LIGHT ARCHITECTURE 3

ursRECHER

ARCHITECTURE 3

LIGHT

urs RECHER

Publish & Design By
Relight Imaging Limited
www.relight.com.hk
info@relight.com.hk

Thank you

The first big thanks of course goes to Raymond from Relight Imaging Limited (www.relight.com.hk). Although I always said I would leave it at the first two editions of LIGHT ARCHITECTURE, he motivated me to write this third volume and also produced it.

The concept and layout are very close to the first two books. Therefore, my gratitude is once again expressed to Warren and his team at Primaimaging / Indonesia.

The copyright of quite a few photographs is not with me, but with broncolor. I would also like to thank them for providing me with all the pictures I needed (and of course for the best light in the world!).
All the people pictured have unbureaucratically agreed to have their photos shown as part of this book. My sincere thanks goes to them as well.

I wrote all texts in my native language German. The English text was done by my daughter Anouk. Since she’s not a photographer, I credit her twice as much for pulling it off...
For the translation into Chinese, I’d like to thank Olive Sun and for the graphic work (including the correct interpretation and realization of my idiosyncratic sketches of the set-ups) a special thanks goes to Megan.

Finally, I would like to thank Deborah, my wife, for her valuable feedback on my work over the years. This third volume of LIGHT ARCHITECTURE is dedicated to her and my daughter Anouk mentioned above.

Urs Recher

Web:
www.ursrecher.ch

@ursrecherphotography

Contents

Introduction

This third volume of LIGHT ARCHITECTURE pursues the same goal as its predecessors: I am not concerned with fixed rules about how light must be set, what is right and what is wrong. Every photographer must decide subjectively for him- or herself what is “beautiful” and in this process it seems very important to me that we work with a lot of patience on the set until it seems perfect to us. There can be no such thing as “good enough.” Only perfection is good enough.

Perfection here does not mean superficial, technical perfection but refers to the effect of the image. A photograph can be perfectly sharp, correctly exposed, depicted without optical errors, and still fail to reach the viewer emotionally. In this case, the image is “not good”, even if objectively and technically there is nothing wrong with it. So, it’s a matter of looking closely, trusting one’s eye and working until we can say with certainty: “That’s it”.

Of course, we can achieve this ambitious goal much faster if we know our tools and their characteristics. These tools are first and foremost camera, light, and when photographing people, of course, the interaction with them. The cameras and their settings are mentioned briefly with each example but are rarely of central importance - exceptions being long and multiple exposures, for example. This book is about understanding what happens in front of the lens.

In discussions about light, the primary issue is always what light shapers were used. This is certainly of pivotal interest, but talking about how a particular light is used seems more important to me. The question of which light source is suitable for which application to me makes no sense either. The use of a light shaper is appropriate when it helps to achieve the intended goal. It doesn’t matter whether a portrait reflector is used for a product shot or on a beauty set; what counts is the result.

So, we shouldn’t believe in irrefutable rules here either (otherwise all our pictures would look the same), but let our curiosity and creativity run free. With this very open approach to lighting design, we will certainly encounter problems again and again, because something just does not work as hoped. It will then prove to be very useful if we have a deep knowledge of light, understand the problem, and are accordingly determined to find a better solution.

Even after a good 30 years of professional photography, light still has a surprise in store for me every now and then at times even positive ones. In this case, I again try to understand what I see, so that I can later reproduce it intentionally. Thus, over the years an ever more complex vocabulary of the language of the light results, the underlying rules, so to speak the grammar of this language, becomes ever clearer and more logical.

So back to the goal of this book. It is to explain LIGHT, and thus the most important and wonderful tool of photography, so that we can more easily and consciously achieve the high demands placed on us and on our images.

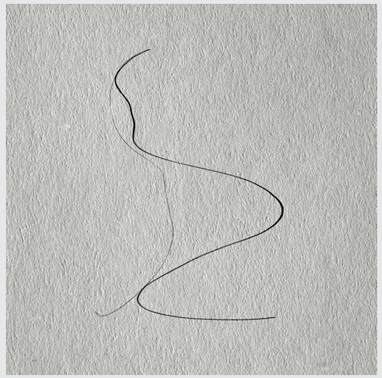
1. Hard, soft, and diffuse light

1.1 Hard light:

A light is called hard if its shadows are very sharply defined and clear. However, this says nothing about the shadow contrast; shadow depth (contrast) and shadow definition are independent of each other.

The perfect hard light would be a luminous mathematical point. Since every light source has a minimal spatial extent, the absolute hard light does not exist. In the example shown above, a naked flash tube was still sufficient to produce mostly clear shadows.

