**QUICK SELECTION GUIDE**

##### **Tips for Quick Selection Guide**

**Walk-In Cooler Box Load Parameters**

1. 95°F ambient air temperature surrounding box
2. 4" styrene (R=16.7, K=.24) walls/ceiling, 6" concrete slab floor
3. Average product load with 5°F pulldown in 24 hours
4. BTUH load based on 16-18 hour compressor run time for 35°F box (timer recommended) +20 hrs. for 30°F box
5. See Table C for adjustment to box load for glass doors
6. For 80°F ambient temp. surrounding box deduct 12%
7. For 4" Urethane walls + ceiling, 6" concrete slab floor deduct 12%
8. For 10' ceiling height add 10%
9. For additional BTUH load for product cooling see Table A

**Table A Product Cooling Loads for Walk-In Coolers**

**Walk-In Freezer Box Load Parameters**

1. 95°F ambient air temperature surrounding box
2. 4" urethane (R=25, K=.16) walls, ceiling + floor
3. Average product load with 10°F pulldown in 24 hours
4. BTUH load based on 18 hour compressor run time
5. See Table C for adjustment to box load for glass doors
6. For 80°F ambient temp. surrounding box deduct 12%
7. For 20 hour compressor run time (light frost load) in lieu of 18 hour

run time, deduct 11%

1. For 10' ceiling height add 10%
2. For additional BTUH load for product cooling see Table D

(24 hour pulldown) / 18 hour compressor operation) 24% safety factor added to loads to allow for service

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Product** | **Specific Heat**  **Above Freezing** | **10 Degree Pulldown BTUH Load for Indicated lbs of Product per 24 hours** | | | | | |
| **500** | **1000** | **1500** | **2000** | **3000** | **5000** |
| Beef | .72 | 240 | 480 | 720 | 960 | 1440 | 2400 |
| Pork | .53 | 177 | 353 | 530 | 706 | 1060 | 1767 |
| Veal & Lamb | .76 | 253 | 506 | 760 | 1012 | 1520 | 2533 |
| Poultry | .79 | 263 | 526 | 790 | 1053 | 1580 | 2633 |
| Seafood | .80 | 267 | 533 | 800 | 1066 | 1600 | 2667 |
| Vegetables | .92 | 307 | 613 | 920 | 1226 | 1840 | 3067 |
| Bakery Food | .74 | 247 | 494 | 740 | 988 | 1480 | 2467 |
| Beer | 1.00 | 333 | 666 | 1000 | 1333 | 2000 | 3333 |

For product pulldown greater than 10 degrees, divide pulldown temperature by 10. Multiply this number by the BTUH shown on Table A, then add to box load.

**Table B Meat Cutting/Prep Room Load**

(BTUH/hr/sq.ft. of floor area)

|  |  |  |  |
| --- | --- | --- | --- |
| **Floor Sq. Ft.** | **Approx. 65% R.H. Room Temp.** | |  |
| **55°F** | **50°F** |
| 100 | 93 | 105 | Room loads based on continuous operation and includes allowance for average number of personnel, processing equipment etc., with glass panel in one wall and walls and ceilings insulated with 3" of styrene with box located in air con- ditioned area. Evaporator should be low outlet velocity type to avoid drafts and should be selected for continuous operation and not less than 30°F evap. temperature |
| 200 | 88 | 99 |
| 300 | 85 | 95 |
| 400 | 81 | 90 |
| 500 | 78 | 87 |
| 600 | 75 | 85 |
| 700 | 72 | 81 |
| 800 | 69 | 78 |
| 900 | 67 | 75 |
| 1000 | 65 | 73 |
| 1200 | 62 | 69 |

**Table D Product Freezing Loads for Walk-In Freezers**

**Table C Glass Door Loads**

|  |  |
| --- | --- |
| **Box Temperature** | **BTU**  **per Door** |
| +35 | 1060 |
| +30 | 960 |
| 0 | 1730 |
| -10 | 1730 |
| -20 | 1730 |

Adjusted for run time load. Multiply number of doors times door load above and add to box load.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Product** | **Specific Heat BTU/lb/°F** | | **Latent Heat BTU/lb** | **Freezer Temp (F)** |  | | | | | |
| **32 -** | **32 +** | **100** | **300** | **750** | **1000** | **1500** | **3000** |
| Beef | .72 | .40 | 95 | 29 | 790 | 2370 | 5925 | 7900 | 11850 | 23700 |
| Pork | .53 | .32 | 60 | 28 | 523 | 1571 | 3926 | 5235 | 7853 | 15710 |
| Veal & Lamb | .76 | .45 | 100 | 28 | 841 | 2524 | 6311 | 8414 | 12621 | 25240 |
| Poultry | .79 | .42 | 106 | 27 | 878 | 2636 | 6590 | 8787 | 13181 | 26360 |
| Seafood | .80 | .43 | 110 | 28 | 906 | 2719 | 6797 | 9063 | 13595 | 27190 |
| Vegetables | .92 | .47 | 130 | 30 | 1053 | 3159 | 7898 | 10530 | 15795 | 31590 |
| Bakery Food | .74 | .34 | 53 | 20 | 520 | 1560 | 3900 | 5200 | 7800 | 15600 |

