Shown with Westcott # 4634 7 ft. Parabolic Umbrella. (Not Included)

Product Description

The LS200N lighting system is designed to combine the light output of two Nikon SB-900 speedlights and direct it into an umbrella or softbox. For optimum performance, the new parabolic umbrellas require that the light source be centered and on axis with the umbrella shaft. The two flash heads are separated by only 3/4 of an inch where the umbrella shaft mount is located. This effectively allows the umbrella shaft to pass through the light source and permits the light to be properly focused. When a softbox light modifier is desired, both flash heads output light through the center of the optional speedring. The speedring permits quick mounting and removal of the softbox. The 14 mm wide panel in place on the Nikon SB-900, results in better light distribution across the surface of the softbox compared to a studio light with the optional internal baffle, with graduated density, in place. In fact, the Doiron Design LS200N performs better without the use of the optional internal baffle in most applications.

A built-in receptacle for a RadioPopper PX receiver with 2 way splitter directs ITTL signals to both SB-900 speedlights via fiber optics. A RadioPopper PX transmitter mounted to an on camera SU-800 or master SB-900, provides full wireless ITTL capability without the requirement for line of sight. A single RadioPopper system provides a radio link between the on camera Nikon SU-800, or master SB-900 and the LS200N System. RadioPopper is available at radiopopper.com.

A Pole mounting clamp capable of mounting (2) Nikon SD-9 compact battery packs, or (2) Quantum Turbo 2X2, or (2)Turbo3 battery packs is included. In addition, a shaft spacer is included that sets the proper focal length for Westcott #4632, #4633 and #4634 7 ft. parabolic umbrellas and Flashpoint 7 ft. parabolic umbrella.

Features:

Built-in receptacle for RadioPopper PX receiver with 2 way splitter, directs signal to both SB-900 speedlites via fiber optics. No need for a second RadioPopper PX receiver.

A RadioPopper PX transmitter mounted onto an SU-800 speedlite transmitter or camera mounted SB-900 provides a wireless ITTL solution, without line of sight requirements. RadioPopper PX transmitter & receiver available @ radiopopper.com. (Not included)

Built-in umbrella mount supports the new 7 ft. parabolic umbrellas.

Directs light pattern in center of umbrella, on shaft axis, for optimum light distribution.

Shaft spacer sets umbrella to optimum distance from light source. (Applicable for Westcott # 4632, 4633, 4634 and Flashpoint # 16RTB86S) Spacer Included.

Quick mount speedring for mounting softboxes. (Optional)

Pole clamp for mounting (2) SD-9 battery packs. (Included) May also be used to mount (2) Quantum Turbo 2X2 or (2) Quantum Turbo 3.

Outstanding light distribution! See test results for Westcott 7 ft. parabolic umbrellas # 4632, 4633 and #4634. Also Creative Light 3 ft. and 5 ft. OCTA Soft-boxes.

Supports off camera wireless High-Speed Sync without line of sight requirement to 1/8000 second.

An LS200N with optional speedring and Creative Light OCTA 90 RF softbox will outperform a Quantum T5d-R with Quantum QF75. See Figures 14, 15, 16 and 17 for test results.

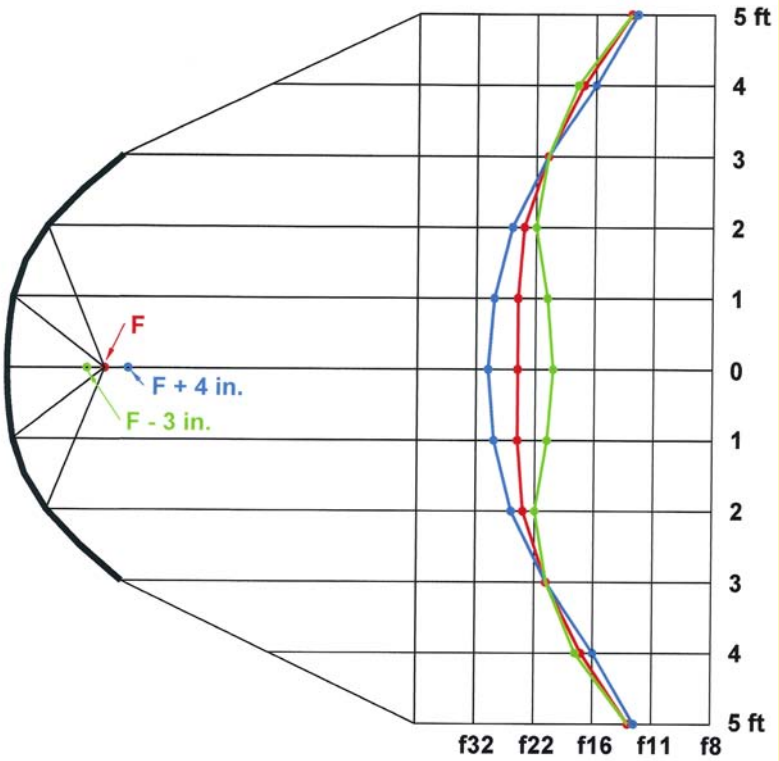
Pole Clamp for mounting (2) Nikon SD-9 Battery Packs. (Included)

Mounting External Battery Packs

The illustration to the left shows (2) Nikon SD-9 battery packs mounted to a light stand using the included pole clamp. The pole clamp may also be used to mount other battery packs using a 1/4-20 tread mounting screw or belt clip mount such as Quantum Turbo 2x2 or Turbo 3. When using Quantum battery packs with Nikon SB-900, Quantum CKE or CKE2 cable is required.

Do I Have To Focus a Parabolic Umbrella?

Although the new parabolic 7 ft. umbrellas look the same, they have different characteristics. Figure 1 illustrates the focusing characteristics of the Westcott #4633 7 ft. parabolic umbrella (silver) at 5 feet. The included shaft spacer sets the LS200N at focus point F, which yields the most consistent light intensity readings across the center of the umbrella. Increasing the focal distance to F + 4 inches causes the center to be more intense by 1/2 stop. Decreasing the focal distance to F - 3 inches causes the center to be about 1//2 stop less intense.



