LIGHT ARCHITECTURE 2

ursRECHER

First of all I would like to thank Lenny and Warren of Primaimaging, Jakarta. They encouraged me to write this book and they also produced the first edition. In cooperation with their team and friends they also ensured that my English became understandable.

John and his team from Brainwave Design in Singapore were very patient with me. They changed the layouts, the texts and the diagrams for me again and again and again.

For many years, my wife Debby has always provided important feedback on my work and criticized my photography constructively. She often assisted me, and waited patiently until I had the shot I wanted.

Bron Elektronik AG in Switzerland owns the copyright of some pictures. I would like to thank them for placing the shots at my disposal and for producing the second edition of Light Architecture.

My friend Julia had a close look at chapter one. She corrected my English and made sure that everybody can understand what I am trying to explain. Pamela finally checked and corrected all the textfiles of this second edition.

This book is for Debby and Anouk.

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light follows rules

This book is supposed to be “different”. Unlike most photography books it does not give fixed rules, such as how this or that has to be illuminated, or which contrast is the right one and which focal length and shutter speed has to be used.

Every photographer still has to decide how he (or she) wants the photograph to look. I just try to give an idea how light functions. With the theoretical background, we should be able to get the result we want.

Before we start analysing photographs and set-ups, we should take a brief look at light and its rules. This helps to really understand why which lightshaper is used and – just as important – where and how it should be placed.

We have to understand the set-ups and should not try to learn them by heart or copy them like a menu from a cookery book! When we understand the rules, we do no longer have to hope for good results and can determine how to modify the light until we get the effect we are looking for.

Our technical abilities in forming light must not limit our creative visions! And in a second step – after having achieved a profound understanding of light – we should start forgetting about all the technical aspects of our work and only concentrate on the visual, the emotion, the moment and the model.

All the photographs are shown with a minimum of manipulation. I want to give a very honest and realistic impression on what can be expected, when working with the set-ups as explained in Chapter 2. In particular the skins are not retouched and the original texture is still visible.

All the names of the lightshapers used in this book refer to the broncolor system that is described in chapter 3. It is the lighting system I use for my daily work, and it is the one with the widest range of lightshapers. It therefore offers the most creative possibilities when working with the most important tool of a photographer: LIGHT.

1.1 Hard, Soft And Diffused light

1.1.1 Hard light:

Looking at the light of a point light source, we will see very clearly defined shadows. On a background or underground there is either light or shadow, but nothing in between, with no gradations. Even the finest details provide a clear shadow. The structure of any object (e.g. textile, skin) is pointed out very clearly.

A very hard light source is the only one that does not change its characteristics when we vary the distance (but it does change the power – see “1.3 The inverse square law”). The shadows remain the same: very sharp.

Hard light may increase the contrast of the object. The areas directly lit may be burnt while the shadows remain very dark. The hardness of the light finally has an influence on the color saturation. Small, hard light increases the saturation of the picture while soft, and especially diffused light reduces it.

The following lightshapers can be used as hard lights:
Any open reflector like P70, P65, P45, P50, PAR reflector, when used over a certain distance; i.e. a few meters or more. Fresnel spots like Pulso Flooter, Pulso Spot 4, Fresnel spot attachment for Picolite. Optical systems like Pulso Spot 4 with 150 mm Optical snoot, Projection attachment for Picolite and Profil 15/42. Sunlite-set, Litestick or bare bulbs (lamphead with no attachments at all).

1.1.2 Soft light:

Average soft light sources have about the same sizes as the objects or set-ups they illuminate: Let's say a 50 by 50 cm softbox for a narrow cropped portrait or an 80 by 140 cm softbox for a full body shot.

The shadows on the underground and background are still clearly visible, even when they are not sharply defined anymore. Big parts of these shadows are graduated and a small core shadow still exists. Small and fine details however do not appear. The texture of our object is now shown in a lower contrast and is therefore not as clear as in a hard light.

Soft light increases the contrast of the object a little, but less than a hard one. The final color saturation is somewhere in between the one derived from a hard light (high) and a diffused light (low).

Being soft, our light source has a certain size (it is not a point anymore) and the distance from it becomes very important. The closer we get, the bigger the light source becomes (seen from the perspective of the object or model). This means that our light becomes softer when we get closer, and harder when we use it over larger distances.

A light of about 100 cm by 100 cm placed at 4 meters from the model has the same hardness as a source of half the size (50 cm by 50 cm) at half the distance (2 meters). Due to the inverse square law, we can expect other effects (see 1.3). When we bring the 100 cm by 100 cm softbox to half the distance (we will have to reduce the power by about 2 f-stops), the light will be a lot softer.

The following lightshapers can be used as soft lights:
Any sized softbox (choose the dimensions and the position carefully!) Acrylic area lights such as Hazylight-Soft, Boxlite 40 (for quite small objects) and Satellite Staro. "Soft spots" such as Satellite Evolution, Mini-Satellite when completely focused.
Their light is directed (not diffused), but they have a large diameter and are therefore soft. Softlight reflector P-Soft, Para FB focused and defocused.

1.1.3 Diffused light:

Now the light source is huge. Shadows no longer exist, as the light is big enough to shine all around the object or model.

The light does not show any direction anymore. The only contrast remaining in the photograph is the contrast of the object itself.

The structure of the object's surface is as flat as possible, almost invisible and the color saturation is heavily reduced.

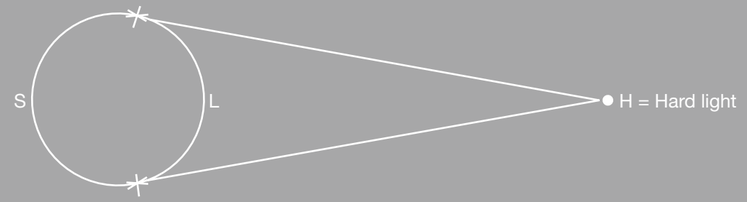
The following lightshapers (or set-ups) can be used as diffused lights:
Big softboxes at short distances for rather small objects. Indirect lights reflected by several bright walls (these walls have to be neutral in color to avoid a color shift). Light-tents wrapped around the object.

A good example to illustrate the difference of hard and soft shadows:
Through a very narrow opening of curtains, daylight is falling into this hotel room. Horizontally, the opening is only a few centimeters wide – the corresponding shadows are very hard. The vertical shadows however, are very soft because the curtains let some light in from the ceiling to the floor.

In the studio, this effect can be simulated with narrow Striplites like the Striplite 120 or with some limitations, a Pulsoflex EM 30 × 114 and EM 40 × 155.

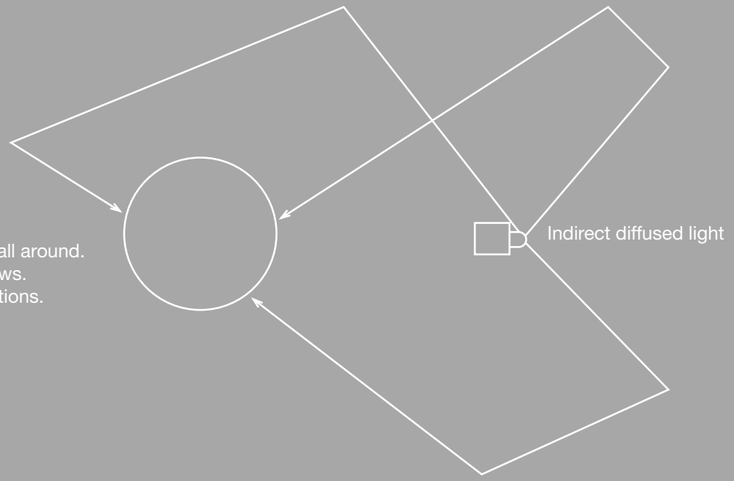
1.1.4 Light and three dimensionality:

An object or a body lit with hard light only shows very little gradations. A specific spot is either bright or dark but there are almost no grey values in between. We refer to this as a two-dimensional light.



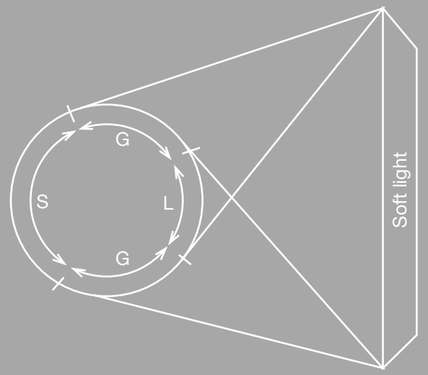
L = Light
S = Shadow

When we now light the same set-up in a diffused manner, we even “lose” one more dimension: The entire object shows the same brightness. Diffused lights have the lowest contrast of all possible lights. It does not add any contrast to the picture; the only contrast remaining in the photograph is the one of the object itself. On a portrait shot we can make use of this fact to let the skin appear flawless.



Object lit all around.
No shadows.
No Gradations.

Only when we use soft light (preferably with rather high contrast) will we get all the fine details in different grey values. All forms and shapes become perfectly visible in the photograph and we can call this kind of light three-dimensional. Compare the black and white picture of a woman’s back in Chapter 2.3.



L = Light
G = Gradations
S = Shadow

1.2 Five Parameters To Classify Light

1.2.1 Coverage:

The coverage of a lightshaper tells us how the light is distributed. It can be:

- Even (e.g. big softbox behind camera, open reflectors defocused, Para FB defocused, optical snoots)
- Center weighted (e.g. open reflector focused, Para FB focused, PAR reflector, some Fresnel spots, any lightshaper with honeycomb grids)
- Linear graduated: (e.g. long and narrow softboxes at short distance, Striplites and Lightbars as sidelights)

1.2.2 Edge-transfer:

The edge-transfer gives us an idea of how abrupt the light ends once we reach the end of the light angle. It can be:

- Very sharp (e.g. optical snoots and attachments)
- Quite sharp (e.g. Fresnel spots, Satellite Evolution, Mini-Satellite and honeycomb grids)
- Soft (e.g. softboxes, acrylic area lights such as Hazylight-Soft and Boxlite 40, open reflectors)
- Non-existent (bare bulb, Balloon, Litestick and Lightbar)

1.2.3 Shadow definition:

Shadows of hard lights are highly defined while soft lights have a low shadow definition. Diffused lights have no shadows at all.

1.2.4 Shadow contrast:

Working in a black or very large studio we can expect black shadows whenever we do not intentionally brighten them up with a fill-in light.

In smaller or more brightly painted environments however, light can be bounced back from the walls and fill in the shadows. In this situation the shadow contrast depends directly on the light angle of our source: Directed spots or standard reflectors with honeycomb grids do not hit the walls very much, resulting in black shadows. Working with the broncolor Balloon we have a light angle of 360°. All the studio walls will get a lot of light and the shadows will be very bright.

When we are working with such a “wide-angle light”, the inverse square law (see 1.3) still gives us a possibility to control our shadows: The closer we get (to the object or model) the faster the light falls off after hitting it. This makes the walls (and the floors and ceilings) darker and the shadow contrast is increased.

1.2.5 Highlights:

We will have a very close look at highlights in chapter 1.4 – directed and diffused reflections.

In general we can say that the highlights of hard lights are very small and completely burnt. Those of soft lights show clearly the form of the lightshaper (rectangular or round) and might still be burnt a little. Diffused lights finally should not show any dominant highlight anymore, but they can reduce the colors dramatically (e.g. the color of eyes in a diffuse portrait).

1.3 The Inverse Square Law

The intensity of light falls off with the square of the distance.

Two examples:
At twice the distance we get 2 × 2 = 4 times less light.

We move a light from 2 meters to 10 meters. This is 5 times farther.
5 × 5 = 25 ~ we get 25 times (about 4½ f-stops) less light.

This mathematical rule is only 100% correct if we calculate the fall-off of a point-light source. Huge area lights and especially the directed and parallel light of spots such as the Satellites, Para FB and Fresnel lights, have a fall-off that is much slower. The power of the light stays constant over a bigger area.

Working in smaller studios (especially with bright walls) it might be very difficult to get dark shadows and backgrounds, but only as long as the lights are far away from the model. In this situation we have almost the same amount of light on all the walls.
The background turns bright and all the other walls fill in the shadows.

When we move the light closer, it falls off much faster, the studio walls turn black and now we can control the shadows.

Soft light is difficult to direct. Only very few soft light sources can be used with honeycomb grids. This means that most of these lights illuminate a model or an object very evenly. Only when we use soft lights very closely (and the light falls off quickly), can we still get nicely graduated illuminations.

1.4 Directed And Diffused Reflections

Reflections in mirrors, glasses, eyes, chrome, polished surfaces and water are directed reflections. Those on textiles, stones, wood, matt skin and any other matt material are called diffused reflections. And there is a lot in between directed and diffused reflections, such as oily skin and any kind of coated surfaces (semi-gloss).

When the distance (and the position) of a lightshaper to the object is changed, directed and diffused reflections will show different effects. Diffused reflections change their brightness according to the inverse square law. When we put the light source at twice the distance, the object gets about 2 f-stops darker. When we now shoot a mirror (as a perfect example of a directed reflection) and again change the distance of our lightshaper (for example a big softbox), the reflection of the softbox in the mirror becomes smaller but not darker. The reflection is always as bright as the light source itself!

How can we use this knowledge?

Lighting a portrait over a large distance requires a rather high output of light to achieve a correct exposure. As the lightshaper itself is very bright in this situation, directed reflections (eyes, glasses and skin without make-up) are bright too. The glasses show strong reflections and the skin looks oily.

Now we bring our light a lot closer, at 1/3 of the original distance. According to the inverse square law we can reduce the power a little more than 3 f-stops and still get the correct exposure. But as the lightshaper itself is now 9 times darker, all the directed reflections mentioned above are a lot less disturbing or even invisible.
The glasses become transparent and the skin matt!

Let's have a look at two details from a product shot. Both are done with the same lightshaper: A Boxlite 40.

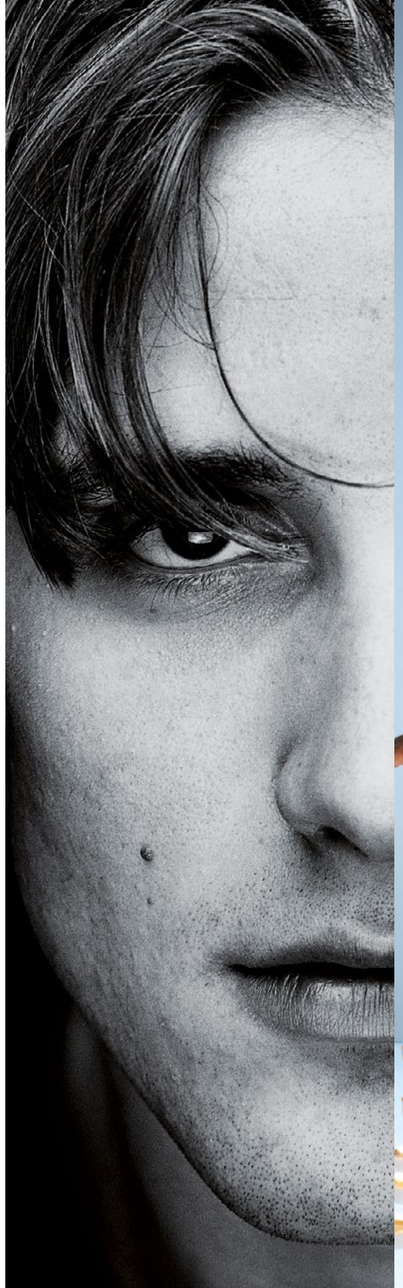
In the left picture, the Boxlite 40 is 120 cm away from the object. The highlights are small and burnt, and the letters cannot be read.

Before exposing the right one, I put the light source closer (at about 40 cm) and reduced the power (around 3 stops). The highlight is still visible, larger but not burnt anymore.

In addition, you will realize that the contrast is higher when we move the light closer. Due to the inverse square law, less light is reflected from the walls and the shadows turn darker.

