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Fenestration Design for Office and Residential Buildings

S. J. Treado
D. B. Holland

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
National Engineering Laboratory
Center for Building Technology
Building Physics Division
Gaithersburg, MD 20899

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U.S. DEPARTMENT OF COMMERCE, Malcolm Baldrige, *Secretary*
NATIONAL BUREAU OF STANDARDS, Ernest Ambler, *Director*

ABSTRACT

The influence of fenestration design on energy performance and illumination conditions in office and residential buildings is examined, and recommendations are given for effective design of fenestration systems to meet occupant requirements. Particular emphasis is given to various shading strategies, such as blinds, shades, light shelves and fins, and their impacts on interior daylight levels and distribution, illumination quality, and energy requirements.

A comparison is made between the total daylight gain into the building and the useful daylight gain, where useful daylight is defined as daylight which can be used to offset electric lighting requirements. Significant improvements in daylighting, lighting and thermal performance are shown to be possible with various fenestration designs.

Keywords: contrast, daylighting, energy performance, illumination, shading, solar gain

FOREWORD

This report documents work performed under contract number N0003785AF00D01 for the Naval Civil Engineering Laboratory, during the period of October 1984 through September 1985. This effort is part of a continuing research program investigating the effective use of daylighting in buildings.

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DISCLAIMER

References to any commercial equipment, materials or computer software are given to describe the conduct of the research. Such identification does not imply recommendation or endorsement by the National Bureau of Standards.

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1. INTRODUCTION

The potential benefits of daylight utilization in buildings have been well documented. In addition to the obvious benefit of reduction of energy usage for electric lighting, daylighting can reduce peak cooling requirements and annual energy usage for building space conditioning [1,5]. Additional benefits of improved illumination quality (i.e. task visibility) and occupant satisfaction have been attributed to daylight utilization in buildings. However, these potential benefits can only be achieved through the judicious selection of fenestration system elements. Such a selection procedure requires considerable attention to the trade-offs associated with the various aspects of fenestration performance, such as solar and light transmission and distribution, and related thermal characteristics. Site, location and occupant factors also influence the fenestration design requirements.

Traditional fenestration design procedures have involved computations of solar gains, interior daylight levels and thermal heat transfer for various design day conditions. With the advent of sophisticated building energy analysis computer simulation programs, the effects of fenestration design on annual and peak energy requirements can also be evaluated. The designer is faced with the task of selecting a fenestration design that is optimal in some general sense, including energy usage, peak load, and illumination quantity and quality considerations. Such an optimization procedure is difficult at best, since comparisons among these different elements are not straight forward.

To illustrate this point, consider a simple case where a bare window is compared to a window with a blind, and the impact on annual energy usage and peak loads is evaluated. The use of shading will decrease solar heat gains, thereby reducing cooling loads and cooling energy. Heating loads and energy usage will increase due to shading. In some geographical locations, the increased heating energy requirements will more than offset the reductions in cooling energy needs, because cooling systems have coefficients of performance greater than 2, while heating efficiencies are less than one. Thus, less cooling energy savings occur than heating energy increases for equal, but opposite, changes in cooling and heating loads. However, peak cooling loads are decreased through the use of shading. Shading also impacts lighting energy requirements if daylighting is utilized, reducing available interior daylight. The selection of the most effective fenestration design, considering the trade-offs between total energy usage, peak cooling loads and daylighting performance, is a formidable task.

The general design problem described above is the subject of much current research and has yet to be adequately resolved. This report addresses a subset of the general fenestration

optimization procedure as applied to office or residential type buildings with windows. Particular emphasis is given to the effect of fenestration design details and shading strategies on illumination conditions in and energy performance of daylit buildings. The analysis was performed using the CEL 1 computer simulation program, which possesses sophisticated daylighting and fenestration modeling capabilities [6,7]. Twenty-eight fenestration designs were modeled and analyzed to evaluate their daylighting and energy performance. These designs included shades, blinds, light shelves and barriers.

The results are presented in a format to allow easy comparison of the trade-offs and benefits of each fenestration design. Recommendations are presented to assist the designer in determining the appropriate fenestration design for a particular application.

2. BACKGROUND

In order to compare the relative performance of various fenestration designs, it is necessary to select a set of metrics to be used in quantifying the important performance aspects. These metrics should characterize the important performance aspects associated with fenestration design. Experience quickly suggests some obvious metrics, such as light levels, task contrast and lighting power reductions under typical conditions. Difficulty arises in adequately defining typical conditions in a useful manner. A few design day type analyses usually prove to be useful, but not sufficient to evaluate net annual effects. To overcome this obstacle, building energy analysis computer programs may evaluate building thermal performance in 8760 hourly increments over a time period of a year [8,9]. While such an approach adequately determines net annual energy performance, the individual performance attributes of a particular fenestration design tend to be obscured due to the sheer volume of computational effort and output. These programs tend to focus on net energy and loads performance for a building zone at the expense of detailed fenestration performance information. It is possible to generate output reports containing information such as hourly solar gains and a few other fenestration-related parameters; however, this approach is unwieldy.

An alternate approach would be to choose a smaller number of instants of time distributed throughout the year, and to look at the performance of various fenestration alternatives in greater detail for those times. This allows a qualitative as well as quantitative view of the influence of fenestration design on illumination conditions. While lighting energy for a building zone can be quantified with a single number, illuminance levels will usually vary throughout the space, particularly when daylighting is utilized. Evaluation of task visibility requires the selection of a typical task and viewing direction, as well as the specification of lighting system characteristics and luminaire location.

In attempting to evaluate the performance of various fenestration options, many factors may be of interest. Conductive heat transfer is dependent on the thermal conductivity of the fenestration elements, and solar heat gain is a function of solar transmittance. Daylight gain is related to visible transmittance, but the distribution of daylight within the interior building space is dependent on the presence, configuration and reflectance characteristics of the fenestration components and room surfaces.

When daylighting is used to minimize lighting requirements, the amount of lighting power needed at any instant in time is determined by the level of useful interior daylight. Useful daylight can be defined as daylight which can be used to offset

electric lighting. Daylight is only useful, from a lighting energy viewpoint, up to the illumination set-point specified for the space. If a uniform illumination of 50 footcandles (538 lux) is desired within the space, daylight is only useful up to that level. If daylight levels exceed the set-point, surplus illumination results, and no additional lighting energy reductions are possible. Of course, daylight levels usually vary throughout the building space, being highest near the fenestration elements, and decreasing with distance from the fenestration. Thus, it is entirely possible that surplus illumination may occur near the fenestration while more daylight could be used in other parts of the building space. This situation is demonstrated in figure 1, which indicates a typical variation of daylight level with position relative to a window. Daylight level is greatest near the window, where it exceeds the illumination set-point, or the desired light level. The daylight level decreases away from the window. Only the daylight up to the illumination set-point is useful daylight, in this case given by the area bounded vertically by the daylight level curve and the illumination set-point line, whichever is lesser. The area above the illumination set-point represents surplus illumination.

At a given instant of time, a particular fenestration element will admit solar radiant energy at a certain rate containing some fraction of visible light. If the daylight is spread uniformly throughout the space, useful daylight will be at a maximum, producing the maximum reduction in lighting power requirements. The solar heat gain will add to cooling loads or subtract from heating loads depending on whether the building is in a cooling or heating mode. Useful daylight reduces lighting energy usage, and the resulting cooling loads, thereby helping to control cooling loads. Surplus daylight, however, adds to cooling loads without reducing lighting energy. If the building is in a heating mode, surplus illumination reduces heating loads. Thus, the fenestration characteristics which are beneficial while the building is in a cooling mode are different than those for the building in a heating mode.

Since interior daylight levels vary with time and position within the building space, it is difficult to succinctly quantify the effect of fenestration design on daylighting performance. Thus, it is useful to determine average performance over a number of times and positions, and then to examine the variation of results for different subsets, such as different sky types, times of day or seasons. Such an analysis allows the designer to evaluate the detailed performance of the fenestration under different sets of conditions, and then to determine the fenestration characteristics which are most beneficial for a particular application.

3. DESCRIPTION OF SIMULATIONS

The CEL 1 lighting and daylighting analysis computer program was used to simulate the performance of various fenestration options. Simulations were executed for five hours each for typical days in December, March and June, to examine seasonal and hourly variations, and for three sky types, clear, partly cloudy and overcast. Daylight levels, useful daylight levels and task contrasts were calculated for twelve locations within a typical office or residential space with a window wall. In addition, lighting energy requirements were determined for each building space, for each condition. Twenty-eight fenestration types were modeled and evaluated. Table 1 lists the characteristics of the simulated building space. Figure 2 shows the layout of the simulated building space.

Calculations were performed for the solar times 0800, 1000, 1200, 1400, and 1600, for a latitude of 40 degrees. No particular geographical location was specified, since no thermal calculations were performed.

1. Interior daylight level - Daylight illuminance was calculated for a horizontal orientation at 12 locations distributed uniformly throughout the space.
2. Task contrast and contrast rendition factor - Task contrast is a measure of task visibility determined from the ratio of the difference in luminance of the dark and light portions of the task to the luminance of the light part. Contrast was calculated for a pencil task at a viewing angle of 25 degrees, parallel to the window, for the 12 interior locations. Contrast rendition factor is the ratio of task contrast to contrast under spherical illumination. The sphere contrast of the pencil task was 0.1678.
3. Total daylight ratio - Total daylight is the sum of all daylight falling on the work plane. Dividing total daylight on the work plane by the daylight available at the window produces the total daylight ratio. The total daylight ratio is a measure of the ability of the fenestration system to provide daylight on the work plane, without regard to surplus illumination considerations. High total daylight ratios indicate high solar heat gains, which are beneficial during the heating season but detrimental during the cooling season.
4. Useful daylight ratio - Useful daylight is the sum of all work plane daylight which can reduce lighting energy. The useful daylight ratio is the ratio of useful daylight on the work plane to available daylight at the window. High useful daylight ratios mean low levels of surplus daylight and the

corresponding excess solar heat gain, a condition which is beneficial during the cooling season.

5. Lighting power ratio - This is the ratio of dimmed lighting power with daylighting to the undimmed lighting power, at the illumination set-point. Low lighting power ratios mean lighting energy savings, and reductions in cooling loads due to lighting energy dissipation.

Since useful daylight levels and lighting power are dependent on illumination set-point, calculations were made for 50 and 100 footcandles (538 and 1076 lux). Of the 28 fenestration types simulated, 24 were south-facing and 4 were north-facing. Table 2 lists the characteristics of each fenestration type. Figures 3a and b show the various fenestration types.

While the fenestration designs are described as being composed of light shelves, barriers, blinds and shades, they actually represent broader classes of configurations. For example, a lower light shelf might be implemented by a thin, horizontal element projecting into the room, or by a deep window sill. In addition to the exterior barrier design shown in figure 3, a similar shading effect can be obtained by recessing the window in a vertical well. Thus, from an architectural standpoint, performance similar to the simulated fenestration designs can be obtained using alternate configurations with similar geometrical qualities and reflectance characteristics.

The results for each fenestration type were normalized using the results for the south-facing bare window. This allows easy evaluation of the effect of adding each of the fenestration options to a bare window. For each calculated parameter, a tabulation was made of the average value for all sky conditions, times and months. Additional tabulations were made for various subsets by month and sky type.

4. ANALYSIS OF RESULTS

The simulation results were tabulated for all fenestration types, and then sorted using each parameter as a key. This provides a relative ranking of the performance of each fenestration option by each parameter. This procedure was implemented for the entire dataset, and then separately for each sky type, and for the December and June datasets. The parameters and their abbreviations used in the tables of results are shown in table 3. All parameters are normalized using the south-facing bare window results.

The results are averaged for all times, months and sky types included in the particular tabulation, as identified in the table caption.

4.1 RESULTS FOR ALL SKY TYPES

Each table displays all of the results, sorted according to a single parameter, with the best performance at the top of each list, and the poorest performance at the bottom. This allows comparison of the various fenestration types by each parameter. Table 4 lists the results sorted by CRFA (average contrast rendition factor ratio) for all simulations. Very little variation is seen for this parameter for all fenestration types, although the blinds with barriers and/or light shelves are at the top of the list. This indicates that average task contrast was not significantly dependent on fenestration type, for this task and viewing orientation.

Table 5 summarizes the results sorted by TDRA (average total daylight ratio), for all simulations. Considerable variations in daylight gain are seen to occur with fenestration type. As would be expected, the bare window allows the most daylight into the space, and the shades with barriers the least, capturing only 31 percent of the light admitted by the bare window. However, examination of the useful daylight columns indicates that the shades admit 60 percent or more of the useful daylight admitted by the bare window. Thus, the daylighting performance differences between the bare window and the shades are not as great as would appear on the basis of total daylight gain differences, due to surplus illumination with the bare window. Also, several of the light shelf and barrier combinations transmit over 80 percent of the daylight compared to the bare window.

It is interesting to note that the average total daylight ratio for the north-facing bare window is only 78 percent of that for the south-facing bare window, but the average useful daylight ratio for the north bare window is 39 percent higher than the south bare window. This can be attributed to better interior daylight distribution with the north window leading to higher

useful daylight levels. The south bare window has much higher direct beam solar gain which causes surplus illumination levels near the window.

Tables 6 and 7 summarize the results sorted by useful daylight ratio for illumination set-points of 50 and 100 fc, respectively. Here we see that the four north-facing windows provide the highest useful daylight ratios, ranging from 98 to 139 percent of the south-facing bare window values. The useful daylight levels are higher for the 50 fc set-point than the 100 fc set-point because the bare window values used for normalization are relatively higher for the 100 fc set-point. Almost one-half of the south facing fenestration options have useful daylight ratios of 89 percent or more of that for the bare south-facing window, while the worst performance was 60 percent for the shades with upper barrier. For many fenestration options, the useful daylight ratios are seen to be much greater than the corresponding total daylight ratios. This means that significant lighting energy savings can be achieved while still keeping cooling loads down and controlling thermal and visual comfort conditions through the use of shading strategies.

Tables 8 and 9 list the lighting power reduction results for all simulations, for illumination set-points of 50 and 100 fc, respectively. These results show that at the 50 fc set-point, the all barriers and lower light shelf cases produced the same average lighting power consumption as the bare window. At the 100 fc set-point, the lower barrier, lower light shelf with lower barrier and blinds with lower barrier all required less average lighting power than the bare window. This can be attributed to better daylight distribution with the lower barrier, which reflects daylight towards the ceiling, thereby increasing daylight levels deep in the room. The all barriers, lower light shelf with all barriers and lower light shelf cases all produced the same average lighting power as the bare window for 100 fc.

As would be expected, average lighting power was less for the higher set-point, since high daylighting levels were useful in reducing electric lighting requirements, which otherwise would have been surplus illumination at the lower set-point. Nine of the options had lighting power less than ten percent above the bare window. Lighting power was maximum for the configurations with shades, ranging from 50 to 100 percent greater than the bare window for the high set-point.

It is interesting to note that the normalized total daylight ratios and useful daylight ratios are, in most cases, less than one, indicating that the additional reflections from barriers and lightshelves cause more daylight to be absorbed by interior surfaces while improving daylight distribution. However, the useful daylight ratios are frequently higher than the total daylight ratios for a particular fenestration option, showing a relative

improvement in useful daylight levels versus total daylight levels, for the fenestration option compared to the bare window. The north bare window required an average lighting power of one and one half to two times that for the south bare window, although with higher useful daylight ratios, due to less available daylight on a north-facing surface.

4.2 EFFECT OF SKY TYPE

In order to further investigate the daylighting and energy performance of the various fenestration options, the results were separated for each sky type, clear, partly cloudy and overcast, and sorted according to output parameters as before.

Table 10 displays the clear sky results ranked by contrast rendition factor. Very little variation in this parameter was observed, although the spread in values was five percent. In table 11, the ranking is by total daylight ratio, where the lower barrier, lower light shelf with barrier and upper light shelf top the list, outperforming the bare window due to reflected daylight contributions. The configurations with shades were only 15 to 26 percent as effective as the bare window in providing daylight on the work plane. Useful daylight ratios are the key parameters used for ranking in tables 12 and 13. Again, the bare window lies in the middle of the pack with the north-facing windows and several barrier combinations providing more useful daylight. The shades ranked at the bottom in useful daylight ratio. Lighting power reductions for clear skies are shown in tables 14 and 15 for the two set points. The benefits of the lower barrier and other barrier and light-shelf combinations are apparent in these tables. The diffusely reflected light from the barriers and shelves improves daylight distribution while maintaining high daylight levels. The fraction of lighting power saved for the lower set-point was greater than for the upper set-point, in contrast to the results for all skies, for the top performers. This is probably due to the low fraction of usable daylight in the direct beam solar radiation characteristic of clear skies, combined with the lower demand for daylight to meet the illumination set-point.

Tables 16 through 21 present the same ranking sequence for the partly cloudy skies. The general trends are similar to the clear skies, but average total daylight ratios are lower, and useful daylight ratios are higher for the north orientations. This is due to higher incident daylight levels on the north surface with partly cloudy skies. The upper and lower light shelf with lower barrier performs particularly well in useful daylight ratio at the high set point. About one half of the fenestration options exceed the bare window performance. Several of the barrier and/or light shelf combinations required less lighting power than the bare window ranging as low as 13 percent for the low set-point and 57 percent for the high set-point. This indicates that

lighting power is very sensitive to fenestration configuration under partly cloudy skies.

The results for overcast skies are presented in tables 22 through 27. Contrast does not vary significantly. Total daylight ratios are essentially equal for north and south facing windows, with or without shades and useful daylight ratios generally exceeded total daylight ratios. Lighting power requirements varied as much as 58 percent higher at the low set-point, and 30 percent higher at the high set-point, compared to the bare window.

4.3 SEASONAL EFFECTS

Now that the effects of sky type have been examined, it is useful to investigate the variations in fenestration performance with time of year. The results were sorted by month and then ranked using each parameter as before. Data are presented for all skies for the month of June in tables 28 through 33, and the month of December in tables 34 through 39.

Average contrast is seen to vary only slightly as before. The south bare window has the highest total daylight ratio for December, but ranks below the north orientations without a shade for the June data. Overall, total daylight ratios are lower in December than in June. Rankings by useful daylight ratio are similar for both months, with only the north windows exceeding the south bare window. However, the lower light shelf and barrier have lower lighting power ratios than the bare window in June, as does the all barrier case in December, for the low set point. A few other barrier/shelf/blinds combinations beat the bare window in June at the high set point. While the north-facing windows make good use of admitted interior daylight, as evidenced by high useful daylight ratios, overall daylight gains are lower than for a south window, so lighting power savings are less.

The clear sky condition was examined in greater detail by separating the results by month. Tables 40 through 45 present the clear sky results for June, and tables 46 through 51 show the clear sky results for December. This information would be most useful for evaluating summer and winter fenestration performance in predominantly clear sky locations. Performance can also be compared to that for all sky conditions to assess the effect of sky type on the results.

Average contrast exhibits the same lack of sensitivity to fenestration type. Total daylight ratios, however, are much higher in June than in December, with 12 of the barrier/shelf combinations out-performing the south bare window. This can be attributed to the contribution of reflected direct beam daylight. The bare window is found near the middle in the useful daylight

rankings in both months, demonstrating the superior daylight distribution provided by the barriers, blinds and light shelves. Several of the barrier and light shelf combinations gave reduced lighting power requirements, with larger reductions in June than in December. Lighting energy for the lower barrier was only 30 percent of that for the bare window at the low set point, and 55 percent at the high set point. Again, reflected daylight is responsible for these lighting power savings.

5. FENESTRATION DESIGN RECOMMENDATIONS

Based on the foregoing computer simulations and results, some general recommendations can be given for effective use of fenestration in office or residential buildings. While studies have shown that overhead fenestration is the most effective daylighting strategy, roof mounted fenestration have limited applicability in office and residential buildings due to their inherent limitation to the top floor of a building and their lack of allowing a view of the building surroundings. Thus limiting the analysis to window-wall fenestration designs, in particular the use of barriers, lightshelves, blinds, shades and combinations thereof, the following observations and recommendations are appropriate:

- o On average, very little variation in task contrast can be expected with variation in fenestration design, for reasonable task viewing directions.
- o The use of a lower barrier or light shelf to reflect daylight into the building space can significantly reduce lighting power requirements.
- o The use of barriers, light shelves and blinds may reduce the total daylight distributed throughout the building space, while useful daylight levels experience less of a reduction. More useful daylight per total daylight means less surplus illumination and lower cooling loads due to solar heat gain.
- o North-facing windows provide high ratios of usable daylight, compared to a south-facing window, but lighting power levels were greater due to lower daylight availability on the north window.
- o Barriers, light shelves and blinds are even more useful for clear and partly-cloudy skies than for average conditions, especially during summer conditions.
- o The fully drawn shades options were not effective at reducing lighting power, however they had high useful daylight ratios compared to their total daylight ratios, and good overcast sky daylight distribution. Operable shades would have more potential.
- o Peak cooling loads can be controlled through the dual benefits of reduced lighting power and reduced heat gain from daylighting, through the use of reflective barriers, light shelves and blinds.