Focus Properties: @ 5 ft.

Light Modifier: *Westcott # 4633, 7 ft. Parabolic Umbrella (Silver)*

Light Source: *(2) Nikon SB-900 @ Full Power*

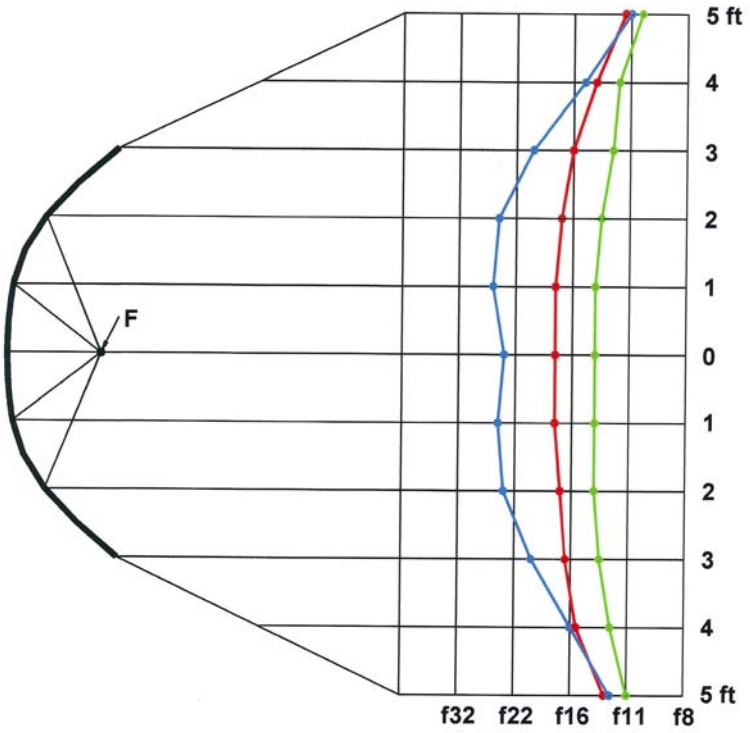
Test Conditions: *Sekonic L758dr With Lumisphere In Extended Position @ 5 ft. From Umbrella, ISO 200, Focus Set Using The Included Shaft Spacer To F Position, Zoom Set To 14 mm (Wide Panel) On SB-900s.*

Focal Point: F F + 4 in. F - 3 in.

Figure 1

Light Distribution @ 5 ft., 10 ft. and 15 ft. for 7 ft. Parabolic Umbrellas

Figures 2, 3 and 4 illustrate light distribution data for the Westcott 7 ft. parabolic umbrellas, # 4633 (silver), # 4634 (White/Black) and #4632 (White, Shoot Through). Light distribution data is plotted at 5 ft., 10 ft. and 15 ft. for all umbrellas. Although these are not as concentrated and do not yield as high a light intensity in the center as the Paul C Buff PLM V2, they are a broader light source and are very usable at distances from 5 feet to more than 15 feet. The light tapers smoothly from a 6 foot diameter. All 3 of these umbrellas were set at focus point F using the included shaft spacer for the Doiron Design LS200N light system. Zoom was set to 14 mm using the wide panel on both SB-900s.



Light Distribution: @ 5 ft., 10 ft., 15 ft.

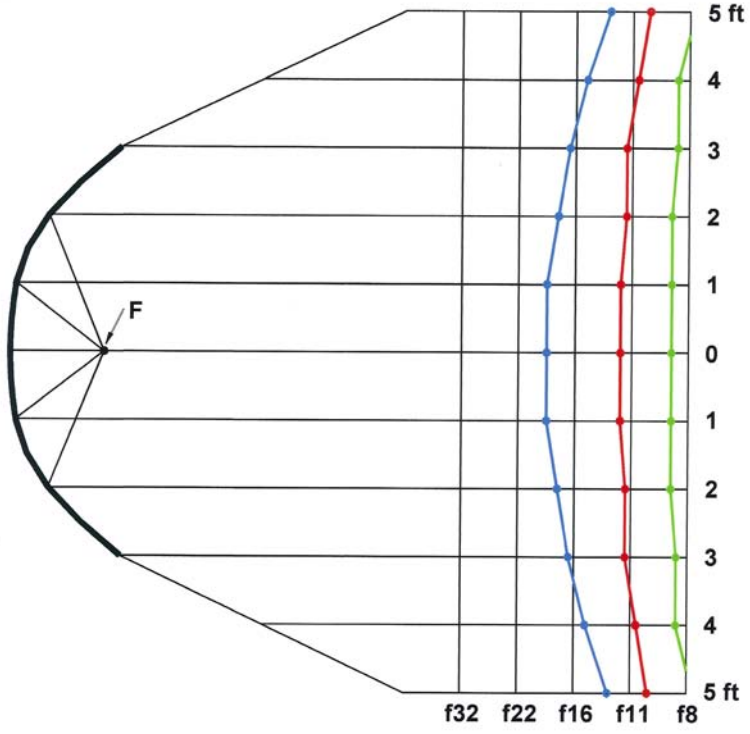
Light Modifier: *Westcott # 4633, 7 ft. Parabolic Umbrella (Silver)*

Light Source: *(2) Nikon SB-900 @ Full Power*

Test Conditions: *Sekonic L758dr With Lumisphere In Extended Position @ 5 ft., 10 ft., 15 ft. From Umbrella, ISO 200, Focus Set Using The Included Shaft Spacer To F Position, Zoom Set To 14 mm (Wide Panel) On SB-900s.*

Test Distance: 5 ft. 10 ft. 15 ft.

Figure 2



Light Distribution: @ 5 ft., 10 ft., 15 ft.

