

TABLE 16. INSTANTANEOUS RATES OF HEAT GAIN DUE TO TRANSMITTED DIRECT AND DIFFUSE OR SKY SOLAR RADIATION BY A SINGLE SHEET OF UNSHADED COMMON WINDOW GLASS

For Clear Atmospheres and 18 Deg Declination, North (August 1)

Note: For total instantaneous heat gain, add these values to the Table 17 values.

30 DEG NORTH LATITUDE										
SUN TIME		INSTANTANEOUS HEAT GAIN IN BTU PER (HR) (SQ FT)								
AM →		N	NE	E	SE	S	SW	W	NW	HORIZ.
5 a.m.	6 p.m.	25	98	108	52	5	5	5	17	
6	5	23	155	190	110	10	10	10	77	
7	4	16	148	205	136	14	13	13	137	
8	3	16	106	180	136	21	15	15	15	195
9										
10	2	17	54	128	116	34	17	16	16	241
11	1	18	20	59	78	45	19	18	18	267
12		18	19	19	35	49	35	19	19	276
PM →		N	NW	W	SW	S	SE	E	NE	HORIZ.

40 DEG NORTH LATITUDE										
SUN TIME		INSTANTANEOUS HEAT GAIN IN BTU PER (HR) (SQ FT)								
AM →		N	NE	E	SE	S	SW	W	NW	HORIZ.
5 a.m.	7 p.m.	3	7	6	2	0	0	0	0	1
6	6	28	116	131	67	7	6	6	6	25
7	5	16	149	195	124	11	10	10	10	77
8	4	14	129	205	156	18	13	12	12	137
9	3	15	79	180	162	42	14	14	14	188
10	2	16	31	127	148	69	16	16	16	229
11	1	17	18	58	113	90	23	17	17	252
12		17	17	19	64	98	64	19	17	259
PM →		N	NW	W	SW	S	SE	E	NE	HORIZ.

50 DEG NORTH LATITUDE										
SUN TIME		INSTANTANEOUS HEAT GAIN IN BTU PER (HR) (SQ FT)								
AM →		N	NE	E	SE	S	SW	W	NW	HORIZ.
5 a.m.	7 p.m.	20	54	54	20	3	3	3	3	6
6	6	25	128	149	81	8	7	7	7	34
7	5	12	139	197	136	12	10	10	10	80
8	4	13	107	202	171	32	12	12	12	129
9	3	14	54	176	183	72	14	14	14	173
10	2	15	18	124	174	110	16	16	16	206
11	1	16	16	57	143	136	42	16	16	227
12		16	16	18	96	144	96	18	16	234
PM →		N	NW	W	SW	S	SE	E	NE	HORIZ.

other design temperatures are given in Table 24 in a later section, Effect of Deviation from Design Conditions.

Tables 16 and 17 may be used for other types of glass with good accuracy, by using the factors given in Table 18: Table 16 values are multiplied by the appropriate factor given in Table 18 to obtain heat gain due to transmitted solar radiation. For glasses having a transmittance for normally incident radiation differing from the table values, factors may be found by linear interpolation. To obtain instantaneous rates of heat gain by con-

TABLE 17. INSTANTANEOUS RATES OF HEAT GAIN BY CONVECTION AND RADIATION FROM A SINGLE SHEET OF UNSHADED COMMON WINDOW GLASS

For Clear Atmospheres and 18 Deg Declination, North (August 1)

For 75 F Indoor Temperature

Note: For total instantaneous heat gain, add these values to the Table 16 values.

SUN TIME		DAY-BULB DEG F	NORTH LATITUDE DEGREES	INSTANTANEOUS HEAT GAIN IN BTU PER (HR) (SQ FT)									
				N	NE	E	SE	S	SW	W	NW	Hor.	
5 a.m.	74	30	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	
6	74		-1	0	1	0	-1	-1	-1	-1	-1		
7	75		0	3	3	2	0	0	0	0	2		
8	77		2	5	6	5	2	2	2	2	5		
9	80		5	7	9	8	6	5	5	5	9		
10	83		8	10	11	11	9	8	8	8	13		
11	87		13	13	15	15	14	13	13	13	18		
12	90		17	17	17	18	18	18	17	17	21		
1 p.m.	93		20	20	20	20	21	22	22	21	25		
2	94		21	21	21	21	22	24	24	23	26		
3	95	22	22	22	22	23	25	26	25	26			
4	94	21	21	21	21	21	24	25	24	24			
5	93	21	20	20	20	20	22	24	23	22			
6	91	18	18	18	18	18	19	19	19	18			
7	87	13	13	13	13	13	13	13	13	13			
8	85	11	11	11	11	11	11	11	11	11			
9	83	8	8	8	8	8	8	8	8	8			
5 a.m.	74	40	-1	-1	-1	-1	-1	-1	-1	-1	-1		
6	74		0	1	1	0	-1	-1	-1	-1	0		
7	75		0	3	3	2	0	0	0	0	2		
8	77		2	5	6	5	3	2	2	2	5		
9	80		5	7	9	8	6	5	5	5	9		
10	83		8	9	11	11	10	8	8	8	13		
11	87		13	13	15	16	15	14	13	13	18		
12	90		17	17	17	18	19	18	17	17	21		
1 p.m.	93		20	20	20	21	22	22	22	20	25		
2	94		21	21	21	21	23	24	24	22	26		
3	95	22	22	22	22	24	26	26	24	26			
4	94	21	21	21	21	22	25	25	24	24			
5	93	20	20	20	20	20	23	24	23	22			
6	91	18	18	18	18	18	19	20	20	18			
7	87	13	13	13	13	13	13	13	13	13			
8	85	11	11	11	11	11	11	11	11	11			
9	83	8	8	8	8	8	8	8	8	8			
5 a.m.	74	50	-1	0	0	-1	-1	-1	-1	-1	-1		
6	74		0	1	1	-1	-1	-1	-1	-1	0		
7	75		0	2	3	2	0	0	0	0	2		
8	77		2	4	5	5	3	2	2	2	5		
9	80		5	6	9	9	7	5	5	5	9		
10	83		8	9	11	12	11	8	8	8	12		
11	87		13	13	15	16	16	14	13	13	17		
12	90		17	17	17	19	19	19	17	17	20		
1 p.m.	93		20	20	20	21	23	23	21	20	24		
2	94		21	21	21	21	24	25	24	21	25		
3	95	22	22	22	22	24	26	26	24	26			
4	94	21	21	21	21	22	25	25	23	24			
5	93	20	20	20	20	20	23	24	23	22			
6	91	18	18	18	18	18	19	20	20	18			
7	87	13	13	13	13	13	13	14	14	13			
8	85	11	11	11	11	11	11	11	11	11			
9	83	8	8	8	8	8	8	8	8	8			

vection and radiation, two steps are required. First, Table 17 values are multiplied by the appropriate coefficient of X listed in Table 18. Second, Table 19 values are multiplied by the appropriate coefficient of Y listed in Table 18, and added to the first value. All convection and radiation gain values for double glass were computed for a 1-in. air space. No great