## Cooling Load Calculation Sheet

### Estimate for 15:00 PM

<table>
<thead>
<tr>
<th>Local Time</th>
<th>Sun Time</th>
<th>Peak Load</th>
<th>Local Time</th>
<th>Sun Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 AM</td>
<td>600</td>
<td>6000</td>
<td>12:00 AM</td>
<td>600</td>
</tr>
</tbody>
</table>

### Hour of Operation

- **DB**: Dry Bulb
- **WB**: Wet Bulb
- **%RH**: Relative Humidity
- **DP**: Dew Point
- **GR/LB**: Grains/Lb

### Conditions

- **OUTDOOR (OA)**: 76 F, 50 %RH, 0 %DP, 0 GR/LB
- **ROOM (RM)**: 76 F, 50 %RH, 0 %DP, 0 GR/LB
- **DIFFERENCE**: 19 F, 30 %RH, 0 %DP, 0 GR/LB

### Ventilation

- **OUTDOOR AIR**: PEOPLE X 50 CFM/PERS = 2000 CFM
- **CFM VENTILATION** = 5000

### Infiltration

- **SWINGING REVOLVING DOORS**: 50 PEOPLE X 12 CFM/PERS = 600 CFM
- **DOORS**: 3 DOORS X 100 CFM/DOOR = 300 CFM
- **EXHAUST FAN**: 300 CFM
- **CRACK**: 5 FEET X 50 CFM/FT = 1000 CFM
- **CFM INFILTRATION** = 0

### Effects of Heat (Btu/hr)

- **PEOPLE** = 25 PEOPLE X 63 CFM/PERSON = 1575 CFM
- **POWER** = 25 HP OR KW X 63 CFM/HP = 1575 CFM
- **LIGHT** = 25 WATT X 3.4 X 12 = 1050 CFM
- **APPAREL ETC.** = 25 SQ FT X 12 = 300 CFM
- **ADDITIONAL HEAT GAIN** = 25 X 12 = 300 CFM

### Sub Total 1 (Btu/hr)

- **INTERNAL HEAT** = 4050 CFM
- **SUPPLY CFM** = 6058 CFM
- **BYPASS CFM** = 6058 CFM

### Sub Total 2 (Btu/hr)

- **SUB TOTAL 2** = 50560 CFM
- ** Select ADP = 53 CFM/PERSON = 53 CFM **

### Adiabatic Processes

- **TEMPRISE** = (1 - 0.5 BF) X (T помещение - Tвоздух)
- **DEHUMIDIFIED AIR QTY** = 6058 CFM
- **DEHUMIDIFIER EFFECTIVE ROOM SENS. HEAT** = 4647 CFM
- **EFFECTIVE ROOM SENS. HEAT** = 85,677 CFM

### Supply Air Quantity

- **ROOF LATENT HEAT** = 83,716 CFM
- **EFFECTIVE ROOM LATENT HEAT** = 83,716 CFM
- **EFFECTIVE ROOM TOTAL HEAT** = 83,716 CFM
- **OUTDOOR AIR LATENT HEAT** = 1635 CFM
- **SENSIBLE**: 450 CFM X (1 - 0.5 BF) X 1.08
- **LATENT**: 510 CFM X 2 GB/LB X 1.08
- **RETURN DUCT LEAK GAIN** = 10 CFM
- **DEHUM & PUMP%**: 5 + 5

### Sub Total 4 (Btu/hr)

- **SUB TOTAL 4** = 2126 CFM

### Grand Total Heat (Btu/hr)

- **GRAND TOTAL HEAT** = 85,677 CFM

### Location

- **Структура элемента**: Location: Project Name:  

### Notes

1. **Use Dry-Bulb (DB) Temperature Difference from Top of Estimate Form.**
2. **Use Moisture Content (GR/LB) Difference From Top of Estimate Form.**
3. **Normally, Use "CFM Ventilation" for "CFM Outdoor Air" However When Infiltration Is To Be Offset, Refer To Page 92 To Determine "CFM Outdoor Air."**
4. **When Infiltration Is Not To Be Offset, And "CFM Ventilation Is Less Than "CFM Infiltration," Then The Excess Infiltration Is Accounted Forhere.**