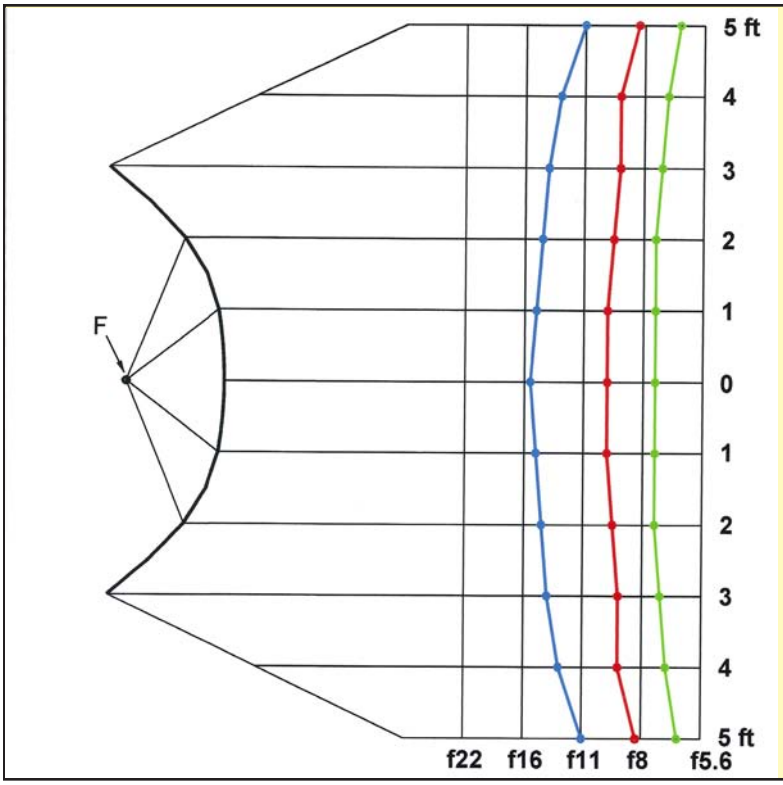
Light Modifier: *Westcott # 4634, 7 ft. Parabolic Umbrella (White/Black)*

Light Source: *(2) Nikon SB-900 @ Full Power*

Test Conditions: *Sekonic L758dr With Lumisphere In Extended Position @ 5 ft., 10 ft., 15 ft. From Umbrella, ISO 200, Focus Set Using The Included Shaft Spacer To F Position, Zoom Set To 14 mm (Wide Panel) On SB-900s.*

Test Distance: 5 ft. 10 ft. 15 ft.

Figure 3



Light Distribution: @ 5 ft., 10 ft., 15 ft.

Light Modifier: *Westcott # 4632, 7 ft. Parabolic Umbrella (White, Shoot Through)*

Light Source: *(2) Nikon SB-900 @ Full Power*

Test Conditions: *Sekonic L758dr With Lumisphere In Extended Position @ 5 ft., 10 ft., 15 ft. From Umbrella, ISO 200, Focus Set Using The Included Shaft Spacer To F Position, Zoom Set To 14 mm (Wide Panel) On SB-900s.*

