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WHY UMBRELLA?

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WHY UMBRELLA?

In recent years, umbrella bounce lighting has become increasingly popular in almost every phase of electronic flash photography. Although no particular lighting technique will solve all your lighting problems, umbrella bounce light has true merits which you may find very useful.

The purpose of this report is to familiarize you with answers to the questions most often asked us concerning umbrella bounce lighting. We hope you will find this information valuable for your particular type of electronic flash photography.

Your questions and suggestions are always appreciated at Norman Enterprises, for they enable us to improve our products and to meet your continually changing needs.

WHAT ARE SOME OF THE ADVANTAGES OF UMBRELLA BOUNCE LIGHTING OVER DIRECT LIGHTING

Umbrella bounce light is a softer light than most direct light. This soft effect can be created in ways other than umbrella bounce, but in most cases the other methods are not as portable or as practical as umbrellas. For example, many soft light lampheads or bounce flats are too large to use on location; also, wall and ceiling color encountered on location are not always correct for bouncing light.

This soft light is generally desirable for high key photography where shadow areas are kept to a minimum. Much of today's low key portrait photography is done with umbrella bounce light because light placement is uncomplicated and skin tones are quite flattering.

Umbrella bounce light produces a larger, more even angle of coverage than most direct light units. This can mean that light placement is less critical, especially in situations such as fashion and some commercial photography where your subject is moving over a given area.

Umbrella bounce light tends to wrap around the subject and in many instances, this reduces the number of lights required to create a particular effect. Also, umbrellas can be utilized to simulate the "north-



UMBRELLA BOUNCE LIGHT TENDS TO WRAP AROUND THE SUBJECT. Fig. 1

light" effect and thereby minimize retouching.

In small shooting areas where you are not able to move direct light equipment back far enough to obtain adequate depth of light, umbrella bounce light is especially handy. Maximum depth of light penetration is possible because the light fall-off (inverse square law) is measured from the light to the umbrella, then back to the subject.



Fig. 2 10' FROM LIGHT TO SUBJECT YOU NEED AN 8' SPACE.

Fig. 3 10' FROM LIGHT TO SUBJECT YOU NEED A 10' SPACE.

WHAT ARE SOME OF THE DISADVANTAGES OF UMBRELLA BOUNCE LIGHTING OVER DIRECT LIGHTING?

In situations where depth of field is to be maintained, umbrella bounce lighting generally requires more light output from your electronic flash unit than you need when using direct light. This is due to the light losses in the umbrella fabric as well to the increased angle of coverage obtained from bouncing the light. In many cases this means that the electronic flash equipment you need will cost more because of the additional power required to work at a given f stop. However, since you may not require as many lampheads to create a particular effect, your overall investment in equipment may be similar for a direct or umbrella bounce system.

Umbrella light is not practical for many situations where a high degree of contrast and control is needed. This would be the case when using barn doors, snoots, spot lights, etc. However, in many of these instances, umbrella lighting may still be utilized as a fill light source. Umbrella lighting does not lend itself to situations such as outdoor shooting on windy days, or to candid work where you have neither time nor space to set up a light stand and umbrella assembly.

In some cases modeling lights are not bright enough for use in umbrellas and it is difficult to compose lighting and focus the camera. This problem has been solved in many instances by the use of high powered quartz modeling lamps.

CHOOSING THE PROPER UMBRELLA

There are round umbrellas, square umbrellas, white umbrellas, silver umbrellas, large umbrellas, small umbrellas, umbrellas designed to change color balance, and every combination imaginable. We have no stock answer designed to recommend which one you need, but rather feel an intelligent decision should take into consideration the equipment you will be using and the effect you desire in your photography.

WHAT ABOUT ROUND UMBRELLAS?

Round umbrellas produce round catch lights. In most cases the catch light looks completely normal. It is sometimes possible to see the actual shape of the umbrella perimeter in the catch light. This could be desirable or undesirable. It's all a matter of personal preference.

Round umbrellas generally have curved ribs. The angle of reflection is less near the edges of the curved ribs than it would be near the edges of flat ribs, thus you get a greater wrap around effect than with flat ribbed umbrellas. This added wrap around effect is very desirable for color portraiture. The resulting soft light requires little or no fill light, depending on the desired effect. The curved ribs also enable you to feather the light with more control than with flat ribbed umbrellas, because the angle of coverage has a more defined cut off point.



Fig. 4 CURVED RIBS WRAP THE LIGHT AROUND THE SUBJECT

In some round umbrellas, the curved ribs can cause the reflected light to produce a focal point. This focal point could be undesirable when using the umbrella at a distance from the subject equal to the focal length of the umbrella-light combination. Testing your umbrella to make sure this is not a problem will enable you to utilize the umbrella to your best advantage. The umbrella focal point is more noticeable in silver umbrellas with non-textured fabrics because this type fabric produces a harsher light. Harshness depends both on the fabric texture and the reflection quality of the material. It varies with each umbrella type.





HOW ABOUT SQUARE UMBRELLAS?

Square umbrellas produce square catch lights. Some photographers like square catch lights because it looks like the reflection from window light. On the other hand, some photographers object to square catch lights. It's strictly up to your personal preference.

Square umbrellas generally have flat ribs. Since the angle of reflection is equal to the angle of incidence, the light pattern produced by a fully opened flat ribbed umbrella has no apparent focal point, and thus produces a more even angle of coverage than curved ribbed umbrellas.