*If this diff temp is too high, determine supply cfm for desired difference by supply air quantity formula.
*When bypassing mixture of outdoor and return air, use supply cfm when bypassing return air only, use dehumidified cfm.
Cell: B10
Comment: Solar gain-glass can

calculate by two method . First is for "With the Storage Factor", use the description of case 1. Second is for "without the Storage Factor", use the description of case 2.

Cell: C11
Comment: Windows area, sq ft

Area of glassed structure that solar heat gain get thru at varies exposure. (N,E,S,W,NE,SE,SW,NW), Chapter 3

Cell: E11
Comment:

Solar heat gain thru glass, Btu/(hr)-(sq ft)

Case 1; With Storage factor

Multiplying of "Peak solar heat gain thru ordinary glass" (at the selected month, location, exposure) and " Storage load factors of solar heat gain".

(Table 6, Page 29 for Peak solar heat gain thru ordinary glass and Table 7, 8, 9, 10 or 11, Page 30-34 for Storage load factors of solar heat gain thru glass):

Example: The peak solar heat gain for a west exposure 
in July at 40 north Latitude = 164 Btu/hr-sqft (Tbl.6) and the
Storage load factor with internal shade = 0.66 for a west exposure at 4 pm, the weight ~ 100 lb/sq ft. So, the
Solar heat gain thru glass for a west = 164x0.66 =
108.24 Btu/hr

Case 2; Without Storage factor

Solar heat gain thru ordinary glass* (at the selected month, location, exposure), (Table 15, Page 44-49)

Cell: G11
Comment:

Over all Factor for solar heat gain

Case 1: With storage factor

Factor for adjustment of the value of solar heat gain as the effect of Shading Device or Glass block. And the correction factor (Table 16, Page 52, Over all Factors for solar heat gain thru glass, Table 17, Page 54, Solar heat gain for glass block)

Example: Factor of solar heat gain thru glass for the Regular plate Glass = 0.94

Case 2: Without storage factor

Correction factor on the bottom of Table 15, Page 44-49

Cell: J11
Comment: Outdoor & Room condition

- Outdoor condition see Table 1-3 Page 10-19
- Room Condition see Table 4-5, Page 20-23

Cell: C12
Comment: Windows area, sq ft

Area of glassed structure that solar heat gain get thru at varies exposure. (N,E,S,W,NE,SE,SW,NW), Chapter 3
Case 1; With Storage factor

Multiplying of "Peak solar heat gain thru ordinary glass" (at the selected month, location, exposure) and "Storage load factors of solar heat gain".

(Table 6, Page 29 for Peak solar heat gain thru ordinary glass and Table 7,8,9,10 or 11, Page 30-34 for Storage load factors of solar heat gain thru glass):

Example: The peak solar heat gain for a west exposure in July at 40 north latitude = 164 Btu/hr-sqft (Tbl.6) and the storage load factor with internal shade = 0.66 for a west exposure at 4 pm, the weight ~ 100 lb/sq ft. So, the solar heat gain thru glass for a west = 164x0.66 = 108.24 Btu/hr

Case 2; Without Storage factor

Solar heat gain thru ordinary glass" (at the selected month, location, exposure), (Table15, Page 44-49)

Case 1: With storage factor

Factor for adjustment of the value of solar heat gain as the effect of Shading Device or Glass block. And the correction factor (Table 16, Page 52, Over all Factors for solar heat gain thru glass, Table 17, Page 54, Solar heat gain for glass block).

Example: Factor of solar heat gain thru glass for the Regular plate Glass = 0.94

Case 2: Without storage factor

Correction factor on the bottom of Table 15, Page 44-49

Case 1; With Storage factor

Multiplying of "Peak solar heat gain thru ordinary glass" (at the selected month, location, exposure) and "Storage load factors of solar heat gain".