6. CONCLUSIONS

Evaluation of the effect of fenestration design, especially the use of barriers, light shelves, blinds, shades and combinations of the above, indicates that more effective use of daylight can be made using such fenestration components compared to a bare window. Since the useful daylight gain, that is the daylight which can be used to offset electric lighting, is kept high relative to total daylight gain, lighting energy is reduced while excess solar gains are minimized, thereby controlling cooling loads.

The relative performance of various fenestration designs varies with sky type and season. Reflective barriers, light shelves and blinds are most effective for clear and partly cloudy skies, particularly in summer. This suggests substantial potential for reducing peak cooling loads, as well as lighting energy requirements.

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Table 1. Simulated Building Space

Room width	12 ft
depth	24 ft
height	9 ft

Reflectance - ceiling	0.3
- walls	0.5
- floor	0.3
- ground	0.2

Window - width	9 ft
- height	4 ft
- sill height	4 ft
- transmittance	0.8

Light shelves, barriers - reflectance 0.8, 1.5 ft deep

Shades - transmittance 0.4

Blinds - horizontal, open position, reflectance 0.8

Lighting System - fluorescent with dimming controls

Table 2. Fenestration Types.

1.	South bare	
2.	shades	
3.	blinds	
4.	bare	lower light shelf
5.	shades	lower light shelf
6.	blinds	lower light shelf
7.	bare	upper light shelf
8.	shades	upper light shelf
9.	blinds	upper light shelf
10.	bare	upper barrier
11.	shades	upper barrier
12.	blinds	upper barrier
13.	bare	lower barrier
14.	shades	lower barrier
15.	blinds	lower barrier
16.	bare	all barriers
17.	shades	all barriers
18.	blinds	all barriers
19.	bare	lower light shelf, upper barrier
20.	bare	lower light shelf, lower barrier
21.	bare	lower light shelf, all barriers
22.	bare	upper light shelf, lower barrier
23.	bare	upper, lower light shelves, lower barrier
24.	bare	upper light shelf, lower barrier

- 25. North bare
- 26. shades
- 27. blinds
- 28. bare lower light shelf

Table 3. Simulation Output Parameters

- CRFA - Average contrast rendition factor ratio
- TDRA - Average total daylight ratio
- UDR50A - Average useful daylight ratio for 50 fc (538 lux) set-point
- UDR100A - Average useful daylight ratio for 100 fc (1076 lux) set-point
- LPR50A - Average lighting power ratio for 50 fc (538 lux) set-point
- LPR100A - Average lighting power ratio for 100 fc (1076 lux) set-point

Table 4.

AVERAGE CRF FOR ALL SKIES

CONFIGURATION	VALUE (SORTED BY CRFA)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
BLINDS, UPPER BARRIER	1.01	0.56	0.79	0.78	1.24	1.09
BLINDS, UPPER LIGHT SHELF	1.01	0.54	0.89	0.85	1.41	1.23
NORTH WIN., LO. LIT. SHELF	1.01	0.71	1.32	1.23	2.18	1.63
UP. & LO. LIT.SHELF, UP. BAR	1.01	0.64	0.82	0.80	1.24	1.06
UPPER BARRIER	1.01	0.68	0.82	0.80	1.18	1.03
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.67	0.96	0.98	1.12	1.06
BLINDS, ALL BARRIERS	1.00	0.62	0.93	0.93	1.12	1.06
BLINDS, LOWER LIGHT SHELF	1.00	0.65	0.96	0.95	1.12	1.03
LO. LIT. SHELF, ALL BARRIERS	1.00	0.68	0.93	0.93	1.06	1.00
LO. LIT. SHELF, LO. BARRIER	1.00	0.91	0.86	0.83	1.12	0.94
LOWER LIGHT SHELF	1.00	0.94	0.96	0.98	1.00	1.00
NORTH WIN., BLINDS	1.00	0.73	1.32	1.25	2.18	1.63
SHADES, UPPER LIGHT SHELF	1.00	0.40	0.79	0.73	2.71	1.83
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.80	0.89	0.88	1.12	1.06
UP. LIT. SHELF, LO. BARRIER	1.00	0.88	0.93	0.93	1.18	1.09
UPPER LIGHT SHELF	1.00	0.86	0.93	0.90	1.24	1.11
UPPER LIGHT SHELF	1.00	0.82	0.79	0.78	1.24	1.06
ALL BARRIERS	0.99	0.74	0.96	0.95	1.00	1.00
BLINDS, LOWER BARRIER	0.99	0.62	0.86	0.83	1.12	0.97
LOWER BARRIER	0.99	0.96	0.86	0.88	1.06	0.91
NORTH BARE WINDOW	0.99	0.78	1.39	1.30	2.00	1.54
NORTH WIN., SHADES	0.99	0.56	1.07	0.98	3.00	1.97
SHADES	0.99	0.49	0.86	0.80	2.53	1.77
SHADES, ALL BARRIERS	0.99	0.41	0.79	0.73	2.59	1.80
SHADES, LOWER BARRIER	0.99	0.35	0.75	0.68	2.24	1.63
SHADES, UPPER BARRIER	0.99	0.31	0.68	0.60	2.47	1.74
SHADES, LOWER LIGHT SHELF	0.98	0.48	0.86	0.80	2.12	1.57

Table 5.

AVERAGE TDR FOR ALL SKIES

CONFIGURATION

VALUE (SORTED BY TDRA)

	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LOWER BARRIER	0.99	0.96	0.86	0.88	1.06	0.91
LOWER LIGHT SHELF	1.00	0.94	0.96	0.98	1.00	1.00
LO. LIT. SHELF, LO. BARRIER	1.00	0.91	0.86	0.83	1.12	0.94
UP. LIT. SHELF, LO. BARRIER	1.00	0.88	0.93	0.93	1.18	1.09
UPPER LIGHT SHELF	1.00	0.86	0.93	0.98	1.24	1.11
UPPER LIGHT SHELF	1.00	0.82	0.79	0.78	1.24	1.06
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.80	0.89	0.88	1.12	1.06
NORTH BARE WINDOW	0.99	0.78	1.39	1.30	2.00	1.54
ALL BARRIERS	0.99	0.74	0.96	0.95	1.00	1.00
NORTH WIN., BLINDS	1.00	0.73	1.32	1.25	2.18	1.63
NORTH WIN., LO. LIT. SHELF	1.01	0.71	1.32	1.23	2.18	1.63
LO. LIT. SHELF, ALL BARRIERS	1.00	0.68	0.93	0.93	1.06	1.00
UPPER BARRIER	1.01	0.68	0.82	0.80	1.18	1.03
BLINDS	1.00	0.67	0.96	0.98	1.12	1.06
BLINDS, LOWER LIGHT SHELF	1.00	0.65	0.96	0.95	1.12	1.03
UP. & LO. LIT.SHELF, UP. BAR	1.01	0.64	0.82	0.80	1.24	1.06
BLINDS, ALL BARRIERS	1.00	0.62	0.93	0.93	1.12	1.06
BLINDS, LOWER BARRIER	0.99	0.62	0.86	0.83	1.12	0.97
BLINDS, UPPER BARRIER	1.01	0.56	0.79	0.78	1.24	1.09
NORTH WIN., SHADES	0.99	0.56	1.07	0.98	3.00	1.97
BLINDS, UPPER LIGHT SHELF	1.01	0.54	0.89	0.85	1.41	1.23
SHADES	0.99	0.49	0.86	0.80	2.53	1.77
SHADES, LOWER LIGHT SHELF	0.98	0.48	0.86	0.80	2.12	1.57
SHADES, ALL BARRIERS	0.99	0.41	0.79	0.73	2.59	1.80
SHADES, UPPER LIGHT SHELF	1.00	0.40	0.79	0.73	2.71	1.83
SHADES, LOWER BARRIER	0.99	0.35	0.75	0.68	2.24	1.63
SHADES, UPPER BARRIER	0.99	0.31	0.68	0.60	2.47	1.74

Table 6.

AVERAGE UDR50 FOR ALL SKIES

CONFIGURATION	VALUE (SORTED BY UDR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	0.99	0.78	1.39	1.30	2.00	1.54
NORTH WIN., BLINDS	1.00	0.73	1.32	1.25	2.18	1.63
NORTH WIN., LO. LIT. SHELF	1.01	0.71	1.32	1.23	2.18	1.63
NORTH WIN., SHADES	0.99	0.56	1.07	0.98	3.00	1.97
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
ALL BARRIERS	0.99	0.74	0.96	0.95	1.00	1.00
BLINDS	1.00	0.67	0.96	0.98	1.12	1.06
BLINDS, LOWER LIGHT SHELF	1.00	0.65	0.96	0.95	1.12	1.03
LOWER LIGHT SHELF	1.00	0.94	0.96	0.98	1.00	1.00
BLINDS, ALL BARRIERS	1.00	0.62	0.93	0.93	1.12	1.06
LO. LIT. SHELF, ALL BARRIERS	1.00	0.68	0.93	0.93	1.06	1.00
UP. LIT. SHELF, LO. BARRIER	1.00	0.88	0.93	0.93	1.18	1.09
UPPER LIGHT SHELF	1.00	0.86	0.93	0.90	1.24	1.11
BLINDS, UPPER LIGHT SHELF	1.01	0.54	0.89	0.85	1.41	1.23
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.80	0.89	0.88	1.12	1.06
BLINDS, LOWER BARRIER	0.99	0.62	0.86	0.83	1.12	0.97
LO. LIT. SHELF, LO. BARRIER	1.00	0.91	0.86	0.83	1.12	0.94
LOWER BARRIER	0.99	0.96	0.86	0.88	1.06	0.91
SHADES	0.99	0.49	0.86	0.80	2.53	1.77
SHADES, LOWER LIGHT SHELF	0.98	0.48	0.86	0.80	2.12	1.57
UP. & LO. LIT.SHELF, UP. BAR	1.01	0.64	0.82	0.80	1.24	1.06
UPPER BARRIER	1.01	0.60	0.82	0.80	1.18	1.03
BLINDS, UPPER BARRIER	1.01	0.56	0.79	0.78	1.24	1.09
SHADES, ALL BARRIERS	0.99	0.41	0.79	0.73	2.59	1.80
SHADES, UPPER LIGHT SHELF	1.00	0.40	0.79	0.73	2.71	1.83
UPPER LIGHT SHELF	1.00	0.82	0.79	0.78	1.24	1.06
SHADES, LOWER BARRIER	0.99	0.35	0.75	0.68	2.24	1.63
SHADES, UPPER BARRIER	0.99	0.31	0.68	0.60	2.47	1.74

Table 7.

AVERAGE UDR100 FOR ALL SKIES

CONFIGURATION	VALUE (SORTED BY UDR100A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	0.99	0.78	1.39	1.30	2.00	1.54
NORTH WIN., BLINDS	1.00	0.73	1.32	1.25	2.18	1.63
NORTH WIN., LO. LIT. SHELF	1.01	0.71	1.32	1.23	2.18	1.63
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.67	0.96	0.98	1.12	1.06
LOWER LIGHT SHELF	1.00	0.94	0.96	0.98	1.00	1.00
NORTH WIN., SHADES	0.99	0.56	1.07	0.98	3.00	1.97
ALL BARRIERS	0.99	0.74	0.96	0.95	1.00	1.00
BLINDS, LOWER LIGHT SHELF	1.00	0.65	0.96	0.95	1.12	1.03
BLINDS, ALL BARRIERS	1.00	0.62	0.93	0.93	1.12	1.06
LO. LIT. SHELF, ALL BARRIERS	1.00	0.68	0.93	0.93	1.06	1.00
UP. LIT. SHELF, LO. BARRIER	1.00	0.88	0.93	0.93	1.18	1.09
UPPER LIGHT SHELF	1.00	0.86	0.93	0.90	1.24	1.11
LOWER BARRIER	0.99	0.96	0.86	0.88	1.06	0.91
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.80	0.89	0.88	1.12	1.06
BLINDS, UPPER LIGHT SHELF	1.01	0.54	0.89	0.85	1.41	1.23
BLINDS, LOWER BARRIER	0.99	0.62	0.86	0.83	1.12	0.97
LO. LIT. SHELF, LO. BARRIER	1.00	0.91	0.86	0.83	1.12	0.94
SHADES	0.99	0.49	0.86	0.80	2.53	1.77
SHADES, LOWER LIGHT SHELF	0.98	0.48	0.86	0.80	2.12	1.57
UP. & LO. LIT.SHELF, UP. BAR	1.01	0.64	0.82	0.80	1.24	1.06
UPPER BARRIER	1.01	0.68	0.82	0.80	1.18	1.03
BLINDS, UPPER BARRIER	1.01	0.56	0.79	0.78	1.24	1.09
UPPER LIGHT SHELF	1.00	0.82	0.79	0.78	1.24	1.06
SHADES, ALL BARRIERS	0.99	0.41	0.79	0.73	2.59	1.80
SHADES, UPPER LIGHT SHELF	1.00	0.40	0.79	0.73	2.71	1.83
SHADES, LOWER BARRIER	0.99	0.35	0.75	0.68	2.24	1.63
SHADES, UPPER BARRIER	0.99	0.31	0.68	0.60	2.47	1.74

Table 8.

AVERAGE LPR50 FOR ALL SKIES

CONFIGURATION	VALUE (SORTED BY LPR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
ALL BARRIERS	0.99	0.74	0.96	0.95	1.00	1.00
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	1.00	0.94	0.96	0.98	1.00	1.00
LO. LIT. SHELF, ALL BARRIERS	1.00	0.68	0.93	0.93	1.06	1.00
LOWER BARRIER	0.99	0.96	0.86	0.88	1.06	0.91
BLINDS	1.00	0.67	0.96	0.98	1.12	1.06
BLINDS, ALL BARRIERS	1.00	0.62	0.93	0.93	1.12	1.06
BLINDS, LOWER BARRIER	0.99	0.62	0.86	0.83	1.12	0.97
BLINDS, LOWER LIGHT SHELF	1.00	0.65	0.96	0.95	1.12	1.03
LO. LIT. SHELF, LO. BARRIER	1.00	0.91	0.86	0.83	1.12	0.94
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.80	0.89	0.88	1.12	1.06
UP. LIT. SHELF, LO. BARRIER	1.00	0.88	0.93	0.93	1.18	1.09
UPPER BARRIER	1.01	0.68	0.82	0.80	1.18	1.03
BLINDS, UPPER BARRIER	1.01	0.56	0.79	0.78	1.24	1.09
UP. & LO. LIT.SHELF, UP. BAR	1.01	0.64	0.82	0.80	1.24	1.06
UPPER LIGHT SHELF	1.00	0.86	0.93	0.90	1.24	1.11
UPPER LIGHT SHELF	1.00	0.82	0.79	0.78	1.24	1.06
BLINDS, UPPER LIGHT SHELF	1.01	0.54	0.89	0.85	1.41	1.23
NORTH BARE WINDOW	0.99	0.78	1.39	1.30	2.00	1.54
SHADES, LOWER LIGHT SHELF	0.98	0.48	0.86	0.80	2.12	1.57
NORTH WIN., BLINDS	1.00	0.73	1.32	1.25	2.18	1.63
NORTH WIN., LO. LIT. SHELF	1.01	0.71	1.32	1.23	2.18	1.63
SHADES, LOWER BARRIER	0.99	0.35	0.75	0.68	2.24	1.63
SHADES, UPPER BARRIER	0.99	0.31	0.68	0.60	2.47	1.74
SHADES	0.99	0.49	0.86	0.80	2.53	1.77
SHADES, ALL BARRIERS	0.99	0.41	0.79	0.73	2.59	1.80
SHADES, UPPER LIGHT SHELF	1.00	0.40	0.79	0.73	2.71	1.83
NORTH WIN., SHADES	0.99	0.56	1.07	0.98	3.00	1.97

Table 9.

AVERAGE LPR100 FOR ALL SKIES

CONFIGURATION	VALUE (SORTED BY LPR100A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER BARRIER	0.99	0.96	0.86	0.88	1.06	0.91
LO. LIT. SHELF, LO. BARRIER	1.00	0.91	0.86	0.83	1.12	0.94
BLINDS, LOWER BARRIER	0.99	0.62	0.86	0.83	1.12	0.97
ALL BARRIERS	0.99	0.74	0.96	0.95	1.00	1.00
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LO. LIT. SHELF, ALL BARRIERS	1.00	0.68	0.93	0.93	1.06	1.00
LOWER LIGHT SHELF	1.00	0.94	0.96	0.98	1.00	1.00
BLINDS, LOWER LIGHT SHELF	1.00	0.65	0.96	0.95	1.12	1.03
UPPER BARRIER	1.01	0.68	0.82	0.80	1.18	1.03
BLINDS	1.00	0.67	0.96	0.98	1.12	1.06
BLINDS, ALL BARRIERS	1.00	0.62	0.93	0.93	1.12	1.06
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.80	0.89	0.88	1.12	1.06
UP. & LO. LIT.SHELF, UP. BAR	1.01	0.64	0.82	0.80	1.24	1.06
UPPER LIGHT SHELF	1.00	0.82	0.79	0.78	1.24	1.06
BLINDS, UPPER BARRIER	1.01	0.56	0.79	0.78	1.24	1.09
UP. LIT. SHELF, LO. BARRIER	1.00	0.88	0.93	0.93	1.18	1.09
UPPER LIGHT SHELF	1.00	0.86	0.93	0.90	1.24	1.11
BLINDS, UPPER LIGHT SHELF	1.01	0.54	0.89	0.65	1.41	1.23
NORTH BARE WINDOW	0.99	0.78	1.39	1.30	2.00	1.54
SHADES, LOWER LIGHT SHELF	0.98	0.48	0.86	0.80	2.12	1.57
NORTH WIN., BLINDS	1.00	0.73	1.32	1.25	2.18	1.63
NORTH WIN., LO. LIT. SHELF	1.01	0.71	1.32	1.23	2.18	1.63
SHADES, LOWER BARRIER	0.99	0.35	0.75	0.68	2.24	1.63
SHADES, UPPER BARRIER	0.99	0.31	0.68	0.60	2.47	1.74
SHADES	0.99	0.49	0.86	0.80	2.53	1.77
SHADES, ALL BARRIERS	0.99	0.41	0.79	0.73	2.59	1.80
SHADES, UPPER LIGHT SHELF	1.00	0.40	0.79	0.73	2.71	1.83
NORTH WIN., SHADES	0.99	0.56	1.07	0.98	3.00	1.97

Table 10.

AVERAGE CRF FOR CLEAR SKIES

CONFIGURATION

VALUE (SORTED BY CRFA)

	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
BLINDS, UPPER BARRIER	1.02	0.74	1.07	1.14	0.80	0.84
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.85	1.07	1.19	0.70	0.77
UPPER BARRIER	1.02	0.94	1.07	1.19	0.60	0.74
BLINDS, UPPER LIGHT SHELF	1.01	0.44	0.87	0.86	1.70	1.26
UPPER LIGHT SHELF	1.01	1.13	1.07	1.19	0.60	0.74
ALL BARRIERS	1.00	0.79	1.00	1.10	0.80	0.84
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.53	0.93	0.95	1.30	1.10
BLINDS, ALL BARRIERS	1.00	0.61	1.00	1.05	1.00	0.97
BLINDS, LOWER BARRIER	1.00	0.84	1.07	1.19	0.60	0.65
BLINDS, LOWER LIGHT SHELF	1.00	0.53	0.93	0.95	1.50	1.13
LO. LIT. SHELF, ALL BARRIERS	1.00	0.71	1.00	1.10	0.90	0.90
LO. LIT. SHELF, LO. BARRIER	1.00	1.24	1.07	1.24	0.60	0.65
LOWER BARRIER	1.00	1.34	1.13	1.29	0.50	0.55
LOWER LIGHT SHELF	1.00	0.94	0.93	1.00	1.20	1.03
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.67	1.62	3.70	1.77
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.82	0.93	0.95	1.30	1.06
UP. LIT. SHELF, LO. BARRIER	1.00	0.90	0.93	0.95	1.20	1.06
UPPER LIGHT SHELF	1.00	0.89	0.93	0.95	1.30	1.10
NORTH BARE WINDOW	0.99	0.77	1.00	1.71	3.30	1.71
NORTH WIN., BLINDS	0.99	0.69	1.67	1.62	3.60	1.77
NORTH WIN., SHADES	0.98	0.29	1.07	0.86	5.70	2.39
SHADES	0.98	0.18	0.53	0.48	4.30	2.03
SHADES, ALL BARRIERS	0.98	0.18	0.53	0.48	4.30	2.03
SHADES, LOWER BARRIER	0.98	0.26	0.67	0.67	3.10	1.65
SHADES, UPPER BARRIER	0.98	0.23	0.60	0.57	3.70	1.84
SHADES, UPPER LIGHT SHELF	0.98	0.16	0.53	0.43	4.50	2.06
SHADES, LOWER LIGHT SHELF	0.97	0.19	0.53	0.52	3.90	1.87

Table 11.