If you want to go one step further and photograph a very clear shadow of a human hair, for example, there is no way around improvisation. Here, the size of the light source was virtually reduced by working only with the reflection of a naked flash tube on the convex side of a spoon. The thin greyish line is the hair, the wider and darker line its shadow.



If you want to avoid such tinkering, in addition to the open flash tubes we also have projection spots in the studio whose light is very hard.

Compared to soft light sources, hard ones are largely independent of position - at least as far as shadow definition is concerned: hard remains hard. Shadow contrast is another story as will be explained in section 3.

1.2. Soft light:

Typical soft lights create two different shadows at the same time: core shadows and penumbras. The closer the illuminated object is to the background, the more clearly defined these shadows are.

The decisive factor for the softness of a light source is not primarily its absolute size, but rather its subjective size as seen from the model or object. A softbox with dimensions of 100x100 cm over 2 meters appears exactly the same size as a softbox with edge lengths of 50 cm one meter away. Therefore, the shadow definition is also identical. However, the distance also has a decisive influence on the contrast of the image.

While a hard light is largely independent of position and therefore always hard, it makes little sense to describe a light source with a larger spatial extent (e.g., a softbox) as “soft”, since this changes rapidly with changing distance. Also, when a light source is rotated, its subjective size changes. A softbox that is rotated away from the model appears smaller from the model’s position and the light becomes harder. The edge of a soft light source can therefore produce clearly defined, hard shadows, even over a short distance.

Following these considerations, it makes much more sense to describe an entire lighting setup as soft, but not individual light sources.

1.3 Diffuse light:

At some point, the subjective size of a light source exceeds a certain level, and no direction of light can be detected at all. In this case, one speaks of diffuse light.

Except for very small sets, diffuse illumination is almost always achieved indirectly. Light shapers with large beam angles illuminate the reflecting studio walls. The studio itself becomes the largest possible light shaper, so to speak. Again, it is not important how large the studio is. What counts is, that it is illuminated as homogeneously as possible.

Completely diffuse lighting is therefore not easy to achieve in non-reflective environments. In addition, care must be taken that the walls used are bright as well as color neutral.

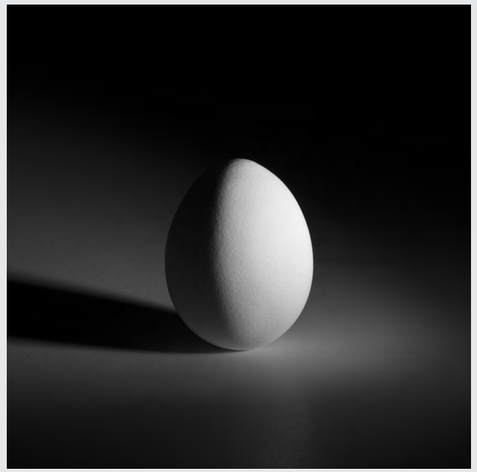
Diffuse lights are logically identical everywhere in the studio and, in combination with other (main) lights, are well suited for contrast control.

Let’s look at a case study to conclude the categorization of light into hard, soft, and diffuse: An open flash tube in a reflective environment.
Certainly, we get very clearly defined shadows since the flash tube can be considered a point light source. However, with a beam angle of almost 360°, the flash tube naturally illuminates the object not only directly, but also indirectly via the studio walls at the same time. A single light source thus simultaneously provides a hard main light and a diffuse brightening that can be controlled with dark light absorbers or via distance, as explained in section 3.

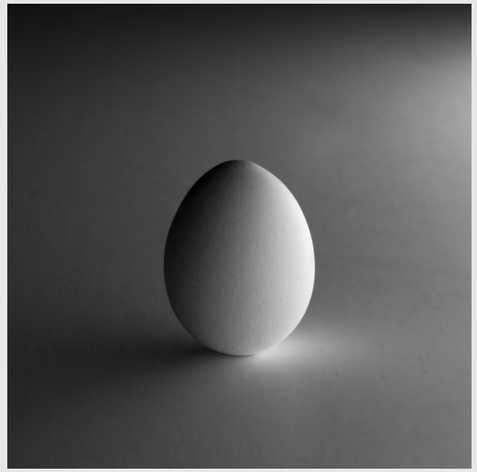
2. Light and three-dimensionality:

2.1 Matte objects:

Hard light sources are characterized by only divergent beams. The light propagating in a straight line has no possibility to surround an object. A certain point on the object is therefore either bright or dark. An in-between or brightness gradient is practically non-existent, the light can be described as two-dimensional.



In this second shot, a litepipe lying on the shooting table illuminates the egg, with about half of the light source behind it. The right contour is illuminated by the whole litepipe, but the further we get to the left, the less light hits the egg. We get a perfect and even gradation all around the object. Soft lights model an object or body beautifully in three dimensions especially when the contrast is kept high.