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Case 2; Without Storage factor

Solar heat gain thru ordinary glass" (at the selected month, location, exposure), (Table15, Page 44-49)
Cell: G13
Comment:

Over all Factor for solar heat gain

Case 1: With storage factor

Factor for adjustment of the value of solar heat gain as the effect of Shading Device or Glass block. And the correction factor(Table 16, Page 52, Over all Factors for solar heat gain thru glass, Table 17, Page 54, Solar heat gain for glass block)

Example: Factor of solar heat gain thru glass for the Regular plate Glass = 0.94

Case 2: Without storage factor

Correction factor on the bottom of Table 15, Page 44-49

Cell: C14
Comment: Windows area, sq ft

Area of glassed structure that solar heat gain get thru at varies exposure. (N, E, S, W, NE, SE, SW, NW), Chapter 3

Cell: E14
Comment:

Solar heat gain thru glass, Btu/(hr)-(sq ft)

Case 1: With Storage factor

Multiplying of "Peak solar heat gain thru ordinary glass" (at the selected month, location, exposure) and "Storage load factors of solar heat gain". (Table 6, Page 29 for Peak solar heat gain thru ordinary glass and Table 7, 8, 9, 10 or 11, Page 30-34 for Storage load factors of solar heat gain thru glass):

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Case 2: Without Storage factor

Solar heat gain thru ordinary glass" (at the selected month, location, exposure), (Table 15, Page 44-49)

Cell: G14
Comment:

Over all Factor for solar heat gain

Case 1: With storage factor

Factor for adjustment of the value of solar heat gain as the effect of Shading Device or Glass block. And the correction factor(Table 16, Page 52, Over all Factors for solar heat gain thru glass, Table 17, Page 54, Solar heat gain for glass block)

Example: Factor of solar heat gain thru glass for the Regular plate Glass = 0.94

Case 2: Without storage factor

Correction factor on the bottom of Table 15, Page 44-49

Cell: C15
Comment: Windows area, sq ft

Area of glassed structure that solar heat gain get thru the vertical exposure; Chapter 3
Solar heat gain thru glass, Btu/(hr)-(sq ft)

Case 1; With Storage factor

Multiplying of "Peak solar heat gain thru ordinary glass" (at the selected month, location, exposure) and "Storage load factors of solar heat gain".

( Table 6, Page 29 for Peak solar heat gain thru ordinary glass and Table 7, 8, 9, 10 or 11, Page 30-34 for Storage load factors of solar heat gain thru glass):

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Case 2; Without Storage factor

Solar heat gain thru ordinary glass" (at the selected month, location, exposure), (Table 15, Page 44-49)

Over all Factor for solar heat gain

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Factor for adjustment of the value of solar heat gain as the effect of Shading Device or Glass block. And the correction factor (Table 16, Page 52, Over all Factors for solar heat gain thru glass, Table 17, Page 54, Solar heat gain for glass block)

Example: Factor of solar heat gain thru glass for the Regular plate Glass = 0.94

Case 2: Without storage factor

Correction factor on the bottom of Table 15, Page 44-49

People, Person

Amount of people in the A/C area.

Ventilation rate, CFM/Person

Ventilation rate base on the quantity of person in conditioning space. (Table 45, Page 97)

Wall area, sq ft

Area of wall or roof that conducted heat gain thru at each exposure. (.E, S, W, NE, SE, SW, NW)