Test Distance: **5 ft.** **10 ft.** **15 ft.**

Figure 4

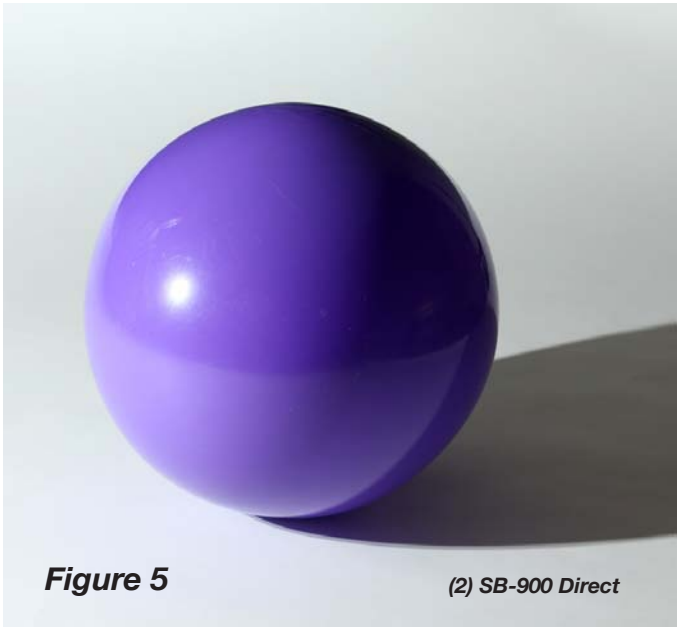


Figure 5 *(2) SB-900 Direct*

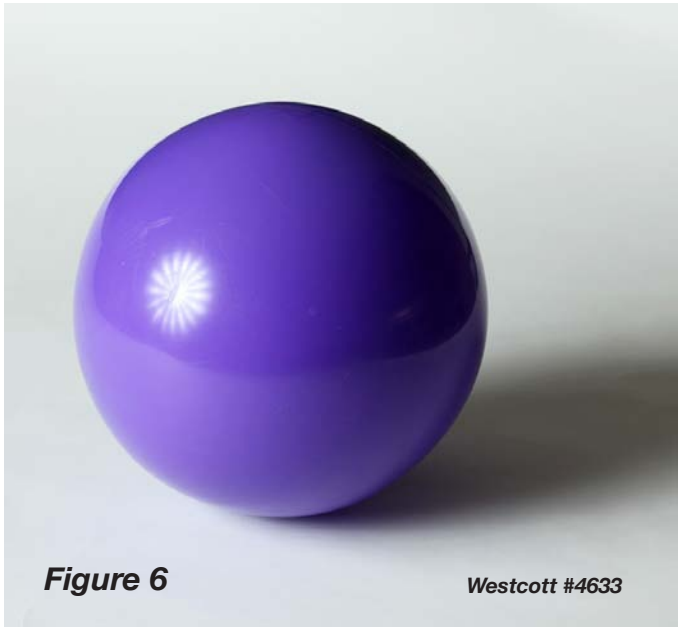


Figure 6 *Westcott #4633*

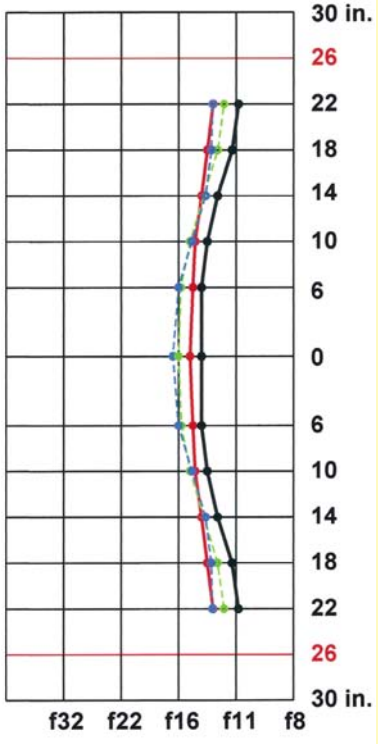
Figure 5 illustrates the hard lighting characteristics of using both SB-900s speedlites directly without any modifier. The benefit of using the LS200N in this configuration is increased light output by 1 stop (160 Watt Seconds total) and wireless off camera lighting without the line of sight requirements associated with IR. In addition, (1) RadioPopper PX receiver is able to control (2) SB-900s. A second RadioPopper PX receiver is unnecessary.

Figure 6 illustrates the softer lighting characteristics using a Westcott #4633 7 ft. Parabolic Umbrella. The rim of the umbrella was positioned 5 feet from the subject.

Using Large Soft-boxes With Speedlights

There is a tendency for manufacturers to design soft-boxes with a narrow profile or depth because they are less bulky. In order to improve center to edge light distribution, an inner baffle incorporating a graduated density is used. Although this reduces the hot spot in the center, it reduces the operating efficiency. There is no substitute for increased depth. Figure 7 and Figure 8 compare the surface light distribution characteristics of two 5 ft. octagonal soft-boxes. Figure 7 illustrates the performance of the Creative Light OCTA 150 RF. With the 14mm wide panels in place on both SB-900s, the 2.50 Width/Depth Ratio of the Creative Light 5 ft. OCTA enables outstanding light distribution characteristics at the surface. The light 4 inches from the edge is down 0.4 stops compared to the center without the use of the interior baffle. By comparison, a Paul C Buff Einstein 640 set to match the intensity of the (2) SB-900s yields a 0.7 stop loss under the same condition. Figure 8 illustrates the results of the Westcott 5 ft. Octabank with a Width/Depth Ratio of 3.33. The results is increased light reduction to 1 stop at 4 inches from the edge. This is still better than the results with the Paul C Buff Einstein 640 set to match the intensity of the (2) SB-900s. The results without the internal baffle is down 1.3 stop and down 1 stop with internal baffle. The Paul C Buff Einstein 640 studio light was used to establish a reference in both applications.

Speedlights are designed to direct the light forward with a limited area of coverage. This enables the light to be concentrated on the area to be photographed. In order to cover the largest area possible, the speedlights should be used with the 14 mm wide panel in place. Since the light pattern is diverging, soft-boxes with greater depth provide better light coverage on the front diffusion panel. Excellent light distribution is ensured with a Width/Depth Ratio of 2.50 or less. Figures 7, 8 and 13 illustrate the light distribution at 2 inches from the surface of the soft-boxes. A fixture with a probe is used to maintain the distance at 2 inches between the surface of the soft-box



Light Distribution: ***Center To Edge @ 2 inches From Surface.***

Light Modifier: *Creative Light OCTA 150 RF, 5 ft. Octagonal Soft-box.*

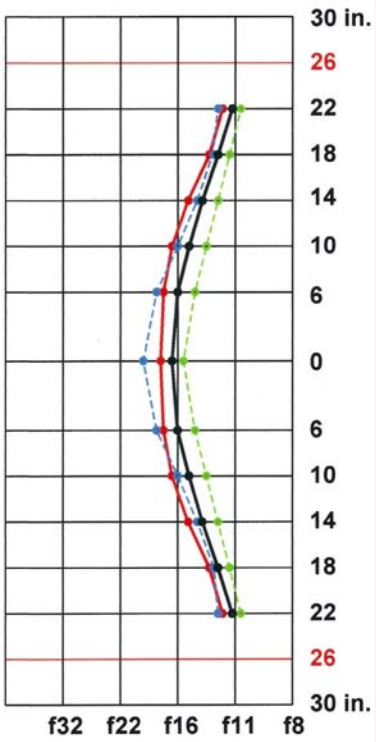
Light Source: *(2) Nikon SB-900 @ 1/8 Power (20 WS)*

Test Conditions: *Sekonic L758dr With Lumisphere In Retracted Position @ 2 inches From Soft-box, ISO 200, Zoom Set To 14 mm (Wide Panel) On 580EXII.*
Red, No Baffle **Black, With Baffle**

Reference: *Dashed Lines Represent Paul C Buff Einstein 640 WS Light Source Set To 20 WS To Match The Output Of The (2) Nikon SB-900s.*
Blue, No Baffle **Green, With Baffle**

Width/Depth Ratio: *60 in./24 in. = 2.50*

Figure 7



Light Distribution: ***Center To Edge @ 2 inches From Surface.***

Light Modifier: *Westcott Octabank, 5 ft. Octagonal Soft-box.*

Light Source: *(2) Nikon SB-900 @ 1/8 Power (20 WS)*

Test Conditions: *Sekonic L758dr With Lumisphere In Retracted Position @ 2 inches From Soft-box, ISO 200, Zoom Set To 14 mm (Wide Panel) On 580EXII.*
Red, No Baffle **Black, With Baffle**