Diffuse light has no predominant direction, it comes from everywhere or nowhere, so to speak, which means pretty much the same thing photographically. A scene is illuminated equally from all sides - the light is one-dimensional.

2.2 Shiny objects:

While soft and high-contrast highlights can make a matte object appear beautifully three-dimensional, brightness gradients must be worked out on high-gloss surfaces.

Such surfaces reflect the light sources. Hard light sources produce only the smallest, burnt-out points of light, softboxes create white polygons and diffuse lights reflect the whole studio, also without any shaping.

If gradations in the reflections are to better show the shapes of the object, the light sources must also have gradations in brightness. As a rule, this is achieved with backlit diffusers. Their material properties and the light sources used behind them depend primarily on the size and shape of the object to be photographed. It is always an advantage if the diffusion material has no structure. Personally, I use almost exclusively white acrylic plates with a high opacity.

Here is a behind-the-scenes shot that illustrates this technique. The corresponding photograph of a watch is described in detail later in this book.

3. Contrast (and inverse square law)

The physics of light teaches us that the intensity of a light source decreases or increases quadratically with distance (inverse square law). This means that if we move a light source to twice the distance (i.e., by a factor of 2) away from an object, the object will be illuminated 2^2, i.e., four times less brightly, which in turn corresponds to 2 whole f-stops.

We can apply this rule approximately whenever we move lights, but it is only precise if we start from point light sources in a non-reflecting environment!

The water level of a channel is approximately the same everywhere if the width of the channel does not change. Only when the river flows into a delta, the water becomes less deep. The situation is similar with light: Directed light from focused light shapers is “channeled”, so to speak, and the intensity decreases less quickly than we would expect mathematically. The extreme case here is a laser beam which, apart from atmospheric disturbances, remains constant. Even the distance of the earth to the moon can be measured with a laser. If this light were also subject to the inverse-square-law, the light source used would have to be very powerful.

In a diffusely illuminated studio, the light intensity is practically identical everywhere. If you move away from one wall, the other one comes closer and compensates for any loss of light.

Soft light is also the most complex in these considerations. If a softbox is far away from an object, it can be approximated as a point. Far in this case means a multiple of the diameter. At extreme close range, however, softboxes are surprisingly homogeneous with a slow light fall-off. The reason is that over very short distances, not all the surface of a diffuser throws the same amount of light onto the subject; less light reaches the object from the distant corners.
If you move the softbox further away, the amount of light from its center is reduced, but the periphery becomes more important and partially compensates for the greater distance. Only when the entire surface of the softbox casts the same amount of light onto the object the inverse-square-law takes effect.

But even in this case, not everything is clear, because at larger distances and in a reflective environment, we must also consider the indirect, diffuse portion of the light again. This “basic illumination” is equally strong everywhere in the studio and again falsifies the mathematically expected result.

These considerations lead to explanations concerning the contrast behavior of light shapers:
In non-reflective environments (dark, large studios and outdoor locations without the influence of ambient light), all light shapers have the same contrast, namely black on the shadow side and the brightness of the illuminated areas depends on the set power.

If there are reflecting walls nearby, these can influence the contrast, i.e., reduce it. In order not to be at the mercy of this effect, we have several options:

By placing black, light-absorbing elements on the side facing away from the light, the indirect light can be partially absorbed, increasing the contrast.

More compact sets with shorter distances between the light shaper and the model or object also increase contrast. Since light loses power quadratically to distance, potentially reflective walls can be ignored if they are much farther away from the light than the model. For example, a model is sitting 1 meter away from a light source, and the nearest wall is another 3 meters away, for a total of 4 meters. This means that the wall is 4 times further away from the light source than the model, and thus 16 times less light arrives. If this wall is not completely white or mirrored, we can safely neglect its reflections. The same considerations allow us to control the brightness of backgrounds very precisely.

Finally, there is another way to reduce unwanted contrast-reducing reflections: Honeycomb grids. For the sake of simplicity, I will call them only “grids” in the following. They do not (usually) change the size of a light source, but merely reduce its beam angle. As a result, less light reaches the reflective studio walls and shadows become darker. Contrary to widespread understanding, grids do not make the light harder but only more contrasty.