Equivalent temperature diff., Deg F

Operation of Equivalent temperature difference value (wall, roof, Table 19, Page 62) and
<table>
<thead>
<tr>
<th>Cell</th>
<th>Comment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>G17</td>
<td>Transmission Coefficient, U, (Btu/(hr)(sq ft)(deg F))</td>
<td>Value of Transmission Coefficient, U Value of each type of wall material (Table 21,22,23,24,25,26, Page 66-70)</td>
</tr>
<tr>
<td>M17</td>
<td>Ventilation rate, CFM/Sq.ft</td>
<td>Ventilation rate base on the size of the conditioning space. (Table 45, Page 97)</td>
</tr>
<tr>
<td>C18</td>
<td>Wall area, sq ft</td>
<td>Area of wall or roof that conducted heat gain get thru at each exposure. (E,S,W,NE, SE,SW,NW)</td>
</tr>
<tr>
<td>E18</td>
<td>Equivalent temperature diff., Deg F</td>
<td>Operation of Equivalent temperature difference value (wall, roof, Table 19, Page 62) and Correction number (Table 20A, Page 63,64)</td>
</tr>
<tr>
<td>G18</td>
<td>Transmission Coefficient, U, (Btu/(hr)(sq ft)(deg F))</td>
<td>Value of Transmission Coefficient, U Value of each type of wall material (Table 21,22,23,24,25,26, Page 66-70)</td>
</tr>
<tr>
<td>C19</td>
<td>Wall area, sq ft</td>
<td>Area of wall or roof that conducted heat gain get thru at each exposure. (E,S,W,NE, SE,SW,NW)</td>
</tr>
<tr>
<td>E19</td>
<td>Equivalent temperature diff., Deg F</td>
<td>Operation of Equivalent temperature difference value (wall, roof, Table 19, Page 62) and Correction number (Table 20A, Page 63,64)</td>
</tr>
<tr>
<td>G19</td>
<td>Transmission Coefficient, U, (Btu/(hr)(sq ft)(deg F))</td>
<td>Value of Transmission Coefficient, U Value of each type of wall material (Table 21,22,23,24,25,26, Page 66-70)</td>
</tr>
<tr>
<td>C20</td>
<td>Wall area, sq ft</td>
<td>Area of wall or roof that conducted heat gain get thru at each exposure. (E,S,W,NE, SE,SW,NW)</td>
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| Cell: E20 | Comment: Equivalent temperature diff., Deg F  
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<td>Operation of Equivalent temperature difference value (wall, roof, Table 19, Page 62) and Correction number (Table 20A, Page 63,64)</td>
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</tbody>
</table>

| Cell: G20 | Comment: Transmission Coefficient, \( U \), (Btu/(hr)(sq ft)(deg F))  
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<tbody>
<tr>
<td></td>
<td>Value of Transmission Coefficient, ( U ) Value of each type of wall material (Table 21, 22, 23, 24, 25, 26, Page 66-70)</td>
</tr>
</tbody>
</table>

| Cell: L20 | Comment: People, Person  
<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>Amount of people in the A/C area.</td>
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| Cell: M20 | Comment: Infiltration rate  
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<tbody>
<tr>
<td></td>
<td>Infiltration rate based on number of people, See Table 41, Page 90</td>
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| Cell: C21 | Comment: Wall area, sq ft  
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<tbody>
<tr>
<td></td>
<td>Area of wall or roof that conducted heat gain through each exposure. (E, S, W, NE, SE, SW, NW)</td>
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| Cell: E21 | Comment: Equivalent temperature diff., Deg F  
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<tbody>
<tr>
<td></td>
<td>Operation of Equivalent temperature difference value (wall, roof, Table 20, Page 63) and Correction number (Table 20A, Page 63,64)</td>
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| Cell: G21 | Comment: Transmission Coefficient, \( U \), (Btu/(hr)(sq ft)(deg F))  
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<tbody>
<tr>
<td></td>
<td>Value of Transmission Coefficient, ( U ) Value of each type of roof material (Table 27, 28, Page 71,72)</td>
</tr>
</tbody>
</table>

| Cell: L21 | Comment: Door  
<table>
<thead>
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<tbody>
<tr>
<td></td>
<td>The number of open doors of the A/C area.</td>
</tr>
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</table>

| Cell: M21 | Comment: Infiltration rate  
<table>
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<tr>
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<tbody>
<tr>
<td></td>
<td>Infiltration rate based on number of opening doors, See Table 41, Page 90</td>
</tr>
</tbody>
</table>

| Cell: C22 | Comment: Wall area, sq ft  
<table>
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</table>
Area of wall or roof that conducted heat gain get thru at each exposure. (E, S, W, NE, SE, SW, NW)