After all these theoretical highlights, we should never forget that a photographer's most important tool is his eyes! Don't forget to open them.

the setups




ACQUA DI
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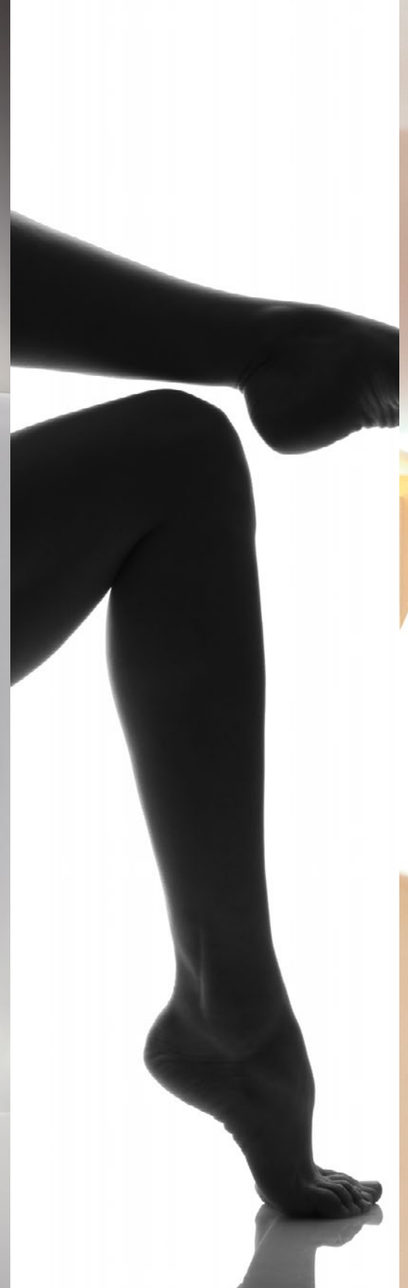
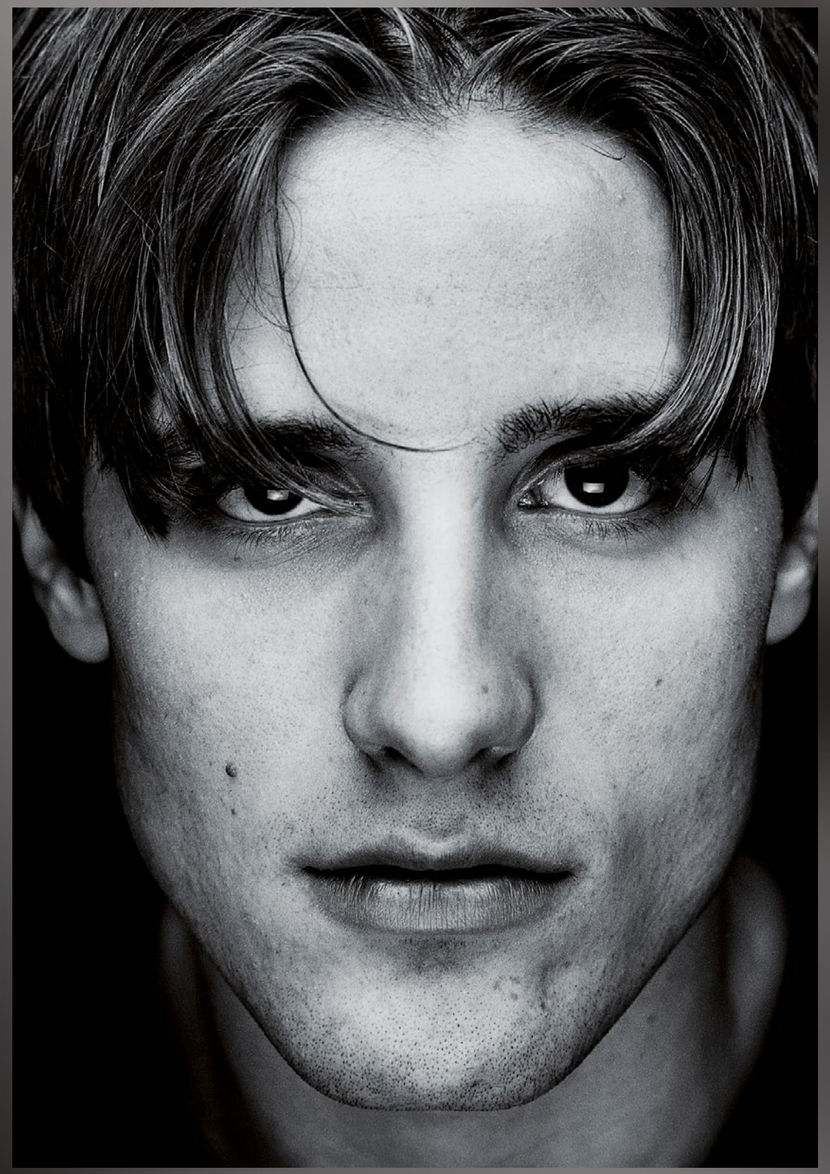
GIORGIO ARMANI
LOTION APRÈS-RASAGE
AFTER SHAVE LOTION





Camera type and Medium
35 mm SLR/ black and white negative

Resolution / Sensitivity
24 × 36 mm / ISO 100

Focal length
135 mm

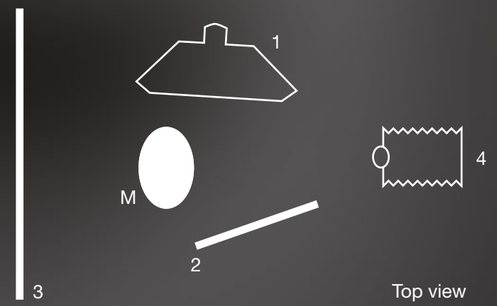
Shutter speed / f-stop
1/60 sec / f 11

A reasonably sized softbox (Pulsoflex C 60 × 100 cm) was chosen to shoot this portrait. It was placed very close and right above the head. As it is used at an angle of about 90 degrees to the camera, the light is not flat or too soft, but shows a dramatically shaped face.

I made sure that the fill-in is not diffused by using a mirror as a “hard reflector”. This tool is used at an “aggressive angle” by touching the model’s upper body, causing the only reflection to be seen in the eyes. In a photograph with a hard main light, you should not use this kind of reflector, as you may get twin-shadows.

If the light becomes too harsh, both the main light and the reflector can be moved slightly towards the camera.

1 Pulsoflex C 60 × 100 cm on a unilite lamp base
2 Mirror
3 Black background paper
4 Camera
M Model



Top view

Unilite

Pulsoflex C 60 × 100

Nano 2

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
16 Mpixels / ISO 50

Focal length
120 mm

Shutter speed / f-stop
1/125 sec / f 8

In most shots shown in this book, Para FB is used defocused to shape a body or an object perfectly. In this beauty shot however, I wanted to optimize the appearance of skin that is already very good. The way to do this is to move the light closer to the lens. Working with Para FB, this means nothing more than focusing it!

Compared with photographs, where Para FB was used defocused, you will notice that the light on the face is somewhat flatter, but that the contours are still very clear, even when this portrait is overexposed by almost a full stop.

The background is evenly lit with a symmetrical power pack (Nano 2) and a Topas A2 is used for the Para FB.

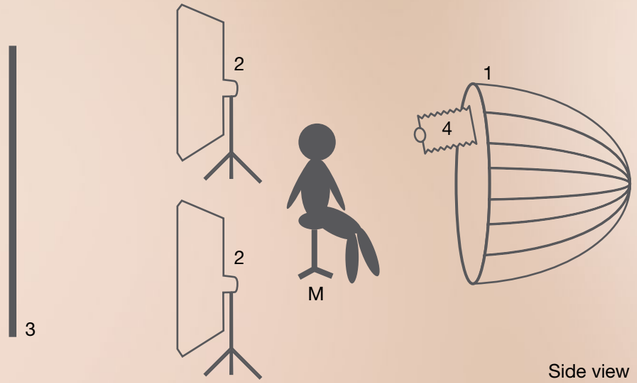
1 Para 220 FB focused

2 Pulsoflex EM 80 × 140 cm on Unilite lamp base to illuminate the background

3 White background paper

4 Camera

M Model



Side view

Unilite | Pulsoflex EM 80 × 140 | Para 220 FB | Nano 2 | Topas A2

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

Focal length
250 mm

Shutter speed / f-stop
1/125 sec / f 16

The Litestick is positioned as close as possible to the model and just above the picture frame. The camera on the other hand is far away and equipped with a rather long lens. This set-up ensures that we get the harsh fall-off on both sides of the model's face.

Due to the very big light angle of the Litestick you may have to place black flags on both sides of the model.

Start with the white background first and make sure that the light bounced back has no effect on the face, especially the contours. These should be dark in the final shot.

1 Litestick centered and just above the picture frame

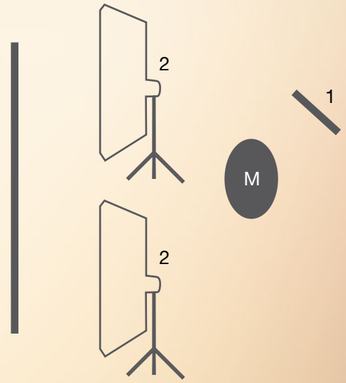
2 Pulsoflex EM 30 × 110 cm on Pulso G lamp base illuminates the background

3 White background

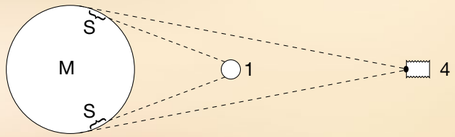
4 Camera

M Model

S Darker edges, as the light of the Litestick does not reach these areas



Side view



Litestick | Pulsoflex EM 30 × 110 | Pulso G | Nano 2 | Grafit A2

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

Focal length
80 mm

Shutter speed / f-stop
1/60 sec / f 11

If the skin looks too oily, mount the soft-reflector to the Ringflash C. This makes the reflection on the skin less dominant (see chapter 1.4 Directed And Diffused Reflections).

The soft-reflector (in cooperation with the modelling lights of Ringflash C) also reduces the red-eye-effect.

For a portrait, the focal length chosen is very short. This guarantees a fall-off of the light from the arms to the face and avoids a very even illumination that would be typical for the Ringflash C used as a main light (see chapter 1.3 The Inverse Square Law).

Balance carefully the power of the Ringflash C. If it is too bright, the shot becomes flat. If it is too dark, the skin may look “dirty”.

1 Ringflash C without honeycomb grids

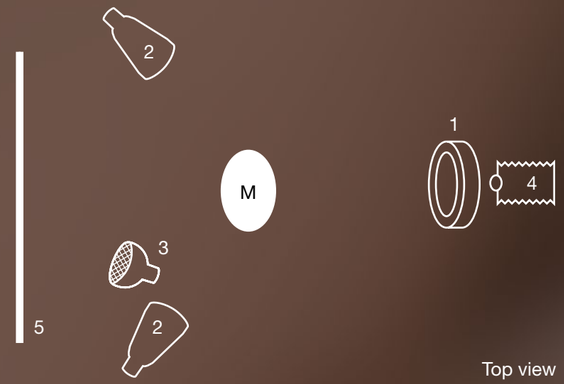
2 Pulsoflex EM 30 × 110 cm on Pulso G lamp base

3 P65 standard reflector with honeycomb grid on Pulso G lamp base

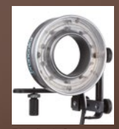
4 Camera

5 Dark grey background paper

M Model



Top view


Ringflash C


Pulsoflex EM 30 × 110


Pulso G


Standard Reflector P65


Honeycomb grids for P65, P45 and PAR, set of 3 pcs.


Topas A2

Verso A2

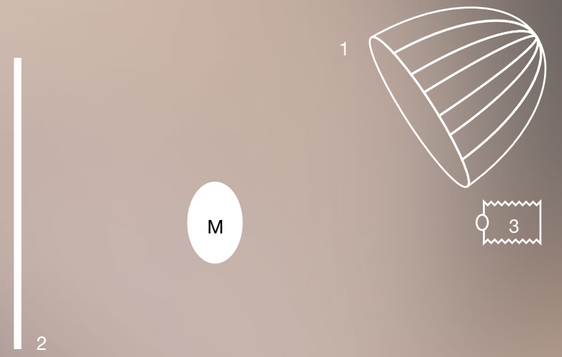
Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

Focal length
120 mm

Shutter speed / f-stop
1/125 sec / f 11

Para 220 FB (defocused) is used from the right side of the camera. Apart from placing the Para 220 FB centered behind the camera, we can also use it as a side light. It forms the face (or an entire body) perfectly by using one only lightshaper!

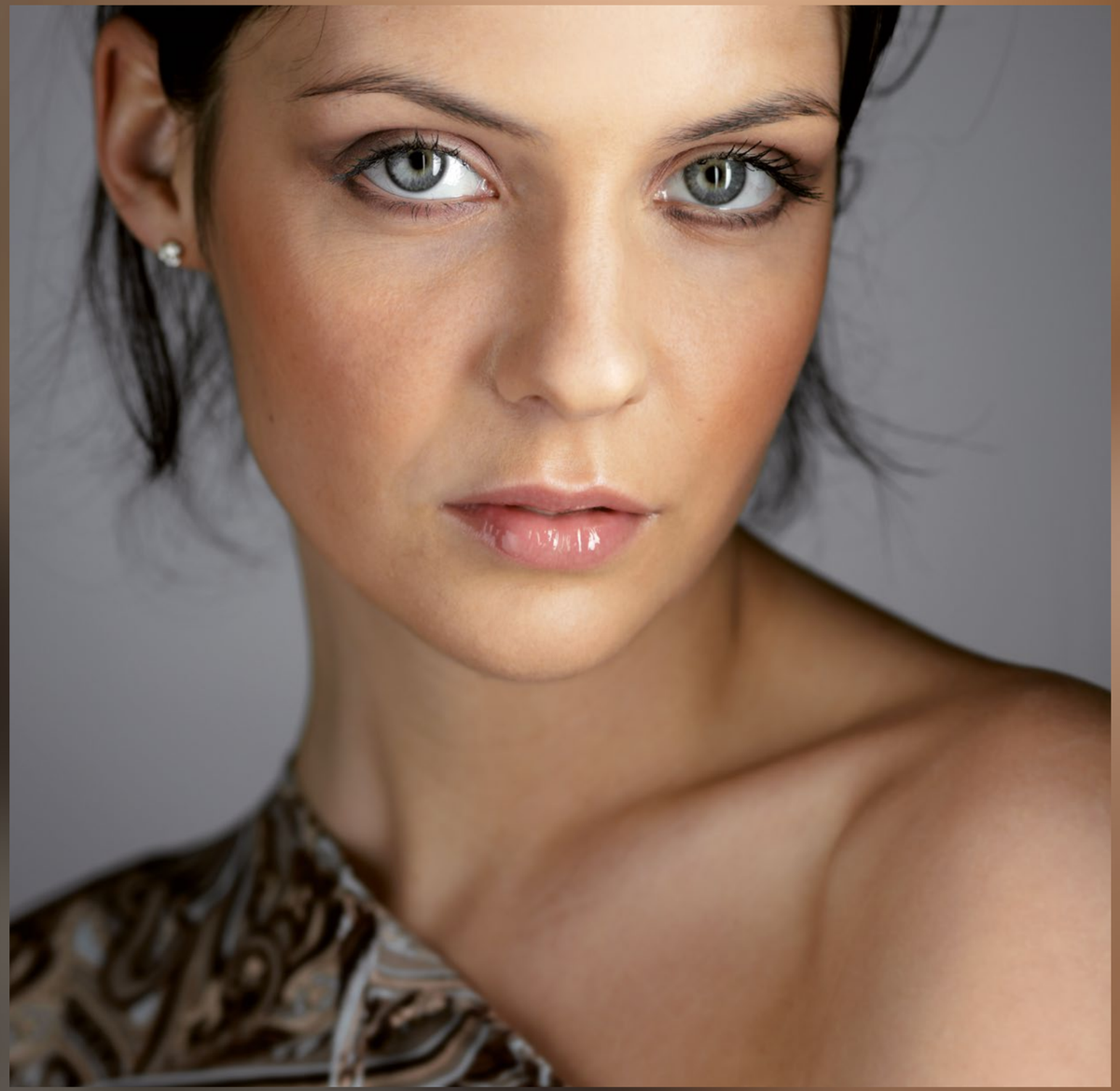


1 Para 220 FB defocused
2 Bright grey background paper
3 Camera
M Model

Side view


Para 220 FB


Topas A2



Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

Focal length
120 mm

Shutter speed / f-stop
1/125 sec / f 8½

The Pulsoflex C is placed very close to the model and directed more towards the camera than to the face.