AVERAGE TDR FOR CLEAR SKIES

CONFIGURATION	VALUE (SORTED BY TDRA)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER BARRIER	1.00	1.34	1.13	1.29	0.50	0.55
LO. LIT. SHELF, LO. BARRIER	1.00	1.24	1.07	1.24	0.60	0.65
UPPER LIGHT SHELF	1.01	1.13	1.07	1.19	0.60	0.74
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	1.00	0.94	0.93	1.00	1.20	1.03
UPPER BARRIER	1.02	0.94	1.07	1.19	0.60	0.74
UP. LIT. SHELF, LO. BARRIER	1.00	0.90	0.93	0.95	1.20	1.06
UPPER LIGHT SHELF	1.00	0.89	0.93	0.95	1.30	1.10
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.85	1.07	1.19	0.70	0.77
BLINDS, LOWER BARRIER	1.00	0.84	1.07	1.19	0.60	0.65
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.82	0.93	0.95	1.30	1.06
ALL BARRIERS	1.00	0.79	1.00	1.10	0.80	0.84
NORTH BARE WINDOW	0.99	0.77	1.00	1.71	3.30	1.71
BLINDS, UPPER BARRIER	1.02	0.74	1.07	1.14	0.80	0.84
LO. LIT. SHELF, ALL BARRIERS	1.00	0.71	1.00	1.10	0.90	0.90
NORTH WIN., BLINDS	0.99	0.69	1.67	1.62	3.60	1.77
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.67	1.62	3.70	1.77
BLINDS, ALL BARRIERS	1.00	0.61	1.00	1.05	1.00	0.97
BLINDS	1.00	0.53	0.93	0.95	1.30	1.10
BLINDS, LOWER LIGHT SHELF	1.00	0.53	0.93	0.95	1.50	1.13
BLINDS, UPPER LIGHT SHELF	1.01	0.44	0.87	0.86	1.70	1.26
NORTH WIN., SHADES	0.98	0.29	1.07	0.86	5.70	2.39
SHADES, LOWER BARRIER	0.98	0.26	0.67	0.67	3.10	1.65
SHADES, UPPER BARRIER	0.98	0.23	0.60	0.57	3.70	1.84
SHADES, LOWER LIGHT SHELF	0.97	0.19	0.53	0.52	3.90	1.87
SHADES	0.98	0.18	0.53	0.48	4.30	2.03
SHADES, ALL BARRIERS	0.98	0.18	0.53	0.48	4.30	2.03
SHADES, UPPER LIGHT SHELF	0.98	0.16	0.53	0.43	4.50	2.06

Table 12.

AVERAGE UDR50 FOR CLEAR SKIES

CONFIGURATION	VALUE (SORTED BY UDR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	0.99	0.77	1.00	1.71	3.30	1.71
NORTH WIN., BLINDS	0.99	0.69	1.67	1.62	3.60	1.77
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.67	1.62	3.70	1.77
LOWER BARRIER	1.00	1.34	1.13	1.29	0.50	0.55
BLINDS, LOWER BARRIER	1.00	0.94	1.07	1.19	0.60	0.65
BLINDS, UPPER BARRIER	1.02	0.74	1.07	1.14	0.80	0.84
LO. LIT. SHELF, LO. BARRIER	1.00	1.24	1.07	1.24	0.60	0.65
NORTH WIN., SHADES	0.98	0.29	1.07	0.86	5.70	2.39
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.85	1.07	1.19	0.70	0.77
UPPER BARRIER	1.02	0.94	1.07	1.19	0.60	0.74
UPPER LIGHT SHELF	1.01	1.13	1.07	1.19	0.60	0.74
ALL BARRIERS	1.00	0.79	1.00	1.10	0.80	0.84
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS, ALL BARRIERS	1.00	0.61	1.00	1.05	1.00	0.97
LO. LIT. SHELF, ALL BARRIERS	1.00	0.71	1.00	1.10	0.90	0.90
BLINDS	1.00	0.53	0.93	0.95	1.30	1.10
BLINDS, LOWER LIGHT SHELF	1.00	0.53	0.93	0.95	1.50	1.13
LOWER LIGHT SHELF	1.00	0.94	0.93	1.00	1.20	1.03
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.82	0.93	0.95	1.30	1.06
UP. LIT. SHELF, LO. BARRIER	1.00	0.90	0.93	0.95	1.20	1.06
UPPER LIGHT SHELF	1.00	0.89	0.93	0.95	1.30	1.10
BLINDS, UPPER LIGHT SHELF	1.01	0.44	0.87	0.86	1.70	1.26
SHADES, LOWER BARRIER	0.98	0.26	0.67	0.67	3.10	1.65
SHADES, UPPER BARRIER	0.98	0.23	0.60	0.57	3.70	1.84
SHADES	0.98	0.18	0.53	0.48	4.30	2.03
SHADES, ALL BARRIERS	0.98	0.18	0.53	0.48	4.30	2.03
SHADES, LOWER LIGHT SHELF	0.97	0.19	0.53	0.52	3.90	1.87
SHADES, UPPER LIGHT SHELF	0.98	0.16	0.53	0.43	4.50	2.06

Table 13. --

AVERAGE UDR100 FOR CLEAR SKIES

CONFIGURATION	VALUE (SORTED BY UDR100A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	0.99	0.77	1.80	1.71	3.30	1.71
NORTH WIN., BLINDS	0.99	0.69	1.67	1.62	3.60	1.77
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.67	1.62	3.70	1.77
LOWER BARRIER	1.00	1.34	1.13	1.29	0.50	0.55
LO. LIT. SHELF, LO. BARRIER	1.00	1.24	1.07	1.24	0.60	0.65
BLINDS, LOWER BARRIER	1.00	0.84	1.07	1.19	0.60	0.65
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.85	1.07	1.19	0.70	0.77
UPPER BARRIER	1.02	0.94	1.07	1.19	0.60	0.74
UPPER LIGHT SHELF	1.01	1.13	1.07	1.19	0.60	0.74
BLINDS, UPPER BARRIER	1.02	0.74	1.07	1.14	0.80	0.84
ALL BARRIERS	1.00	0.79	1.00	1.10	0.80	0.84
LO. LIT. SHELF, ALL BARRIERS	1.00	0.71	1.00	1.10	0.90	0.90
BLINDS, ALL BARRIERS	1.00	0.61	1.00	1.05	1.00	0.97
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	1.00	0.94	0.93	1.00	1.20	1.03
BLINDS	1.00	0.53	0.93	0.95	1.30	1.10
BLINDS, LOWER LIGHT SHELF	1.00	0.53	0.93	0.95	1.50	1.13
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.82	0.93	0.95	1.30	1.06
UP. LIT. SHELF, LO. BARRIER	1.00	0.90	0.93	0.95	1.20	1.06
UPPER LIGHT SHELF	1.00	0.89	0.93	0.95	1.30	1.10
BLINDS, UPPER LIGHT SHELF	1.01	0.44	0.87	0.86	1.70	1.26
NORTH WIN., SHADES	0.98	0.29	1.07	0.86	5.70	2.39
SHADES, LOWER BARRIER	0.98	0.26	0.67	0.67	3.10	1.65
SHADES, UPPER BARRIER	0.98	0.23	0.60	0.57	3.70	1.84
SHADES, LOWER LIGHT SHELF	0.97	0.19	0.53	0.52	3.90	1.87
SHADES	0.98	0.18	0.53	0.48	4.30	2.03
SHADES, ALL BARRIERS	0.98	0.18	0.53	0.48	4.30	2.03
SHADES, UPPER LIGHT SHELF	0.98	0.16	0.53	0.43	4.50	2.06

Table 14.

AVERAGE LPR50 FOR CLEAR SKIES

CONFIGURATION	VALUE (SORTED BY LPR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER BARRIER	1.00	1.34	1.13	1.29	0.50	0.55
BLINDS, LOWER BARRIER	1.00	0.84	1.07	1.19	0.60	0.65
LO. LIT. SHELF, LO. BARRIER	1.00	1.24	1.07	1.24	0.60	0.65
UPPER BARRIER	1.02	0.94	1.07	1.19	0.60	0.74
UPPER LIGHT SHELF	1.01	1.13	1.07	1.19	0.60	0.74
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.85	1.07	1.19	0.70	0.77
ALL BARRIERS	1.00	0.79	1.00	1.10	0.80	0.84
BLINDS, UPPER BARRIER	1.02	0.74	1.07	1.14	0.80	0.84
LO. LIT. SHELF, ALL BARRIERS	1.00	0.71	1.00	1.10	0.90	0.90
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS, ALL BARRIERS	1.00	0.61	1.00	1.05	1.00	0.97
LOWER LIGHT SHELF	1.00	0.94	0.93	1.00	1.20	1.03
UP. LIT. SHELF, LO. BARRIER	1.00	0.90	0.93	0.95	1.20	1.06
BLINDS	1.00	0.53	0.93	0.95	1.30	1.10
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.82	0.93	0.95	1.30	1.06
UPPER LIGHT SHELF	1.00	0.89	0.93	0.95	1.30	1.10
BLINDS, LOWER LIGHT SHELF	1.00	0.53	0.93	0.95	1.50	1.13
BLINDS, UPPER LIGHT SHELF	1.01	0.44	0.87	0.86	1.70	1.26
SHADES, LOWER BARRIER	0.98	0.26	0.67	0.67	3.10	1.65
NORTH BARE WINDOW	0.99	0.77	1.80	1.71	3.30	1.71
NORTH WIN., BLINDS	0.99	0.69	1.67	1.62	3.60	1.77
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.67	1.62	3.70	1.77
SHADES, UPPER BARRIER	0.98	0.23	0.60	0.57	3.70	1.84
SHADES, LOWER LIGHT SHELF	0.97	0.19	0.53	0.52	3.90	1.87
SHADES	0.98	0.18	0.53	0.48	4.30	2.03
SHADES, ALL BARRIERS	0.98	0.18	0.53	0.48	4.30	2.03
SHADES, UPPER LIGHT SHELF	0.98	0.16	0.53	0.43	4.50	2.06
NORTH WIN., SHADES	0.98	0.29	1.07	0.86	5.70	2.39

Table 15.

AVERAGE LPR100 FOR CLEAR SKIES

CONFIGURATION	VALUE (SORTED BY LPR100A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER BARRIER	1.00	1.34	1.13	1.29	0.50	0.55
BLINDS, LOWER BARRIER	1.00	0.84	1.07	1.19	0.60	0.65
LO. LIT. SHELF, LO. BARRIER	1.00	1.24	1.07	1.24	0.60	0.65
UPPER BARRIER	1.02	0.94	1.07	1.19	0.60	0.74
UPPER LIGHT SHELF	1.01	1.13	1.07	1.19	0.60	0.74
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.85	1.07	1.19	0.70	0.77
ALL BARRIERS	1.00	0.79	1.00	1.10	0.80	0.84
BLINDS, UPPER BARRIER	1.02	0.74	1.07	1.14	0.80	0.84
LO. LIT. SHELF, ALL BARRIERS	1.00	0.71	1.00	1.10	0.90	0.90
BLINDS, ALL BARRIERS	1.00	0.61	1.00	1.05	1.00	0.97
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	1.00	0.94	0.93	1.00	1.20	1.03
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.82	0.93	0.95	1.30	1.06
UP. LIT. SHELF, LO. BARRIER	1.00	0.90	0.93	0.95	1.20	1.06
BLINDS	1.00	0.53	0.93	0.95	1.30	1.10
UPPER LIGHT SHELF	1.00	0.89	0.93	0.95	1.30	1.10
BLINDS, LOWER LIGHT SHELF	1.00	0.53	0.93	0.95	1.50	1.13
BLINDS, UPPER LIGHT SHELF	1.01	0.44	0.87	0.86	1.70	1.26
SHADES, LOWER BARRIER	0.98	0.26	0.67	0.67	3.10	1.65
NORTH BARE WINDOW	0.99	0.77	1.80	1.71	3.30	1.71
NORTH WIN., BLINDS	0.99	0.69	1.67	1.62	3.60	1.77
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.67	1.62	3.70	1.77
SHADES, UPPER BARRIER	0.98	0.23	0.60	0.57	3.70	1.84
SHADES, LOWER LIGHT SHELF	0.97	0.19	0.53	0.52	3.90	1.87
SHADES	0.98	0.18	0.53	0.48	4.30	2.03
SHADES, ALL BARRIERS	0.98	0.18	0.53	0.48	4.30	2.03
SHADES, UPPER LIGHT SHELF	0.98	0.16	0.53	0.43	4.50	2.06
NORTH WIN., SHADES	0.98	0.29	1.07	0.86	5.70	2.39

Table 16.

AVERAGE CRF FOR PARTLY CLOUDY SKIES

CONFIGURATION

VALUE (SORTED BY CRFA)

	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
BLINDS, UPPER BARRIER	1.02	0.50	1.09	1.06	0.63	0.83
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.63	1.09	1.11	0.63	0.78
UPPER BARRIER	1.02	0.71	1.09	1.11	0.50	0.74
BLINDS, LOWER BARRIER	1.01	0.52	1.09	1.11	0.38	0.74
BLINDS, UPPER LIGHT SHELF	1.01	0.34	0.91	0.89	1.08	1.30
LOWER BARRIER	1.01	1.16	1.09	1.11	0.25	0.65
NORTH BARE WINDOW	1.01	0.51	2.91	2.28	4.50	2.52
NORTH WIN., BLINDS	1.01	0.47	2.73	2.11	5.00	2.65
NORTH WIN., LO. LIT. SHELF	1.01	0.48	2.82	2.22	4.75	2.61
NORTH WIN., SHADES	1.01	0.21	1.45	1.00	8.13	3.52
SHADES	1.01	0.07	0.45	0.33	6.63	3.09
SHADES, ALL BARRIERS	1.01	0.07	0.45	0.33	6.38	3.00
SHADES, LOWER BARRIER	1.01	0.12	0.64	0.50	4.50	2.48
SHADES, UPPER BARRIER	1.01	0.10	0.64	0.44	5.13	2.65
SHADES, UPPER LIGHT SHELF	1.01	0.07	0.45	0.33	6.88	3.13
UPPER LIGHT SHELF	1.01	1.03	1.09	1.06	0.50	0.83
ALL BARRIERS	1.00	0.62	1.00	1.06	0.75	0.87
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.38	1.00	1.00	1.25	1.09
BLINDS, ALL BARRIERS	1.00	0.42	1.00	1.00	1.00	0.96
LO. LIT. SHELF, ALL BARRIERS	1.00	0.53	1.00	1.06	1.00	0.91
LO. LIT. SHELF, LO. BARRIER	1.00	1.12	1.09	1.17	0.13	0.57
UP. LIT. SHELF, LO. BARRIER	1.00	0.92	1.00	0.94	1.38	1.13
UPPER LIGHT SHELF	1.00	0.92	1.00	0.94	1.38	1.13
BLINDS, LOWER LIGHT SHELF	0.98	0.44	1.09	1.11	0.38	0.78
LOWER LIGHT SHELF	0.98	0.98	1.09	1.11	0.38	0.74
UP. & LO. LIT.SHELF, LO. BAR	0.98	0.90	4.64	3.72	5.00	2.57
SHADES, LOWER LIGHT SHELF	0.96	0.14	0.73	0.61	4.88	2.52

Table 17.

AVERAGE TDR FOR PARTLY CLOUDY SKIES

CONFIGURATION	VALUE (SORTED BY TDRA)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER BARRIER	1.01	1.16	1.09	1.11	0.25	0.65
LO. LIT. SHELF, LO. BARRIER	1.00	1.12	1.09	1.17	0.13	0.57
UPPER LIGHT SHELF	1.01	1.03	1.09	1.06	0.50	0.83
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	0.98	0.98	1.09	1.11	0.38	0.74
UP. LIT. SHELF, LO. BARRIER	1.00	0.92	1.00	0.94	1.38	1.13
UPPER LIGHT SHELF	1.00	0.92	1.00	0.94	1.38	1.13
UP. & LO. LIT.SHELF, LO. BAR	0.98	0.90	4.64	3.72	5.00	2.57
UPPER BARRIER	1.02	0.71	1.09	1.11	0.50	0.74
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.63	1.09	1.11	0.63	0.78
ALL BARRIERS	1.00	0.62	1.00	1.06	0.75	0.87
LO. LIT. SHELF, ALL BARRIERS	1.00	0.53	1.00	1.06	1.00	0.91
BLINDS, LOWER BARRIER	1.01	0.52	1.09	1.11	0.38	0.74
NORTH BARE WINDOW	1.01	0.51	2.91	2.28	4.50	2.52
BLINDS, UPPER BARRIER	1.02	0.50	1.09	1.06	0.63	0.83
NORTH WIN., LO. LIT. SHELF	1.01	0.48	2.82	2.22	4.75	2.61
NORTH WIN., BLINDS	1.01	0.47	2.73	2.11	5.00	2.65
BLINDS, LOWER LIGHT SHELF	0.98	0.44	1.09	1.11	0.38	0.78
BLINDS, ALL BARRIERS	1.00	0.42	1.00	1.00	1.00	0.96
BLINDS	1.00	0.38	1.00	1.00	1.25	1.09
BLINDS, UPPER LIGHT SHELF	1.01	0.34	0.91	0.89	1.88	1.30
NORTH WIN., SHADES	1.01	0.21	1.45	1.00	8.13	3.52
SHADES, LOWER LIGHT SHELF	0.96	0.14	0.73	0.61	4.88	2.52
SHADES, LOWER BARRIER	1.01	0.12	0.64	0.50	4.50	2.48
SHADES, UPPER BARRIER	1.01	0.10	0.64	0.44	5.13	2.65
SHADES	1.01	0.07	0.45	0.33	6.63	3.09
SHADES, ALL BARRIERS	1.01	0.07	0.45	0.33	6.38	3.00
SHADES, UPPER LIGHT SHELF	1.01	0.07	0.45	0.33	6.88	3.13

Table 18.

AVERAGE UDR50 FOR PARTLY CLOUDY SKIES

CONFIGURATION	VALUE (SORTED BY UDR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
UP. & LO. LIT.SHELF, LO. BAR	0.98	0.90	4.64	3.72	5.00	2.57
NORTH BARE WINDOW	1.01	0.51	2.91	2.28	4.50	2.52
NORTH WIN., LO. LIT. SHELF	1.01	0.48	2.82	2.22	4.75	2.61
NORTH WIN., BLINDS	1.01	0.47	2.73	2.11	5.00	2.65
NORTH WIN., SHADES	1.01	0.21	1.45	1.00	0.13	3.52
BLINDS, LOWER BARRIER	1.01	0.52	1.09	1.11	0.38	0.74
BLINDS, LOWER LIGHT SHELF	0.98	0.44	1.09	1.11	0.38	0.78
BLINDS, UPPER BARRIER	1.02	0.50	1.09	1.06	0.63	0.83
LO. LIT. SHELF, LO. BARRIER	1.00	1.12	1.09	1.17	0.13	0.57
LOWER BARRIER	1.01	1.16	1.09	1.11	0.25	0.65
LOWER LIGHT SHELF	0.98	0.98	1.09	1.11	0.38	0.74
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.63	1.09	1.11	0.63	0.78
UPPER BARRIER	1.02	0.71	1.09	1.11	0.50	0.74
UPPER LIGHT SHELF	1.01	1.03	1.09	1.06	0.50	0.83
ALL BARRIERS	1.00	0.62	1.00	1.06	0.75	0.87
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.38	1.00	1.00	1.25	1.09
BLINDS, ALL BARRIERS	1.00	0.42	1.00	1.00	1.00	0.96
LO. LIT. SHELF, ALL BARRIERS	1.00	0.53	1.00	1.06	1.00	0.91
UP. LIT. SHELF, LO. BARRIER	1.00	0.92	1.00	0.94	1.38	1.13
UPPER LIGHT SHELF	1.00	0.92	1.00	0.94	1.38	1.13
BLINDS, UPPER LIGHT SHELF	1.01	0.34	0.91	0.89	1.88	1.30
SHADES, LOWER LIGHT SHELF	0.96	0.14	0.73	0.61	4.88	2.52
SHADES, LOWER BARRIER	1.01	0.12	0.64	0.50	4.50	2.48
SHADES, UPPER BARRIER	1.01	0.10	0.64	0.44	5.13	2.65
SHADES	1.01	0.07	0.45	0.33	6.63	3.09
SHADES, ALL BARRIERS	1.01	0.07	0.45	0.33	6.38	3.00
SHADES, UPPER LIGHT SHELF	1.01	0.07	0.45	0.33	6.88	3.13

Table 19. ---

AVERAGE UDR100 FOR PARTLY CLOUDY SKIES

CONFIGURATION	VALUE (SORTED BY UDR100A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
UP. & LO. LIT.SHELF, LO. BAR	0.98	0.90	4.64	3.72	5.00	2.57
NORTH BARE WINDOW	1.01	0.51	2.91	2.28	4.50	2.52
NORTH WIN., LO. LIT. SHELF	1.01	0.48	2.82	2.22	4.75	2.61
NORTH WIN., BLINDS	1.01	0.47	2.73	2.11	5.00	2.65
LO. LIT. SHELF, LO. BARRIER	1.00	1.12	1.09	1.17	0.13	0.57
BLINDS, LOWER BARRIER	1.01	0.52	1.09	1.11	0.38	0.74
BLINDS, LOWER LIGHT SHELF	0.98	0.44	1.09	1.11	0.38	0.78
LOWER BARRIER	1.01	1.16	1.09	1.11	0.25	0.65
LOWER LIGHT SHELF	0.98	0.98	1.09	1.11	0.38	0.74
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.63	1.09	1.11	0.63	0.78
UPPER BARRIER	1.02	0.71	1.09	1.11	0.50	0.74
ALL BARRIERS	1.00	0.62	1.00	1.06	0.75	0.87
BLINDS, UPPER BARRIER	1.02	0.50	1.09	1.06	0.63	0.83
LO. LIT. SHELF, ALL BARRIERS	1.00	0.53	1.00	1.06	1.00	0.91
UPPER LIGHT SHELF	1.01	1.03	1.09	1.06	0.50	0.83
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.38	1.00	1.00	1.25	1.09
BLINDS, ALL BARRIERS	1.00	0.42	1.00	1.00	1.00	0.96
NORTH WIN., SHADES	1.01	0.21	1.45	1.00	8.13	3.52
UP. LIT. SHELF, LO. BARRIER	1.00	0.92	1.00	0.94	1.38	1.13
UPPER LIGHT SHELF	1.00	0.92	1.00	0.94	1.38	1.13
BLINDS, UPPER LIGHT SHELF	1.01	0.34	0.91	0.89	1.88	1.30
SHADES, LOWER LIGHT SHELF	0.96	0.14	0.73	0.61	4.88	2.52
SHADES, LOWER BARRIER	1.01	0.12	0.64	0.50	4.50	2.48
SHADES, UPPER BARRIER	1.01	0.10	0.64	0.44	5.13	2.65
SHADES	1.01	0.07	0.45	0.33	6.63	3.09
SHADES, ALL BARRIERS	1.01	0.07	0.45	0.33	6.38	3.00
SHADES, UPPER LIGHT SHELF	1.01	0.07	0.45	0.33	6.88	3.13

Table 20.