<table>
<thead>
<tr>
<th>Cell: E22</th>
<th>Comment: Equivalent temperature diff., Deg F</th>
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<tbody>
<tr>
<td></td>
<td>Operation of Equivalent temperature difference value (wall, roof, Table 20, Page 63) and Correction number (Table 20A, Page 63, 64)</td>
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<table>
<thead>
<tr>
<th>Cell: G22</th>
<th>Comment: Transmission Coefficient, $U$, (Btu/hr)(sq ft)(deg F)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Value of Transmission Coefficient, $U$ Value of each type of Roof material (Table 27, 28, Page 71, 72)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: O22</th>
<th>Comment: Exhaust capacity, CFM</th>
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<tbody>
<tr>
<td></td>
<td>Exhaust capacity of the system</td>
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<table>
<thead>
<tr>
<th>Cell: C24</th>
<th>Comment: Glassed area, sq ft</th>
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<tbody>
<tr>
<td></td>
<td>Heat transmission area thru glass except wall &amp; roof.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: E24</th>
<th>Comment: Dry bulb temp. diff., F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dry bulb temperature difference between outdoor temperature and air conditioning room temperature. (See the data at the top of calculation sheet)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Cell: G24</th>
<th>Comment: U Value of glass, Btu/hr-sq.ft-F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transmission Coefficient value of Windows, skylights, doors &amp; Glass block (Table 33, Page 76)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: C25</th>
<th>Comment: Partition area, sq ft</th>
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<tbody>
<tr>
<td></td>
<td>Heat transmission area thru partition except wall &amp; roof.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: E25</th>
<th>Comment: Dry bulb temp. diff., F</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Dry bulb temperature difference between another side of partition and air conditioning room temperature.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: G25</th>
<th>Comment: U Value of Partition, Btu/hr-sq.ft-F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Transmission Coefficient value of Partitions (Table 25, 26, Page 69, 70)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: C26</th>
<th>Comment: Ceiling area, sq ft</th>
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<tbody>
<tr>
<td></td>
<td>Heat transmission area thru ceiling except wall &amp; roof.</td>
</tr>
<tr>
<td>Cell</td>
<td>Comment</td>
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<td>------</td>
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</tr>
<tr>
<td>E26</td>
<td>Dry bulb temp. diff., F</td>
</tr>
<tr>
<td>G26</td>
<td>U Value of Partition, Btu/hr-sq.ft-F</td>
</tr>
<tr>
<td>C27</td>
<td>Floor area, sq ft</td>
</tr>
<tr>
<td>E27</td>
<td>Dry bulb temp. diff., F</td>
</tr>
<tr>
<td>G27</td>
<td>U Value of Partition, Btu/hr-sq.ft-F</td>
</tr>
<tr>
<td>C28</td>
<td>Infiltration, cfm</td>
</tr>
<tr>
<td>E28</td>
<td>Dry bulb temp. diff., F</td>
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<tr>
<td>L30</td>
<td>Apparatus dewpoint</td>
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<tr>
<td>C31</td>
<td>People, Person</td>
</tr>
<tr>
<td>G31</td>
<td>Heat gain from people, Btu/hr</td>
</tr>
<tr>
<td>C32</td>
<td>Power, kw</td>
</tr>
</tbody>
</table>
Cell: G32
Comment: Heat gain from electric motor, Btu/hr
   Sensible heat release from motor into the A/C area (Table 53, Page 105)

Cell: C33
Comment: Power, kw
   Grossory of power of lighting in the A/C area. It can generate heat to be the cooling load.