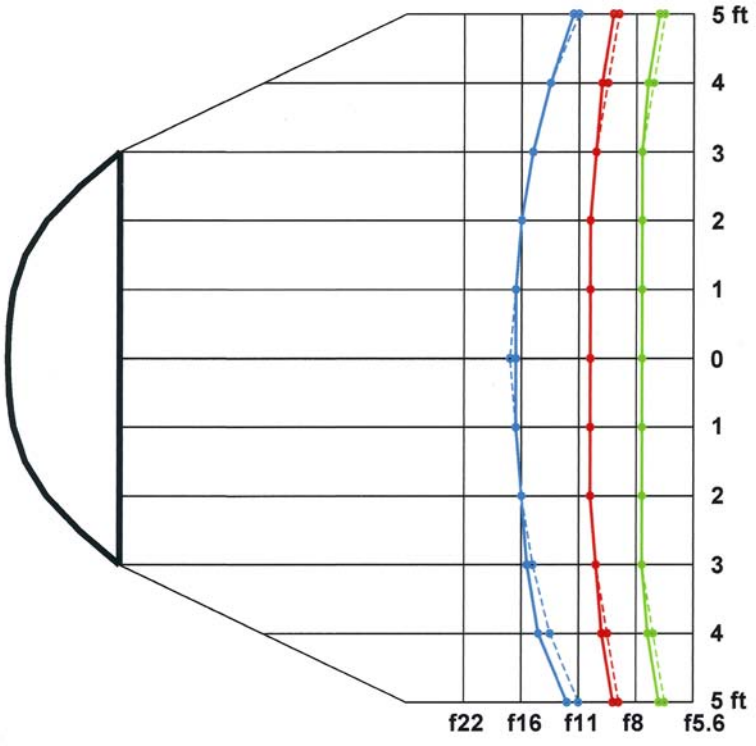
Reference: *Dashed Lines Represent Paul C Buff Einstein 640 WS Light Source Set To 20 WS To Match The Output Of The (2) Nikon SB-900s.*
Blue, No Baffle **Green, With Baffle**

Width/Depth Ratio: *60 in./18 in. = 3.33*

Figure 8

and the Sekonic L-758dr light meter. The conclusion is that soft-boxes with a lower Width/Depth Ratio will yield better light distribution at the surface of the soft-box. Figure 9 Illustrates the light distribution at 5, 10 and 15 feet from the surface of the Creative Light OCTA 150 RF. The dashed lines reference the results with a Paul C Buff Einstein 640 set to 160 Watt Seconds to match the output of both SB-900s. Figure 10 Illustrates the light distribution at 5, 10 and 15 feet from the surface of the Westcott 5 ft. Octabank. The dashed lines reference the results with a Paul C Buff Einstein 640 set to 160 Watt Seconds to match the output of both SB-900s.

Figure 11 and Figure 12 illustrate the softening performance of the Creative Light OCTA 150 RF and the Westcott 5 ft. Octabank octagonal soft-boxes. Both soft-boxes where maintained at 4 feet from the subject.



Light Distribution: @ 5 ft., 10 ft., 15 ft.

Light Modifier: *Creative Light OCTA 150 RF, 5 ft. Octagonal Soft-box.*

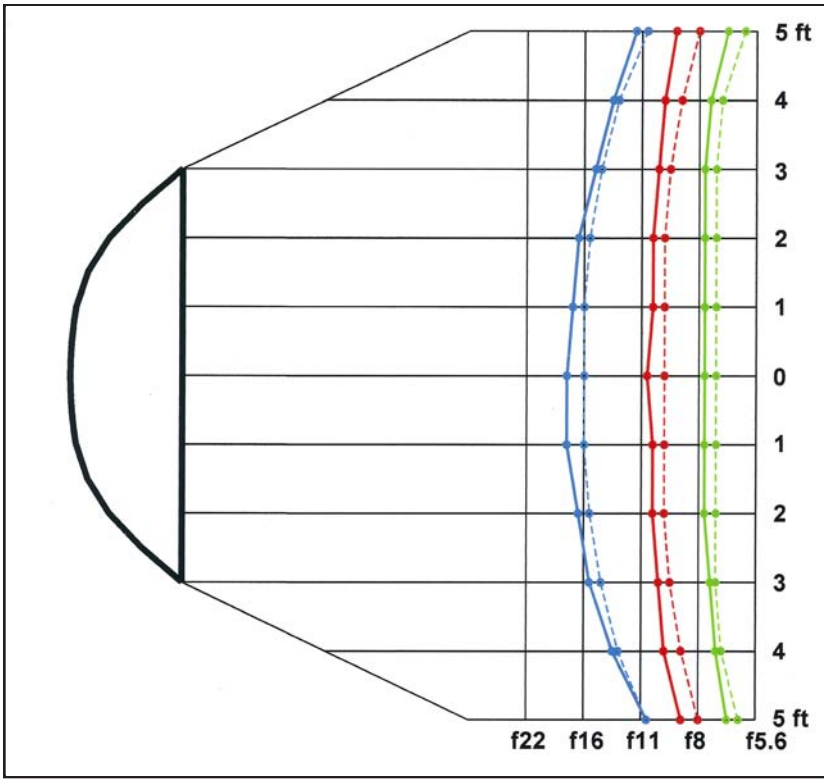
Light Source: *(2) Nikon SB-900 @ Full Power*

Test Conditions: *Sekonic L758dr With Lumisphere In Extended Position @ 5 ft., 10 ft., 15 ft. From Soft-box, ISO 200, Zoom Set To 14 mm (Wide Panel) On SB-900s, No Baffle.*

Test Distance: **5 ft.** **10 ft.** **15 ft.**

Width/Depth Ratio: *60 in./24 in. = 2.50*

Figure 9



Light Distribution: @ 5 ft., 10 ft., 15 ft.

Light Modifier: *Westcott Octabank, 5 ft. Octagonal Soft-box.*

Light Source: *(2) Nikon SB-900 @ Full Power*

Test Conditions: *Sekonic L758dr With Lumisphere In Extended Position @ 5 ft., 10 ft., 15 ft. From Soft-box, ISO 200, Zoom Set To 14 mm (Wide Panel) On SB-900s, No Baffle.*

Test Distance: 5 ft. 10 ft. 15 ft.

