TABLE 21. INSTANTANEOUS RATES OF HEAT GAIN BY CONVECTION AND RADIATION FROM UNSHADED WALLS OF 8-IN. HOLLOW GLASS BLOCK OF PATTERNS TYPE I, II, III, IV, IVA AND V[a]

For Clear Atmospheres and 18 Deg Declination, North (August 1)
For 80 F Indoor Temperature

Note: For total instantaneous heat gain add these values to values in Table 18, or Table 20 adjusted by Table 22 factors.

SUN TIME	DRY-BULB FAHR.		INSTANTANEOUS HEAT GAIN IN BTU PER (HR) (SQ FT)							
			N	NE	E	SE	S	SW	W	NW
5 a.m.	74		−3	−3	−3	−3	−3	−3	−3	−3
6	74		0	3	4[a]	3	−2	−2	−2	−2
7	75		1	15	17[a]	13	−1	−1	−1	−1
8	77		0	21	26[a]	21	1	0	0	0
9	80		0	20	33	27	5	1	2	1
10	83		2	12	36	32	12	3	3	3
11	87		4	6	29	32	19	5	6	5
12	90	40	6	8	16	26	23	9	8	7
1 p.m.	93	Degrees	8	10	14	14	26	25	12	9
2	94	North	9	10	15	11	25	37	28	11
3	95	Latitude	11	11	16	11	21	44	41	17
4	94		11	11	15	11	16	45	44	30
5	93		11	10	13	10	13	43	42[a]	35
6	91		13	9	11	9	11	35	35[a]	29
7	87		11	7	8	7	8	19	21[a]	15
8	85		7	4	4	4	4	7	7	4
9	83		4	3	2	3	2	3	4	3

SUN TIME	DRY-BULB	LATITUDE	SE	S	SW	LATITUDE	SE	S	SW
5 a.m.	74		−3	−3	−3		−3	−3	−3
6	74		1	−2	−2		5	−2	−2
7	75		11	−1	−1		13	−1	−1
8	77		20	0	0		21	0	0
9	80		26	1	2		27	6	1
10	83		29	4	4		32	15	2
11	87		26	8	5		35	22	4
12	90	30[b]	18	12	7	50[b]	33	28	17
1 p.m.	93	Degrees	10	15	16	Degrees	23	31	31
2	94	North	11	16	30	North	12	32	39
3	95	Latitude	12	14	39	Latitude	11	28	43
4	94		12	13	43		11	20	44
5	93		11	11	41		10	12	43
6	91		10	9	32		9	10	36
7	87		6	6	15		7	7	23
8	85		4	4	6		4	4	10
9	83		3	3	3		3	3	3

[a] For types III, IV, IVA and V patterns and 30, 40 and 50 deg latitudes, multiply east wall values for 6 7 and 8 a.m. by 1.40, and west wall values for 5, 6 and 7 p.m. by 1.25.

[b] For N, NE, E, W and NW use 40 deg North Latitude values.

determined values of solar energy absorption and temperature difference between the two faces. Because the exact dependence of the latter on weather conditions has not been determined, the values of convection and radiation gain cannot be regarded as exact for the assumed design conditions. Indoor and outdoor convection and radiation heat transfer data are the same as those used for common window glass. Table 23 gives corrections to be applied for other design temperatures.

To obtain transmitted direct and diffuse solar radiation for other types of 8-in. block, the Table 20 values are multiplied by the approximate percentages given in Table 22. Note that corrections are the same for all latitudes, and that they vary only on the surfaces exposed to the direct sun. The convection and radiation gain values for all blocks are so nearly

TABLE 22. INSTANTANEOUS RATES OF HEAT GAIN DUE TO TRANSMITTED DIRECT AND DIFFUSE SOLAR RADIATION BY UNSHADED WALLS OF 8-IN HOLLOW GLASS BLOCK OF TYPES II, III, IV, IVA AND V PATTERNS

Multiply the Table 20 Values for Type I by These Percentage Factors
For Clear Atmospheres and 18 Deg Declination, North (August 1)
For 30, 40, and 50 Deg North Latitude

Note: To obtain total instantaneous heat gain add adjusted Table 20 values to the Table 21 values.

INSTANTANEOUS HEAT GAIN DUE TO TRANSMITTED SOLAR RADIATION AS A PERCENTAGE OF TYPE I PATTERN

SUN TIME		TYPE II PATTERN					TYPE III PATTERN				
AM → ↓		N, NW, W, SW	NE	E	SE	S	N, NW, W, SW	NE	E	SE	S
5 a.m.	7 p.m.	100	100	100	100	100	70	70	70	70	70
6	6	100	95	95	90	100	70	65	65	70	70
7	5	100	90	90	90	100	70	65	60	65	70
8	4	100	95	90	90	100	70	65	60	65	70
9	3	100	95	85	90	90	70	65	65	70	65
10	2	100	95	95	95	95	70	70	70	75	65
11	1	100	100	95	95	100	70	70	70	80	75
12		100	100	100	100	100	70	70	70	75	90
	PM →	N, NE, E, SE	NW	W	SW	S	N, NE, E, SE	NW	W	SW	S

SUN TIME		TYPE IV PATTERN					TYPE IVA PATTERN				
AM → ↓		N, NW, W, SW	NE	E	SE	S	N, NW, W, SW	NE	E	SE	S
5 a.m.	7 p.m.	55	45	35	75	55	55	45	35	30	55
6	6	55	45	35	80	55	55	35	35	30	55
7	5	55	45	35	60	55	55	35	40	35	55
8	4	55	45	30	40	55	55	45	45	45	55
9	3	55	50	25	30	60	55	50	65	65	50
10	2	55	55	35	30	50	55	55	85	90	60
11	1	55	55	45	35	40	55	55	70	105	95
12		55	55	55	50	45	55	55	55	100	115
	PM →	N, NE, E, SE	NW	W	SW	S	N, NE, E, SE	NW	W	SW	S

SUN TIME		TYPE V PATTERN				
AM → ↓		N, NW, W, SW	NE	E	SE	S
5 a.m.	7 p.m.	60	35	35	30	60
6	6	60	35	35	30	60
7	5	60	35	40	35	60
8	4	60	50	65	50	60
9	3	60	80	90	90	60
10	2	60	70	105	105	90[a]
11	1	60	60	80	110	105[a]
12		60	60	60	85	115[a]
	PM →	N, NE, E, SE	NW	W	SW	S

Designation of Block Type
II—Semi-Light Diffusing
III—Light Diffusing
IV—Light Diffusing
IVA—Light Diffusing
V—Light Directing

[a] Reduce by 30% for 30 deg N latitude only.

TABLE 23. APPROXIMATE CORRECTIONS TO TABLES 14 AND 21 FOR DEVIATIONS FROM INDOOR AND OUTDOOR DESIGN TEMPERATURES

For each degree the design room temperature exceeds 80 F, subtract correction. For each degree the design outdoor dry-bulb temperature exceeds 95 F, add correction. Apply these corrections to each value in Table 14 or Table 21.

GLASS TYPE	CORRECTION BTU PER (HR) (SQ FT)
Single Flat or Rolled Figured Glass	1.0
Double Flat Glass and Glass Block	0.5