Due to the soft edge-transfer (see paragraph 1.2.2 Edge-transfer) of the Pulsoflex C, you get nice gradations on both sides of the face and not only on the shadow-side.

Although the softbox is very close, the light remains hard as from the model's perspective only a very narrow Striplite can be seen. As such, this light emphasizes the structure of the skin and is best used with models having very good skin. The cardboard (3) controls the shadows on the right side of the model's face, and the reflecting wall (4) controls those on the left.

The high color saturation of the light makes it perfect for make-up shots and the narrow highlights put a cat-like accent on the eyes.

1 Pulsoflex C 60 × 100 cm on a Pulso G lamp base

2 P65 standard reflector with honeycomb grid on a Pulso G lamp base

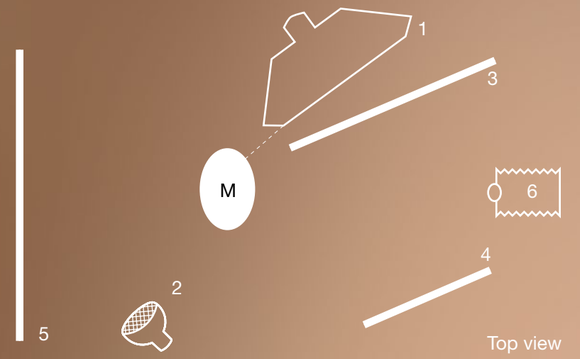
3 Black/white cardboard (the black side towards the lens)

4 Reflecting wall

5 Dark grey background paper

6 Camera

M Model



Top view

Pulsoflex C 60 × 100 | Pulso G | Standard Reflector P65 | Honeycomb grids for P65, P45 and PAR, set of 3 pcs. | Grafit A2

Camera type and Medium
Medium format with film 120

Resolution / Sensitivity
6 × 6 cm / ISO 100

Focal length
150 mm

Shutter speed / f-stop
1/125 sec / f 11

The portrait is shot with still-life tools using two Striplites 60. Using equipment in an untypical way can create new effects and ideas for lighting.
With the angle of the two Striplites, adjust the gradations towards the ears (see paragraph 1.2.2 Edge-transfer) and in their position you control the darker area in the center of the face. Adjust the two Striplites 60 very carefully and protect the lens well from their light (5).

The Softlight reflector P-Soft is used as fill-in light. Place it as close as possible to the model's upper body and just below the picture frame.

Depending on the hair color, the reflective cardboard (4) is placed higher above or closer by the model

This special lighting requires very precise power adjustments and a large power range. Two Grafits were the first choice.

1 Striplite 60 almost straight to the camera

2 Softlight reflector P-Soft from below the model's face

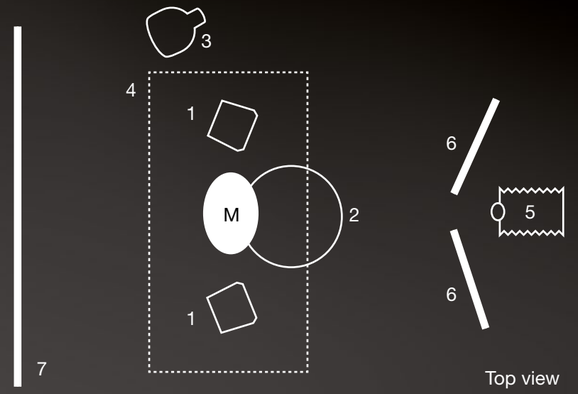
3 P65 standard reflector on a Pulso G lamp base for the background

4 White cardboard above the models head for a decent fill-in on the hair

5 Camera

6 Black flags to protect the lens from the strong light of the two Striplites 60 and to avoid flair.

M Model



Top view

Striplite 60 Evolution | Softlight Reflector P | Pulso G | Standard Reflector P65 | Grafit A4 | Grafit A2

2.2 full body & fashion

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

Focal length
120 mm

Shutter speed / f-stop
1/125 sec / f 8

Place the big area light (1) as low as possible. Your light gets very soft and nicely graduated with a heavy fall-off towards the legs (see chapter 1.3 The Inverse Square Law). The scene can be filled-in differently, but only Para FB (used defocused) shapes the body this perfectly. The camera is rather low, about as high as the model's knees. The result is an elegant, tall body. Using a large aperture (f 8.0) avoids visible structure (like footprints and crinkles) on the background, as it is far out of focus.

A remote controlled Grafit A4 was used to feed the Cumulite. The second one was for the Para FB.

1 Cumulite 2 (if not available use a Pulsoflex C 150 x 150 cm) as main-light

2 Para 220 FB, defocused as a fill-in

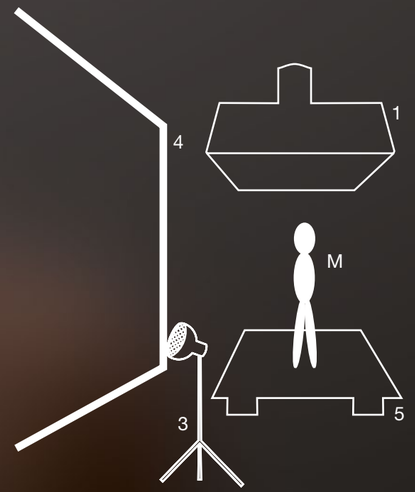
3 P65 standard reflector with honeycomb grid on a Pulso G lamp base for the bright spot on the background

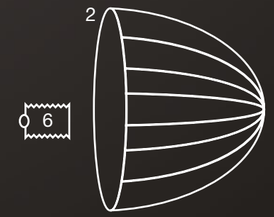
4 Dark grey background paper

5 Low table (30 cm), covered with the same background paper

6 Camera

M Model





Side view


Cumulite 2


Pulsoflex C 150 × 150


Para 220 FB


Pulso G


Standard Reflector P65


Honeycomb grids for P65, P45 and PAR, set of 3 pcs.


Grafit A4

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

Focal length
120 mm

Shutter speed / f-stop
1/125 sec / f 11

First adjust the exposure of the light table. The textile should not be burnt.

Then comes the white background. You may want to consider protecting the model from scattered light with some black flags.

Place the accent lights and adjust the power. Fill in the model's face by using a lightshaper with honeycomb grids to direct the light on the model's face only. Do not fill-in the entire set-up. This might destroy the cool and mystical lighting.

Two symmetrical power packs (Nano 2) illuminated the white acrylic from below while the asymmetrical ones were used for the other lightshapers.

1 White acrylic plate on 40 cm Foba tubes (white paper on floor below)

2 Pulso G lamp bases (bare bulb, no accessories)

3 Satellite Staro with honeycomb grid on Unilite lamp base as a fill-in on the model's face only

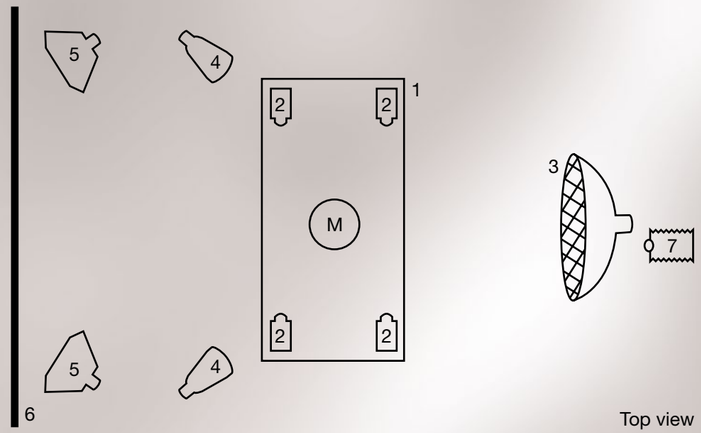
4 Pulsoflex EM 30 × 110 cm on Pulso G lamp base as accent lights

5 Pulsoflex EM 80 × 140 cm on background

6 White wall

7 Camera

M Model



Top view

Pulso G | Unilite | Satellite Staro | Honeycomb grid for Satellite Staro | Pulsoflex EM 30 × 110 | Pulsoflex EM 80 × 140 | Grafit A4 | Nano 2 | Topas A4

Camera type and Medium
Digital DSLR

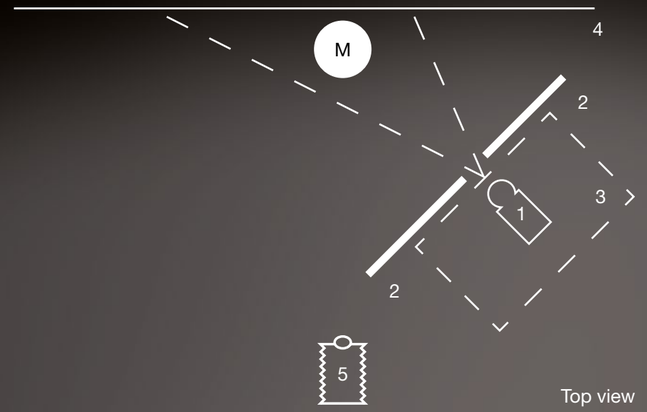
Resolution / Sensitivity
21 Mpixels / ISO 100

Focal length
55 mm

Shutter speed / f-stop
1/125 sec / f 11

A single lamp base, equipped with a matt protecting glass (1), is placed quite close behind a small opening of two polystyrene walls (2). This is the reason why the shadows of the two walls are soft and evenly graduated.

The model however is far away from the light source and close to the background wall - her shadow appears hard. (Read 1.1.1 and 1.1.2, hard and soft light.) To avoid too much indirect light and to guarantee a high contrast, the polystyrene walls are painted black on the side facing the lamp head and another black cardboard (3) blocks most of the light going towards the ceiling.



Top view

1 Pulso G bare bulp (no accessories)

2 Black painted polystyrene walls to cut the light

3 Black cardboard over the lamp base to cut the light

4 White wall

5 Camera

M model


Pulso G


Scoro A4S

Camera type and Medium
Medium format with digital back

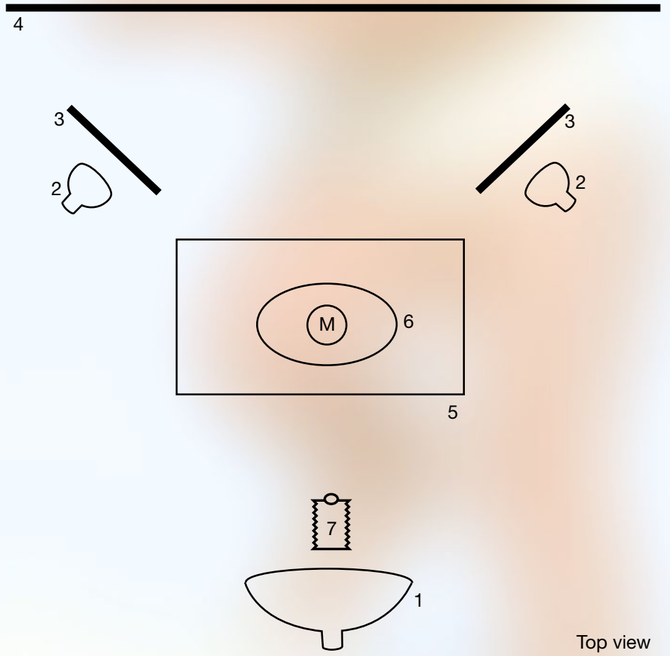
Resolution / Sensitivity
16 Mpixels / ISO 100

Focal length
120 mm

Shutter speed / f-stop
1/125 sec / f 16

To simplify the assembling of three different shots in one, it was very important to illuminate the blue background as evenly as possible.

Make sure that the distance between the model and the background is big enough. Otherwise the blue light might bounce back and provoke an unpleasant skin tone.



Top view

1 Satellite Staro (without grids) on a Pulso G lamp base, above the camera

2 P65 standard reflectors on Pulso G lamp bases, defocused

3 Light blue filters (about ½ stop)

4 White background

5 White acrylic on a white covered low table, shiny side up

6 Cotton wool

7 Camera

M Model

Pulso G | Standard Reflector P65 | Satellite Staro | Grafit A4

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
16 Mpixels / ISO 50

Focal length
120 mm

Shutter speed / f-stop
1/125 sec / f 11

The three indirect lights all have the same power and their light circles overlap a little on the white walls. The camera is as close as possible to the reflecting wall and in a position where no direct light from one of the standard reflectors can reach the lens.

The big Pulsoflex C 150 × 150 cm on the opposite side is used as an additional accent light (and not as a fill-in). Therefore it is placed behind the model. The saturation of the entire shot (except the blue-jeans) is reduced to 50%.

This very soft (almost diffused) light reaches every corner of the studio. No additional light for the background is required.

1 White walls (paper, polystyrene or cloth), in total 6 to 8 meters

2 P70 standard reflector on Pulso G lamp base used as main light

3 P70 standard reflector on Pulso G lamp base used as fill-in light

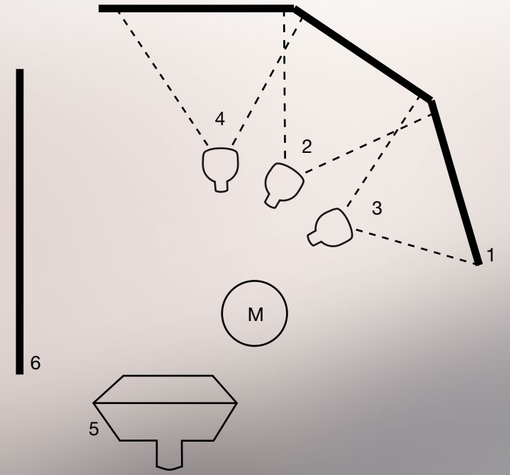
4 P70 standard reflector on Pulso G lamp base used as accent light