Width/Depth Ratio: *60 in./18 in. = 3.33*

Figure 10

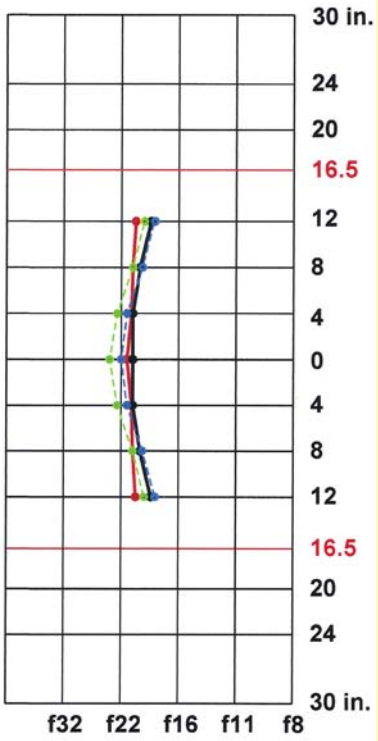
Figure 11 *Creative Light OCTA150 RF*

Figure 12 *Westcott Octabank 5 ft.*

Figure 13 illustrates outstanding surface light distribution of the Creative Light OCTA 90 RF from center to edge with (2) Nikon SB-900s. With the 14 mm wide panels in place, the suface light distribution at 4 inches from edge is down 0.2 stops. The best surface light distribution is with the (2) SB-900s, without the interior baffle.

Figure 14 illustrates the light distribution at 5, 10 and 15 feet from the Creative Light OCTA 90 RF soft-box. The light source is (2) Nikon SB-900s. The Dashed lines represent the same soft-box with a Paul C Buff Einstein 640 WS light source set to 160 Watt Seconds to match the output of (2) Nikon SB-900s. Figure 15 illustrates the light distribution at 5,10 and 15 feet from a Quantum QF75 soft-box with a Quantum T5d-R light source. The light intensity is greater with the (2) Nikon SB-900s with Creative Light OCTA 90 RF soft-box than the Quantum T5d-R with QF75 soft-box by more than 0.6 stop. This is due in part because the Nikon SB-900s have a built-in reflectors that direct the light onto the front diffusion panel.

Figure 16 illustrates the properties of the light with the Creative Light OCTA 90 RF powered by (2) Nikon SB-900s. Figure 17 illustrates the properties of the light with the Quantum QF75 powered by a Quantum T5d-R. Soft-boxes are 4 feet from the subject in both applications.



Light Distribution: ***Center To Edge @ 2 inches From Surface.***

Light Modifier: *Creative Light OCTA 90 RF, 3 ft. Octagonal Soft-box.*

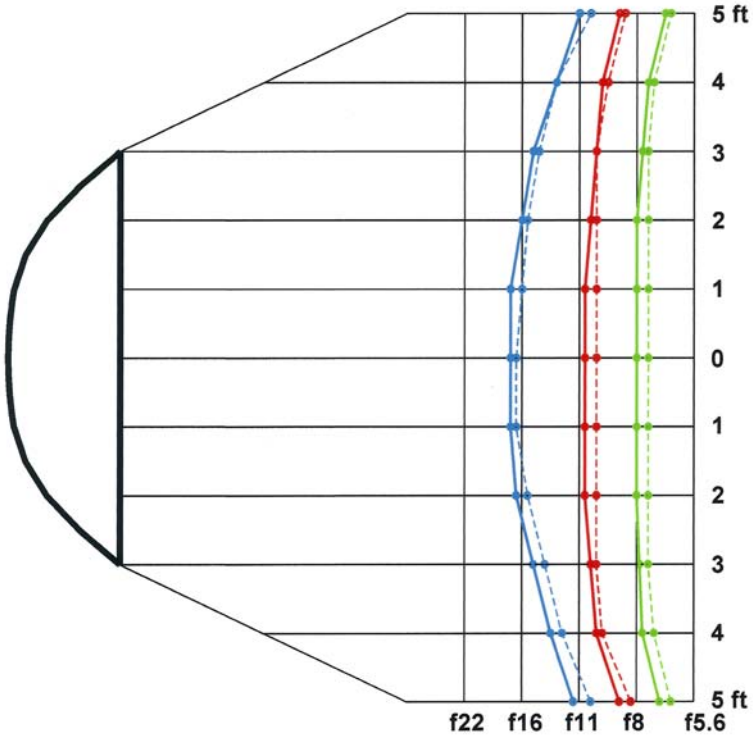
Light Source: *(2) Nikon SB-900 @ 1/8 Power (20 WS)*

Test Conditions: *Sekonic L758dr With Lumisphere In Retracted Position @ 2 inches From Soft-box, ISO 200, Zoom Set To 14 mm (Wide Panel) On 580EXII.*
Red, No Baffle **Black, With Baffle**

Reference: *Dashed Lines Represent Paul C Buff Einstein 640 WS Light Source Set To 20 WS To Match The Output Of The (2) Nikon SB-900s.*
Blue, No Baffle **Green, With Baffle**

Width/Depth Ratio: *36 in./16 in. = 2.25*

Figure 13



Light Distribution: @ 5 ft., 10 ft., 15 ft.

Light Modifier: *Creative Light OCTA 90 RF, 3 ft. Octagonal Soft-box.*

Light Source: *(2) Nikon SB-900 @ Full Power*

Test Conditions: *Sekonic L758dr With Lumisphere In Extended Position @ 5 ft., 10 ft., 15 ft. From Soft-box, ISO 200, Zoom Set To 14 mm (Wide Panel) On SB-900s, No Baffle.*