Freezing loads based on product entering at 40°F maximum. For a specific pulldown time, the product load BTU/hr may be adjusted by multiplying the above loads by 24 and dividing by the specified pulldown time in hours. To adjust for 0°F freezer temperature, multiply the above loads by 0.97, and for -20°F freezer, multiply by 1.04

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|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Dimensions** | **Floor Sq. Ft.** | **+35 Room Usage** | | **+30 Room Usage** | | **0 Room Usage** | | **-10 Room Usage** | | **-20 Room Usage** | |
| **Avg.** | **Hvy.** | **Avg.** | **Hvy.** | **Avg.** | **Hvy.** | **Avg.** | **Hvy.** | **Avg.** | **Hvy.** |
| 6 x 6 x 8 | 36 | 4750 | 6389 | 4488 | 6037 | 4583 | 6505 | 4929 | 7041 | 5274 | 7577 |
| 6 x 8 x 8 | 48 | 5417 | 7274 | 5119 | 6974 | 5225 | 7407 | 5630 | 8028 | 6034 | 8648 |
| 6 x 10 x 8 | 60 | 6055 | 8100 | 5722 | 7655 | 5806 | 8213 | 6265 | 8911 | 6725 | 9609 |
| 8 x 8 x 8 | 64 | 6188 | 8291 | 5848 | 7835 | 5934 | 8410 | 6405 | 9127 | 6876 | 9844 |
| 8 x 10 x 8 | 80 | 6954 | 9269 | 6572 | 8759 | 6631 | 9363 | 7165 | 10169 | 7699 | 10974 |
| 8 x 12 x 8 | 96 | 7669 | 10174 | 7247 | 9614 | 7273 | 10234 | 7867 | 11123 | 8461 | 12011 |
| 8 x 14 x 8 | 112 | 8366 | 11045 | 7905 | 10437 | 7922 | 11092 | 8575 | 12059 | 9227 | 13026 |
| 8 x 16 x 8 | 128 | 9051 | 11888 | 8553 | 11234 | 8528 | 11890 | 9237 | 12933 | 9946 | 13976 |
| 8 x 18 x 8 | 144 | 9748 | 12732 | 9212 | 12032 | 9169 | 12732 | 9936 | 13852 | 10702 | 14972 |
| 8 x 20 x 8 | 160 | 10419 | 13548 | 9846 | 12803 | 9755 | 13490 | 10576 | 14682 | 11397 | 15874 |
| 8 x 22 x 8 | 176 | 11540 | 14807 | 10905 | 13992 | 10817 | 14715 | 11692 | 15977 | 12567 | 17239 |
| 8 x 24 x 8 | 192 | 12224 | 15622 | 11552 | 14763 | 11386 | 15439 | 12314 | 16769 | 13242 | 18099 |
| 8 x 26 x 8 | 208 | 12874 | 16398 | 12166 | 15496 | 11976 | 16176 | 12955 | 17573 | 13935 | 18970 |
| 8 x 28 x 8 | 224 | 13519 | 17163 | 12775 | 16219 | 12530 | 16873 | 13562 | 18336 | 14594 | 19799 |
| 8 x 30 x 8 | 240 | 14187 | 17947 | 13407 | 16960 | 13108 | 17587 | 14191 | 19115 | 15274 | 20642 |
| 8 x 32 x 8 | 256 | 14824 | 18694 | 14009 | 17666 | 13653 | 18264 | 14786 | 19855 | 15920 | 21446 |
| 10 x 10 x 8 | 100 | 7789 | 10339 | 7361 | 9770 | 7386 | 10401 | 7990 | 11304 | 8594 | 12208 |
| 10 x 12 x 8 | 120 | 8626 | 11385 | 8152 | 10759 | 8138 | 11405 | 8809 | 12401 | 9481 | 13397 |
| 10 x 14 x 8 | 140 | 9439 | 12384 | 8920 | 11703 | 8887 | 12405 | 9626 | 13493 | 10365 | 14581 |
| 10 x 16 x 8 | 160 | 10250 | 13379 | 9686 | 12643 | 9577 | 13311 | 10379 | 14484 | 11182 | 15658 |
| 10 x 18 x 8 | 180 | 11049 | 14349 | 10441 | 13560 | 10279 | 14216 | 11144 | 15472 | 12009 | 16728 |
| 10 x 20 x 8 | 200 | 11838 | 15299 | 11187 | 14458 | 10942 | 15070 | 11868 | 16405 | 12794 | 17741 |