Cell: G33
Comment: Heat gain from light, Btu/hr
   Sensible heat release from lights into the A/C area (Table 49, Page 101)

Cell: D34
Comment: Heat gain from appliance, Btu/hr
   Grossory of power of appliance in the A/C area. It can generate sensible heat to be the cooling load. (Table 50, 51, 52 Page 101, 103)

Cell: G34
Comment: Correction Factor of Appliance
   Factoc of Appliance for the adjustment of each situation of cooling load. (Bottom of Table 50, 51, 52)

Cell: D35
Comment: Additional heat gain, Btu/hr
   Heat gain from pipe or tank located in A/C area. (Table 54-57 Page 107-109)

Cell: G35
Comment: Correction Factor of Additional heat gain
   Factoc of additional heat gain for the adjustment of each situation of cooling load. (Bottom of Table 54-57)

Cell: C37
Comment: Floor area of A/C space, sq.ft
   Floor area of air conditioning space where is influenced by the temperature swing effect. The temperature swing effect will reduce the sensible heat gain. Because of some heat gain is stored in the building. It doesn't release all of it at the peak rate.

Cell: E37
Comment: Desired temperature swing, F
   Recommended inside design condition. The temperature swing value depend on each type of building function. (Table 4, Page 20)
Cell: G37
Comment: Storage Factor
Factor of storage heat gain depend on the load pattern, weight of material surrounding the space and hour of operation. (Table 13, Page 37)

Cell: C40
Comment: Safety Factor
Factor for the uncertainly of survey. The value in the range of 0%-5%. To be added to the room sensible heat. (Chapter 7, Page 112)

Cell: C43
Comment: Heat gain to supply duct, %
Heat gain to supply duct in case of the cooled air duct go through the unconditioned space. Depend on amount of room sensible heat, type of duct insulation, distance and temperature difference between cooled air in duct and the unconditioned space temperature. (Chart 3, Page 110)

Cell: E43
Comment: Supply air duct leak loss, %
Average supply duct leakage from the entire length of low velocity supply duct whether large and small system is around 10% of supply air quantity. Individual workmanship is the greatest variable and duct leakages from 5%-30%. (Chapter 7, Page 110)

Cell: G43
Comment: Heat gain from A/C Fan, Draw thru system, %
The generated heat gain from fan motor which distribute cooled air in the A/C system. It will effect to have more sensible heat gain. And depend on the temperature difference of room to supply air, Fan total pressure and feature of fan installation. (Table 59, Page 111)

Cell: C44
Comment: Outdoor air, CFM
Quantity of outdoor air make up to the A/C system. See note 3 on the bottom of this calculation sheet (Table 45, Page 97 and Table 43, Page 92)

Cell: E44
Comment: Dry bulb temp. diff, F
Dry bulb temperature difference between outdoor temperature and air conditioning room temperature. (See the data at the top of calculation sheet)

Cell: G44
Comment: Bypass Factor
Bypass factor is a function of the physical and operating characteristcs of the conditioning apparatus (Cooling Coil). See typical Bypass Factors (Table 61, Page 127)

Cell: C47
Comment: Infiltration, cfm
Ignore this value in case of ventilation excess infiltration of air through window, door, crack or swinging door. (See note 4)

**Cell: E47**
*Comment: Moisture content, Gr/Lb*
Moisture content difference between outdoor and room condition. (See note 2)

**Cell: C48**
*Comment: People, Person*
Amount of people in the A/C area.

**Cell: E48**
*Comment: Heat gain from people, Btu/hr*
Latent heat release from body when they are doing the activity (Table 48, Page 100)

**Cell: C49**
*Comment: Steam, Lb/Hr*
Amount of steam escape to conditioned space

**Cell: D50**
*Comment: Heat gain from appliance, Btu/hr*
Grossory of power of appliance in the A/C area. It can generate latent heat to be the cooling load. (Table 50, 51, 52, Page 101, 103)

**Cell: G50**
*Comment: Correction Factor of Appliance*
Fact of Appliance for the adjustment of each situation of cooling load. (Bottom of Table 50, 51, 52)

**Cell: D51**
*Comment: Additional heat gain, Btu/hr-sq.ft*
Heat gain from evaporation of free water surface in A/C space. (Table 58, Page 109)

**Cell: C52**
*Comment: Moisture material area, sq.ft*
Face area of moisture material which can evaporate into A/C space.