5 Pulsoflex C 150 × 150 cm on Pulso G lamp base

6 White wall

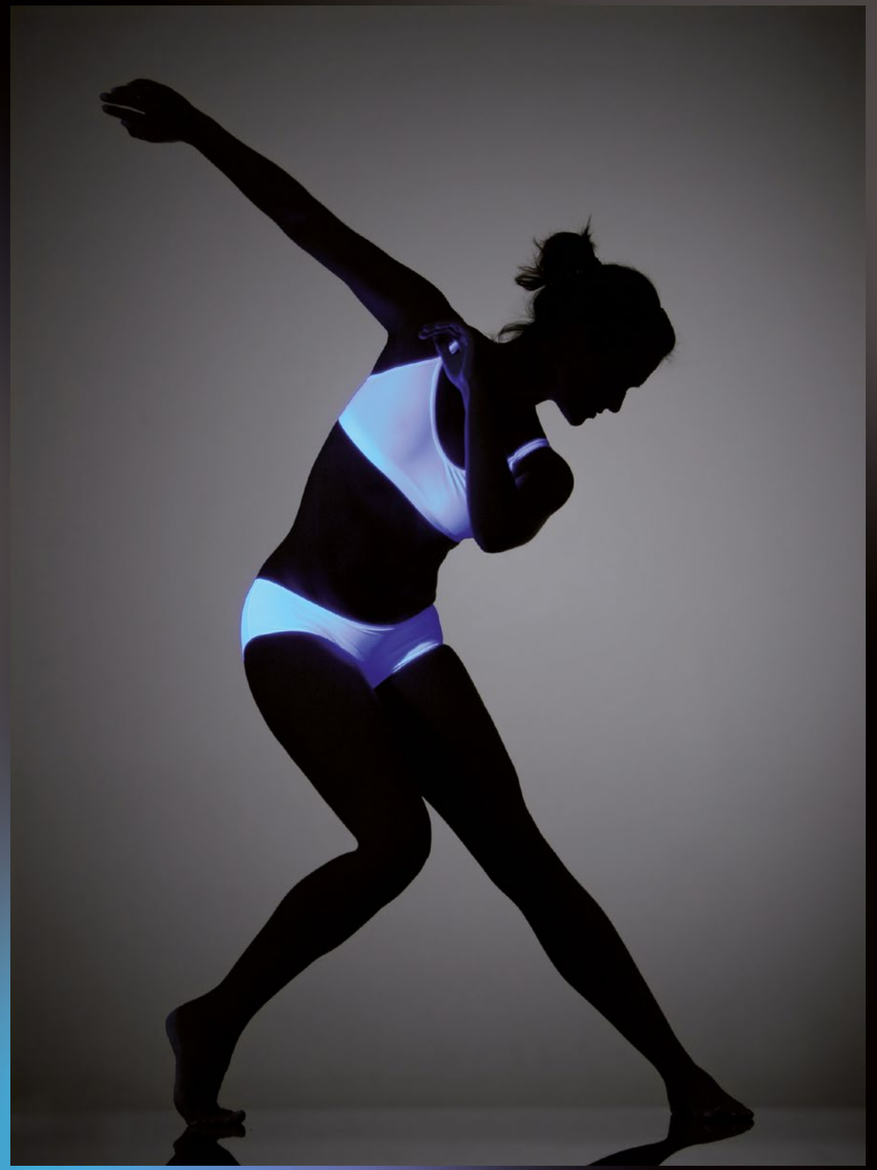
7 Camera

M Model



Top view

Standard Reflector P70 | Pulso G | Pulsoflex C 150 x 150 | Topas A4



Camera type and Medium
35 mm DSLR

Resolution / Sensitivity
10 Mpixels / ISO 100

Focal length
135 mm

Shutter speed / f-stop
1/125 sec / f 11

1 Pulso G lamp base with UV attachment (main light)

2 Pulso G lamp base with UV attachment (fill-in)

3 Pulso G lamp base with P65 and honeycomb grids

4 Black acrylic plate on low table

5 Grey background paper

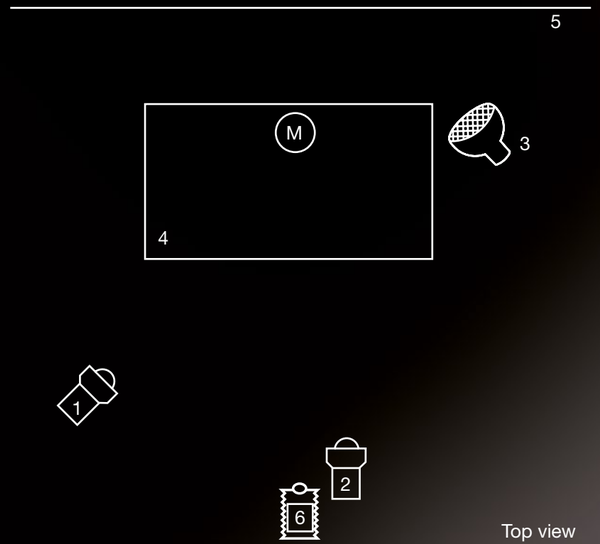
6 Camera

M Model

Two Pulso G lamp bases both equipped with a UV attachment illuminate the model wearing white underwear. The left one is used as main light (1). On the right and very close to the camera we placed the second as fill-in (2).

In this situation, a white reflective wall would not be useful as a fill-in light because it would convert the UV flash into the visible spectrum and illuminate the model with visible (day-)light.

The background is lit with a “normal” flash head and a P65 standard reflector (3) with medium grids.



Top view


Pulso G

UV attachment


Standard Reflector P65


Honeycomb grids for P65, P45 and PAR, set of 3 pcs.

Scoro A4S

Camera type and Medium
Meduim format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 100

Focal length
120 mm

Shutter speed / f-stop
1/4 sec / f 5.6 ½

The exposure is 50% candlelight and 50% flashlight. The grey balance is in between the two color temperatures (about 4000 K). The candles appear warm and the flashlight already turns a little blue. No color filters are required.

Try different time – aperture – variations.

The bare bulbs below the acrylic had to be at a very low intensity. They should not overpower the candles. I used two Grafit A2 at the lowest possible settings (15 joules each).

1 Pulso G lamp bases (bare bulb, no accessories attached)

2 White acrylic plate on 40 cm foba tubes (white paper covers the floor below). About 200 lit candles

3 Para 220 FB (defocused) as fill-in light

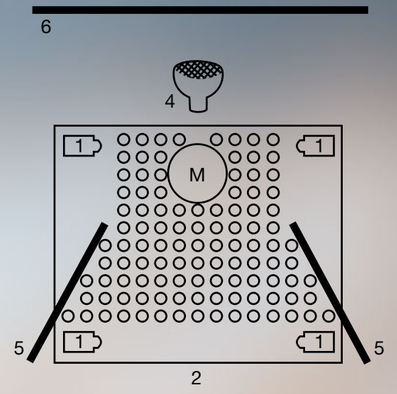
4 Softlight reflector P-Soft with diffuser and honeycomb grid hidden behind the acrylic. It is lighting the background unevenly (center weighted)

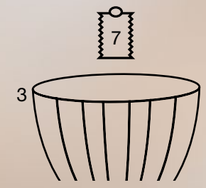
5 Cardboard walls to avoid air circulation that would blow out the candles

6 White background

7 Camera

M Model





Top view


Para 220 FB


Pulso G


Softlight Reflector P


Honeycomb grid for Softlight


Grafit A2


Grafit A4

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
16 Mpixels / ISO 50

Focal length
120 mm

Shutter speed / f-stop
1/125 sec / f 11

1 Para 220 FB defocused

2 P70 standard reflectors on Pulso G lamp bases bounced indirectly to illuminate the background

3 High polystyrene walls; the white side is facing the P70 standard reflector

4 White acrylic plate on a low, white covered table

5 White background paper

6 Reflective wall to control the contrast

7 Camera

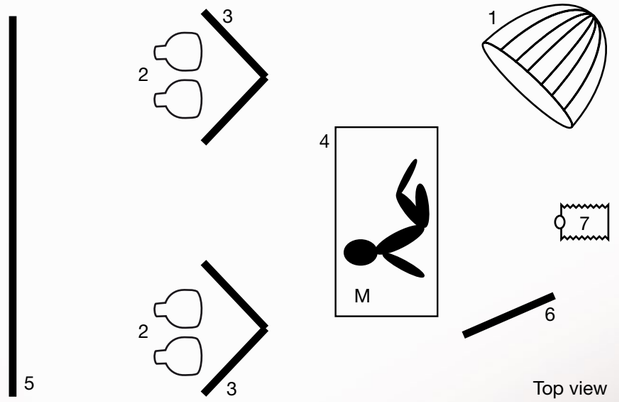
M Model

This (diffused) indirect illumination of the background is very even. Any structure (like texture of the wall paint or small crevices) of the background wall gets lost - even without overexposure.

Make a first shot with the background only. Set the white there to RGB 250/250/250. This ensures a clean white, but it is not strong enough to have an influence on the model that should appear completely black now. If she appears too bright you increase the distance between her and the background.

Painting the polystyrene walls black on the side facing the model will help to achieve a clear distinction of the white clothing against the white background.

As the acrylic plate has a shiny surface, possible shadows on the left side are “reflected away”.



Top view


Para 220 FB


Standard Reflector P70


Pulso G


Grafit A4


Nano 2

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 25

Focal length
120 mm

Shutter speed / f-stop
1/125 sec / f 16

1 Pulsoflex EM 80 × 140 cm on a Unilite lamp base

2 Pulsoflex EX 30 × 110 cm on a Unilite lamp base

3 Black velvet

4 Dark grey background paper

5 P65 Standard reflector on a Pulso G lamp base

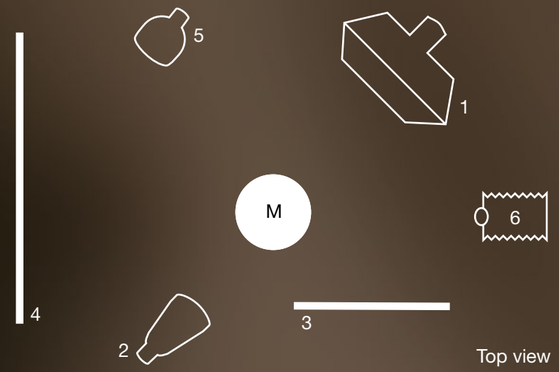
6 Camera

M Model

We can compare this set-up with a classic portrait: We have a main light (1), an accent light (2) but instead of a fill-in light we use black velvet.

This set-up might be too harsh for a portrait but is a simple solution to illuminate a body interestingly.

With the angle between the two lights and the model (in this example I had exactly 180 degrees), we can adjust the size of the shadow on the body.



Top view

Pulso G | Standard Reflector P65 | Unilite | Pulsoflex EM 30 × 110 | Pulsoflex EM 80 × 140 | Grafit A4

Camera type and Medium
Medium format with a digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

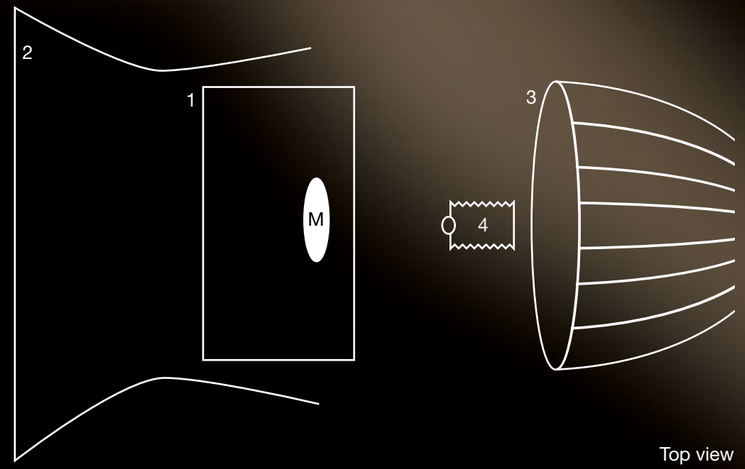
Focal length
80 mm

Shutter speed / f-stop
1/125 sec / f 16

To emphasize the form of the body and to show clearly the structure of every muscle, I chose the biggest Para FB and used it completely defocused.

Using it like this, the center of Para FB does not reflect any light. The reflections are coming from the edges, all around the camera. These are sidelights and therefore they shape the body perfectly.

To read more about the light of Para FB, see chapter 3.1 Lightshapers And Their Characteristics / Para FB.



Top view

1 Black acrylic plate on low table
2 Black velvet
3 Para FB 330 defocused
4 Camera
M Model


Para 330 FB


Grafit A4

Camera type and Medium
35 mm / color negative

Resolution / Sensitivity
24 x 36 mm / ISO 160

Focal length
35 mm

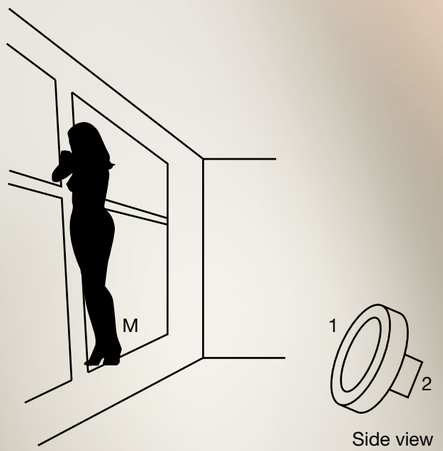
Shutter speed / f-stop
1/200 sec / f 11

Daylight is underexposed by about 1 stop.

The model is illuminated with a Ringflash C (and a certain amount of indirect light as the location is small and the walls bright).

With 35 mm the focal length is very short, and the perspective therefore dramatic. In this set-up, a Ringflash that is always rectangular around the lens would create a heavy gradation on the body: The head would be underexposed and the legs way overexposed (see chapter 1.3 The Inverse Square Law).

The new Ringflash C can be tilted in any direction to compensate this effect (if needed, three different honeycomb grids will give even more control over the illumination).



1 Ringflash C
2 Camera
M Model

Side view

Ringflash C

Verso A2

Camera type and Medium
Medium format with b/w film 120

Resolution / Sensitivity
6 × 6 cm / ISO 100

Focal length
120 mm

Shutter speed / f-stop
1/125 sec / f 8

1 P70 Standard reflector on a Pulso G lamp base, indirect (main light)

2 P70 Standard reflector, indirect (fill-in light)

3 P70 Standard reflector, indirect (accent light)

4 Large black velvet

5 Medium grey background paper

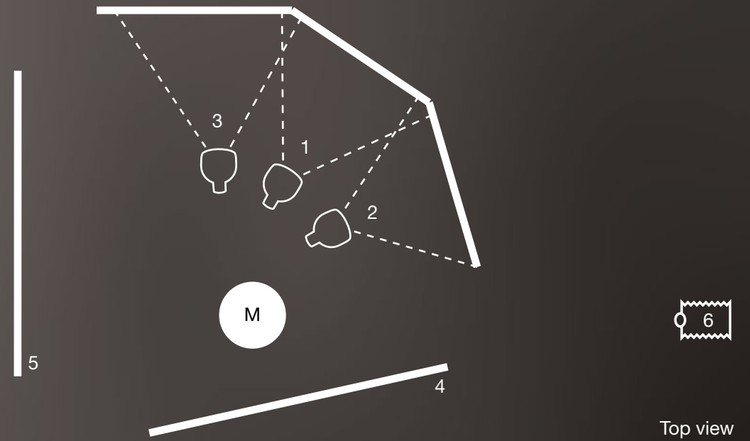
6 Camera

M Model

A huge soft light is one of the best possibilities to shape a body and make many details visible (see 1.1.4 Light and three dimensionality).

At the beginning, set all three indirect lights to the same power (and choose this setting as your aperture). Different parts of the body get more or less of the light and therefore appear nicely graduated - from an overexposure of 1½ stops on the light side to an absolute black in the shadows. The power of the three lights can then be adjusted individually.

To make sure that the light does not become diffuse and flat, place a large black wall very close to the model. This increases the contrast to a maximum.



Top view


Standard Reflector P70


Pulso G


Topas A4

Camera type and Medium
Medium format with a digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

Focal length
120 mm macro

Shutter speed / f-stop
1/125 sec / f 16

Unlike the black and white photograph of a woman's back in this chapter that is shot with only one soft light, this body detail is realized with hard lights. To get a lot of details in the photograph, I had to work with not less than six lights.

Both Standard reflectors are not directed straight at the model, but more towards the camera. With the use of honeycomb grids, we achieve additional gradations.

Once the light is placed, vary the illumination with the position of the model rather than replacing the lights too often.

All the lightshapers had a high light output (open reflectors) and were extremely close to the model. Power packs like Grafit A2 and Verso A2 that allow performance at very low settings were essential.

