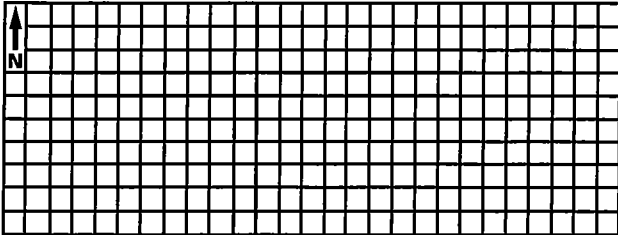
Basis for Estimate

Room Dimensions: Width _____ ft. Length _____ ft. Height _____ ft.

Volume: (L) _____ x (W) _____ x (H) _____ = _____ cu. ft.

Ambient Temp _____ °F. (Corrected for sun load) — Room Temp. _____ °F. = _____ °F. T.D.

Note: Tables can be found in Engineering Manual.



	Insulation	
	Inches	Type
Ceiling		
Walls		
Floor		

Product Load

(a) _____ lbs./day of _____ to be reduced from entering temp. of _____ °F. to freezing point of _____ °F. (Table 7) = _____ °F. Initial temp. drop and then reduced from freezing point to storage Temp. of _____ °F. = (Table 7) _____ °F. Final temp. drop.
 (b) _____ gallons of ice cream @ _____ overrun

Miscellaneous

Motors (including all blower motors) _____ HP Ground Temp. _____ (Table 21)
 Lights (assume 1 watt/sq.ft.) _____ Watts
 No. of People _____

1. Transmission Loads

Ceiling: (L) _____ x (W) _____ x Heat Load _____ (Table 1) = _____
 North Wall: (L) _____ x (H) _____ x Heat Load _____ (Table 1) = _____
 South Wall: (L) _____ x (H) _____ x Heat Load _____ (Table 1) = _____
 East Wall: (W) _____ x (H) _____ x Heat Load _____ (Table 1) = _____
 West Wall: (W) _____ x (H) _____ x Heat Load _____ (Table 1) = _____
 Floor: (L) _____ x (W) _____ x Heat Load _____ (Table 1) = _____

2. Air Change Load

Volume: _____ cu. ft. x _____ Factor (Table 5) x _____ Factor (Table 6) = _____

3. Additional Loads

Electrical Motors: _____ HP x 75000 BTU/HP/24 hr. = _____
 Electrical Lights: _____ Watts x 82 = _____
 People Load: _____ People x _____ BTU/24 hrs. (Table 12) = _____
 Glass Door Load: _____ Doors x 31200 BTU/Door/24 hr. = _____

4. Product Load: (Table 7) (Product Load Figured @ 24 hr. Pulldown*)

(a) _____ lbs./day x _____ Spec. Heat above freezing x _____ °F. Intial Temp. Drop = _____
 _____ lbs./day x _____ Latent Heat Fusion = _____
 _____ lbs./day x _____ Spec. Heat below freezing x _____ °F. Intial Temp. Drop = _____
 (b) _____ gallons of ice cream/day x _____ BTU/gal (Table 19) = _____
 *For product pulldown time other than 24 hrs. figure 24 hr. load x (24/Pulldown Time)

Total Refrigeration Load (1+2+3+4+5) BTU/24 hrs. _____
 Add 10% Safety Factor _____
 Total with Safety/Factor BTU/24 hrs. _____

Divide by No. of Operating Hrs. (18) to obtain BTUH Cooling Requirement _____

	Equipment Selection	
Condensing Unit	Unit Cooler	System Capacity
Qty. Model No.	Qty. Model No.	BTU/hr.