AVERAGE LPR50 FOR PARTLY CLOUDY SKIES

CONFIGURATION	VALUE (SORTED BY LPR50)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LO. LIT. SHELF, LO. BARRIER	1.00	1.12	1.09	1.17	0.13	0.57
LOWER BARRIER	1.01	1.16	1.09	1.11	0.25	0.65
BLINDS, LOWER BARRIER	1.01	0.52	1.09	1.11	0.38	0.74
BLINDS, LOWER LIGHT SHELF	0.98	0.44	1.09	1.11	0.38	0.78
LOWER LIGHT SHELF	0.98	0.98	1.09	1.11	0.38	0.74
UPPER BARRIER	1.02	0.71	1.09	1.11	0.50	0.74
UPPER LIGHT SHELF	1.01	1.03	1.09	1.06	0.50	0.83
BLINDS, UPPER BARRIER	1.02	0.50	1.09	1.06	0.63	0.83
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.63	1.09	1.11	0.63	0.78
ALL BARRIERS	1.00	0.62	1.00	1.06	0.75	0.87
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS, ALL BARRIERS	1.00	0.42	1.00	1.00	1.00	0.96
LO. LIT. SHELF, ALL BARRIERS	1.00	0.53	1.00	1.06	1.00	0.91
BLINDS	1.00	0.38	1.00	1.00	1.25	1.09
UP. LIT. SHELF, LO. BARRIER	1.00	0.92	1.00	0.94	1.38	1.13
UPPER LIGHT SHELF	1.00	0.92	1.00	0.94	1.38	1.13
BLINDS, UPPER LIGHT SHELF	1.01	0.34	0.91	0.89	1.88	1.30
NORTH BARE WINDOW	1.01	0.51	2.91	2.28	4.50	2.52
SHADES, LOWER BARRIER	1.01	0.12	0.64	0.50	4.50	2.48
NORTH WIN., LO. LIT. SHELF	1.01	0.48	2.82	2.22	4.75	2.61
SHADES, LOWER LIGHT SHELF	0.96	0.14	0.73	0.61	4.88	2.52
NORTH WIN., BLINDS	1.01	0.47	2.73	2.11	5.00	2.65
UP. & LO. LIT.SHELF, LO. BAR	0.98	0.90	4.64	3.72	5.00	2.57
SHADES, UPPER BARRIER	1.01	0.10	0.64	0.44	5.13	2.65
SHADES, ALL BARRIERS	1.01	0.07	0.45	0.33	6.38	3.00
SHADES	1.01	0.07	0.45	0.33	6.63	3.09
SHADES, UPPER LIGHT SHELF	1.01	0.07	0.45	0.33	6.88	3.13
NORTH WIN., SHADES	1.01	0.21	1.45	1.00	8.13	3.52

Table 21.

AVERAGE LPR100 FOR PARTLY CLOUDY SKIES

CONFIGURATION	VALUE (SORTED BY LPR100)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LO. LIT. SHELF, LO. BARRIER	1.00	1.12	1.09	1.17	0.13	0.57
LOWER BARRIER	1.01	1.16	1.09	1.11	0.25	0.65
BLINDS, LOWER BARRIER	1.01	0.52	1.09	1.11	0.38	0.74
LOWER LIGHT SHELF	0.98	0.98	1.09	1.11	0.38	0.74
UPPER BARRIER	1.02	0.71	1.09	1.11	0.50	0.74
BLINDS, LOWER LIGHT SHELF	0.98	0.44	1.09	1.11	0.38	0.78
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.63	1.09	1.11	0.63	0.78
BLINDS, UPPER BARRIER	1.02	0.50	1.09	1.06	0.63	0.83
UPPER LIGHT SHELF	1.01	1.03	1.09	1.06	0.50	0.83
ALL BARRIERS	1.00	0.62	1.00	1.06	0.75	0.87
LO. LIT. SHELF, ALL BARRIERS	1.00	0.53	1.00	1.06	1.00	0.91
BLINDS, ALL BARRIERS	1.00	0.42	1.00	1.00	1.00	0.96
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.38	1.00	1.00	1.25	1.09
UP. LIT. SHELF, LO. BARRIER	1.00	0.92	1.00	0.94	1.38	1.13
UPPER LIGHT SHELF	1.00	0.92	1.00	0.94	1.38	1.13
BLINDS, UPPER LIGHT SHELF	1.01	0.34	0.91	0.89	1.88	1.30
SHADES, LOWER BARRIER	1.01	0.12	0.64	0.50	4.50	2.48
NORTH BARE WINDOW	1.01	0.51	2.91	2.28	4.50	2.52
SHADES, LOWER LIGHT SHELF	0.96	0.14	0.73	0.61	4.98	2.52
UP. & LO. LIT.SHELF, LO. BAR	0.98	0.90	4.64	3.72	5.00	2.57
NORTH WIN., LO. LIT. SHELF	1.01	0.48	2.82	2.22	4.75	2.61
NORTH WIN., BLINDS	1.01	0.47	2.73	2.11	5.00	2.65
SHADES, UPPER BARRIER	1.01	0.10	0.64	0.44	5.13	2.65
SHADES, ALL BARRIERS	1.01	0.07	0.45	0.33	6.38	3.00
SHADES	1.01	0.07	0.45	0.33	6.63	3.09
SHADES, UPPER LIGHT SHELF	1.01	0.07	0.45	0.33	6.88	3.13
NORTH WIN., SHADES	1.01	0.21	1.45	1.00	8.13	3.52

Table 22.

AVERAGE CRF FOR OVERCAST SKIES

CONFIGURATION	VALUE (SORTED BY CRFA)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
BLINDS, LOWER LIGHT SHELF	1.02	0.89	0.92	0.94	1.15	1.06
BLINDS, UPPER LIGHT SHELF	1.02	0.77	0.85	0.85	1.24	1.11
LOWER LIGHT SHELF	1.02	0.91	0.93	0.95	1.12	1.04
NORTH WIN., LO. LIT. SHELF	1.02	0.91	0.93	0.95	1.12	1.04
UP. & LO. LIT.SHELF, LO. BAR	1.02	0.72	0.86	0.72	1.21	1.11
SHADES, LOWER LIGHT SHELF	1.01	0.92	0.95	0.96	1.09	1.02
SHADES, UPPER LIGHT SHELF	1.01	0.81	0.90	0.90	1.15	1.08
UPPER LIGHT SHELF	1.01	0.80	0.90	0.89	1.18	1.09
ALL BARRIERS	1.00	0.81	0.90	0.90	1.18	1.06
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.97	0.97	0.99	1.06	1.02
BLINDS, ALL BARRIERS	1.00	0.79	0.88	0.89	1.21	1.09
BLINDS, UPPER BARRIER	1.00	0.50	0.68	0.65	1.58	1.28
LO. LIT. SHELF, ALL BARRIERS	1.00	0.79	0.88	0.89	1.18	1.08
LO. LIT. SHELF, LO. BARRIER	1.00	0.53	0.71	0.67	1.48	1.25
NORTH BARE WINDOW	1.00	0.99	0.98	1.00	1.00	1.00
NORTH WIN., BLINDS	1.00	0.97	0.97	0.97	1.06	1.02
NORTH WIN., SHADES	1.00	1.01	1.00	1.01	1.00	0.98
SHADES	1.00	1.01	1.00	1.01	0.97	0.98
SHADES, ALL BARRIERS	1.00	0.82	0.90	0.91	1.15	1.06
SHADES, UPPER BARRIER	1.00	0.52	0.71	0.66	1.52	1.26
UP. & LO. LIT.SHELF, UP. BAR	1.00	0.50	0.69	0.65	1.55	1.28
UP. LIT. SHELF, LO. BARRIER	1.00	0.84	0.92	0.92	1.12	1.06
UPPER BARRIER	1.00	0.52	0.69	0.66	1.52	1.26
UPPER LIGHT SHELF	1.00	0.47	0.66	0.61	1.58	1.30
BLINDS, LOWER BARRIER	0.99	0.56	0.73	0.70	1.45	1.23
LOWER BARRIER	0.98	0.58	0.75	0.72	1.42	1.23
SHADES, LOWER BARRIER	0.98	0.59	0.76	0.72	1.39	1.21

Table 23.

AVERAGE TDR FOR OVERCAST SKIES

CONFIGURATION	VALUE (SORTED BY TDRA)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH WIN., SHADES	1.00	1.01	1.00	1.01	1.00	0.98
SHADES	1.00	1.01	1.00	1.01	0.97	0.98
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
NORTH BARE WINDOW	1.00	0.99	0.98	1.00	1.00	1.00
BLINDS	1.00	0.97	0.97	0.99	1.06	1.02
NORTH WIN., BLINDS	1.00	0.97	0.97	0.97	1.06	1.02
SHADES, LOWER LIGHT SHELF	1.01	0.92	0.95	0.96	1.09	1.02
LOWER LIGHT SHELF	1.02	0.91	0.93	0.95	1.12	1.04
NORTH WIN., LO. LIT. SHELF	1.02	0.91	0.93	0.95	1.12	1.04
BLINDS, LOWER LIGHT SHELF	1.02	0.89	0.92	0.94	1.15	1.06
UP. LIT. SHELF, LO. BARRIER	1.00	0.84	0.92	0.92	1.12	1.06
SHADES, ALL BARRIERS	1.00	0.82	0.90	0.91	1.15	1.06
ALL BARRIERS	1.00	0.81	0.90	0.90	1.18	1.08
SHADES, UPPER LIGHT SHELF	1.01	0.81	0.90	0.90	1.15	1.08
UPPER LIGHT SHELF	1.01	0.80	0.90	0.89	1.18	1.09
BLINDS, ALL BARRIERS	1.00	0.79	0.88	0.89	1.21	1.09
LO. LIT. SHELF, ALL BARRIERS	1.00	0.79	0.88	0.89	1.18	1.08
BLINDS, UPPER LIGHT SHELF	1.02	0.77	0.85	0.85	1.24	1.11
UP. & LO. LIT. SHELF, LO. BAR	1.02	0.72	0.86	0.72	1.21	1.11
SHADES, LOWER BARRIER	0.98	0.59	0.76	0.72	1.39	1.21
LOWER BARRIER	0.98	0.58	0.75	0.72	1.42	1.23
BLINDS, LOWER BARRIER	0.99	0.56	0.73	0.70	1.45	1.23
LO. LIT. SHELF, LO. BARRIER	1.00	0.53	0.71	0.67	1.48	1.25
SHADES, UPPER BARRIER	1.00	0.52	0.71	0.66	1.52	1.26
UPPER BARRIER	1.00	0.52	0.69	0.66	1.52	1.26
BLINDS, UPPER BARRIER	1.00	0.50	0.68	0.65	1.58	1.28
UP. & LO. LIT. SHELF, UP. BAR	1.00	0.50	0.69	0.65	1.55	1.28
UPPER LIGHT SHELF	1.00	0.47	0.66	0.61	1.58	1.30

Table 24.

AVERAGE UDR50 FOR OVERCAST SKIES

CONFIGURATION

VALUE (SORTED BY UDR50)

	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
NORTH WIN., SHADES	1.00	1.01	1.00	1.01	1.00	0.98
SHADES	1.00	1.01	1.00	1.01	0.97	0.98
NORTH BARE WINDOW	1.00	0.99	0.98	1.00	1.00	1.00
BLINDS	1.00	0.97	0.97	0.99	1.06	1.02
NORTH WIN., BLINDS	1.00	0.97	0.97	0.97	1.06	1.02
SHADES, LOWER LIGHT SHELF	1.01	0.92	0.95	0.96	1.09	1.02
LOWER LIGHT SHELF	1.02	0.91	0.93	0.95	1.12	1.04
NORTH WIN., LO. LIT. SHELF	1.02	0.91	0.93	0.95	1.12	1.04
BLINDS, LOWER LIGHT SHELF	1.02	0.89	0.92	0.94	1.15	1.06
UP. LIT. SHELF, LO. BARRIER	1.00	0.84	0.92	0.92	1.12	1.06
ALL BARRIERS	1.00	0.81	0.90	0.90	1.18	1.08
SHADES, ALL BARRIERS	1.00	0.82	0.90	0.91	1.15	1.06
SHADES, UPPER LIGHT SHELF	1.01	0.81	0.90	0.90	1.15	1.08
UPPER LIGHT SHELF	1.01	0.80	0.90	0.89	1.18	1.09
BLINDS, ALL BARRIERS	1.00	0.79	0.88	0.89	1.21	1.09
LO. LIT. SHELF, ALL BARRIERS	1.00	0.79	0.88	0.89	1.18	1.08
UP. & LO. LIT. SHELF, LO. BAR	1.02	0.72	0.86	0.72	1.21	1.11
BLINDS, UPPER LIGHT SHELF	1.02	0.77	0.85	0.85	1.24	1.11
SHADES, LOWER BARRIER	0.98	0.59	0.76	0.72	1.39	1.21
LOWER BARRIER	0.98	0.58	0.75	0.72	1.42	1.23
BLINDS, LOWER BARRIER	0.99	0.56	0.73	0.70	1.45	1.23
LO. LIT. SHELF, LO. BARRIER	1.00	0.53	0.71	0.67	1.48	1.25
SHADES, UPPER BARRIER	1.00	0.52	0.71	0.66	1.52	1.26
UP. & LO. LIT. SHELF, UP. BAR	1.00	0.50	0.69	0.65	1.55	1.28
UPPER BARRIER	1.00	0.52	0.69	0.66	1.52	1.26
BLINDS, UPPER BARRIER	1.00	0.50	0.68	0.65	1.58	1.28
UPPER LIGHT SHELF	1.00	0.47	0.66	0.61	1.58	1.30

AVERAGE UDR100 FOR OVERCAST SKIES

CONFIGURATION

VALUE (SORTED BY UDR100)

	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH WIN., SHADES	1.00	1.01	1.00	1.01	1.00	0.98
SHADES	1.00	1.01	1.00	1.01	0.97	0.98
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
NORTH BARE WINDOW	1.00	0.99	0.98	1.00	1.00	1.00
BLINDS	1.00	0.97	0.97	0.99	1.06	1.02
NORTH WIN., BLINDS	1.00	0.97	0.97	0.97	1.06	1.02
SHADES, LOWER LIGHT SHELF	1.01	0.92	0.95	0.96	1.09	1.02
LOWER LIGHT SHELF	1.02	0.91	0.93	0.95	1.12	1.04
NORTH WIN., LO. LIT. SHELF	1.02	0.91	0.93	0.95	1.12	1.04
BLINDS, LOWER LIGHT SHELF	1.02	0.89	0.92	0.94	1.15	1.06
UP. LIT. SHELF, LO. BARRIER	1.00	0.84	0.92	0.92	1.12	1.06
SHADES, ALL BARRIERS	1.00	0.82	0.90	0.91	1.15	1.06
ALL BARRIERS	1.00	0.81	0.90	0.90	1.18	1.08
SHADES, UPPER LIGHT SHELF	1.01	0.81	0.90	0.90	1.15	1.08
BLINDS, ALL BARRIERS	1.00	0.79	0.88	0.89	1.21	1.09
LO. LIT. SHELF, ALL BARRIERS	1.00	0.79	0.88	0.89	1.18	1.08
UPPER LIGHT SHELF	1.01	0.80	0.90	0.89	1.18	1.09
BLINDS, UPPER LIGHT SHELF	1.02	0.77	0.85	0.85	1.24	1.11
LOWER BARRIER	0.98	0.58	0.75	0.72	1.42	1.23
SHADES, LOWER BARRIER	0.98	0.59	0.76	0.72	1.39	1.21
UP. & LO. LIT. SHELF, LO. BAR	1.02	0.72	0.86	0.72	1.21	1.11
BLINDS, LOWER BARRIER	0.99	0.56	0.73	0.70	1.45	1.23
LO. LIT. SHELF, LO. BARRIER	1.00	0.53	0.71	0.67	1.48	1.25
SHADES, UPPER BARRIER	1.00	0.52	0.71	0.66	1.52	1.26
UPPER BARRIER	1.00	0.52	0.69	0.66	1.52	1.26
BLINDS, UPPER BARRIER	1.00	0.50	0.68	0.65	1.58	1.28
UP. & LO. LIT. SHELF, UP. BAR	1.00	0.50	0.69	0.65	1.55	1.28
UPPER LIGHT SHELF	1.00	0.47	0.66	0.61	1.58	1.30

Table 26.

AVERAGE LPR50 FOR OVERCAST SKIES

CONFIGURATION

VALUE (SORTED BY LPR50A)

	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
SHADES	1.00	1.01	1.00	1.01	0.97	0.98
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
NORTH BARE WINDOW	1.00	0.99	0.98	1.00	1.00	1.00
NORTH WIN., SHADES	1.00	1.01	1.00	1.01	1.00	0.98
BLINDS	1.00	0.97	0.97	0.99	1.06	1.02
NORTH WIN., BLINDS	1.00	0.97	0.97	0.97	1.06	1.02
SHADES, LOWER LIGHT SHELF	1.01	0.92	0.95	0.96	1.09	1.02
LOWER LIGHT SHELF	1.02	0.91	0.93	0.95	1.12	1.04
NORTH WIN., LO. LIT. SHELF	1.02	0.91	0.93	0.95	1.12	1.04
UP. LIT. SHELF, LO. BARRIER	1.00	0.84	0.92	0.92	1.12	1.06
BLINDS, LOWER LIGHT SHELF	1.02	0.89	0.92	0.94	1.15	1.06
SHADES, ALL BARRIERS	1.00	0.82	0.90	0.91	1.15	1.06
SHADES, UPPER LIGHT SHELF	1.01	0.81	0.90	0.90	1.15	1.08
ALL BARRIERS	1.00	0.81	0.90	0.90	1.18	1.08
LO. LIT. SHELF, ALL BARRIERS	1.00	0.79	0.88	0.89	1.18	1.08
UPPER LIGHT SHELF	1.01	0.80	0.90	0.89	1.18	1.09
BLINDS, ALL BARRIERS	1.00	0.79	0.88	0.89	1.21	1.09
UP. & LO. LIT. SHELF, LO. BAR	1.02	0.72	0.86	0.72	1.21	1.11
BLINDS, UPPER LIGHT SHELF	1.02	0.77	0.85	0.85	1.24	1.11
SHADES, LOWER BARRIER	0.98	0.59	0.76	0.72	1.39	1.21
LOWER BARRIER	0.98	0.58	0.75	0.72	1.42	1.23
BLINDS, LOWER BARRIER	0.99	0.56	0.73	0.70	1.45	1.23
LO. LIT. SHELF, LO. BARRIER	1.00	0.53	0.71	0.67	1.48	1.25
SHADES, UPPER BARRIER	1.00	0.52	0.71	0.66	1.52	1.26
UPPER BARRIER	1.00	0.52	0.69	0.66	1.52	1.26
UP. & LO. LIT. SHELF, UP. BAR	1.00	0.50	0.69	0.65	1.55	1.28
BLINDS, UPPER BARRIER	1.00	0.50	0.68	0.65	1.58	1.28
UPPER LIGHT SHELF	1.00	0.47	0.66	0.61	1.58	1.30

Table 27.