1 Picture frame

2 P70 Standard reflector with honeycomb grid on Pulso lamp base, both very close to the body

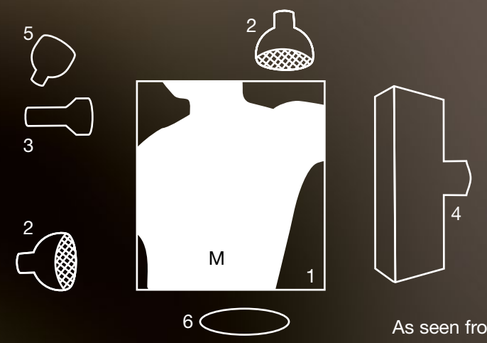
3 Picolite with Fresnel spot attachment to the model's neck

4 Pulsoflex EM 30 × 110 cm on Pulso G lamp base as a backlight from the right behind the model

5 P65 Standard reflector on a Unilite lamp base for the background (dark grey paper)

6 Small mirror (held in hand)

M Model



As seen from the camera


Standard Reflector P65


Pulso G


Unilite


Picolite small lamp


Fresnel spot attachment for Mobilite/Picolite


Pulsoflex EM 30 × 110


Honeycomb grids for P70, set of 3 pcs.


Grafit A2


Verso A2

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

Focal length
80 mm

Shutter speed / f-stop
20 sec / f 32

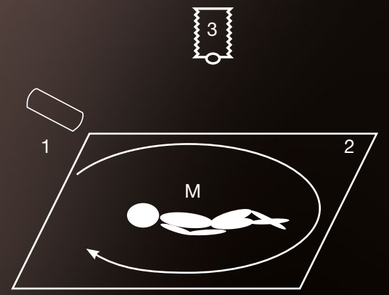
1 Picolite with narrow honeycomb grid
2 Black silk
3 Camera
M Model

The body landscape on page 52 is illuminated with no less than 5 independent spotlights. If we want to extend this kind of illumination to a full body shot, we can either use some 25 lights or:

We use one single light (here it is a Picolite (1) with the most narrow honeycomb grid), and move it around the model while we constantly fire one flash after another. This shot is done with a sequence of 40 flashes and an interval of ½ sec, which requires an exposure time of 20 seconds.

When we make sure that every spot of the body is only lit with one single flash, we can expect an absolute sharp picture, even when the model moves a little bit (breathing) during the very long exposure time.

A high-end power pack such as Scoro makes life very easy as the flashes are fired in a constant and adjustable rhythm.

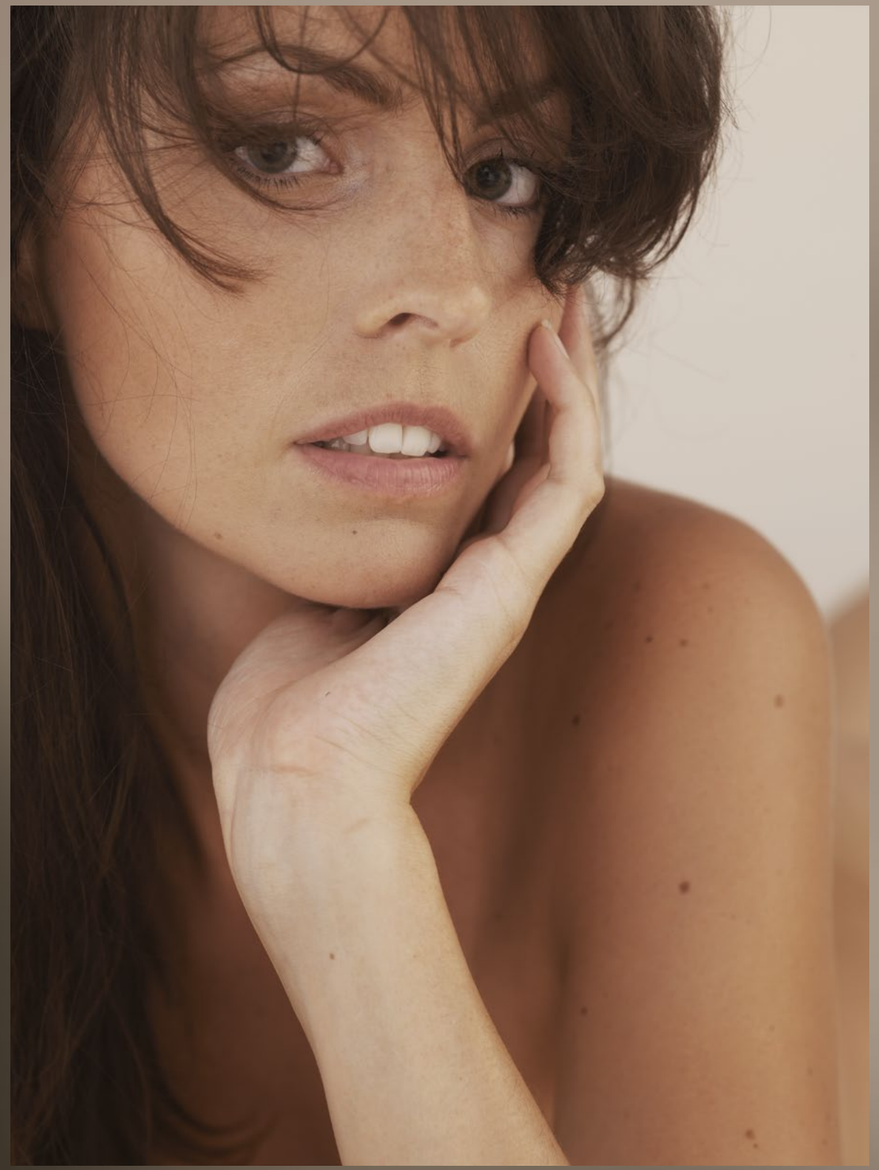


Side view

Attachment with 3 honeycomb grids and 2 aperture masks for Mobilite / Picolite

Picolite small lamp

Scoro A4S



Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 100

Focal length
120 mm

Shutter speed / f-stop
1/125 sec / f 8

To illuminate an object diffused, the lightshaper should be several times the size of the object. On a full-body shot the easiest way to do this is by indirect illumination.

Three bare bulb flash heads are directed away from the model, making sure that no direct light is hitting on her. All the walls are as white and color-neutral as possible.

As the light comes from everywhere, a good lens shade is essential to avoid flair. This light is very easy to handle. The model and the photographer can move freely, the skin appears very clean, even without any make-up and reflections in the eyes are almost invisible (see chapter 1.4 Directed And Diffused Reflections).

Indirect lighting always requires a lot of light. Here I used two power packs Topas A4 at 3200 joules each.

1 Unilite lamp bases (no accessories attached and directed away from the model)

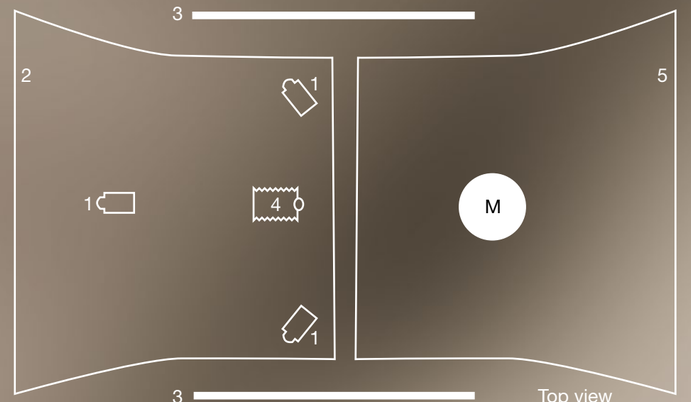
2 White background paper

3 White polystyrene walls

4 Camera

5 Background paper (bright sepia)

M Model



Top view

Unilite

Topas A4

Camera type and Medium
Medium format with digital back

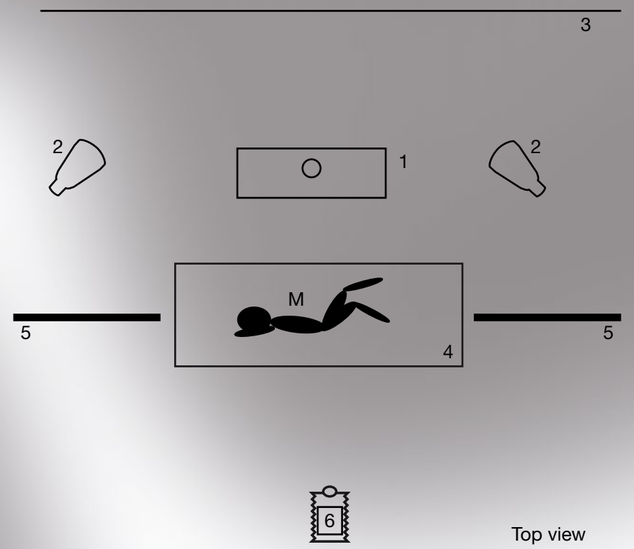
Resolution / Sensitivity
39 Mpixels / ISO 50

Focal length
120 mm

Shutter speed / f-stop
1/125 sec / f 16

In a first step, I illuminated the background and made sure that this light had no uncontrolled effect on the model's body. Two black polystyrene walls (5) block most of the light being reflected from the white background. When we additionally place the model quite far away from the background, her body is almost completely black when we fire the background flashes only.

After this, I placed a big soft box (here it is a Pulsoflex EM 80 × 140 cm (1)) above and slightly behind the model. We adjust its power carefully, so the body doesn't become too bright and the body forms are well visible.



Top view

1 Pulsoflex EM 80 x140 cm on a unilite lamp base

2 Pulsoflex EM 40 x155 cm on a Pulso G lamp base

3 White background

4 White acrylic plate on table

5 Polystyrene walls to cut the light reflected from the background

6 Camera

M Model

Pulso G | Unilite | Pulsoflex EM 80 × 140 | Pulsoflex EM 40 × 155 | Scoro A4S

Camera type and Medium
Large format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

Focal length
180 mm

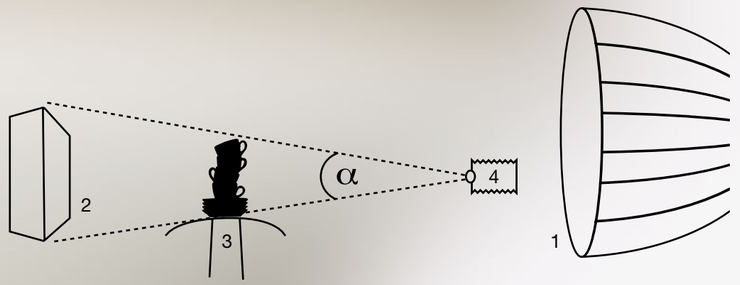
Shutter speed / f-stop
1/20 sec / f 22

Not only for people photography but also for products, Para FB is one of the best choices to shape and give volume to the object.

In this shot Para FB is used defocused.

Due to the long lens, the picture angle is very narrow and a Boxlite 40 is just big enough to serve as a perfect white background. This technique is easier than lighting a large white background and placing many black flags to protect the (shiny) object from unpleasant reflections.

1 Para FB 330 defocused
2 Boxlite 40
3 White and shiny acrylic, slightly curved
4 Camera
α Picture angle



Side view

Boxlite 40

Para 330 FB

Topas A4

Camera type and Medium
Large format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

Focal length
100 mm

Shutter speed / f-stop
1/2 sec / f 22

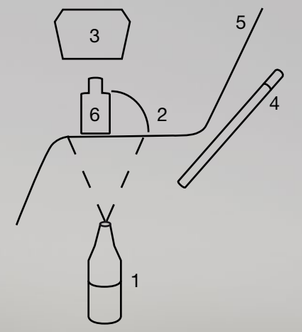
1 Picolite with projecting attachment
2 Concave mirror
3 Striplite 60
4 Litestick
5 Small acrylic background table
6 Frosted bottle

A Picolite (1) on a floor stand and equipped with a projecting attachment illuminates the acrylic table below and behind the frosted bottle. To compensate the strong gradation this light creates, we place a concave and silver coated cardboard (2) behind the object (6).

A Striplite 60 (3) is placed as low as possible and horizontally above the bottle‘s cap. Due to the low position, the light of this Striplite has no undesired effect on the background (read chapter 1.3 The Inverse Square Law).

The concave background finally is lit with a Litestick (4). With its distance to the table we define the gradations and the contrast. We use the integrated heat protection to create the dark line between the two highlights.

The lightstick is connected to an independent Scoro pack. We program this unit with a short delay, maybe ½ sec, so we expose the background ½ sec later than the main lights - enough time for us to hold a strong soft filter in front of the lens before we fire the Litestick. This softens the contours of the bottle.



Side view

Picolite small lamp | Projecting attachment for Picolite | Striplite 60 | Litestick | Scoro A2S | Scoro A4S

Camera type and Medium
Large format / slide

Resolution / Sensitivity
4/5 inch / ISO 100

Focal length
360 mm

Shutter speed / f-stop
1/30 sec / f 32

The distance (d) between the diffuser and the lens defines the amount of black you will obtain in the shot.

With the angle and the position of your main light (1) you adjust the gradations. The focusing and the distance have a big influence on the contrast of your picture.

The Pulso Spot 4 with 150 mm Projection attachment is used to emphasize the texture of the black stone. If the Striplite 60 has an unpleasant influence on the gradations, you have to work with a double exposure. Shoot the lights (1) and (3) first, then cover the diffuser with black cloth (or remove it) and expose the Striplite 60.

1 P65 Standard reflector with wide grids on a Pulso G lamp base

2 Striplite 60

3 Pulso Spot 4 with 150 mm Projection attachment and templates

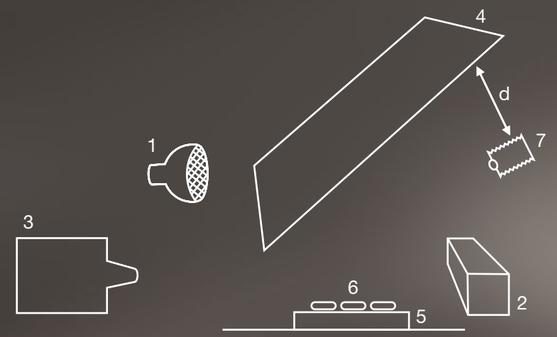
4 White acrylic plate (matt side towards the objects)

5 Black stone

6 Objects

7 Camera

d Distance between the acrylic plate and the lens



Side view


Standard Reflector P65


Pulso G


Honeycomb grids for P65, P45 and PAR, set of 3 pcs.


Striplight 60 Evolution


Pulso-Spot 4


Optical Snoot 150-mm 5500 K for Pulso-Spot


Grafit A2


Grafit A4

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

Focal length
120 mm

Shutter speed / f-stop
1/60 sec / f 22

Another strictly diffused illumination.

A bare bulb flash head is placed right above the camera and it is directed upwards. The banana actually lies on the only spot in the studio where no direct light is hitting.

Rather small and movable white walls allow the removal of even the smallest shadows easily.

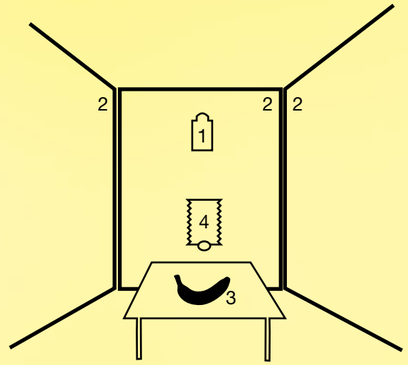
Indirect illumination always requires a very high light output. To reach f/22 at ISO 50, I had to gather the light of two Grafit A4 power packs at 3200 joules each. A Pulso Twin head (with two flash tubes of 3200 joules each) provided the total of 6400 joules I needed for this shot.

1 Pulso Twin lamp base as bare bulb (no accessories)

2 White walls

3 Object on a white acrylic table (matt side up)

4 Camera



Side view

Pulso Twin

Grafit A4

Camera type and Medium
Large format / slide

Resolution / Sensitivity
4/5 inch / ISO 100

Focal length
300 mm

Shutter speed / f-stop
1/30 sec / f 5.6

The Picolite with the narrow grid illuminates the letterhead with the four brand names. The sheets in the background are lit from both sides with two standard reflectors and grids.