FULLY OPENED UMBRELLA WIDER ANGLE OF COVERAGE SOFTER LIGHT OUTPUT



Fig. 7 CLOSED DOWN UMBRELLA LESS COVERAGE MORE LIGHT OUTPUT

Many square umbrellas can be opened to various degrees, permitting the reflected angle of coverage and the light output to be controlled at a given distance. Opening the umbrella widens the angle of coverage and lowers the light output. Closing down the umbrella narrows the angle of coverage, increases the light output, and produces a more harsh effect.

WHAT ABOUT WHITE UMBRELLAS?

White umbrellas produce a softer light than do silver umbrellas of comparable size.

We have found the light loss with most white umbrellas to be approximately 2f stops less than direct light. These figures are based on white umbrellas powered by an average studio lamphead containing an average reflector. Our definition of an average reflector is one producing a 10 to 1 light output ratio and having an included angle of 60° coverage. This 10 to 1 ratio simply means that the reflector produces 3f stops more light than the same lamphead would on bare bulb operation.

Many white umbrellas utilize translucent fabrics. Thus some of the light will filter through the umbrella as well as reflect from it. This can be an advantage if the umbrella is placed directly in front of a bounce flat, wall or corner: the additional light reflected from the bounce flat, wall or corner may produce an even softer lighting quality. The translucent fabric can also be a disadvantage in situations where the camera is located behind the umbrella: filtered light could strike the camera lens and cause flare. With umbrella lighting it is desirable to use a lens shade to prevent flare.





Fig. 9

TRANSLUCENT FABRIC

FILTERED LIGHT MAY CAUSE FLARE.

ADDITIONAL LIGHT REFLECTED FROM WALL AIDS SOFT LIGHTING QUALITY.

HOW ABOUT SILVER UMBRELLAS?

Silver umbrellas produce a harsher light than do white umbrellas of comparable size. This harsh light is still much softer than the light produced in most direct light systems. Silver umbrellas reflect more light than white umbrellas, making them desirable where maximum depth of field is required from a bounce light system. Our tests show that silver umbrellas lose from $\frac{1}{2}$ to $\frac{1}{2}$ f stops over direct light, depending on the reflection index of the particular silver material and the shape of the umbrella. Again, these figures are based on an average studio lamphead containing an average reflector.

Some square silver umbrellas have a reversible fabric which has a high contrast design on one side and a lower contrast design on the other side. This enables you to vary contrast by reversing the fabric.

In all the silver umbrellas tested, we found that very little light was transmitted through the umbrella. This minimized the problem of flare due to light filtering through the umbrella. However, one must be aware that light traveling around the edge of the umbrella could cause a problem to your camera lens.

WHICH TO USE, LARGE OR SMALL?

Large umbrellas produce a softer, broader light than do smaller umbrellas. The larger size will illuminate the subject from greater angles. If you were to create this effect with direct light you could use several lampheads (fig. 10). One disadvantage of using multiple lampheads is that cross shadows will be produced. To eliminate cross shadows, a diffusion sheet of sufficient density would have to be placed in front of the lampheads (fig. 11), making them appear as one single light source.



Fig. 10 MULTIPLE LAMPHEADS PRODUCE CROSS SHADOWS.

Fig. 11 DIFFUSION SHEET ELIMINATES CROSS SHADOWS

Figures 12, 13, and 14 further illustrate how the size of the light source effects softness. In figure 12 the lamphead is pointed directly at the subject. The angles of reflection are great at the sides of our subject, thus the illuminating power of the light source is weak at the sides of the subject. The illuminating power of the lamphead is great only at the front surface of our subject where the subject plane is perpendicular to the light beam.



Fig. 12

DIRECT LIGHT - ILLUMINATING POWER IS WEAK AT THE SIDES OF THE SUBJECT.

Figure 13 shows the lamphead pointed into a small umbrella. The angle of reflection is less at the sides of the trapezoidal subject than with the direct light: thus greater illumination on the sides of our subject is obtained than with direct light.



Fig. 13

SMALL UMBRELLA: ILLUMINATES THE SIDES OF THE SUBJECT BETTER THAN DIRECT LIGHT.

Figure 14 shows a lamphead pointed into a large umbrella. The angle of reflection is even less than that obtained with the small umbrella, thus a softer, more even light is produced.



Fig. 14

LARGE UMBRELLA: ILLUMINATES SIDES OF SUBJECT BETTER THAN SMALL UMBRELLA.

In cases where depth of field must be maintained, it takes more light output from your electronic flash to illuminate a large umbrella than to illuminate a small umbrella. This is because the lamphead must be further away from the umbrella in order to illuminate the entire fabric.





LAMPHEAD BACK FROM UMBRELLA SOFTER LIGHT, MORE COVERAGE

LAMPHEAD CLOSER TO UMBRELLA MORE LIGHT INTENSITY, LESS COVERAGE

HOW ABOUT SMALL UMBRELLAS?

Small umbrellas produce a harsh light compared to large umbrellas. If an umbrella is too small in relationship to the diameter of the lamphead reflector, a good portion of the light will bounce back into the lamphead reflector and produce a void in the beam path: you will notice both a light output loss and a black shadow in the center of the catch light.



UMBRELLA TOO SMALL IN RELATION TO LAMPHEAD PRODUCES A VOID IN THE BEAM PATH. WHERE DO YOU GO FROM HERE?

Using these basic principles as a guide, you can more intelligently select the best umbrellas for your particular type of photography.

May we suggest that too much of a good thing can be bad! For example — when using two or more umbrellas, it is possible to make the light too soft or too flat. If this happens, your photograph will lack depth and the colors can be too bland. Don't forget that you are generally trying to make a two dimensional piece of photographic paper look three dimensional.