AVERAGE LPR100 FOR OVERCAST SKIES

CONFIGURATION	VALUE (SORTED BY LPR100A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH WIN., SHADES	1.00	1.01	1.00	1.01	1.00	0.98
SHADES	1.00	1.01	1.00	1.01	0.97	0.98
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
NORTH BARE WINDOW	1.00	0.99	0.98	1.00	1.00	1.00
BLINDS	1.00	0.97	0.97	0.99	1.06	1.02
NORTH WIN., BLINDS	1.00	0.97	0.97	0.97	1.06	1.02
SHADES, LOWER LIGHT SHELF	1.01	0.92	0.95	0.96	1.09	1.02
LOWER LIGHT SHELF	1.02	0.91	0.93	0.95	1.12	1.04
NORTH WIN., LO. LIT. SHELF	1.02	0.91	0.93	0.95	1.12	1.04
BLINDS, LOWER LIGHT SHELF	1.02	0.89	0.92	0.94	1.15	1.06
SHADES, ALL BARRIERS	1.00	0.82	0.90	0.91	1.15	1.06
UP. LIT. SHELF, LO. BARRIER	1.00	0.84	0.92	0.92	1.12	1.06
ALL BARRIERS	1.00	0.81	0.90	0.90	1.18	1.08
LO. LIT. SHELF, ALL BARRIERS	1.00	0.79	0.88	0.89	1.18	1.08
SHADES, UPPER LIGHT SHELF	1.01	0.81	0.90	0.90	1.15	1.08
BLINDS, ALL BARRIERS	1.00	0.79	0.88	0.89	1.21	1.09
UPPER LIGHT SHELF	1.01	0.80	0.90	0.89	1.18	1.09
BLINDS, UPPER LIGHT SHELF	1.02	0.77	0.85	0.85	1.24	1.11
UP. & LO. LIT. SHELF, LO. BAR	1.02	0.72	0.86	0.72	1.21	1.11
SHADES, LOWER BARRIER	0.98	0.59	0.76	0.72	1.39	1.21
BLINDS, LOWER BARRIER	0.99	0.56	0.73	0.70	1.45	1.23
LOWER BARRIER	0.98	0.58	0.75	0.72	1.42	1.23
LO. LIT. SHELF, LO. BARRIER	1.00	0.53	0.71	0.67	1.48	1.25
SHADES, UPPER BARRIER	1.00	0.52	0.71	0.66	1.52	1.26
UPPER BARRIER	1.00	0.52	0.69	0.66	1.52	1.26
BLINDS, UPPER BARRIER	1.00	0.50	0.68	0.65	1.58	1.28
UP. & LO. LIT. SHELF, UP. BAR	1.00	0.50	0.69	0.65	1.55	1.28
UPPER LIGHT SHELF	1.00	0.47	0.66	0.61	1.58	1.30

Table 28.

AVERAGE CRF FOR ALL SKIES, JUNE

CONFIGURATION

VALUE (SORTED BY CRFA)

	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.84	0.84	0.86	1.25	1.03
BLINDS, UPPER BARRIER	1.01	0.80	0.84	0.83	1.31	1.08
BLINDS, UPPER LIGHT SHELF	1.01	0.75	0.84	0.83	1.63	1.26
NORTH WIN., LO. LIT. SHELF	1.01	1.11	1.16	1.17	1.44	1.16
SHADES, UPPER LIGHT SHELF	1.01	0.66	0.80	0.75	2.31	1.50
UPPER BARRIER	1.01	0.86	0.88	0.86	1.13	1.00
UPPER LIGHT SHELF	1.01	0.77	0.84	0.83	1.25	1.03
ALL BARRIERS	1.00	0.53	0.96	0.94	1.06	1.00
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.95	0.96	0.94	1.19	1.05
BLINDS, ALL BARRIERS	1.00	0.88	0.92	0.92	1.25	1.08
BLINDS, LOWER BARRIER	1.00	0.89	0.88	0.89	1.06	0.97
LO. LIT. SHELF, ALL BARRIERS	1.00	0.89	0.92	0.94	1.19	1.03
LO. LIT. SHELF, LO. BARRIER	1.00	0.96	0.88	0.92	1.00	0.89
LOWER BARRIER	1.00	0.96	0.92	0.92	0.94	0.89
NORTH BARE WINDOW	1.00	1.20	1.24	1.22	1.19	1.08
NORTH WIN., BLINDS	1.00	1.14	1.20	1.17	1.38	1.16
NORTH WIN., SHADES	1.00	0.89	1.00	1.00	2.31	1.50
SHADES	1.00	0.79	0.84	0.83	2.13	1.42
SHADES, ALL BARRIERS	1.00	0.66	0.80	0.75	2.38	1.50
SHADES, LOWER BARRIER	1.00	0.59	0.80	0.75	1.94	1.37
SHADES, UPPER BARRIER	1.00	0.52	0.72	0.69	2.25	1.47
UP. LIT. SHELF, LO. BARRIER	1.00	0.84	0.92	0.92	1.25	1.11
UPPER LIGHT SHELF	1.00	0.82	0.92	0.89	1.31	1.13
BLINDS, LOWER LIGHT SHELF	0.99	0.98	0.96	0.97	1.00	0.95
LOWER LIGHT SHELF	0.99	1.02	0.96	1.00	0.88	0.89
UP. & LO. LIT.SHELF, LO. BAR	0.99	0.84	0.96	0.94	1.00	0.97
SHADES, LOWER LIGHT SHELF	0.98	0.84	0.92	0.92	1.38	1.13

Table 29.

AVERAGE TDR FOR ALL SKIES, JUNE

CONFIGURATION	VALUE (SORTED BY TDRA)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	1.00	1.20	1.24	1.22	1.19	1.08
NORTH WIN., BLINDS	1.00	1.14	1.20	1.17	1.38	1.16
NORTH WIN., LO. LIT. SHELF	1.01	1.11	1.16	1.17	1.44	1.16
LOWER LIGHT SHELF	0.99	1.02	0.96	1.00	0.88	0.89
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS, LOWER LIGHT SHELF	0.99	0.98	0.96	0.97	1.00	0.95
LO. LIT. SHELF, LO. BARRIER	1.00	0.96	0.88	0.92	1.00	0.89
LOWER BARRIER	1.00	0.96	0.92	0.92	0.94	0.89
BLINDS	1.00	0.95	0.96	0.94	1.19	1.05
ALL BARRIERS	1.00	0.93	0.96	0.94	1.06	1.00
BLINDS, LOWER BARRIER	1.00	0.89	0.88	0.89	1.06	0.97
LO. LIT. SHELF, ALL BARRIERS	1.00	0.89	0.92	0.94	1.19	1.03
NORTH WIN., SHADES	1.00	0.89	1.00	1.00	2.31	1.50
BLINDS, ALL BARRIERS	1.00	0.88	0.92	0.92	1.25	1.08
UPPER BARRIER	1.01	0.86	0.88	0.86	1.13	1.00
SHADES, LOWER LIGHT SHELF	0.98	0.84	0.92	0.92	1.38	1.13
UP. & LO. LIT.SHELF, LO. BAR	0.99	0.84	0.96	0.94	1.00	0.97
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.84	0.84	0.86	1.25	1.03
UP. LIT. SHELF, LO. BARRIER	1.00	0.84	0.92	0.92	1.25	1.11
UPPER LIGHT SHELF	1.00	0.82	0.92	0.89	1.31	1.13
BLINDS, UPPER BARRIER	1.01	0.80	0.84	0.83	1.31	1.08
SHADES	1.00	0.79	0.84	0.83	2.13	1.42
UPPER LIGHT SHELF	1.01	0.77	0.84	0.83	1.25	1.03
BLINDS, UPPER LIGHT SHELF	1.01	0.75	0.84	0.83	1.63	1.26
SHADES, ALL BARRIERS	1.00	0.66	0.80	0.75	2.38	1.50
SHADES, UPPER LIGHT SHELF	1.01	0.66	0.80	0.75	2.31	1.50
SHADES, LOWER BARRIER	1.00	0.59	0.80	0.75	1.94	1.37
SHADES, UPPER BARRIER	1.00	0.52	0.72	0.69	2.25	1.47

Table 30.

AVERAGE UDR50 FOR ALL SKIES, JUNE

CONFIGURATION	VALUE (SORTED BY UDR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	1.00	1.20	1.24	1.22	1.19	1.08
NORTH WIN., BLINDS	1.00	1.14	1.20	1.17	1.38	1.16
NORTH WIN., LO. LIT. SHELF	1.01	1.11	1.16	1.17	1.44	1.16
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
NORTH WIN., SHADES	1.00	0.89	1.00	1.00	2.31	1.50
ALL BARRIERS	1.00	0.93	0.96	0.94	1.06	1.00
BLINDS	1.00	0.95	0.96	0.94	1.19	1.05
BLINDS, LOWER LIGHT SHELF	0.99	0.98	0.96	0.97	1.00	0.95
LOWER LIGHT SHELF	0.99	1.02	0.96	1.00	0.88	0.89
UP. & LO. LIT.SHELF, LO. BAR	0.99	0.84	0.96	0.94	1.00	0.97
BLINDS, ALL BARRIERS	1.00	0.88	0.92	0.92	1.25	1.08
LO. LIT. SHELF, ALL BARRIERS	1.00	0.89	0.92	0.94	1.19	1.03
LOWER BARRIER	1.00	0.96	0.92	0.92	0.94	0.89
SHADES, LOWER LIGHT SHELF	0.98	0.84	0.92	0.92	1.38	1.13
UP. LIT. SHELF, LO. BARRIER	1.00	0.84	0.92	0.92	1.25	1.11
UPPER LIGHT SHELF	1.00	0.82	0.92	0.89	1.31	1.13
BLINDS, LOWER BARRIER	1.00	0.89	0.88	0.89	1.06	0.97
LO. LIT. SHELF, LO. BARRIER	1.00	0.96	0.88	0.92	1.00	0.89
UPPER BARRIER	1.01	0.86	0.88	0.86	1.13	1.00
BLINDS, UPPER BARRIER	1.01	0.80	0.84	0.83	1.31	1.08
BLINDS, UPPER LIGHT SHELF	1.01	0.75	0.84	0.83	1.63	1.26
SHADES	1.00	0.79	0.84	0.83	2.13	1.42
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.84	0.84	0.86	1.25	1.03
UPPER LIGHT SHELF	1.01	0.77	0.84	0.83	1.25	1.03
SHADES, ALL BARRIERS	1.00	0.66	0.80	0.75	2.38	1.50
SHADES, LOWER BARRIER	1.00	0.59	0.80	0.75	1.94	1.37
SHADES, UPPER LIGHT SHELF	1.01	0.66	0.80	0.75	2.31	1.50
SHADES, UPPER BARRIER	1.00	0.52	0.72	0.69	2.25	1.47

Table 31.

AVERAGE UDR100 FOR ALL SKIES, JUNE

CONFIGURATION

VALUE (SORTED BY UDR100A)

	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	1.00	1.20	1.24	1.22	1.19	1.08
NORTH WIN., BLINDS	1.00	1.14	1.20	1.17	1.38	1.16
NORTH WIN., LO. LIT. SHELF	1.01	1.11	1.16	1.17	1.44	1.16
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	0.99	1.02	0.96	1.00	0.88	0.89
NORTH WIN., SHADES	1.00	0.89	1.00	1.00	2.31	1.50
BLINDS, LOWER LIGHT SHELF	0.99	0.98	0.96	0.97	1.00	0.95
ALL BARRIERS	1.00	0.93	0.96	0.94	1.06	1.00
BLINDS	1.00	0.95	0.96	0.94	1.19	1.05
LO. LIT. SHELF, ALL BARRIERS	1.00	0.89	0.92	0.94	1.19	1.03
UP. & LO. LIT.SHELF, LO. BAR	0.99	0.84	0.96	0.94	1.00	0.97
BLINDS, ALL BARRIERS	1.00	0.88	0.92	0.92	1.25	1.08
LO. LIT. SHELF, LO. BARRIER	1.00	0.96	0.88	0.92	1.00	0.89
LOWER BARRIER	1.00	0.96	0.92	0.92	0.94	0.89
SHADES, LOWER LIGHT SHELF	0.98	0.84	0.92	0.92	1.38	1.13
UP. LIT. SHELF, LO. BARRIER	1.00	0.84	0.92	0.92	1.25	1.11
BLINDS, LOWER BARRIER	1.00	0.89	0.88	0.89	1.06	0.97
UPPER LIGHT SHELF	1.00	0.82	0.92	0.89	1.31	1.13
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.84	0.84	0.86	1.25	1.03
UPPER BARRIER	1.01	0.86	0.88	0.86	1.13	1.00
BLINDS, UPPER BARRIER	1.01	0.80	0.84	0.83	1.31	1.08
BLINDS, UPPER LIGHT SHELF	1.01	0.75	0.84	0.83	1.63	1.26
SHADES	1.00	0.79	0.84	0.83	2.13	1.42
UPPER LIGHT SHELF	1.01	0.77	0.84	0.83	1.25	1.03
SHADES, ALL BARRIERS	1.00	0.66	0.80	0.75	2.38	1.50
SHADES, LOWER BARRIER	1.00	0.59	0.80	0.75	1.94	1.37
SHADES, UPPER LIGHT SHELF	1.01	0.66	0.80	0.75	2.31	1.50
SHADES, UPPER BARRIER	1.00	0.52	0.72	0.69	2.25	1.47

Table 32.

AVERAGE LPR50 FOR ALL SKIES, JUNE

CONFIGURATION	VALUE (SORTED BY LPR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER LIGHT SHELF .	0.99	1.02	0.96	1.00	0.88	0.89
LOWER BARRIER	1.00	0.96	0.92	0.92	0.94	0.89
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS, LOWER LIGHT SHELF	0.99	0.98	0.96	0.97	1.00	0.95
LO. LIT. SHELF, LO. BARRIER	1.00	0.96	0.88	0.92	1.00	0.89
UP. & LO. LIT.SHELF, LO. BAR	0.99	0.84	0.96	0.94	1.00	0.97
ALL BARRIERS	1.00	0.93	0.96	0.94	1.06	1.00
BLINDS, LOWER BARRIER	1.00	0.89	0.88	0.89	1.06	0.97
UPPER BARRIER	1.01	0.86	0.88	0.86	1.13	1.00
BLINDS	1.00	0.95	0.96	0.94	1.19	1.05
LO. LIT. SHELF, ALL BARRIERS	1.00	0.89	0.92	0.94	1.19	1.03
NORTH BARE WINDOW	1.00	1.20	1.24	1.22	1.19	1.08
BLINDS, ALL BARRIERS	1.00	0.88	0.92	0.92	1.25	1.08
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.84	0.84	0.86	1.25	1.03
UP. LIT. SHELF, LO. BARRIER	1.00	0.84	0.82	0.92	1.25	1.11
UPPER LIGHT SHELF	1.01	0.77	0.84	0.83	1.25	1.03
BLINDS, UPPER BARRIER	1.01	0.80	0.84	0.83	1.31	1.08
UPPER LIGHT SHELF	1.00	0.82	0.92	0.89	1.31	1.13
NORTH WIN., BLINDS	1.00	1.14	1.20	1.17	1.38	1.16
SHADES, LOWER LIGHT SHELF	0.98	0.84	0.92	0.92	1.38	1.13
NORTH WIN., LO. LIT. SHELF	1.01	1.11	1.16	1.17	1.44	1.16
BLINDS, UPPER LIGHT SHELF	1.01	0.75	0.84	0.83	1.63	1.26
SHADES, LOWER BARRIER	1.00	0.59	0.80	0.75	1.94	1.37
SHADES	1.00	0.79	0.84	0.83	2.13	1.42
SHADES, UPPER BARRIER	1.00	0.52	0.72	0.69	2.25	1.47
NORTH WIN., SHADES	1.00	0.89	1.00	1.00	2.31	1.50
SHADES, UPPER LIGHT SHELF	1.01	0.66	0.80	0.75	2.31	1.50
SHADES, ALL BARRIERS	1.00	0.66	0.80	0.75	2.38	1.50

Table 33.

AVERAGE LPR100 FOR ALL SKIES, JUNE

CONFIGURATION

VALUE (SORTED BY LPR100A)

	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LO. LIT. SHELF, LO. BARRIER	1.00	0.96	0.88	0.92	1.00	0.89
LOWER BARRIER	1.00	0.96	0.92	0.92	0.94	0.89
LOWER LIGHT SHELF	0.99	1.02	0.96	1.00	0.88	0.89
BLINDS, LOWER LIGHT SHELF	0.99	0.98	0.96	0.97	1.00	0.95
BLINDS, LOWER BARRIER	1.00	0.89	0.88	0.89	1.06	0.97
UP. & LO. LIT.SHELF, LO. BAR	0.99	0.84	0.96	0.94	1.00	0.97
ALL BARRIERS	1.00	0.93	0.96	0.94	1.06	1.00
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
UPPER BARRIER	1.01	0.86	0.88	0.86	1.13	1.00
LO. LIT. SHELF, ALL BARRIERS	1.00	0.89	0.92	0.94	1.19	1.03
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.84	0.84	0.86	1.25	1.03
UPPER LIGHT SHELF	1.01	0.77	0.84	0.83	1.25	1.03
BLINDS	1.00	0.95	0.96	0.94	1.19	1.05
BLINDS, ALL BARRIERS	1.00	0.88	0.92	0.92	1.25	1.08
BLINDS, UPPER BARRIER	1.01	0.80	0.84	0.83	1.31	1.08
NORTH BARE WINDOW	1.00	1.20	1.24	1.22	1.19	1.08
UP. LIT. SHELF, LO. BARRIER	1.00	0.84	0.92	0.92	1.25	1.11
SHADES, LOWER LIGHT SHELF	0.98	0.84	0.92	0.92	1.38	1.13
UPPER LIGHT SHELF	1.00	0.82	0.92	0.89	1.31	1.13
NORTH WIN., BLINDS	1.00	1.14	1.20	1.17	1.38	1.16
NORTH WIN., LO. LIT. SHELF	1.01	1.11	1.16	1.17	1.44	1.16
BLINDS, UPPER LIGHT SHELF	1.01	0.75	0.84	0.83	1.63	1.26
SHADES, LOWER BARRIER	1.00	0.59	0.80	0.75	1.94	1.37
SHADES	1.00	0.79	0.84	0.83	2.13	1.42
SHADES, UPPER BARRIER	1.00	0.52	0.72	0.69	2.25	1.47
NORTH WIN., SHADES	1.00	0.89	1.00	1.00	2.31	1.50
SHADES, ALL BARRIERS	1.00	0.66	0.80	0.75	2.38	1.50
SHADES, UPPER LIGHT SHELF	1.01	0.66	0.80	0.75	2.31	1.50

Table 34.

AVERAGE CRF FOR ALL SKIES, DECEMBER

CONFIGURATION	VALUE (SORTED BY CRFA)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH WIN., LO. LIT. SHELF	1.02	0.69	1.23	1.14	2.15	1.83
BLINDS, LOWER LIGHT SHELF	1.01	0.64	0.92	0.90	1.08	1.08
BLINDS, UPPER BARRIER	1.01	0.59	0.74	0.74	1.12	1.05
BLINDS, UPPER LIGHT SHELF	1.01	0.54	0.82	0.82	1.19	1.15
NORTH BARE WINDOW	1.01	0.76	1.33	1.22	2.08	1.78
NORTH WIN., BLINDS	1.01	0.72	1.26	1.16	2.15	1.83
UP. & LO. LIT.SHELF, UP. BAR	1.01	0.66	0.77	0.76	1.12	1.03
UPPER BARRIER	1.01	0.84	0.77	0.78	1.12	1.03
UPPER LIGHT SHELF	1.01	0.75	0.72	0.72	1.15	1.05
ALL BARRIERS	1.00	0.89	0.92	0.94	1.00	0.98
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.68	0.97	0.96	1.04	1.05
BLINDS, ALL BARRIERS	1.00	0.65	0.90	0.90	1.04	1.03
BLINDS, LOWER BARRIER	1.00	0.64	0.79	0.80	1.08	1.00
LO. LIT. SHELF, ALL BARRIERS	1.00	0.72	0.90	0.92	1.00	1.00
LO. LIT. SHELF, LO. BARRIER	1.00	0.78	0.79	0.80	1.08	1.00
LOWER BARRIER	1.00	0.96	0.82	0.84	1.04	0.95
LOWER LIGHT SHELF	1.00	0.79	0.95	0.94	1.04	1.03
SHADES, UPPER LIGHT SHELF	1.00	0.40	0.69	0.66	2.38	1.90
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.59	0.85	0.82	1.12	1.10
UP. LIT. SHELF, LO. BARRIER	1.00	0.81	0.90	0.90	1.08	1.08
UPPER LIGHT SHELF	1.00	0.79	0.87	0.86	1.12	1.10
NORTH WIN., SHADES	0.99	0.54	0.97	0.86	2.69	2.05
SHADES	0.99	0.48	0.82	0.76	2.27	1.85
SHADES, ALL BARRIERS	0.99	0.41	0.72	0.68	2.23	1.83
SHADES, LOWER BARRIER	0.99	0.35	0.64	0.58	1.96	1.73
SHADES, LOWER LIGHT SHELF	0.99	0.45	0.77	0.72	2.15	1.78
SHADES, UPPER BARRIER	0.99	0.31	0.59	0.52	2.12	1.80

Table 35.