Quick Selection Guide

Dimension	Floor Sq. Ft.	BTUH Load									
		+35 Room Usage		+30 Room Usage		0 Room Usage		-10 room Usage		-20 Room Usage	
		Avg.	Heavy	Avg.	Heavy	Avg.	Heavy	Avg.	Heavy	Avg.	Heavy
6x6x8	36	4750	6389	4488	6037	4583	6505	4929	7041	5274	7577
6x8x8	48	5417	7274	5119	6974	5225	7407	5630	8028	6034	8648
6x10x8	60	6055	8100	5722	7655	5806	8213	6265	8911	6725	9609
8x8x8	64	6188	8291	5848	7835	5934	8410	6405	9127	6876	9844
8x10x8	80	6954	9269	6572	8759	6631	9363	7165	10169	7699	10974
8x12x8	96	7669	10174	7247	9614	7273	10234	7867	11123	8461	12011
8x14x8	112	8366	11045	7905	10437	7922	11092	8575	12059	9227	13026
8x16x8	128	9051	11888	8553	11234	8528	11890	9237	12933	9946	13976
8x18x8	144	9748	12732	9212	12032	9169	12732	9936	13852	10702	14972
8x20x8	160	10419	13548	9846	12803	9755	13490	10576	14682	11397	15874
8x22x8	176	11540	14807	10905	13992	10817	14715	11692	15977	12567	17239
8x24x8	192	12224	15622	11522	14763	11386	15439	12314	16769	13242	18099
8x26x8	208	12874	16398	12166	15496	11976	16176	12955	17573	13935	18970
8x28x8	224	13519	17163	12775	16219	12530	16873	13562	18336	14594	19799
8x30x8	240	14187	17947	13407	16960	13108	17587	14191	19115	15274	20642
8x32x8	256	14824	18694	14009	17666	13653	18264	14786	19855	15920	21446
10x10x8	100	7789	10339	7361	9770	7386	10401	7990	11304	8594	12208
10x12x8	120	8626	11385	8152	10759	8138	11405	8809	12401	9481	13397
10x14x8	140	9439	12384	8920	11703	8887	12405	9626	13493	10365	14581
10x16x8	160	10250	13379	9686	12643	9577	13311	10379	14484	11182	15658
10x18x8	180	11049	14349	10441	13560	10279	14216	11144	15472	12009	16728
10x20x8	200	11838	15299	11187	14458	10942	15070	11868	16405	12794	17741
10x24x8	240	13391	17180	12654	16207	12751	17231	13796	18721	14842	20211
10x28x8	280	14891	18922	14072	17881	14043	18844	15205	20482	16367	22120
12x12x8	144	10038	13021	9486	12305	8991	12553	9739	13655	10486	14756
12x14x8	168	10956	14155	10353	13376	10235	14052	11055	15251	11875	16450
12x16x8	192	11886	15284	11232	14443	11029	15082	11919	16375	12810	17667
12x18x8	216	12775	16359	12072	15459	11807	16080	12767	17464	13726	18847
12x20x8	240	13681	17440	12928	16481	12573	17052	13599	18524	14626	19995
12x22x8	264	14549	18474	13749	17458	13299	17974	14392	19541	15485	21088
14x14x8	196	11993	15423	11333	14575	11126	15216	12024	16521	12923	17826
14x16x8	224	13013	16656	12297	15740	11995	16338	12971	17745	13946	19152
14x20x8	280	15011	19042	14185	17795	13687	18487	14811	20088	15935	21688
14x24x8	336	16969	21347	16036	21073	15330	20539	16598	22324	17866	24110
16x16x8	256	14148	18019	13370	17028	12939	17550	13998	19067	15056	20583
16x20x8	320	16349	20631	15450	19496	14777	19873	15996	21598	17215	23323
16x24x8	374	18506	23157	17488	21883	16563	22093	17938	24017	19313	25941
18x18x8	324	16476	20782	15570	19639	14864	19989	16090	21724	17317	23460
18x20x8	360	18128	22644	17131	21398	16305	21678	17617	23523	18930	25369
18x24x8	432	20484	25389	19357	23993	18260	24090	19739	26149	21219	28208
20x20x8	400	19470	24145	18340	22817	17386	23019	18790	24982	20194	26945
20x24x8	480	21988	27132	20779	25640	19453	25566	21036	27755	22619	29945
20x28x8	560	24963	30480	23590	28804	21963	28514	23721	30922	25479	33330
20x32x8	640	27480	33340	25969	31506	23954	30909	25884	33529	27813	36149
20x36x8	720	29946	36127	28299	34140	25919	33251	28017	36077	30115	38903
20x40x8	800	32420	38904	30637	36764	27888	35575	30153	38603	32518	41631
24x40x8	960	38694	45735	36565	46878	34681	43023	37368	46538	39939	49937
28x40x8	1120	43183	50733	40808	48970	38123	47062	41095	50921	43950	54664
32x40x8	1280	48550	56318	45880	55056	42894	51900	46146	56580	49282	60656
36x40x8	1440	54344	62804	51355	61626	46254	56259	49872	60781	53194	65186
40x40x8	1600	58738	67611	55507	66608	49583	60073	53385	64916	57070	69642

*Heavy usage is defined as two times the average air change. Average air changes determined by ASHRAE based on box size for 24 hour period.