The small highlight in the left lower corner is achieved with a concave mirror, reflecting the light of the standard reflector on the right side (2).

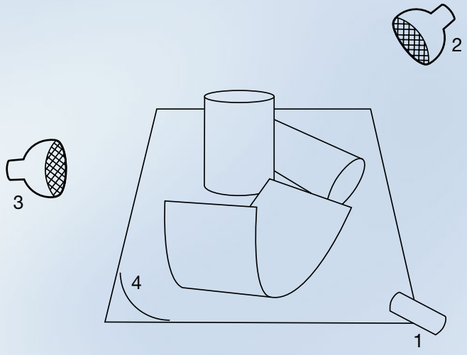
I wanted to expose this high-key product shot with a wide-open lens to get a very selective focus, and as the object itself is already very bright, I needed a power pack that allowed work at extremely low settings. A Grafit A2 was (again) the best choice.

1 Picolite with attachment and narrow grid

2 P70 Standard reflector on Pulso G lamp base and medium grid

3 P70 Standard reflector on Pulso G lamp base and narrow grid

4 Concave mirror



As seen from the camera


Standard Reflector P70


Pulso G


Honeycomb grids for P70, Set of 3 pcs.


Picolite small lamp


Attachment with 3 honeycomb grids and 2 aperture masks for Mobilite / Picolite


Grafit A2

Camera type and Medium
Large format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 100

Focal length
100 mm

Shutter speed / f-stop
1/60 sec / f 16 ½

1 Pulso G lamp base with P70 and honeycomb grids

2 Pulso G lamp base with Softlightreflector P

3 Boxlite 40

4 Black cardboard to cut the light of Boxlite 40

5 Big white acrylic plate

6 Aquarium (about 70 cm wide)

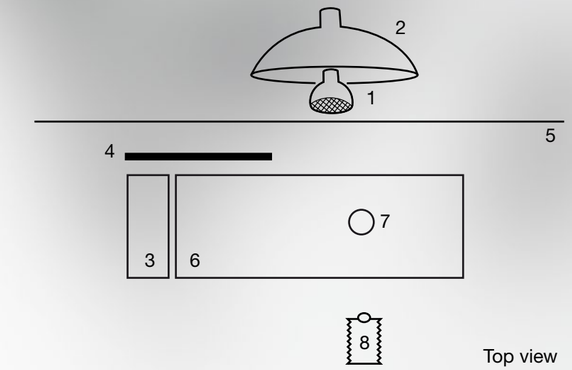
7 Bottle

8 Camera

The acrylic plate (5) behind the aquarium (6) is lit with two independent light sources: A Pulso G lamp base with a normal reflector (1) and an average sized reflector (e.g. a Softlight reflector P (2)). The P70 (equipped with honeycomb grids) is the main light, and shapes the transparent object. As the bottle is only partly below the water level, we have to „extend“ the gradations created by the P70 otherwise we get very wide and dark edges of the bottle where it is above the water level. The Softlight reflector P is responsible for this extended gradation.

A Boxlite (3) finally lights the reflective parts of the bottle (the cap) and it also creates a decent catch light on the glass.

All lights are connected to the same Scoro pack that is set to the shortest possible flash duration - at the power setting of this shot, a 1/5600 s was available. This exposure time is by far short enough to freeze the water splash. (At lower settings t0.1 values as short as 1/8000 s are possible with Scoro.)



Top view


Standard Reflector P70


Pulso G


Honeycomb grids for P70, set of 3 pcs.


Softlight Reflector P


Boxlite 40


Scoro A4S

Camera type and Medium
Large format / slide

Resolution / Sensitivity
4 × 5 inch / ISO 100

Focal length
360mm

Shutter speed / f-stop
1/30 sec / f 8

As the object is transparent, all the lights are placed below or behind it.

The acrylic table is white and as such, we have to protect it properly from the white light of the left side of the Striplite 60. If we do not, all the colors will turn out very pale.

1 Picolite with Fresnel spot attachment and blue gel filter

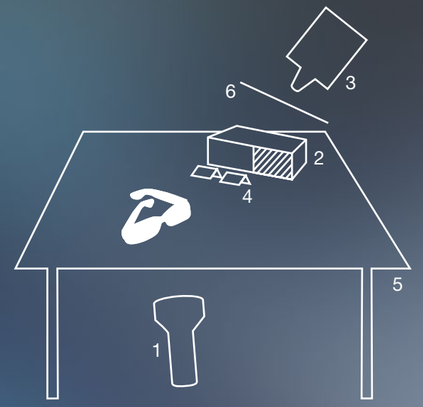
2 Striplite 60, the right side with a turquoise gel filter

3 Pulso Spot 4 with 150 mm spot attachment

4 Small cardboards to limit the amount of white light falling on the table

5 White acrylic with the matt side up

6 Yellow gel filter



Side view

Picolite
small lamp

Fresnel spot
attachment
for Mobilite/Picolite

Striplight 60
Evolution

Pulso-Spot 4

Optical Snoot 150-mm
5500 K for Pulso-Spot

Grafit A2

Camera type and Medium
Large format / slide

Resolution / Sensitivity
4 × 5 inch / ISO 100

Focal length
480 mm

Shutter speed / f-stop
1/30 sec / f 32

1 Pulsoflex C 150 × 150 cm on a Pulso G lamp base

2 Dark grey background paper

3 Pulsoflex EM 80 × 140 cm on a Unilite lamp base

4 P65 Standard reflector with narrow grid on a Pulso G lamp base

5 Light blue gel filter

6 White acrylic plate (matt side to the object)

7 Black velvet (to avoid visible reflection of the studio walls in the tap)

8 Object

9 Camera

10 P70 Standard reflector with medium grid on a Pulso G lamp base

11 Pulso Spot 4 with 150 mm Projection attachment and templates

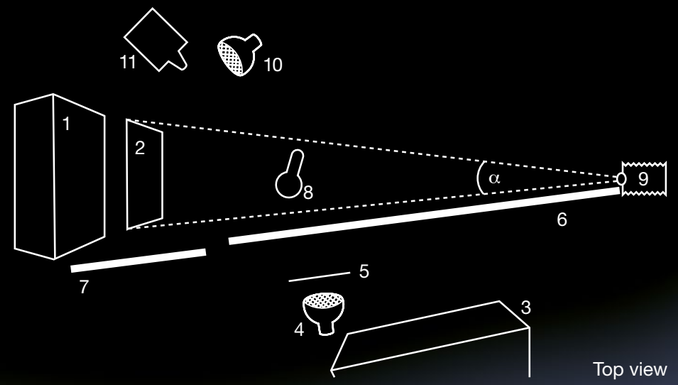
α Picture angle

In a first step you place the big softbox (1) behind the object. Choose its brightness around 250-250-250 (RGB) or 2.7 f-stops above your aperture to get a clean white. If you go far above this value, your entire studio will be lit and visible in the chrome tap.

Cut a grey cardboard (2) in the dimensions of your photograph, place it between the softbox (1) and the object and illuminate it seperately (10). As a result you get a perfect contours all around the chrome tap. This technique becomes easier, if you choose a long focal length and a narrow picture angle α.

The Pulso Spot 4 with 150 mm projection attachment and templates illuminates the running water only. The light does not hit the tap and therefore we do not get a burnt highlight anywhere.

The rest is comparable to a classic chrome shot (see the cuttlery picture in this chapter).



Top view

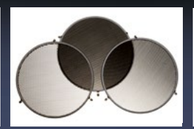

Pulsoflex C 150 × 150

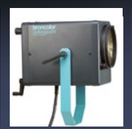

Pulso G


Unilite


Pulsoflex EM 80 × 140


Standard Reflector P70


Honeycomb grids for P65, P45, PAR and P70, Set of 3 pcs.


Pulso-Spot 4


Optical Snoot 150-mm 5500 K for Pulso-Spot


Grafit A2


Topas A4

2.5 mixed lights

Camera type and Medium
Large format / slide

Resolution / Sensitivity
4 × 5 inch / ISO 100

Focal length
90 mm

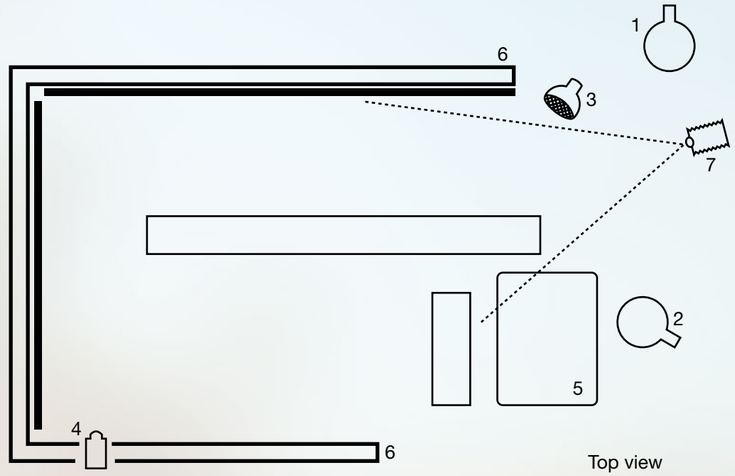
Shutter speed / f-stop
1/2 sec / f 11

The Balloon on the left (2) is supporting the available daylight coming through the skylight (5). The second Balloon is used as a general fill-in.

The spotlight of the Standard reflector with narrow grid (3) breaks the very even illumination on the walkway and the bare bulb close to the background produces another strong accent.

The warm-tone fluorescent lights are slightly burnt and therefore lose their color partially.

1 Balloon on a Unilite lamp base
2 Balloon on a Unilite lamp base
3 P70 Standard reflector with narrow grid on a Pulso G lamp base
4 Pulso G lamp base (bare bulb)
5 Daylight
6 Fluorescent light (warm-tone)
7 Camera



Top view


Standard Reflector P70


Pulso G


Unilite


Honeycomb grids for P70, Set of 3 pcs.


Balloon


Grafit A4

Verso A2

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
39 Mpixels / ISO 200

Focal length
120 mm

Shutter speed / f-stop
1/4 sec / f 5,6 ½

The HMI (1) (800 W from a P65 reflector) illuminates only the back side of the model. Like this, the front and the face are not affected by this light and remain dark. The background shouldn't get any light from the HMI either.

The flashlight (out of a focussed Para 220 FB) therefore can guarantee an absolute sharp picture of the model's front and face... if the flash duration is short enough. Here a Scoro A4 set to t0.1 (min) of 1/3000 sec. An additional narrow softbox (a Pulsoflex EM 40 × 155 cm) illuminates the model's front contours and a P70 with grids brigthens up the model's face.

By the way: The movement visible in the picture is the "landing" of the model. Like this, I can shoot when the model has the best position and pose. I do not have to estimate 1/4 sec before this time and I do not have to deal with any rear shutter synchronisation and delays.

1 HMI 575/800 lamp base with P65 and honeycomb grids

2 Para 220 FB (focussed)

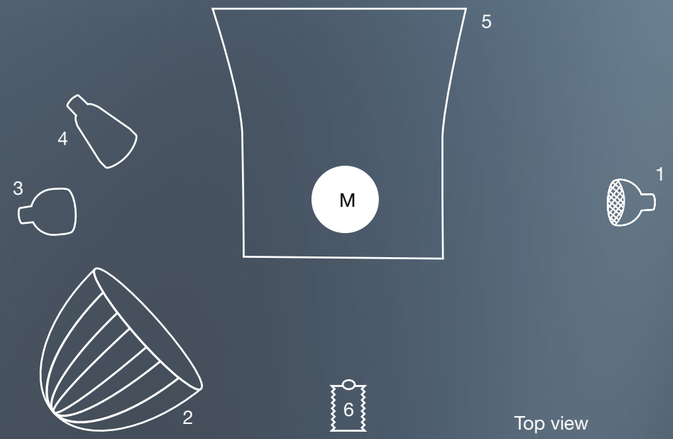
3 Pulso G lamp base with P70 and honeycomb grids

4 Pulsoflex EM 40 × 155 cm on a unilite lampbase

5 Dark grey background

6 Camera

M Model

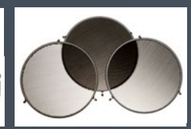


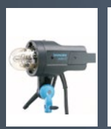
Top view


Standard Reflector P65/70


HMI 575/800 Lamp Base


HMI 575/800


Honeycomb grids for P65, P70 and PAR, set of 3 pcs.


Pulso G


Para 220 FB


Pulsoflex EM 40 × 155


Unilite


Scoro A4S

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

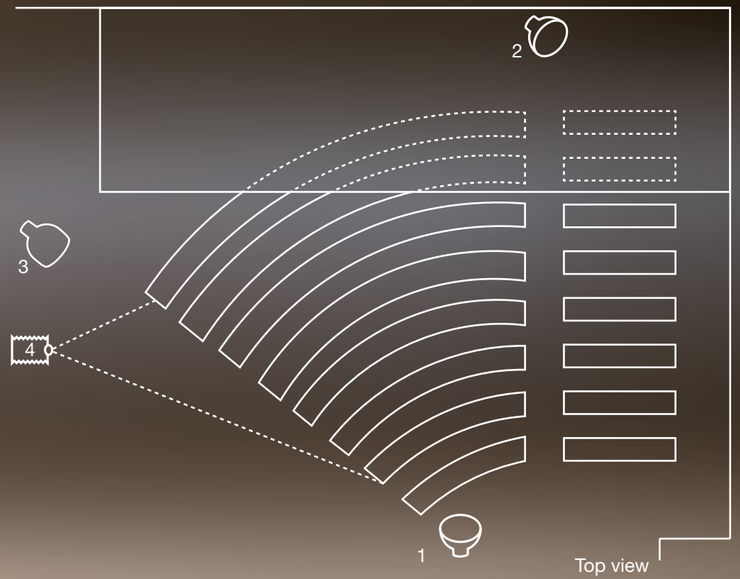
Focal length
40 mm

Shutter speed / f-stop
1 sec / f 11

From all the open reflectors, the PAR has the highest light output (up to 1 1/2 stops more than a P70). It is the best choice for such a dark and very spacious location.

If the lamphead (there are three Pulso G lamp bases here) is equipped with a matt protecting glass, the coverage of the PAR reflector is nicely center-weighted.

The blue light is daylight and the statue on the right is additionally illuminated with a tungsten spot.



Top view

1 PAR reflector on a Pulso G lamp base as main light to the ceiling

2 PAR reflector on a Pulso G lamp base as accent light to the back wall

3 PAR reflector on a Pulso G lamp base as a fill-in for the foreground

4 Camera


Pulso G


Reflector PAR


Topas A4

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 50

Focal length
50 mm

Shutter speed / f-stop
1/30 sec / f 8

For the very limited amount of time we had to realize the shoot (45 minutes), a Balloon was the best choice to illuminate the large location (the lobby of a hotel) quickly. The Balloon limited the contrast of the available daylight and brightened the walls in the background.

An additional softbox (2) was necessary for the black reflector of Para FB.