AVERAGE TDR FOR ALL SKIES, DECEMBER

CONFIGURATION	VALUE (SORTED BY TDRA)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LOWER BARRIER	1.00	0.96	0.82	0.84	1.04	0.95
ALL BARRIERS	1.00	0.89	0.92	0.94	1.00	0.98
UPPER BARRIER	1.01	0.84	0.77	0.78	1.12	1.03
UP. LIT. SHELF, LO. BARRIER	1.00	0.81	0.90	0.90	1.08	1.08
LOWER LIGHT SHELF	1.00	0.79	0.95	0.94	1.04	1.03
UPPER LIGHT SHELF	1.00	0.79	0.87	0.86	1.12	1.10
LO. LIT. SHELF, LO. BARRIER	1.00	0.78	0.79	0.80	1.08	1.00
NORTH BARE WINDOW	1.01	0.76	1.33	1.22	2.08	1.78
UPPER LIGHT SHELF	1.01	0.75	0.72	0.72	1.15	1.05
LO. LIT. SHELF, ALL BARRIERS	1.00	0.72	0.90	0.92	1.00	1.00
NORTH WIN., BLINDS	1.01	0.72	1.26	1.16	2.15	1.83
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.23	1.14	2.15	1.83
BLINDS	1.00	0.68	0.97	0.96	1.04	1.05
UP. & LO. LIT.SHELF, UP. BAR	1.01	0.66	0.77	0.76	1.12	1.03
BLINDS, ALL BARRIERS	1.00	0.65	0.90	0.90	1.04	1.03
BLINDS, LOWER BARRIER	1.00	0.64	0.79	0.80	1.08	1.00
BLINDS, LOWER LIGHT SHELF	1.01	0.64	0.92	0.90	1.08	1.08
BLINDS, UPPER BARRIER	1.01	0.59	0.74	0.74	1.12	1.05
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.59	0.85	0.82	1.12	1.10
BLINDS, UPPER LIGHT SHELF	1.01	0.54	0.82	0.82	1.19	1.15
NORTH WIN., SHADES	0.99	0.54	0.97	0.86	2.69	2.05
SHADES	0.99	0.48	0.82	0.76	2.27	1.85
SHADES, LOWER LIGHT SHELF	0.99	0.45	0.77	0.72	2.15	1.78
SHADES, ALL BARRIERS	0.99	0.41	0.72	0.68	2.23	1.83
SHADES, UPPER LIGHT SHELF	1.00	0.40	0.69	0.66	2.38	1.90
SHADES, LOWER BARRIER	0.99	0.35	0.64	0.58	1.96	1.73
SHADES, UPPER BARRIER	0.99	0.31	0.59	0.52	2.12	1.80

Table 36.

AVERAGE UDR50 FOR ALL SKIES, DECEMBER

CONFIGURATION	VALUE (SORTED BY UDR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	1.01	0.76	1.33	1.22	2.08	1.78
NORTH WIN., BLINDS	1.01	0.72	1.26	1.16	2.15	1.83
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.23	1.14	2.15	1.83
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.68	0.97	0.96	1.04	1.05
NORTH WIN., SHADES	0.99	0.54	0.97	0.86	2.69	2.05
LOWER LIGHT SHELF	1.00	0.79	0.95	0.94	1.04	1.03
ALL BARRIERS	1.00	0.89	0.92	0.94	1.00	0.98
BLINDS, LOWER LIGHT SHELF	1.01	0.64	0.92	0.90	1.08	1.08
BLINDS, ALL BARRIERS	1.00	0.65	0.90	0.90	1.04	1.03
LO. LIT. SHELF, ALL BARRIERS	1.00	0.72	0.90	0.92	1.00	1.00
UP. LIT. SHELF, LO. BARRIER	1.00	0.81	0.90	0.90	1.08	1.08
UPPER LIGHT SHELF	1.00	0.79	0.87	0.86	1.12	1.10
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.59	0.85	0.82	1.12	1.10
BLINDS, UPPER LIGHT SHELF	1.01	0.54	0.82	0.82	1.19	1.15
LOWER BARRIER	1.00	0.96	0.82	0.84	1.04	0.95
SHADES	0.99	0.48	0.82	0.76	2.27	1.85
BLINDS, LOWER BARRIER	1.00	0.64	0.79	0.80	1.08	1.00
LO. LIT. SHELF, LO. BARRIER	1.00	0.78	0.79	0.80	1.08	1.00
SHADES, LOWER LIGHT SHELF	0.99	0.45	0.77	0.72	2.15	1.78
UP. & LO. LIT.SHELF, UP. BAR	1.01	0.66	0.77	0.76	1.12	1.03
UPPER BARRIER	1.01	0.84	0.77	0.78	1.12	1.03
BLINDS, UPPER BARRIER	1.01	0.59	0.74	0.74	1.12	1.05
SHADES, ALL BARRIERS	0.99	0.41	0.72	0.68	2.23	1.83
UPPER LIGHT SHELF	1.01	0.75	0.72	0.72	1.15	1.05
SHADES, UPPER LIGHT SHELF	1.00	0.40	0.69	0.66	2.38	1.90
SHADES, LOWER BARRIER	0.99	0.35	0.64	0.58	1.96	1.73
SHADES, UPPER BARRIER	0.99	0.31	0.59	0.52	2.12	1.80

Table 37.

AVERAGE UDR100 FOR ALL SKIES, DECEMBER

CONFIGURATION	VALUE (SORTED BY UDR100A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	1.01	0.76	1.33	1.22	2.08	1.78
NORTH WIN., BLINDS	1.01	0.72	1.26	1.16	2.15	1.83
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.23	1.14	2.15	1.83
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.68	0.97	0.96	1.04	1.05
ALL BARRIERS	1.00	0.89	0.92	0.94	1.00	0.98
LOWER LIGHT SHELF	1.00	0.79	0.95	0.94	1.04	1.03
LO. LIT. SHELF, ALL BARRIERS	1.00	0.72	0.90	0.92	1.00	1.00
BLINDS, ALL BARRIERS	1.00	0.65	0.90	0.90	1.04	1.03
BLINDS, LOWER LIGHT SHELF	1.01	0.64	0.92	0.90	1.08	1.08
UP. LIT. SHELF, LO. BARRIER	1.00	0.81	0.90	0.90	1.08	1.08
NORTH WIN., SHADES	0.99	0.54	0.97	0.86	2.69	2.05
UPPER LIGHT SHELF	1.00	0.79	0.87	0.86	1.12	1.10
LOWER BARRIER	1.00	0.96	0.82	0.84	1.04	0.95
BLINDS, UPPER LIGHT SHELF	1.01	0.54	0.82	0.82	1.19	1.15
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.59	0.85	0.82	1.12	1.10
BLINDS, LOWER BARRIER	1.00	0.64	0.79	0.80	1.08	1.00
LO. LIT. SHELF, LO. BARRIER	1.00	0.78	0.79	0.80	1.08	1.00
UPPER BARRIER	1.01	0.84	0.77	0.78	1.12	1.03
SHADES	0.99	0.48	0.82	0.76	2.27	1.85
UP. & LO. LIT.SHELF, UP. BAR	1.01	0.66	0.77	0.76	1.12	1.03
BLINDS, UPPER BARRIER	1.01	0.59	0.74	0.74	1.12	1.05
SHADES, LOWER LIGHT SHELF	0.99	0.45	0.77	0.72	2.15	1.78
UPPER LIGHT SHELF	1.01	0.75	0.72	0.72	1.15	1.05
SHADES, ALL BARRIERS	0.99	0.41	0.72	0.68	2.23	1.83
SHADES, UPPER LIGHT SHELF	1.00	0.40	0.69	0.66	2.38	1.90
SHADES, LOWER BARRIER	0.99	0.35	0.64	0.58	1.96	1.73
SHADES, UPPER BARRIER	0.99	0.31	0.59	0.52	2.12	1.80

Table 38.

AVERAGE LPR50 FOR ALL SKIES, DECEMBER

CONFIGURATION	VALUE (SORTED BY LPR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
ALL BARRIERS	1.00	0.89	0.92	0.94	1.00	0.98
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LO. LIT. SHELF, ALL BARRIERS	1.00	0.72	0.90	0.92	1.00	1.00
BLINDS	1.00	0.68	0.97	0.96	1.04	1.05
BLINDS, ALL BARRIERS	1.00	0.65	0.90	0.90	1.04	1.03
LOWER BARRIER	1.00	0.96	0.82	0.84	1.04	0.95
LOWER LIGHT SHELF	1.00	0.79	0.95	0.94	1.04	1.03
BLINDS, LOWER BARRIER	1.00	0.64	0.79	0.80	1.08	1.00
BLINDS, LOWER LIGHT SHELF	1.01	0.64	0.92	0.90	1.08	1.08
LO. LIT. SHELF, LO. BARRIER	1.00	0.78	0.79	0.80	1.08	1.00
UP. LIT. SHELF, LO. BARRIER	1.00	0.81	0.90	0.90	1.08	1.08
BLINDS, UPPER BARRIER	1.01	0.59	0.74	0.74	1.12	1.05
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.59	0.85	0.82	1.12	1.10
UP. & LO. LIT.SHELF, UP. BAR	1.01	0.66	0.77	0.76	1.12	1.03
UPPER BARRIER	1.01	0.84	0.77	0.78	1.12	1.03
UPPER LIGHT SHELF	1.00	0.79	0.87	0.86	1.12	1.10
UPPER LIGHT SHELF	1.01	0.75	0.72	0.72	1.15	1.05
BLINDS, UPPER LIGHT SHELF	1.01	0.54	0.82	0.82	1.19	1.15
SHADES, LOWER BARRIER	0.99	0.35	0.64	0.58	1.96	1.73
NORTH BARE WINDOW	1.01	0.76	1.33	1.22	2.08	1.78
SHADES, UPPER BARRIER	0.99	0.31	0.59	0.52	2.12	1.90
NORTH WIN., BLINDS	1.01	0.72	1.26	1.18	2.15	1.83
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.23	1.14	2.15	1.83
SHADES, LOWER LIGHT SHELF	0.99	0.45	0.77	0.72	2.15	1.78
SHADES, ALL BARRIERS	0.99	0.41	0.72	0.68	2.23	1.83
SHADES	0.99	0.48	0.82	0.76	2.27	1.85
SHADES, UPPER LIGHT SHELF	1.00	0.40	0.69	0.66	2.38	1.90
NORTH WIN., SHADES	0.99	0.54	0.97	0.86	2.69	2.05

Table 39.

AVERAGE LPR100 FOR ALL SKIES, DECEMBER

CONFIGURATION	VALUE (SORTED BY LPR100A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER BARRIER	1.00	0.96	0.82	0.84	1.04	0.95
ALL BARRIERS	1.00	0.89	0.92	0.94	1.00	0.98
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS, LOWER BARRIER	1.00	0.64	0.79	0.80	1.08	1.00
LO. LIT. SHELF, ALL BARRIERS	1.00	0.72	0.90	0.92	1.00	1.00
LO. LIT. SHELF, LO. BARRIER	1.00	0.78	0.79	0.80	1.08	1.00
BLINDS, ALL BARRIERS	1.00	0.65	0.90	0.90	1.04	1.03
LOWER LIGHT SHELF	1.00	0.79	0.95	0.94	1.04	1.03
UP. & LO. LIT.SHELF, UP. BAR	1.01	0.66	0.77	0.76	1.12	1.03
UPPER BARRIER	1.01	0.84	0.77	0.78	1.12	1.03
BLINDS	1.00	0.68	0.97	0.96	1.04	1.05
BLINDS, UPPER BARRIER	1.01	0.59	0.74	0.74	1.12	1.05
UPPER LIGHT SHELF	1.01	0.75	0.72	0.72	1.15	1.05
BLINDS, LOWER LIGHT SHELF	1.01	0.64	0.92	0.90	1.08	1.08
UP. LIT. SHELF, LO. BARRIER	1.00	0.81	0.90	0.90	1.08	1.08
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.59	0.85	0.82	1.12	1.10
UPPER LIGHT SHELF	1.00	0.79	0.87	0.86	1.12	1.10
BLINDS, UPPER LIGHT SHELF	1.01	0.54	0.82	0.82	1.19	1.15
SHADES, LOWER BARRIER	0.99	0.35	0.64	0.58	1.96	1.73
NORTH BARE WINDOW	1.01	0.76	1.33	1.22	2.08	1.78
SHADES, LOWER LIGHT SHELF	0.99	0.45	0.77	0.72	2.15	1.78
SHADES, UPPER BARRIER	0.99	0.31	0.59	0.52	2.12	1.80
NORTH WIN., BLINDS	1.01	0.72	1.26	1.16	2.15	1.83
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.23	1.14	2.15	1.83
SHADES, ALL BARRIERS	0.99	0.41	0.72	0.68	2.23	1.83
SHADES	0.99	0.48	0.82	0.76	2.27	1.85
SHADES, UPPER LIGHT SHELF	1.00	0.40	0.69	0.66	2.38	1.90
NORTH WIN., SHADES	0.99	0.54	0.97	0.86	2.69	2.05

Table 40.

AVERAGE CRF FOR CLEAR SKIES, JUNE

CONFIGURATION	VALUE (SORTED BY CRFA)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
BLINDS, UPPER BARRIER	1.03	1.24	1.08	1.06	0.70	0.90
UP. & LO. LIT.SHELF, UP. BAR	1.03	1.35	1.08	1.11	0.60	0.84
UPPER BARRIER	1.03	1.38	1.08	1.11	0.60	0.81
BLINDS, UPPER LIGHT SHELF	1.02	0.68	0.92	0.83	2.00	1.35
NORTH WIN., LO. LIT. SHELF	1.02	1.26	1.42	1.44	2.00	1.29
UPPER LIGHT SHELF	1.02	1.24	1.08	1.11	0.50	0.77
ALL BARRIERS	1.01	1.12	1.08	1.06	0.80	0.90
BLINDS	1.01	0.88	1.00	0.94	1.30	1.10
BLINDS, ALL BARRIERS	1.01	1.00	1.00	1.00	1.00	1.00
BLINDS, LOWER BARRIER	1.01	1.44	1.17	1.17	0.40	0.68
LO. LIT. SHELF, ALL BARRIERS	1.01	1.09	1.08	1.06	0.90	0.97
LO. LIT. SHELF, LO. BARRIER	1.01	1.53	1.08	1.17	0.50	0.71
LOWER BARRIER	1.01	1.59	1.17	1.22	0.30	0.55
UP. LIT. SHELF, LO. BARRIER	1.01	0.82	1.00	0.94	1.30	1.10
UPPER LIGHT SHELF	1.01	0.79	1.00	0.94	1.40	1.16
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS, LOWER LIGHT SHELF	1.00	0.91	1.00	0.94	1.40	1.10
LOWER LIGHT SHELF	1.00	1.00	1.00	1.00	1.20	1.03
NORTH BARE WINDOW	1.00	1.44	1.50	1.50	1.50	1.16
NORTH WIN., BLINDS	1.00	1.29	1.50	1.44	1.80	1.29
NORTH WIN., SHADES	1.00	0.56	1.08	0.94	4.00	1.90
SHADES	1.00	0.35	0.75	0.61	3.50	1.81
SHADES, ALL BARRIERS	1.00	0.32	0.67	0.56	3.70	1.87
SHADES, LOWER BARRIER	1.00	0.53	0.83	0.78	2.40	1.45
SHADES, UPPER BARRIER	1.00	0.44	0.75	0.67	3.00	1.68
SHADES, UPPER LIGHT SHELF	1.00	0.35	0.67	0.61	3.70	1.84
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.82	1.00	1.00	1.30	1.06
SHADES, LOWER LIGHT SHELF	0.97	0.50	0.83	0.72	2.60	1.48

Table 41.

AVERAGE TDR FOR CLEAR SKIES, JUNE

CONFIGURATION	VALUE (SORTED BY TDRA)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER BARRIER	1.01	1.59	1.17	1.22	0.30	0.55
LO. LIT. SHELF, LO. BARRIER	1.01	1.53	1.08	1.17	0.50	0.71
BLINDS, LOWER BARRIER	1.01	1.44	1.17	1.17	0.40	0.68
NORTH BARE WINDOW	1.00	1.44	1.50	1.50	1.50	1.16
UPPER BARRIER	1.03	1.38	1.08	1.11	0.60	0.81
UP. & LO. LIT.SHELF, UP. BAR	1.03	1.35	1.08	1.11	0.60	0.84
NORTH WIN., BLINDS	1.00	1.29	1.50	1.44	1.80	1.29
NORTH WIN., LO. LIT. SHELF	1.02	1.26	1.42	1.44	2.00	1.29
BLINDS, UPPER BARRIER	1.03	1.24	1.08	1.06	0.70	0.90
UPPER LIGHT SHELF	1.02	1.24	1.08	1.11	0.50	0.77
ALL BARRIERS	1.01	1.12	1.08	1.06	0.80	0.90
LO. LIT. SHELF, ALL BARRIERS	1.01	1.09	1.08	1.06	0.90	0.97
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS, ALL BARRIERS	1.01	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	1.00	1.00	1.00	1.00	1.20	1.03
BLINDS, LOWER LIGHT SHELF	1.00	0.91	1.00	0.94	1.40	1.10
BLINDS	1.01	0.88	1.00	0.94	1.30	1.10
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.82	1.00	1.00	1.30	1.06
UP. LIT. SHELF, LO. BARRIER	1.01	0.82	1.00	0.94	1.30	1.10
UPPER LIGHT SHELF	1.01	0.79	1.00	0.94	1.40	1.16
BLINDS, UPPER LIGHT SHELF	1.02	0.68	0.92	0.83	2.00	1.35
NORTH WIN., SHADES	1.00	0.56	1.08	0.94	4.00	1.90
SHADES, LOWER BARRIER	1.00	0.53	0.83	0.78	2.40	1.45
SHADES, LOWER LIGHT SHELF	0.97	0.50	0.83	0.72	2.60	1.48
SHADES, UPPER BARRIER	1.00	0.44	0.75	0.67	3.00	1.68
SHADES	1.00	0.35	0.75	0.61	3.50	1.81
SHADES, UPPER LIGHT SHELF	1.00	0.35	0.67	0.61	3.70	1.84
SHADES, ALL BARRIERS	1.00	0.32	0.67	0.56	3.70	1.87

Table 42.

AVERAGE UDR50 FOR CLEAR SKIES, JUNE

CONFIGURATION	VALUE (SORTED BY UDR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	1.00	1.44	1.50	1.50	1.50	1.16
NORTH WIN., BLINDS	1.00	1.29	1.50	1.44	1.80	1.29
NORTH WIN., LO. LIT. SHELF	1.02	1.26	1.42	1.44	2.00	1.29
BLINDS, LOWER BARRIER	1.01	1.44	1.17	1.17	0.40	0.68
LOWER BARRIER	1.01	1.59	1.17	1.22	0.30	0.55
ALL BARRIERS	1.01	1.12	1.08	1.06	0.80	0.90
BLINDS, UPPER BARRIER	1.03	1.24	1.08	1.06	0.70	0.90
LO. LIT. SHELF, ALL BARRIERS	1.01	1.09	1.08	1.06	0.90	0.97
LO. LIT. SHELF, LO. BARRIER	1.01	1.53	1.08	1.17	0.50	0.71
NORTH WIN., SHADES	1.00	0.56	1.08	0.94	4.00	1.90
UP. & LO. LIT.SHELF, UP. BAR	1.03	1.35	1.08	1.11	0.60	0.84
UPPER BARRIER	1.03	1.38	1.08	1.11	0.60	0.81
UPPER LIGHT SHELF	1.02	1.24	1.08	1.11	0.50	0.77
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.01	0.88	1.00	0.94	1.30	1.10
BLINDS, ALL BARRIERS	1.01	1.00	1.00	1.00	1.00	1.00
BLINDS, LOWER LIGHT SHELF	1.00	0.91	1.00	0.94	1.40	1.10
LOWER LIGHT SHELF	1.00	1.00	1.00	1.00	1.20	1.03
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.82	1.00	1.00	1.30	1.06
UP. LIT. SHELF, LO. BARRIER	1.01	0.82	1.00	0.94	1.30	1.10
UPPER LIGHT SHELF	1.01	0.79	1.00	0.94	1.40	1.16
BLINDS, UPPER LIGHT SHELF	1.02	0.68	0.92	0.83	2.00	1.35
SHADES, LOWER BARRIER	1.00	0.53	0.83	0.78	2.40	1.45
SHADES, LOWER LIGHT SHELF	0.97	0.50	0.83	0.72	2.60	1.48
SHADES	1.00	0.35	0.75	0.61	3.50	1.81
SHADES, UPPER BARRIER	1.00	0.44	0.75	0.67	3.00	1.68
SHADES, ALL BARRIERS	1.00	0.32	0.67	0.56	3.70	1.87
SHADES, UPPER LIGHT SHELF	1.00	0.35	0.67	0.61	3.70	1.84

Table 43.