**Cell: E52**
*Comment: Moisture content, Gr/Lb*
Moisture content difference between outdoor and room condition. (See note 2)
**Comment:** Permeance, Btu/(hr)(100sq.ft)(Gr/Lb diff)

Diffusion of moisture material into the A/C space. (Table 40, Page 84-85)

<table>
<thead>
<tr>
<th>Cell: C54</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comment:</strong> Safety Factor</td>
</tr>
<tr>
<td>Factor for the uncertainty of survey. The value in the range of 0%-5%. To be added to the room latent heat. (Chapter 7, Page 112)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: E56</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comment:</strong> Supply air duct leak loss, %</td>
</tr>
<tr>
<td>Average supply duct leakage from the entire length of low velocity supply duct whether large and small system is around 10% of supply air quantity. Individual workmanship is the greatest variable and duct leakages from 5%-30%. (Chapter 7, Page 110)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: C57</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comment:</strong> Outdoor air, CFM</td>
</tr>
<tr>
<td>Amount of outdoor air make up to the A/C system can be the latent heat gain by the mixed moisture. See note 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: E57</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comment:</strong> Moisture content, Gr/Lb</td>
</tr>
<tr>
<td>Moisture content difference between outdoor and room condition. (See note 2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: G57</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comment:</strong> Bypass Factor</td>
</tr>
<tr>
<td>Bypass factor is a function of the physical and operating characteristics of the conditioning apparatus (Cooling Coil) See typical Bypass Factors (Table 61, Page 127)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: C61</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comment:</strong> Outdoor air, CFM</td>
</tr>
<tr>
<td>Amount of outdoor air make up to the A/C system can be the sensible heat gain by the temperature difference. See note 3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: E61</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comment:</strong> Dry bulb temp. diff., F</td>
</tr>
<tr>
<td>Dry bulb temperature difference between outdoor temperature and air conditioning room temperature. (See the data at the top of calculation sheet)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cell: G61</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comment:</strong> Bypass Factor</td>
</tr>
<tr>
<td>Bypass factor is a function of the physical and operating characteristics of the conditioning apparatus (Cooling Coil) See typical Bypass Factors (Table 61, Page 127)</td>
</tr>
</tbody>
</table>

| Cell: C62 |
Comment: Outdoor air, CFM

Amount of outdoor air make up to the A/C system can be the latent heat gain by the mixed moisture.

See note 3

Cell: E62
Comment: Moisture content, Gr/Lb

Moisture content difference between outdoor and room condition. (See note 2)

Cell: G62
Comment: Bypass Factor

Bypass factor is a function of the physical and operating characteristics of the conditioning apparatus (Cooling Coil) See typical Bypass Factors (Table 61, Page 127)

Cell: G63
Comment: Heat gain to return duct. %

Heat gain to return duct in case of the cooled air duct go through the unconditioned space. Depend on amount of room sensible heat, type of duct insulation, distance and temperature difference between cooled air in duct and the unconditioned space temperature. (Chart 3, Page 110)

Cell: G65
Comment: Return air duct leak gain, %

Average supply duct leakage from the entire length of low velocity supply duct whether large and small system is around 10% of supply air quantity. Individual workmanship is the greatest variable and duct leakages from 5%-30%, (Chapter 7, Page 110)

Cell: G65
Comment: Heat gain from dehumidifier pump, %

With dehumidifier systems, the horsepower required to pump the water adds heat to the system. This heat will be an addition to the grand total heat. (Table 60, Page 113)

Cell: G65
Comment: Heat gain from dehumidifier pipe, %

- Very little external piping ~1%
- Average external piping ~2%
- extensive external piping ~4%

Chapter 7, Page 113