1 Balloon on a Unilite lamp base

2 Pulsoflex C 60 × 100 cm on a Unilite lamp base

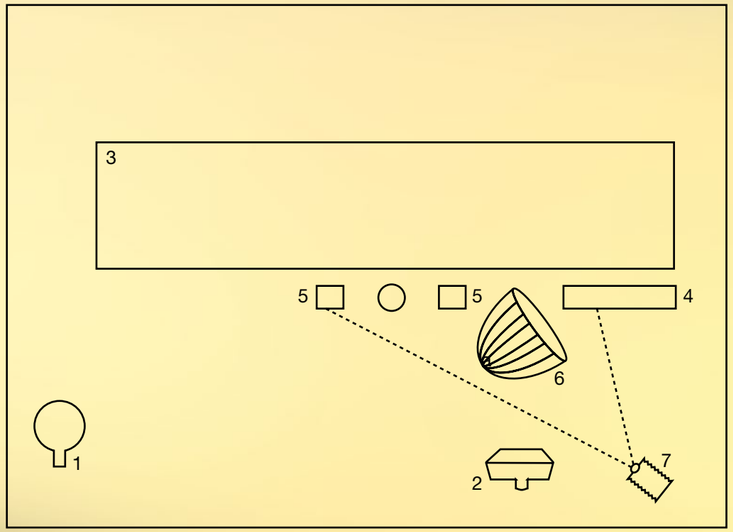
3 Atrium with daylight

4 Acrylic table, lit with tungsten

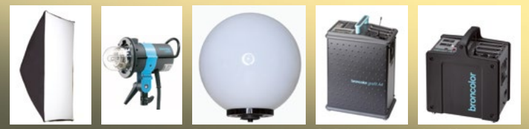
5 Chairs

6 Para 220 FB

7 Camera



Top view



Pulsoflex C 60 × 100 | Unilite | Balloon | Grafit A4 | Verso A2

Camera type and Medium
Medium format / slide

Resolution / Sensitivity
6 × 6 cm / ISO 100

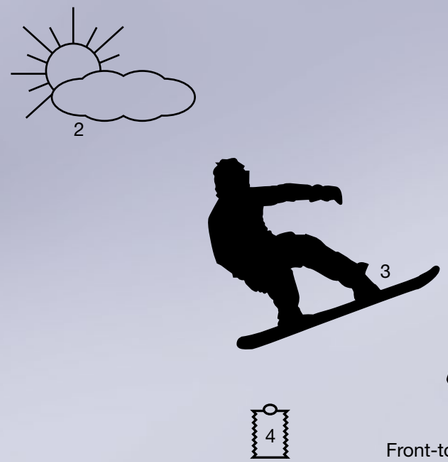
Focal length
80 mm

Shutter speed / f-stop
1/250 sec / f 16

Daylight is underexposed by 1 full stop and acts as a fill-in. To get enough light out of the 1200 joules Mobil power pack, I used a P45 Narrow angle reflector.

The flash duration of the power pack was not short enough to “freeze” the flying model completely. Therefore, I followed his movement with the camera. The person is absolutely sharp, the background slightly blurred.

The picture was produced in 2003. Today, broncolor offers new power packs for such jobs – the Verso A2 and A4. These packs provide 1200 (A2) and 2400 (A4) joules at a much shorter flash duration (up to a 1/4500 sec). It is no longer necessary to move the camera to freeze such a movement (even much faster objects can be shot absolutely sharp if the camera still follows the movement of the object or model).



1 P45 Narrow angle reflector on a Mobilite lamp base

2 Sun as backlight, covered by clouds

3 Model

4 Camera

Front-top view


Narrow angle reflector P45


Mobilite small lamp


Mobil 2AR

Camera type and Medium
Large format / color negative

Resolution / Sensitivity
4 × 5 inch / ISO 160

Focal length
90 mm

Shutter speed / f-stop
1/8 sec / f 11

This photograph shows the seamless background and the “movable sky” of a large rental studio in Switzerland.

With the two Pulso Flooters I adjusted the two dominant spotlights and the thin shadow at the upper edge of the background. The fill-in is continuous light (daylight through the large door and indirect HMI). The shutter speed therefore controls the contrast: If the exposure becomes longer, the fill-in light gets brighter and thus the contrast lower.

1 Pulso Flooter with a Pulso G lamp base defocused (horizontal to the white seamless background)

2 Pulso Flooter with a Pulso G lamp base focused (vertical to the ceiling)

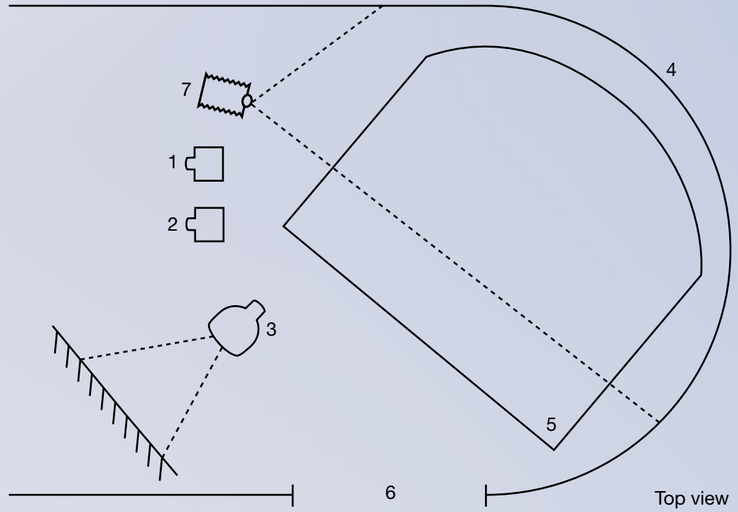
3 800 W HMI indirect as an additional fill-in

4 270 ° seamless white background

5 White “sky” hanging down from the ceiling

6 Daylight

7 Camera



Top view

Pulso G | Flooter | Grafit A4 | HMI 575/800 Lamp Base | HMI 575/800

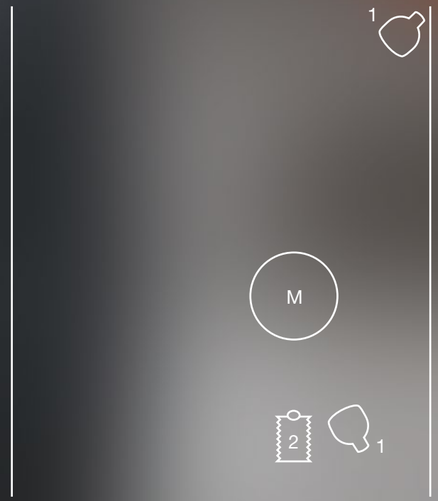
Camera type and Medium
35 mm DSLR

Resolution / Sensitivity
8 Mpixels / ISO 100

Focal length
80 mm

Shutter speed / f-stop
1/125 sec / f 8

To shoot reportage about everyday fashion in South Korea, I chose a shady corner in one of the busiest streets in Seoul. The daylight was slightly under-exposed and the (amateur) models were emphasized with a very dominant illumination. Two hard Standard reflectors, one for the strong backlight and the other as a fill-in, were used. The fill-in light was very close to the lens. A single verso A2 power pack provided the energy for both lights.



Top view

1 Pulso G lamp base
with P70 standard reflector

2 Camera

M Model

Standard
Reflector P70

Pulso G

Verso A2

2.6

available light

Camera type and Medium
Medium format with digital back

Resolution / Sensitivity
22 Mpixels / ISO 100

Focal length
120 mm

Shutter speed / f-stop
1/100 sec / f 5.6

The very last sunlight of a perfect autumn day. The low contrast sunlight entered the forest, shaped the trees and dipped everything in a nice warm light. Even if the sunlight was direct, no additional, artificial light was necessary to obtain a reasonable contrast.

Camera type and Medium
35 mm DSLR

Resolution / Sensitivity
8 Mpixels / ISO 100

Focal length
24mm

Shutter speed / f-stop
1/4sec / f 5.6

Integrated light meters (and spot meters) calculate the exposure as if the motive was in an average grey. If we do not correct the exposure, bright objects will be underexposed and dark motives become too bright.

Here, a single window is illuminating a rather bright room. If we relied too much on the integrated light meter, the result would be underexposure. We have to overexpose the picture. A completely white wall would require up to 2½ stops. This photograph is overexposed by 1½ f-stops and shows the interior of a design hotel in Portugal.

Camera type and Medium
Medium format / color negative

Resolution / Sensitivity
6 × 6 cm / ISO 100

Focal length
80 mm

Shutter speed / f-stop
1/125 sec / f5.6

To shoot a group of people with hard lights (e.g. direct sunlight) can be difficult when there is no additional, artificial light available to control the contrast and the shadows. To capture the spontaneity, it is very important to shoot fast and not to lose a lot of time by setting up additional artificial light first.

Therefore, I was very happy to see these pupils sitting in the shadow of a school's wall in Karimabad, Pakistan. The warm but hard sunlight was eliminated; the boys were hit by soft light from the blue sky. With the scanning of the color negative, I simply had to adjust the color temperature a little bit as the blue sky dipped everything in a very cold bluish light.

Camera type and Medium
35 mm SLR / slide

Resolution / Sensitivity
24 × 36 mm / ISO 100

Focal length
135 mm

Shutter speed / f-stop
1/125 sec / f 8

It was a very wet and stormy day in Patagonia, southern Argentina. Everything was dipped in grey and I had to wait quite some time until the storm dispersed some clouds. The entry of sunlight partially increased the saturation and the brightness dramatically. This wonderful landscape was no longer in a very even, boring and diffused light.

Camera type and Medium
Medium format / slide

Resolution / Sensitivity
6 × 6 cm / ISO 100

Focal length
80 mm

Shutter speed / f-stop
Varying from 2 to 8 sec / f 11 to 22

I shot this gallery below a museum in Rotterdam, The Netherlands. Fluorescent lights that continuously changed their colors lighted it. I just had to wait for the right moment and had to vary the exposure time. This created even more colors because they were “mixed” on the slide during the rather long exposure.

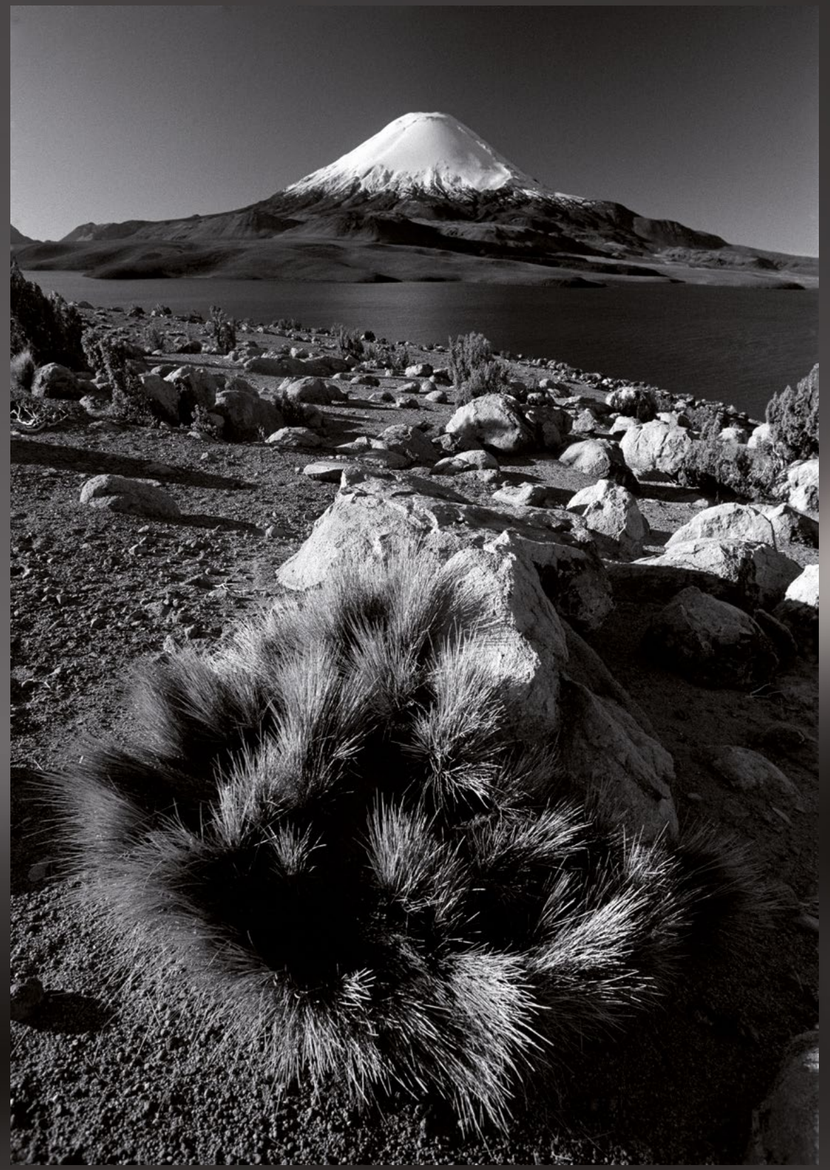
Camera type and Medium
Medium format / color negative

Resolution / Sensitivity
6 × 6 cm / ISO 160

Focal length
80 mm

Shutter speed / f-stop
1/125 sec / f 5.6

It was a very sunny day, difficult to make nice portraits as the sunlight was too hard. To eliminate the direct light, I asked the man to sit under a wooden roof. His seat was very close to the opening in order to capture enough light on his face, and the eyes showed nice reflections from the bright surroundings. If the face had been too dark, the background would have been far overexposed.



Camera type and Medium
35 mm SLR with b/w negative

Resolution / Sensitivity
24 × 36 mm / ISO 100

Focal length
20 mm

Shutter speed / f-stop
1/60 sec / f22

Sunset in the Chilean altiplano at the border to Bolivia. The picture was shot at a 90° angle to the sun, where the skylight is polarized. Because I used a pol-filter, the sky became heavily graduated and created a mystical atmosphere.

Camera type and Medium
Medium format / color negative

Resolution / Sensitivity
6 × 6 cm / ISO 160

Focal length
80 mm

Shutter speed / f-stop
1/125 sec / f 8

This boy was standing between stone walls just around sunset. You will notice, that the upper part of the wall and the boy's face are still lit with warm and relatively hard sunlight while the lower part of the wall and the boy's feet have no sunlight anymore. The light there is soft and colder as it is coming from the blue sky.

Camera type and Medium
35 mm DSLR

Resolution / Sensitivity
8 Mpixels / ISO 200

Focal length
24 mm

Shutter speed / f-stop
1/20sec (image stabilizer on) / f 5.6

The air on the Atlantic coast of Portugal was very humid due to the heavy winds and spindrift. Before sunset, strong sunlight hit the fog and made almost all the contours of the hills disappear. Right after sunset however, when this shot was exposed, the contours of the hills showed more clearly and the very red hue of the sinking sun turned neutral again.

Camera type and Medium
Scanning camera (HORIZONT), color negative

Resolution / Sensitivity
24 × 68 mm / ISO 100

Focal length
Comparable to 20 mm when using a 35 mm SLR

Shutter speed / f-stop
1/125 sec / f 11

This salt lake (salar) in Chile is located at about 4500 meters above sea level. Even without polarization, the sky appears very dark, the colors saturated and the shadows almost black.

The horizon is curved because I was using a scanning camera of which the lens is rotating around the film. If a camera of this type is held horizontally, the horizon becomes flat. If the camera is pointed upwards to the sky, the horizon is concave and if it is directed to the floor (like in this picture) the horizon is convex.