AVERAGE UDR100 FOR CLEAR SKIES, JUNE

CONFIGURATION	VALUE (SORTED BY UDR100A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	1.00	1.44	1.50	1.50	1.50	1.16
NORTH WIN., BLINDS	1.00	1.29	1.50	1.44	1.80	1.29
NORTH WIN., LO. LIT. SHELF	1.02	1.26	1.42	1.44	2.00	1.29
LOWER BARRIER	1.01	1.59	1.17	1.22	0.30	0.55
BLINDS, LOWER BARRIER	1.01	1.44	1.17	1.17	0.40	0.68
LO. LIT. SHELF, LO. BARRIER	1.01	1.53	1.08	1.17	0.50	0.71
UP. & LO. LIT.SHELF, UP. BAR	1.03	1.35	1.08	1.11	0.60	0.84
UPPER BARRIER	1.03	1.38	1.08	1.11	0.60	0.81
UPPER LIGHT SHELF	1.02	1.24	1.08	1.11	0.50	0.77
ALL BARRIERS	1.01	1.12	1.08	1.06	0.80	0.90
BLINDS, UPPER BARRIER	1.03	1.24	1.08	1.06	0.70	0.90
LO. LIT. SHELF, ALL BARRIERS	1.01	1.09	1.08	1.06	0.90	0.97
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS, ALL BARRIERS	1.01	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	1.00	1.00	1.00	1.00	1.20	1.03
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.82	1.00	1.00	1.30	1.06
BLINDS	1.01	0.88	1.00	0.94	1.30	1.10
BLINDS, LOWER LIGHT SHELF	1.00	0.91	1.00	0.94	1.40	1.10
NORTH WIN., SHADES	1.00	0.56	1.08	0.94	4.00	1.90
UP. LIT. SHELF, LO. BARRIER	1.01	0.82	1.00	0.94	1.30	1.10
UPPER LIGHT SHELF	1.01	0.79	1.00	0.94	1.40	1.16
BLINDS, UPPER LIGHT SHELF	1.02	0.68	0.92	0.83	2.00	1.35
SHADES, LOWER BARRIER	1.00	0.53	0.83	0.78	2.40	1.45
SHADES, LOWER LIGHT SHELF	0.97	0.50	0.83	0.72	2.60	1.48
SHADES, UPPER BARRIER	1.00	0.44	0.75	0.67	3.00	1.68
SHADES	1.00	0.35	0.75	0.61	3.50	1.81
SHADES, UPPER LIGHT SHELF	1.00	0.35	0.67	0.61	3.70	1.84
SHADES, ALL BARRIERS	1.00	0.32	0.67	0.56	3.70	1.87

Table 44.

AVERAGE LPR50 FOR CLEAR SKIES, JUNE

CONFIGURATION	VALUE (SORTED BY LPR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER BARRIER	1.01	1.59	1.17	1.22	0.30	0.55
BLINDS, LOWER BARRIER	1.01	1.44	1.17	1.17	0.40	0.68
LO. LIT. SHELF, LO. BARRIER	1.01	1.53	1.08	1.17	0.50	0.71
UPPER LIGHT SHELF	1.02	1.24	1.08	1.11	0.50	0.77
UP. & LO. LIT.SHELF, UP. BAR	1.03	1.35	1.08	1.11	0.60	0.84
UPPER BARRIER	1.03	1.38	1.08	1.11	0.60	0.81
BLINDS, UPPER BARRIER	1.03	1.24	1.08	1.06	0.70	0.90
ALL BARRIERS	1.01	1.12	1.08	1.06	0.80	0.90
LO. LIT. SHELF, ALL BARRIERS	1.01	1.09	1.08	1.06	0.90	0.97
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS, ALL BARRIERS	1.01	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	1.00	1.00	1.00	1.00	1.20	1.03
BLINDS	1.01	0.88	1.00	0.94	1.30	1.10
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.82	1.00	1.00	1.30	1.06
UP. LIT. SHELF, LO. BARRIER	1.01	0.82	1.00	0.94	1.30	1.10
BLINDS, LOWER LIGHT SHELF	1.00	0.91	1.00	0.94	1.40	1.10
UPPER LIGHT SHELF	1.01	0.79	1.00	0.94	1.40	1.16
NORTH BARE WINDOW	1.00	1.44	1.50	1.50	1.50	1.16
NORTH WIN., BLINDS	1.00	1.29	1.50	1.44	1.80	1.29
BLINDS, UPPER LIGHT SHELF	1.02	0.68	0.92	0.83	2.00	1.35
NORTH WIN., LO. LIT. SHELF	1.02	1.26	1.42	1.44	2.00	1.29
SHADES, LOWER BARRIER	1.00	0.53	0.83	0.78	2.40	1.45
SHADES, LOWER LIGHT SHELF	0.97	0.50	0.83	0.72	2.60	1.48
SHADES, UPPER BARRIER	1.00	0.44	0.75	0.67	3.00	1.68
SHADES	1.00	0.35	0.75	0.61	3.50	1.81
SHADES, ALL BARRIERS	1.00	0.32	0.67	0.56	3.70	1.87
SHADES, UPPER LIGHT SHELF	1.00	0.35	0.67	0.61	3.70	1.84
NORTH WIN., SHADES	1.00	0.56	1.08	0.94	4.00	1.90

Table 45.

AVERAGE LPR100 FOR CLEAR SKIES, JUNE

CONFIGURATION	VALUE (SORTED BY LPR100A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER BARRIER	1.01	1.59	1.17	1.22	0.30	0.55
BLINDS, LOWER BARRIER	1.01	1.44	1.17	1.17	0.40	0.68
LO. LIT. SHELF, LO. BARRIER	1.01	1.53	1.08	1.17	0.50	0.71
UPPER LIGHT SHELF	1.02	1.24	1.08	1.11	0.50	0.77
UPPER BARRIER	1.03	1.38	1.08	1.11	0.60	0.81
UP. & LO. LIT.SHELF, UP. BAR	1.03	1.35	1.08	1.11	0.60	0.84
ALL BARRIERS	1.01	1.12	1.08	1.06	0.80	0.90
BLINDS, UPPER BARRIER	1.03	1.24	1.08	1.06	0.70	0.90
LO. LIT. SHELF, ALL BARRIERS	1.01	1.09	1.08	1.06	0.90	0.97
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS, ALL BARRIERS	1.01	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	1.00	1.00	1.00	1.00	1.20	1.03
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.82	1.00	1.00	1.30	1.06
BLINDS	1.01	0.88	1.00	0.94	1.30	1.10
BLINDS, LOWER LIGHT SHELF	1.00	0.91	1.00	0.94	1.40	1.10
UP. LIT. SHELF, LO. BARRIER	1.01	0.82	1.00	0.94	1.30	1.10
NORTH BARE WINDOW	1.00	1.44	1.50	1.50	1.50	1.16
UPPER LIGHT SHELF	1.01	0.79	1.00	0.94	1.40	1.16
NORTH WIN., BLINDS	1.00	1.29	1.50	1.44	1.80	1.29
NORTH WIN., LO. LIT. SHELF	1.02	1.26	1.42	1.44	2.00	1.29
BLINDS, UPPER LIGHT SHELF	1.02	0.68	0.92	0.83	2.00	1.35
SHADES, LOWER BARRIER	1.00	0.53	0.83	0.78	2.40	1.45
SHADES, LOWER LIGHT SHELF	0.97	0.50	0.83	0.72	2.60	1.48
SHADES, UPPER BARRIER	1.00	0.44	0.75	0.67	3.00	1.68
SHADES	1.00	0.35	0.75	0.61	3.50	1.81
SHADES, UPPER LIGHT SHELF	1.00	0.35	0.67	0.61	3.70	1.84
SHADES, ALL BARRIERS	1.00	0.32	0.67	0.56	3.70	1.87
NORTH WIN., SHADES	1.00	0.56	1.08	0.94	4.00	1.90

Table 46.

AVERAGE CRF FOR CLEAR SKIES, DECEMBER

CONFIGURATION	VALUE (SORTED BY CRFA)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.95	1.14	1.28	0.79	0.79
BLINDS, UPPER BARRIER	1.01	0.82	1.14	1.21	0.83	0.86
UPPER BARRIER	1.01	1.18	1.18	1.28	0.79	0.77
UPPER LIGHT SHELF	1.01	1.08	1.14	1.24	0.83	0.81
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.55	0.95	0.93	1.08	1.07
BLINDS, ALL BARRIERS	1.00	0.66	1.05	1.07	0.96	0.95
BLINDS, LOWER BARRIER	1.00	0.90	1.18	1.31	0.75	0.77
BLINDS, LOWER LIGHT SHELF	1.00	0.53	0.91	0.86	1.17	1.12
BLINDS, UPPER LIGHT SHELF	1.00	0.45	0.86	0.79	1.25	1.19
LO. LIT. SHELF, LO. BARRIER	1.00	1.11	1.18	1.34	0.75	0.74
LOWER BARRIER	1.00	1.39	1.23	1.38	0.71	0.70
LOWER LIGHT SHELF	1.00	0.74	0.95	0.97	1.04	1.05
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.64	1.48	2.50	1.72
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.55	0.91	0.83	1.13	1.09
UP. LIT. SHELF, LO. BARRIER	1.00	0.81	0.95	0.90	1.04	1.05
UPPER LIGHT SHELF	1.00	0.79	0.91	0.86	1.08	1.09
ALL BARRIERS	0.99	1.00	1.09	1.17	0.98	0.88
LO. LIT. SHELF, ALL BARRIERS	0.99	0.94	1.18	1.28	0.75	0.81
NORTH BARE WINDOW	0.98	0.77	1.73	1.59	2.38	1.67
NORTH WIN., BLINDS	0.98	0.69	1.59	1.45	2.50	1.72
NORTH WIN., SHADES	0.97	0.29	0.82	0.62	3.21	2.05
SHADES	0.97	0.18	0.45	0.38	2.50	1.74
SHADES, ALL BARRIERS	0.97	0.19	0.45	0.41	2.42	1.70
SHADES, LOWER BARRIER	0.97	0.29	0.64	0.55	1.92	1.51
SHADES, LOWER LIGHT SHELF	0.97	0.18	0.45	0.38	2.46	1.70
SHADES, UPPER BARRIER	0.97	0.24	0.59	0.52	2.13	1.58
SHADES, UPPER LIGHT SHELF	0.97	0.18	0.41	0.38	2.58	1.74

Table 47.

AVERAGE TDR FOR CLEAR SKIES, DECEMBER

CONFIGURATION	VALUE (SORTED BY TDRA)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER BARRIER	1.00	1.39	1.23	1.38	0.71	0.70
UPPER BARRIER	1.01	1.18	1.18	1.28	0.79	0.77
LO. LIT. SHELF, LO. BARRIER	1.00	1.11	1.18	1.34	0.75	0.74
UPPER LIGHT SHELF	1.01	1.08	1.14	1.24	0.83	0.81
ALL BARRIERS	0.99	1.00	1.09	1.17	0.88	0.88
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.95	1.14	1.28	0.79	0.79
LO. LIT. SHELF, ALL BARRIERS	0.99	0.94	1.18	1.28	0.75	0.81
BLINDS, LOWER BARRIER	1.00	0.90	1.18	1.31	0.75	0.77
BLINDS, UPPER BARRIER	1.01	0.82	1.14	1.21	0.83	0.86
UP. LIT. SHELF, LO. BARRIER	1.00	0.81	0.95	0.90	1.04	1.05
UPPER LIGHT SHELF	1.00	0.79	0.91	0.86	1.08	1.09
NORTH BARE WINDOW	0.98	0.77	1.73	1.59	2.38	1.67
LOWER LIGHT SHELF	1.00	0.74	0.95	0.97	1.04	1.05
NORTH WIN., BLINDS	0.98	0.69	1.59	1.45	2.50	1.72
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.64	1.48	2.50	1.72
BLINDS, ALL BARRIERS	1.00	0.66	1.05	1.07	0.96	0.95
BLINDS	1.00	0.55	0.95	0.93	1.08	1.07
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.55	0.91	0.83	1.13	1.09
BLINDS, LOWER LIGHT SHELF	1.00	0.53	0.91	0.86	1.17	1.12
BLINDS, UPPER LIGHT SHELF	1.00	0.45	0.86	0.79	1.25	1.19
NORTH WIN., SHADES	0.97	0.29	0.82	0.62	3.21	2.05
SHADES, LOWER BARRIER	0.97	0.29	0.64	0.55	1.92	1.51
SHADES, UPPER BARRIER	0.97	0.24	0.59	0.52	2.13	1.58
SHADES, ALL BARRIERS	0.97	0.19	0.45	0.41	2.42	1.70
SHADES	0.97	0.18	0.45	0.38	2.50	1.74
SHADES, LOWER LIGHT SHELF	0.97	0.18	0.45	0.38	2.46	1.70
SHADES, UPPER LIGHT SHELF	0.97	0.18	0.41	0.38	2.58	1.74

Table 48.

AVERAGE UDR50 FOR CLEAR SKIES, DECEMBER

CONFIGURATION	VALUE (SORTED BY UDR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	0.98	0.77	1.73	1.59	2.38	1.67
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.64	1.48	2.50	1.72
NORTH WIN., BLINDS	0.98	0.69	1.59	1.45	2.50	1.72
LOWER BARRIER	1.00	1.39	1.23	1.38	0.71	0.70
BLINDS, LOWER BARRIER	1.00	0.90	1.18	1.31	0.75	0.77
LO. LIT. SHELF, ALL BARRIERS	0.99	0.94	1.18	1.28	0.75	0.81
LO. LIT. SHELF, LO. BARRIER	1.00	1.11	1.18	1.34	0.75	0.74
UPPER BARRIER	1.01	1.18	1.18	1.28	0.79	0.77
BLINDS, UPPER BARRIER	1.01	0.82	1.14	1.21	0.83	0.86
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.95	1.14	1.28	0.79	0.79
UPPER LIGHT SHELF	1.01	1.08	1.14	1.24	0.83	0.81
ALL BARRIERS	0.99	1.00	1.09	1.17	0.88	0.88
BLINDS, ALL BARRIERS	1.00	0.66	1.05	1.07	0.96	0.95
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
BLINDS	1.00	0.55	0.95	0.93	1.08	1.07
LOWER LIGHT SHELF	1.00	0.74	0.95	0.97	1.04	1.05
UP. LIT. SHELF, LO. BARRIER	1.00	0.81	0.95	0.90	1.04	1.05
BLINDS, LOWER LIGHT SHELF	1.00	0.53	0.91	0.86	1.17	1.12
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.55	0.91	0.83	1.13	1.09
UPPER LIGHT SHELF	1.00	0.79	0.91	0.86	1.08	1.09
BLINDS, UPPER LIGHT SHELF	1.00	0.45	0.86	0.79	1.25	1.19
NORTH WIN., SHADES	0.97	0.29	0.82	0.62	3.21	2.05
SHADES, LOWER BARRIER	0.97	0.29	0.64	0.55	1.92	1.51
SHADES, UPPER BARRIER	0.97	0.24	0.59	0.52	2.13	1.58
SHADES	0.97	0.18	0.45	0.38	2.50	1.74
SHADES, ALL BARRIERS	0.97	0.19	0.45	0.41	2.42	1.70
SHADES, LOWER LIGHT SHELF	0.97	0.18	0.45	0.38	2.46	1.70
SHADES, UPPER LIGHT SHELF	0.97	0.18	0.41	0.38	2.58	1.74

Table 49.

AVERAGE UDR100 FOR CLEAR SKIES, DECEMBER

CONFIGURATION	VALUE (SORTED BY UDR100A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
NORTH BARE WINDOW	0.98	0.77	1.73	1.59	2.38	1.67
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.64	1.48	2.50	1.72
NORTH WIN., BLINDS	0.98	0.69	1.59	1.45	2.50	1.72
LOWER BARRIER	1.00	1.39	1.23	1.38	0.71	0.70
LO. LIT. SHELF, LO. BARRIER	1.00	1.11	1.18	1.34	0.75	0.74
BLINDS, LOWER BARRIER	1.00	0.90	1.18	1.31	0.75	0.77
LO. LIT. SHELF, ALL BARRIERS	0.99	0.94	1.18	1.28	0.75	0.81
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.95	1.14	1.28	0.79	0.79
UPPER BARRIER	1.01	1.18	1.18	1.28	0.79	0.77
UPPER LIGHT SHELF	1.01	1.08	1.14	1.24	0.83	0.81
BLINDS, UPPER BARRIER	1.01	0.82	1.14	1.21	0.83	0.86
ALL BARRIERS	0.99	1.00	1.09	1.17	0.88	0.88
BLINDS, ALL BARRIERS	1.00	0.66	1.05	1.07	0.96	0.95
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	1.00	0.74	0.95	0.97	1.04	1.05
BLINDS	1.00	0.55	0.95	0.93	1.08	1.07
UP. LIT. SHELF, LO. BARRIER	1.00	0.81	0.95	0.90	1.04	1.05
BLINDS, LOWER LIGHT SHELF	1.00	0.53	0.91	0.86	1.17	1.12
UPPER LIGHT SHELF	1.00	0.79	0.91	0.86	1.08	1.09
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.55	0.91	0.83	1.13	1.09
BLINDS, UPPER LIGHT SHELF	1.00	0.45	0.86	0.79	1.25	1.19
NORTH WIN., SHADES	0.97	0.29	0.82	0.62	3.21	2.05
SHADES, LOWER BARRIER	0.97	0.29	0.64	0.55	1.92	1.51
SHADES, UPPER BARRIER	0.97	0.24	0.59	0.52	2.13	1.58
SHADES, ALL BARRIERS	0.97	0.19	0.45	0.41	2.42	1.70
SHADES	0.97	0.18	0.45	0.38	2.50	1.74
SHADES, LOWER LIGHT SHELF	0.97	0.18	0.45	0.38	2.46	1.70
SHADES, UPPER LIGHT SHELF	0.97	0.18	0.41	0.38	2.58	1.74

Table 50.

AVERAGE LPR50 FOR CLEAR SKIES, DECEMBER

CONFIGURATION	VALUE (SORTED BY LPR50A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER BARRIER	1.00	1.39	1.23	1.38	0.71	0.70
BLINDS, LOWER BARRIER	1.00	0.90	1.18	1.31	0.75	0.77
LO. LIT. SHELF, ALL BARRIERS	0.99	0.94	1.18	1.28	0.75	0.81
LO. LIT. SHELF, LO. BARRIER	1.00	1.11	1.18	1.34	0.75	0.74
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.95	1.14	1.28	0.79	0.79
UPPER BARRIER	1.01	1.18	1.18	1.28	0.79	0.77
BLINDS, UPPER BARRIER	1.01	0.82	1.14	1.21	0.83	0.86
UPPER LIGHT SHELF	1.01	1.08	1.14	1.24	0.83	0.81
ALL BARRIERS	0.99	1.00	1.09	1.17	0.88	0.88
BLINDS, ALL BARRIERS	1.00	0.66	1.05	1.07	0.96	0.95
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	1.00	0.74	0.95	0.97	1.04	1.05
UP. LIT. SHELF, LO. BARRIER	1.00	0.81	0.95	0.90	1.04	1.05
BLINDS	1.00	0.55	0.95	0.93	1.08	1.07
UPPER LIGHT SHELF	1.00	0.79	0.91	0.86	1.08	1.09
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.55	0.91	0.83	1.13	1.09
BLINDS, LOWER LIGHT SHELF	1.00	0.53	0.91	0.86	1.17	1.12
BLINDS, UPPER LIGHT SHELF	1.00	0.45	0.86	0.79	1.25	1.19
SHADES, LOWER BARRIER	0.97	0.29	0.64	0.55	1.92	1.51
SHADES, UPPER BARRIER	0.97	0.24	0.59	0.52	2.13	1.58
NORTH BARE WINDOW	0.98	0.77	1.73	1.59	2.38	1.67
SHADES, ALL BARRIERS	0.97	0.19	0.45	0.41	2.42	1.70
SHADES, LOWER LIGHT SHELF	0.97	0.18	0.45	0.38	2.46	1.70
NORTH WIN., BLINDS	0.98	0.69	1.59	1.45	2.50	1.72
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.64	1.48	2.50	1.72
SHADES	0.97	0.18	0.45	0.38	2.50	1.74
SHADES, UPPER LIGHT SHELF	0.97	0.18	0.41	0.38	2.58	1.74
NORTH WIN., SHADES	0.97	0.29	0.82	0.62	3.21	2.05

Table 51.