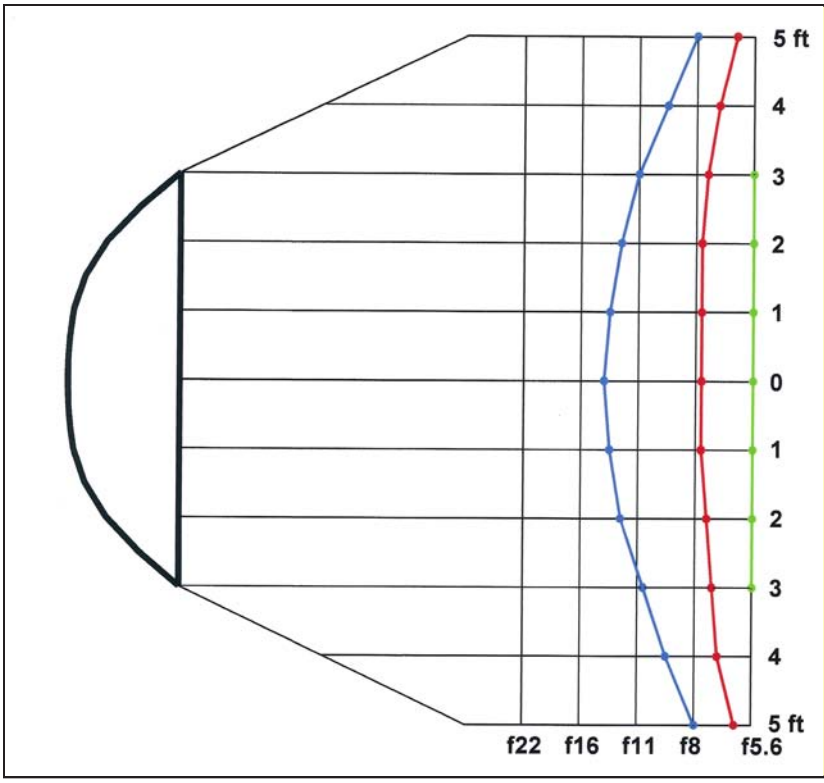
Test Distance: **5 ft.** **10 ft.** **15 ft.**

Width/Depth Ratio: *36 in./16 in. = 2.25*

Figure 14

Speed Ring

One of the group of 8 mounting blocks for octagonal applications is retractable for ease in mounting the rods. Figure 18 illustrates this mounting block in the retracted position. Figure 19 illustrates the sliding block in the working position. A small thumb screw is located on the back side for locking the block in the working position. Figures 18 and 19 illustrate a Westcott Octabank 5 ft. octagonal soft-box with the rear cowling removed to illustrate the mounting of the speed ring onto the LS200N lighting sytem. To remove the speed ring, (1) loosen both thumb screws several turns, (2) slide the top thumb screw up to release the top of the speed ring. (3) This allows the speed ring to tilt forward. (4) Lift the speed ring from the lower thumb screw to remove. To install speed ring, (1) loosen both thumb screws several turns, (2) insert bottom mount of speed ring into lower thumb screw with speed ring tilted forward, (3) lift top thumb screw, (4) tilt speed ring back onto frame and lower top thumb screw. Tighten both thumb screws.



Light Distribution: @ 5 ft., 10 ft., 15 ft.

Light Modifier: *Quantum QF75, 26 inch. Octagonal Soft-box.*

Light Source: *(1) Quantum T5d-R @ Full Power*

Test Conditions: *Sekonic L758dr With Lumisphere In Extended Position @ 5 ft., 10 ft., 15 ft. From Soft-box, ISO 200.*

Test Distance: **5 ft.** **10 ft.** **15 ft.**

Width/Depth Ratio: *26 in./9 in. = 2.88*

Figure 15

Figure 16 *Creative Light OCTA 90 RF*

Figure 17 *Quantum QF75 with T5d-R*

High Speed Sync

When shutter speeds are below the maximum sync speed, the Nikon speedlites modulate light exposure by varying the duration of the light output as illustrated in Figures 20 and 21. Light intensity is at maximum and exposure is controlled by flash duration. The flash fires either after the first curtain is fully opened, or just before the second curtain begins to close, dependent on wether first curtain sync or second curtain sync is selected.

When sync speed exceeds maximum sync speed, the frame is never fully exposed at one time. The second curtain begins to close before the first curtain is fully opened. In order to get a proper exposure, the speedlite must emit light for the duration of first curtain plus second curtain travel. In this application, the exposure needs to be controlled by modulating the light intensity, as illustrated in figures 22 and 23. RadioPopper PX transmitter and receivers support wireless ETTL at shutter speeds up to 1/8000 second. Waveforms were sampled by a fiber optic coupled between a Nikon SB-900 and a photo diode. An amplifier and buffer were used to interface to a Tektronix TDS 2014C oscilloscope.