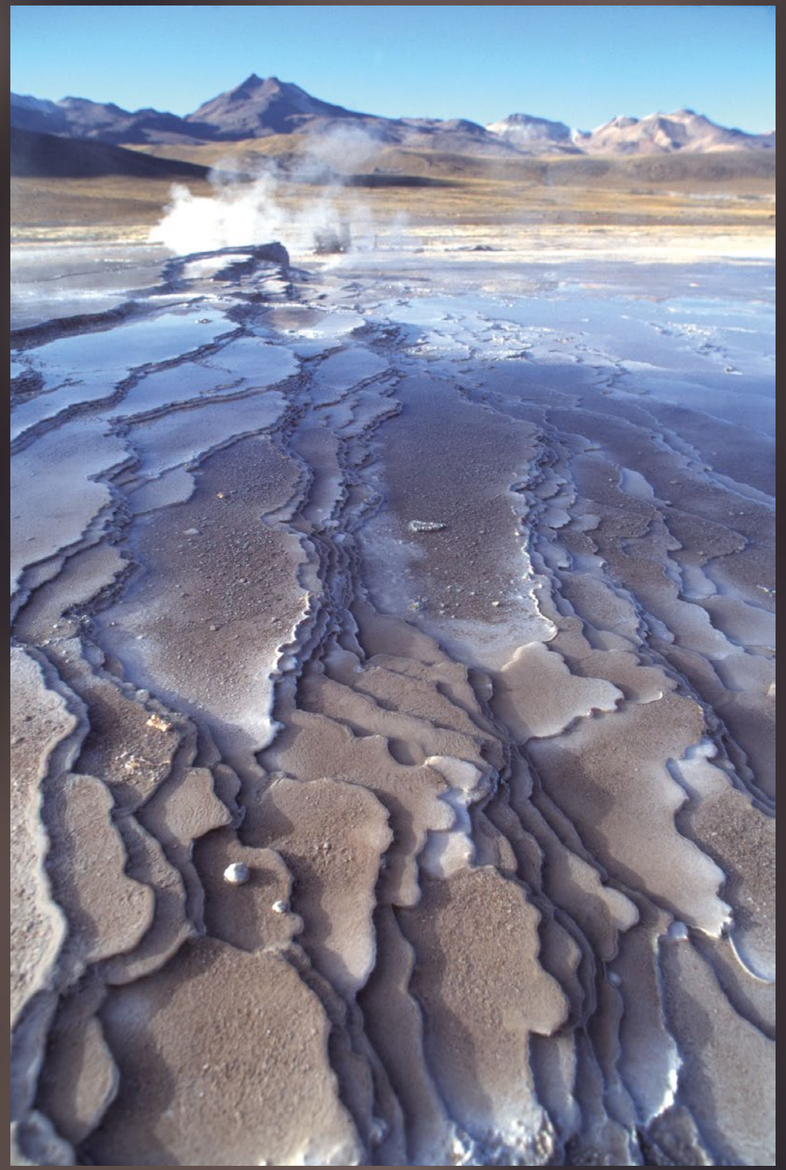
Camera type and Medium
Medium format / color negative

Resolution / Sensitivity
6 × 6 cm / ISO 400

Focal length
80 mm

Shutter speed / f-stop
1/60 sec / f 5.6

I met the shepherd and his flock after a long and rainy day. The clouds were very low, the light absolutely diffused. To make it more interesting, I stood in front of a rather dark wall. This reduced the light coming from the camera axis and created more contrast.



Camera type and Medium
35 mm SLR / slide

Resolution / Sensitivity
24 × 36 mm / ISO 100

Focal length
20 mm

Shutter speed / f-stop
1/60 sec / f 11

The very first sunlight after a very cold night on a geyser-field in Northern Chile. The low sun perfectly structured the deposits of minerals and columns of steam created some nice and low contrast shadows.

the lightshapers

3.1 Lightshapers And Their Characteristics

Open reflectors:

These are available in different diameters and depths. Larger diameters and shorter reflectors have a rather wide light angle and are rather soft. Deep and narrow reflectors focus the light and provide a brighter light over large distances. Honeycomb grids are available for all open reflectors. They reduce the light angle and therefore increase the shadow contrast and color saturation.

P70, P65, P45, P50, P120, P travel, Softlight reflector P- Soft, PAR reflector

(The number following the "P" indicates the light angle)

Softboxes:

Softboxes are available with (Pulsoflex EM) or without (Pulsoflex C) integrated barn doors, which slightly reduce the light angle. The light becomes more controllable as it can be directed (e.g. away from the background or the lens). The shadows get darker and the saturation is higher.

The edge transfer of a Pulsoflex C is smooth while the light of an EM falls off rather sharply. Honeycomb grids are available not only for open reflectors but also for some softboxes. They give a 'spot-type' circular light but without the harshness of a spot lamp.

Pulsoflexes C and EM

Umbrellas:

Umbrellas can be made from different materials: Silver coating gives a rather strong, directed light; white and transparent umbrellas are softer and lower in contrast. To limit scattered light as much as possible, umbrellas should be used in combination with special reflectors. Nevertheless it is very important, that we do not place the camera where direct light from the flashtube can reach the lens. Otherwise we have to place a black flag between the two.

Silver, white and transparent umbrellas

Large area lights:

Huge lights such as Cumulite 2 and Megalite are used to get big and homogeneous reflections (e.g. car photography) or diffused overall lights (e.g. furniture). When they consist of multiple flash heads, the power can be set individually for every single head and the result is a big graduated light source that enables interesting illuminations for food, fashion and beauty set-ups.

Hazylight-Soft, Mini-Cumulite, Cumulite 2, Megalite

Fresnel spots:

Here the light is collimated and projected through a focusable Fresnel lens. The light angle can be varied and the shadows are very sharp. The coverage is more even and the edge-transfer harsher than the light of an open reflector with grids.

Pulso Flooter, Pulso Spot 4, Fresnel spot attachment for Picolite

Optical systems:

Optical lenses allow sharp projection of any form, mask (gobo) or even slides on a background or object. The light angle (and therefore the size of the projection) can sometimes be adjusted (e.g. Profil 15/42. The coverage is even, and the edge transfers razor-sharp. The shadows are very dark and highly defined.

Pulso Spot 4 with 150 mm Optical snoot, Projection attachment for Picolite, Profil 15/42

Boxlites, Striplites:

For many applications it is important for light sources to match subjects size for size. And when we want a reflection not to be burnt out but to show details, it is better if we use a "clean" acrylic area light than a textile softbox. Both these requirements are fulfilled with all the Boxlites, Striplites and Lightbars. Additionally they are very evenly illuminated.

Striplite 60 and 120, Lightbar 60 and 120, Boxlite 40, Picobox for Picolite.

Effect lamps: Satellite Evolution and Mini-Satellite:

Their light is comparable to a huge Fresnel spot. But because of their size, it is a lot softer. Used over long distances, the light is almost completely parallel and a very good simulation of natural sunlight. The two Satellites are the most powerful lightshapers in the broncolor system.

Satellite Staro:

A round "softbox" with a strong hotspot. It is therefore a perfect fashion and beauty light: Big and soft enough to illuminate a face or a body softly, yet hard enough to work out the structure of textiles and skin due to its smaller hotspot.

Balloon:

An all-over light with a light angle of 360 degrees. Perfect for location and with our knowledge about the inverse square law, we can carefully balance direct and indirect light and adjust our contrast with only one light.

Para FB:

Worth a book on its own! Available in 3 diameters: 170, 220 and 330 cm. A very complex lighting system: The most important parameter to change the light characteristics of Para FB is the position of the lamp base inside the reflector. When it is focused (the lamp head is deep inside), the light is almost completely parallel, comparable to a huge spot; but for the size of Para FB, the light is still soft.

When the lamp base is further away from the center of the reflector and about on the level of the opening, we call it defocused. As the coating of Para FB is highly shiny, the center does not reflect any light in this situation and the result is extraordinary: The “flat” lights from the reflector’s center are missing and therefore the forms and shapes of every object or body are beautifully emphasized! 24 small and hard reflections (one for each segment of the reflector) in a huge ring, wrap the entire set-up in a crispy cloud of soft, three-dimensional light.

The distance and the angle are two more possibilities to adjust the light very precisely. And last but not least there are three diffusers with different densities available for every size of Para FB. All this makes Para FB not just another lightshaper, but a complete lighting system!

Ringflash C:

A special lightshaper known for many years already. In the past, the light of the Ringflashes was not very variable. The illumination was more or less even, and may be slightly center-weighted. With the new broncolor Ringflash C and the possibility to use it with honeycomb grids, we now have full control over the light angle. From slightly or heavily center-weighted to spot-like coverage, everything is possible, but the illumination that is unique to the Ringflash remains in all situations.

The Ringflash is also an outstanding fill-in light. Always very close to the camera (even when this is moved), it reaches even the most hidden places in our set-up. It is small and hard and therefore it shows the texture of the object perfectly, even in the deepest shadows.

broncolor system

POWER PACKS

Scoro A4S
31.043.XX
Scoro A2S
31.041.XX

Scoro A4
31.042.XX
Scoro A2
31.040.XX

Grafit A2 RFS
31.169.XX
Grafit A4 RFS
31.179.XX

Verso A2 RFS
31.031.XX
Verso A4 RFS
31.033.XX

Power Dock
for Verso A2 / A4 RFS
36.124.00

Mobil A2R
31.011.XX

Topas A2 RFS
31.173.XX
Topas A4 RFS
31.176.XX
Topas A8 Evolution RFS
31.183.XX

Nano 2
31.151.XX
Nano A4
31.172.XX

MONOLIGHTS

Reflectors are not included

Minicom 40 / RFS
31.405.XX / 31.406.XX

Minicom 80 / RFS
31.415.XX / 31.416.XX

Minipuls C200
31.449.XX

BATTERY UNIT

Powerbox 900
56.302.00

LAMPS

Reflectors are not included

Pulso G
32.115.XX 1600 J
Pulso G
32.116.XX 3200 J

Unilite
32.113.XX 1600 J
Unilite
32.114.XX 3200 J

Pulso Twin
32.117.XX

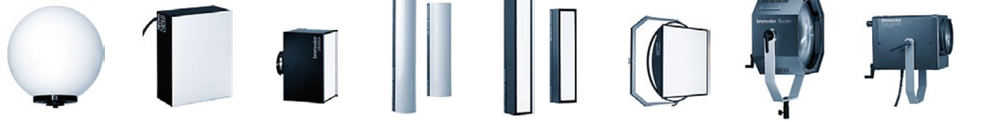
Pulso 8
32.118.XX

Picolite
small lamp
32.021.XX
Mobilite 2
small lamp
32.012.00

EFFECT LAMPS

Ringflash C
32.462.XX
Ringflash P
32.461.XX

Litestick
32.451.00



Balloon
33.161.00

Boxlite 40
32.341.XX

Picobox
33.128.00

Lightbar 120 Evolution
32.353.XX
Lightbar 60 Evolution
32.351.XX

Striplite 120 Evolution
32.303.XX
Striplite 60 Evolution
32.301.XX

Hazylight-Soft
33.513.00

broncolor Flooter
32.431.00

Pulso-Spot 4
32.425.XX

SPECIAL ACCESSORIES

Transmitter RFS
36.130.00

Transceiver RFS
36.131.00

Infrared transmitter IRX 2
36.116.00

REFLECTORS AND ATTACHMENTS

Standard reflector P65
33.106.00
Standard reflector P70
33.107.00

Reflector P-Travel
33.103.00

Reflector PAR
33.113.00

UV attachment
33.626.00

Power reflector
for Ringflash C
33.125.00

Beauty reflector
for Ringflash C
33.124.00

Soft reflector
for Ringflash C
33.123.00

Narrow angle reflector P45
33.104.00
Narrow angle reflector P50
33.105.00

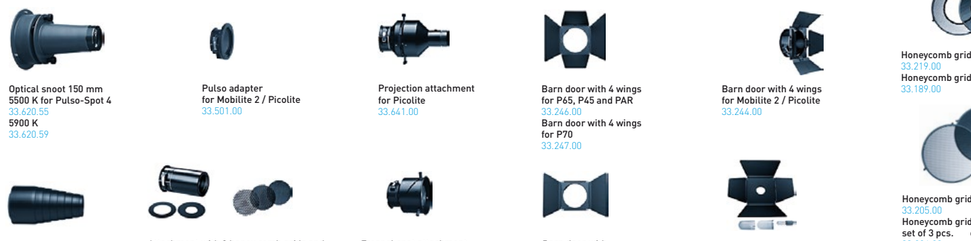
Softlight reflector P
33.110.00

Beauty Dish with textile diffusor
33.111.00

Wide angle
reflector P120
33.112.00

Background
reflector
33.114.00

Spot attachment
33.640.00



Optical snoot 150 mm
5500 K for Pulso-Spot 4
33.620.55
5900 K
33.620.59

Pulso adapter
for Mobilite 2 / Picolite
33.501.00

Projection attachment
for Picolite
33.641.00

Barn door with 4 wings
for P65, P45 and PAR
33.246.00
Barn door with 4 wings
for P70
33.247.00

Barn door with 4 wings
for Mobilite 2 / Picolite
33.244.00

Honeycomb grids for Ringflash C, set of 3 pcs.
33.219.00
Honeycomb grids for Power reflector, set of 3 pcs.
33.189.00

Conical snoot
33.120.00

Attachment with 3 honey comb grids and
2 aperture masks for Mobilite 2 / Picolite
33.204.00

Fresnel spot attachment
for Mobilite 2 / Picolite
33.631.00

Barn door with
2 wings for P70
33.227.00

Sunlite-Set
33.162.00

Honeycomb grids for P50, set of 3 pcs.
33.205.00
Honeycomb grids for P65, P45 and PAR,
set of 3 pcs. extra narrow
33.206.00 33.211.00
Honeycomb grids for P70, set of 3 pcs.
33.207.00

SPECIAL REFLECTORS

Stands are not included

Satellite Staro
33.151.00

Satellite Evolution
33.150.00

Mini-Satellite
33.152.00

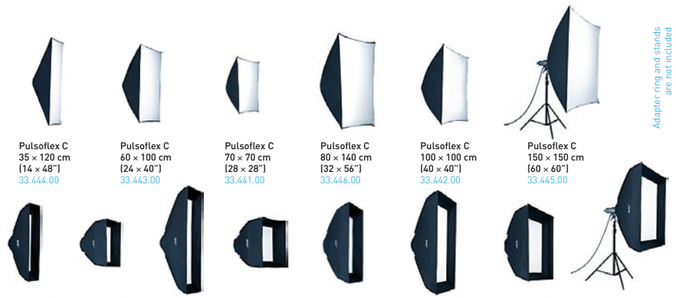
Para 170 FB
33.484.00

Para 220 FB
33.485.00

Para Soft 220 FB
33.487.00

Para Soft 220 FB
33.487.00

SOFTBOXES



Adapter ring and stands
are not included

Pulsoflex C
35 × 120 cm
(14 × 48")
33.444.00

Pulsoflex C
60 × 100 cm
(24 × 40")
33.443.00

Pulsoflex C
70 × 70 cm
(28 × 28")
33.441.00

Pulsoflex C
80 × 140 cm
(32 × 56")
33.446.00

Pulsoflex C
100 × 100 cm
(40 × 40")
33.442.00

Pulsoflex C
150 × 150 cm
(60 × 60")
33.445.00

Pulsoflex EM
30 × 110 cm
(12 × 44")
33.424.00

Pulsoflex EM
35 × 60 cm
(14 × 24")
33.415.00

Pulsoflex EM
40 × 155 cm
(16 × 62")
33.425.00

Pulsoflex EM
50 × 50 cm
(20 × 20")
33.406.00

Pulsoflex EM
55 × 95 cm
(22 × 38")
33.416.00

Pulsoflex EM
80 × 140 cm
(32 × 56")
33.417.00

Pulsoflex EM
80 × 80 cm
(32 × 32")
33.407.00

Pulsoflex EM
110 × 110 cm
(44 × 44")
33.408.00

UMBRELLAS

Umbrella silver ∅ 82 cm (32.3")
33.459.00
Umbrella silver ∅ 102 cm (40.2")
33.460.00
Umbrella transparent ∅ 102 cm (40.2")
33.454.00
Umbrella white ∅ 82 cm (32.3")
33.460.00
Umbrella white ∅ 102 cm (40.2")
33.453.00

Umbrella reflector
33.496.00

Complete product overview on our website

broncolor®
THE LIGHT
www.broncolor.com

Profile of Urs Recher

1967	Born in Basel, Switzerland
1983 – 86	Attended high school in Muttenz, Switzerland
1987 – 89	Study of mathematics and physics at the University of Zürich, Switzerland
1989 – 93	Apprenticeship in photography at the School of Arts and the Studio Heusser+Hertig in Basel, Switzerland
1993	Received certificate in photography of the School of Arts, Basel
1994 – 96	Independent photographer in Santiago de Chile, Chile
1996 – 98	Independent photographer and freelance assistant in Switzerland and The Netherlands
since 1998	Photographer and consultant at Bron Elektronik AG, Switzerland
since 1997 in 2000	Married to Debby and Daughter Anouk was born