| 10 x 24 x 8 | 240 | 13391 | 17180 | 12654 | 16207 | 12751 | 17231 | 13796 | 18721 | 14842 | 20211 |
| 10 x 28 x 8 | 280 | 14891 | 18922 | 14072 | 17881 | 14043 | 18844 | 15205 | 20482 | 16367 | 22120 |
| 12 x 12 x 8 | 144 | 10038 | 13021 | 9486 | 12305 | 8991 | 12553 | 9739 | 13655 | 10486 | 14756 |
| 12 x 14 x 8 | 168 | 10956 | 14155 | 10353 | 13376 | 10235 | 14052 | 11055 | 15251 | 11875 | 16450 |
| 12 x 16 x 8 | 192 | 11886 | 15284 | 11232 | 14443 | 11029 | 15082 | 11919 | 16375 | 12810 | 17667 |
| 12 x 18 x 8 | 216 | 12775 | 16359 | 12072 | 15459 | 11807 | 16080 | 12767 | 17464 | 13726 | 18847 |
| 12 x 20 x 8 | 240 | 13681 | 17440 | 12928 | 16481 | 12573 | 17052 | 13599 | 18524 | 14626 | 19995 |
| 12 x 22 x 8 | 264 | 14549 | 18474 | 13749 | 17458 | 13299 | 17974 | 14392 | 19541 | 15485 | 21088 |
| 14 x 14 x 8 | 196 | 11993 | 15423 | 11333 | 14575 | 11126 | 15216 | 12024 | 16521 | 12923 | 17826 |
| 14 x 16 x 8 | 224 | 13013 | 16656 | 12297 | 15740 | 11995 | 16338 | 12971 | 17745 | 13946 | 19152 |
| 14 x 20 x 8 | 280 | 15011 | 19042 | 14185 | 17795 | 13687 | 18487 | 14811 | 20088 | 15935 | 21688 |
| 14 x 24 x 8 | 336 | 16969 | 21347 | 16036 | 21073 | 15330 | 20539 | 16598 | 22324 | 17866 | 24110 |
| 16 x 16 x 8 | 256 | 14148 | 18019 | 13370 | 17028 | 12939 | 17550 | 13998 | 19067 | 15056 | 20583 |
| 16 x 20 x 8 | 320 | 16349 | 20631 | 15450 | 19496 | 14777 | 19873 | 15996 | 21598 | 17215 | 23323 |
| 16 x 24 x 8 | 374 | 18506 | 23157 | 17488 | 21883 | 16563 | 22093 | 17938 | 24017 | 19313 | 25941 |
| 18 x 18 x 8 | 324 | 16476 | 20782 | 15570 | 19639 | 14864 | 19989 | 16090 | 21724 | 17317 | 23460 |
| 18 x 20 x 8 | 360 | 18128 | 22644 | 17131 | 21398 | 16305 | 21678 | 17617 | 23523 | 18930 | 25369 |
| 18 x 24 x 8 | 432 | 20484 | 25389 | 19357 | 23993 | 18260 | 24090 | 19739 | 26149 | 21219 | 28208 |
| 20 x 20 x 8 | 400 | 19470 | 24145 | 18340 | 22817 | 17386 | 23019 | 18790 | 24982 | 20194 | 26945 |
| 20 x 24 x 8 | 480 | 21988 | 27132 | 20779 | 25640 | 19453 | 25566 | 21036 | 27755 | 22619 | 29945 |
| 20 x 28 x 8 | 560 | 24963 | 30480 | 23590 | 28804 | 21963 | 28514 | 23721 | 30922 | 25479 | 33330 |
| 20 x 32 x 8 | 640 | 27480 | 33340 | 25969 | 31506 | 23954 | 30909 | 25884 | 33529 | 27813 | 36149 |
| 20 x 36 x 8 | 720 | 29946 | 36127 | 28299 | 34140 | 25919 | 33251 | 28017 | 36077 | 30115 | 38903 |
| 20 x 40 x 8 | 800 | 32420 | 38904 | 30637 | 36764 | 27888 | 35575 | 30153 | 38603 | 32518 | 41631 |
| 24 x 40 x 8 | 960 | 38694 | 45735 | 36565 | 43878 | 34681 | 43023 | 37368 | 46538 | 39939 | 49937 |
| 28 x 40 x 8 | 1120 | 43183 | 50733 | 40808 | 48970 | 38123 | 47062 | 41095 | 50921 | 43950 | 54664 |
| 32 x 40 x 8 | 1280 | 48550 | 56318 | 45880 | 55056 | 42894 | 51900 | 46146 | 56580 | 49282 | 60656 |
| 36 x 40 x 8 | 1440 | 54344 | 62804 | 51355 | 61626 | 46254 | 56259 | 49872 | 60781 | 53194 | 65186 |
| 40 x 40 x 8 | 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