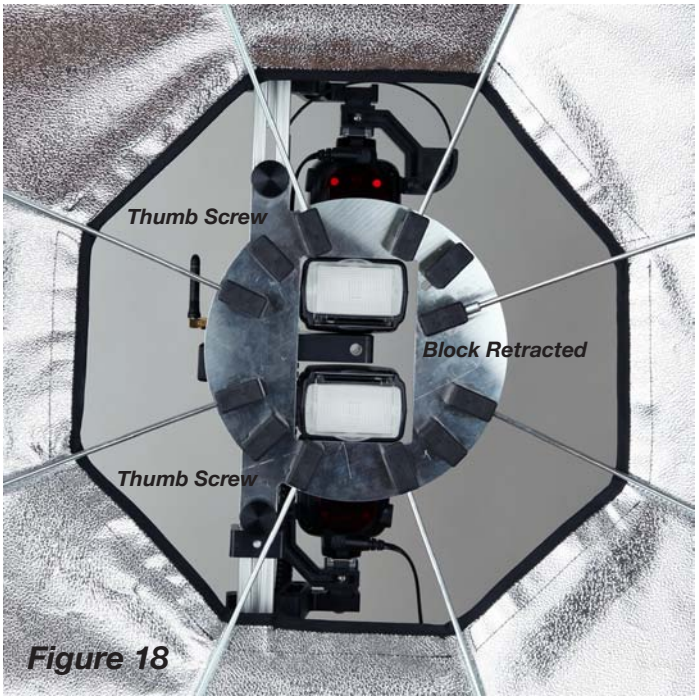


Figure 18

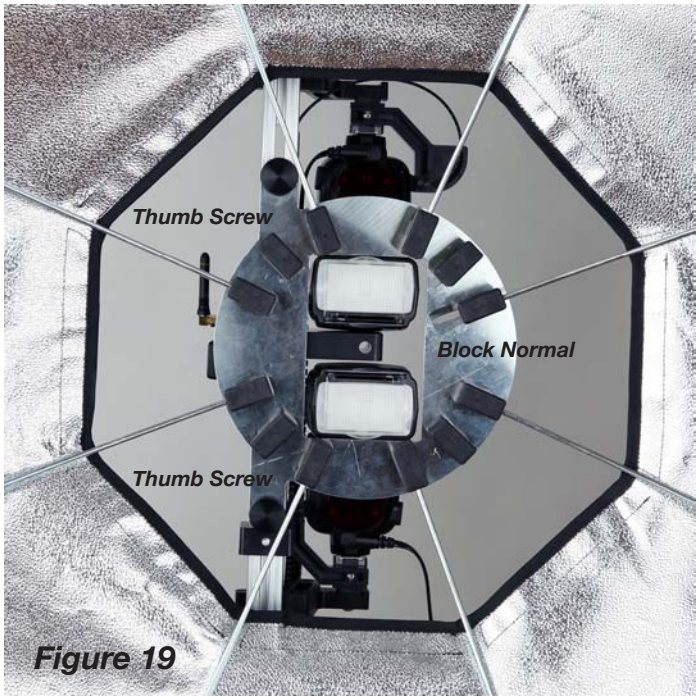


Figure 19

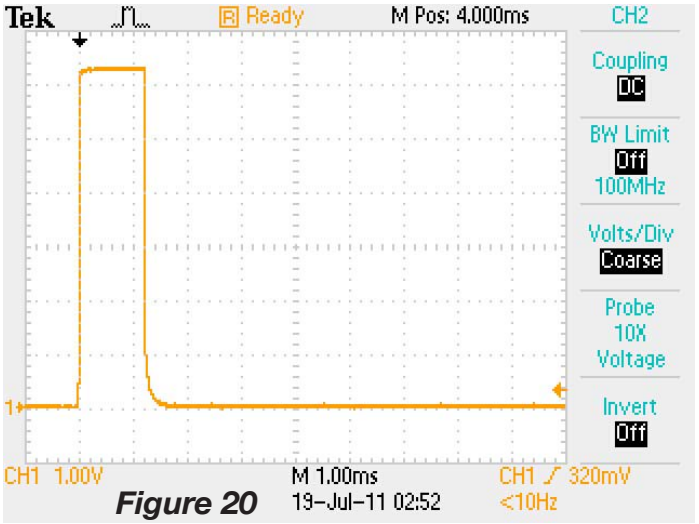


Figure 20

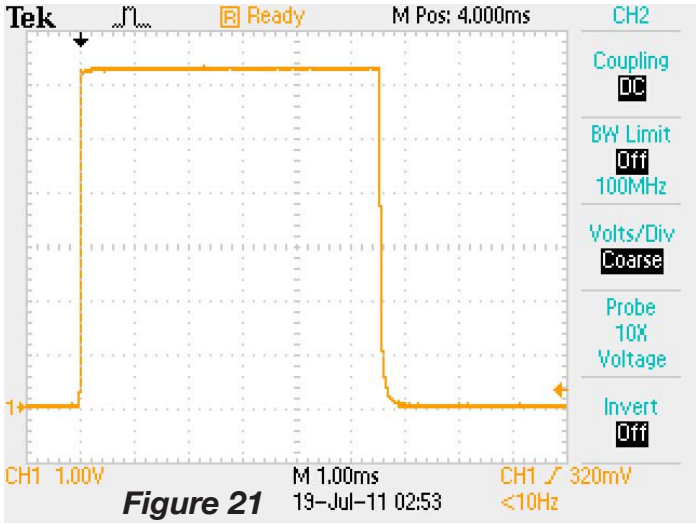


Figure 21

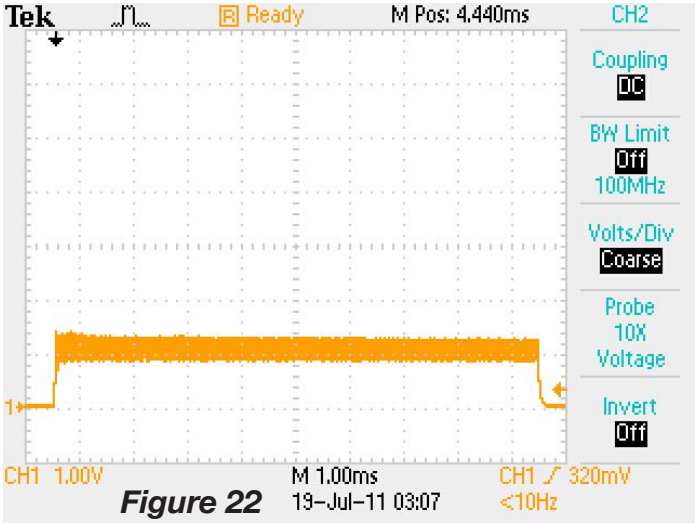


Figure 22

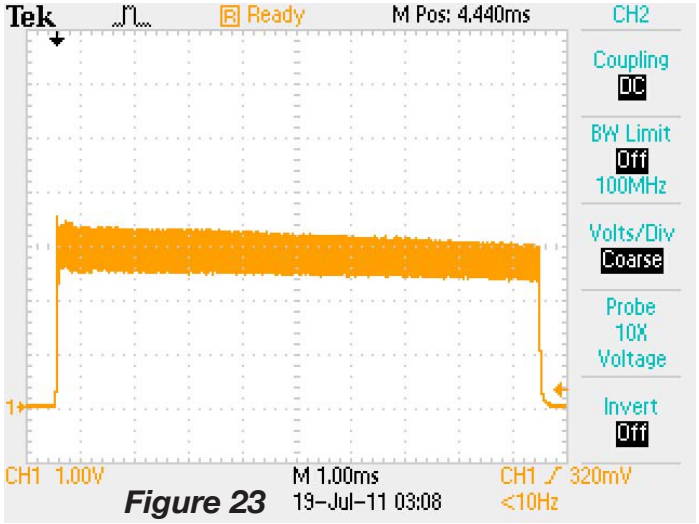


Figure 23