AVERAGE LPR100 FOR CLEAR SKIES, DECEMBER

CONFIGURATION	VALUE (SORTED BY LPR100A)					
	CRFA	TDRA	UDR50A	UDR100A	LPR50A	LPR100A
LOWER BARRIER	1.00	1.39	1.23	1.38	0.71	0.70
LO. LIT. SHELF, LO. BARRIER	1.00	1.11	1.18	1.34	0.75	0.74
BLINDS, LOWER BARRIER	1.00	0.90	1.18	1.31	0.75	0.77
UPPER BARRIER	1.01	1.18	1.18	1.28	0.79	0.77
UP. & LO. LIT.SHELF, UP. BAR	1.02	0.95	1.14	1.28	0.79	0.79
LO. LIT. SHELF, ALL BARRIERS	0.99	0.94	1.18	1.28	0.75	0.81
UPPER LIGHT SHELF	1.01	1.08	1.14	1.24	0.83	0.81
BLINDS, UPPER BARRIER	1.01	0.82	1.14	1.21	0.83	0.86
ALL BARRIERS	0.99	1.00	1.09	1.17	0.88	0.88
BLINDS, ALL BARRIERS	1.00	0.66	1.05	1.07	0.96	0.95
BARE WINDOW	1.00	1.00	1.00	1.00	1.00	1.00
LOWER LIGHT SHELF	1.00	0.74	0.95	0.97	1.04	1.05
UP. LIT. SHELF, LO. BARRIER	1.00	0.81	0.95	0.90	1.04	1.05
BLINDS	1.00	0.55	0.95	0.93	1.08	1.07
UP. & LO. LIT.SHELF, LO. BAR	1.00	0.55	0.91	0.83	1.13	1.09
UPPER LIGHT SHELF	1.00	0.79	0.91	0.86	1.08	1.09
BLINDS, LOWER LIGHT SHELF	1.00	0.53	0.91	0.86	1.17	1.12
BLINDS, UPPER LIGHT SHELF	1.00	0.45	0.86	0.79	1.25	1.19
SHADES, LOWER BARRIER	0.97	0.29	0.64	0.55	1.92	1.51
SHADES, UPPER BARRIER	0.97	0.24	0.59	0.52	2.13	1.58
NORTH BARE WINDOW	0.98	0.77	1.73	1.59	2.38	1.67
SHADES, ALL BARRIERS	0.97	0.19	0.45	0.41	2.42	1.70
SHADES, LOWER LIGHT SHELF	0.97	0.18	0.45	0.38	2.46	1.70
NORTH WIN., BLINDS	0.98	0.69	1.59	1.45	2.50	1.72
NORTH WIN., LO. LIT. SHELF	1.00	0.69	1.64	1.48	2.50	1.72
SHADES	0.97	0.18	0.45	0.38	2.50	1.74
SHADES, UPPER LIGHT SHELF	0.97	0.18	0.41	0.38	2.58	1.74
NORTH WIN., SHADES	0.97	0.29	0.82	0.62	3.21	2.05

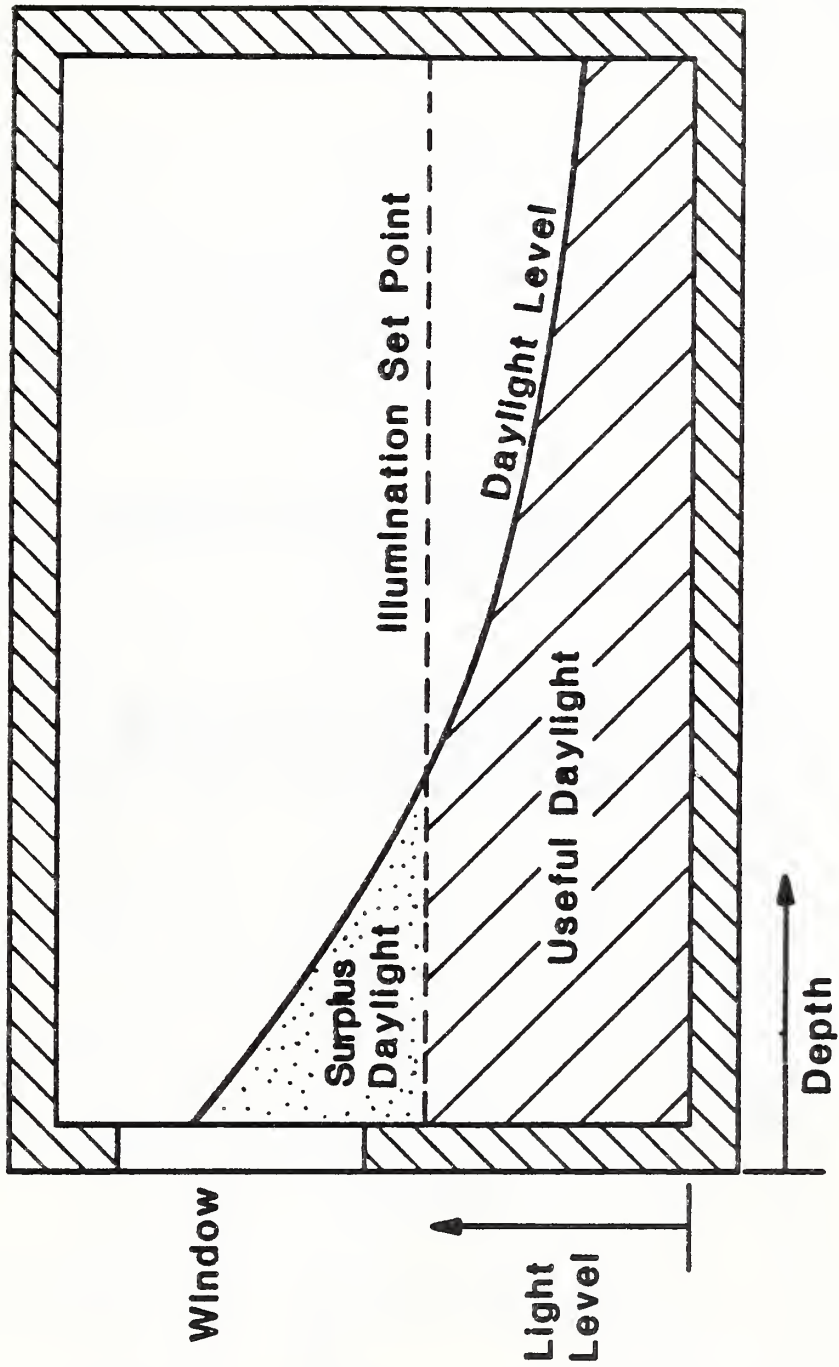
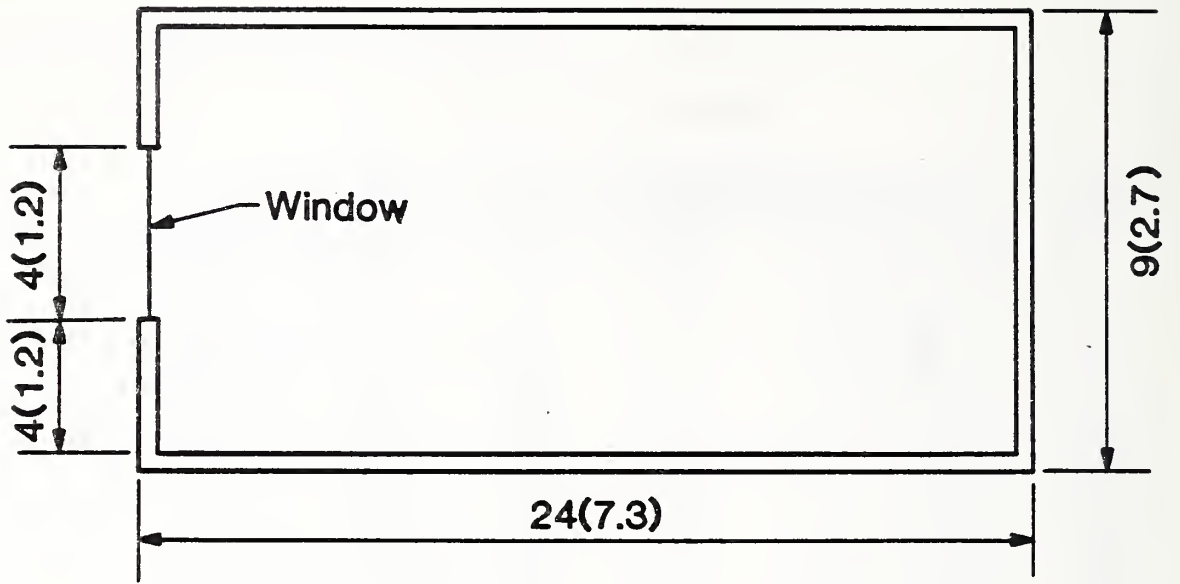


Figure 1. Daylight distribution and useful daylight in a building space with a window



Dimensions in feet (meters)
Not to scale

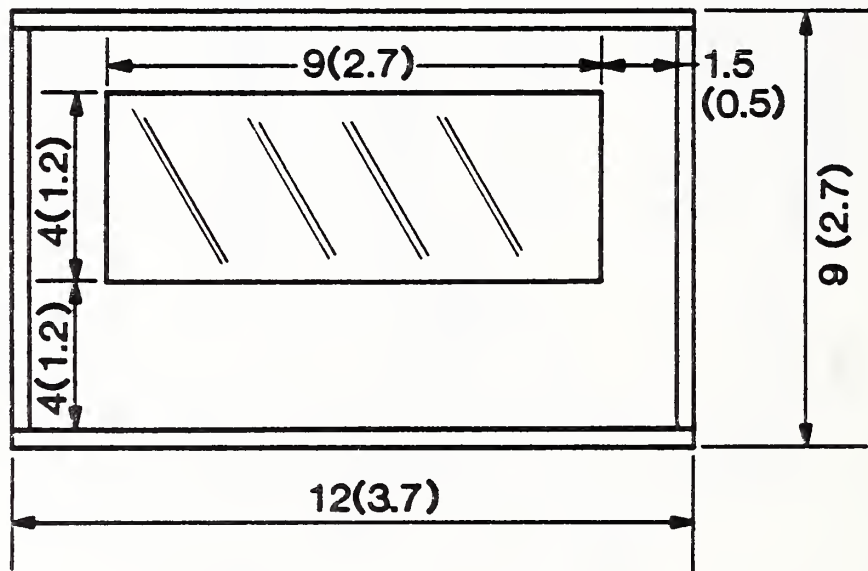


Figure 2. Layout of simulated building

Bare Window

Blinds

Shade

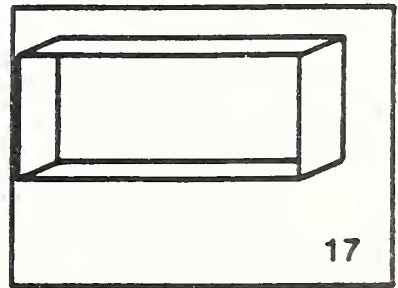
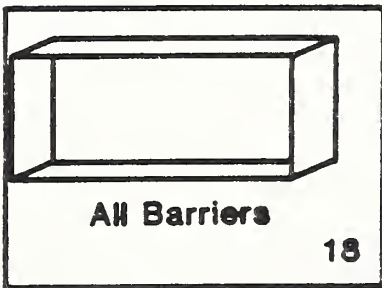
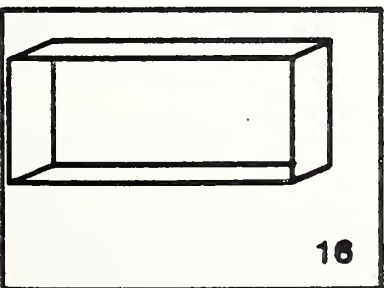
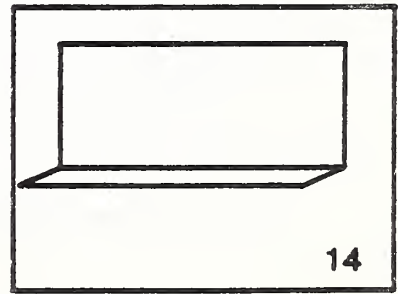
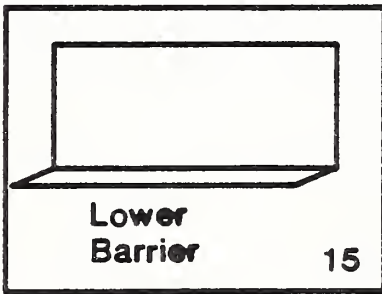
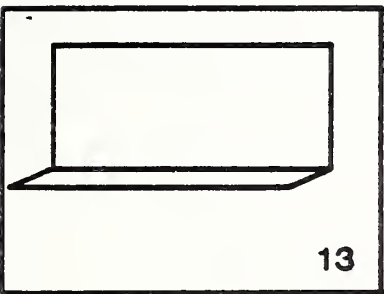
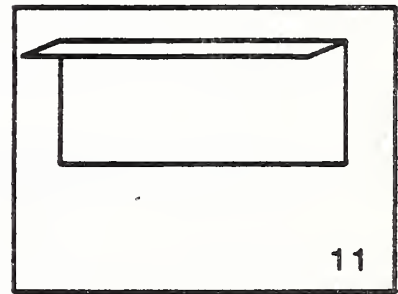
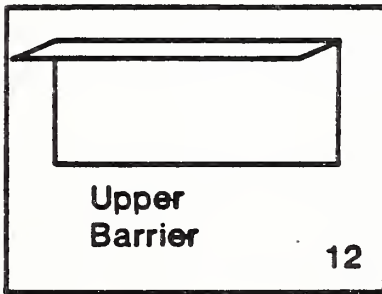
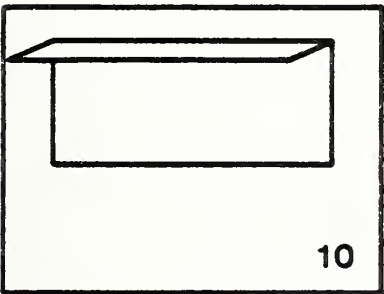
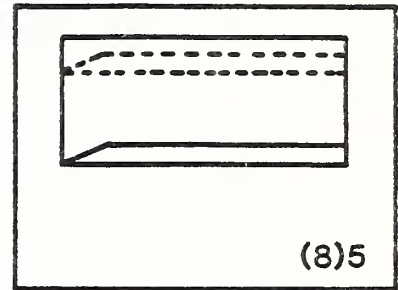
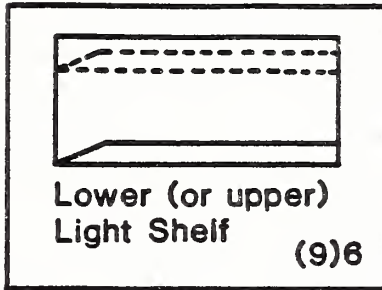
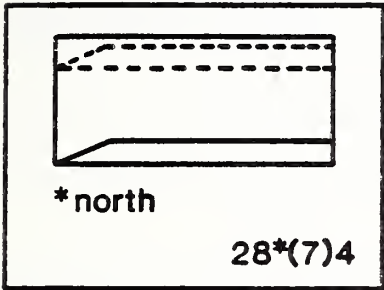
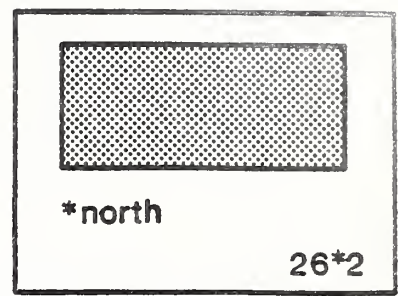
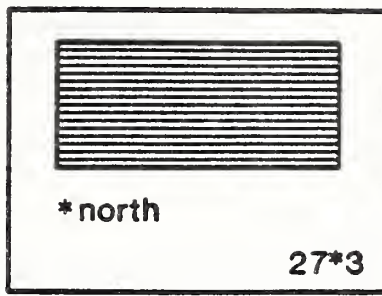
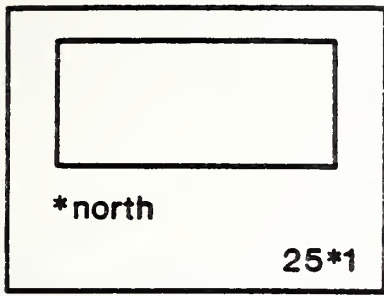


Figure 3a. Fenestration types

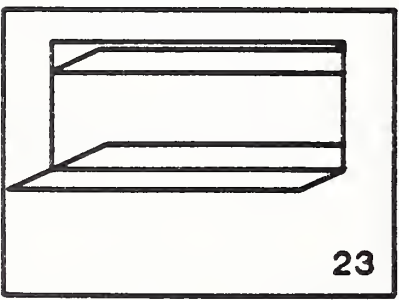
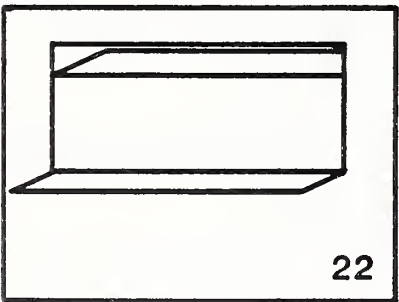
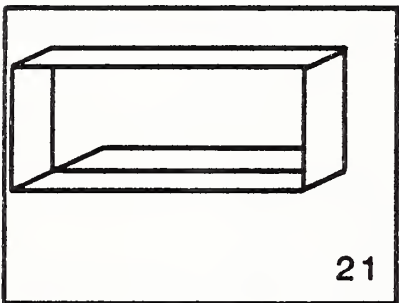
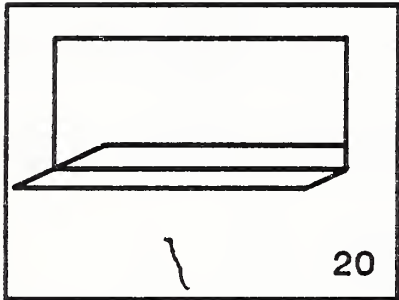
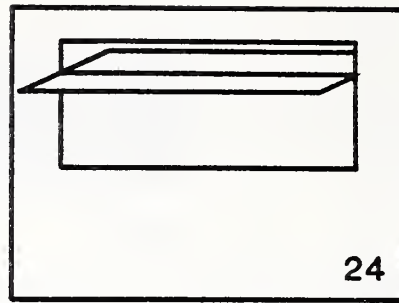
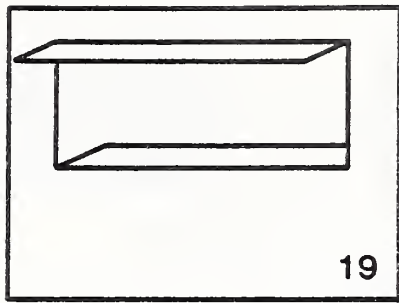


Figure 3b. Fenestration types

U.S. DEPT. OF COMM. BIBLIOGRAPHIC DATA SHEET (See instructions)		1. PUBLICATION OR REPORT NO. NBSIR 86-3489	2. Performing Organ. Report No.	3. Publication Date FEBRUARY 1987
4. TITLE AND SUBTITLE Fenestration Design for Office and Residential Buildings				
5. AUTHOR(S) Stephen J. Treado and Douglas B. Holland				
6. PERFORMING ORGANIZATION (If joint or other than NBS, see instructions) NATIONAL BUREAU OF STANDARDS DEPARTMENT OF COMMERCE WASHINGTON, D.C. 20234			7. Contract/Grant No.	8. Type of Report & Period Covered
9. SPONSORING ORGANIZATION NAME AND COMPLETE ADDRESS (Street, City, State, ZIP) Naval Civil Engineering Laboratory Port Hueneme, CA				
10. SUPPLEMENTARY NOTES <input type="checkbox"/> Document describes a computer program; SF-185, FIPS Software Summary, is attached.				
11. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here) The influence of fenestration design on energy performance and illumination conditions in office and residential buildings is examined, and recommendations are given for effective design of fenestration systems to meet occupant requirements. Particular emphasis is given to various shading strategies, such as blinds, shades, light shelves and fins, and their impacts on interior daylight levels and distribution, illumination quality, and energy requirements. A comparison is made between the total daylight gain into the building and the useful daylight gain, where useful daylight is defined as daylight which can be used to offset electric lighting requirements. Significant improvements in daylighting, lighting and thermal performance are shown to be possible with various fenestration designs.				
12. KEY WORDS (Six to twelve entries; alphabetical order; capitalize only proper names; and separate key words by semicolons) contrast, daylighting, energy performance, illumination, shading, solar gain				
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