4 Directional and diffuse reflections

When we photograph a person, it is of course figuratively also about “portraying” that person, i.e., looking for ways to capture their personality in the picture. It is not self-explanatory that a good understanding of light can also help here:

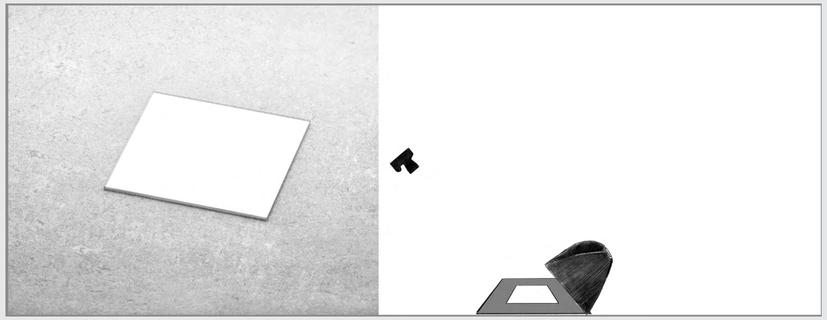
If our technical inadequacies absorb all the attention, we lack it towards the model, we cannot respond to our counterpart. Camera and light must be mastered with almost somnambulistic certainty so that we can fully concentrate on the model. I therefore do not consider portrait photography (or dance photography, for example) to be more trivial than product photography. On the contrary.

But let’s go back to the technical side: In the end, we “only” photograph surfaces. These have only in the rarest cases one clearly defined characteristic, are exclusively shiny (e.g., cutlery, jewelry, watches) or absolutely matte (e.g., laid textile goods). Rather, most photographic tasks consist of making sense of different surfaces in a single shot. So, we need to be able to set light in a way that allows us to simultaneously photograph matte, glossy, and even semi-glossy surfaces like skin, food, or plastic correctly. Correct means here that they represent the object’s original surface as accurate as possible.

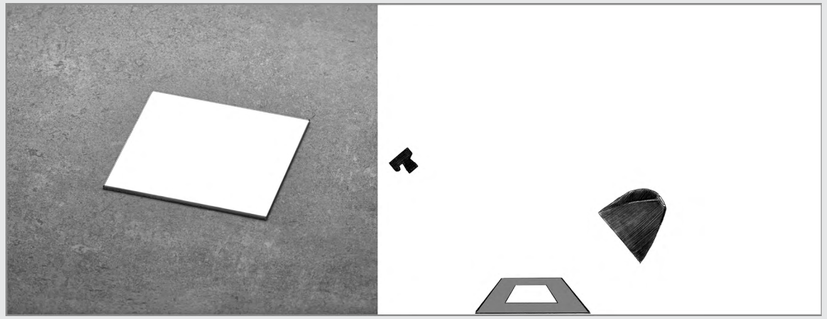
To better understand how we can influence the gloss behavior of objects we need to understand how directional and diffuse reflections work:

Diffuse reflections occur on matte surfaces. As is generally known, their brightness changes when the light source moves away. Directional reflections such as mirrors, (eye)glasses, and shiny skin areas, all behave differently. These reflections are independent of distance and reflect the absolute brightness of the light source. The following sequence illustrates how this affects a set with mixed reflections:

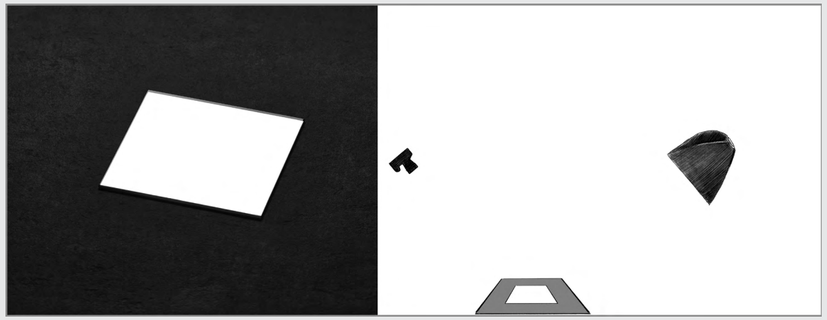
1



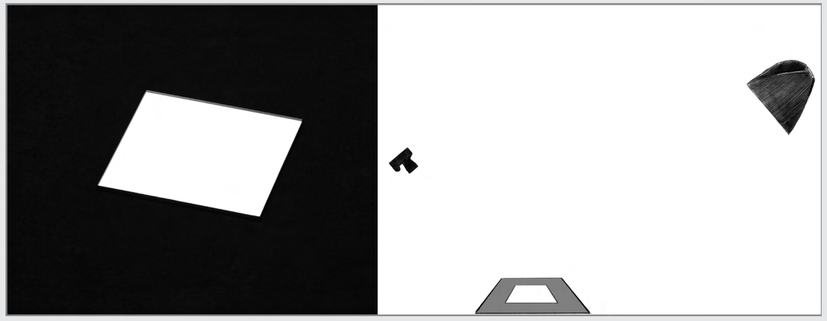
2



3



4



From image 1 to 4, the light source, here a softbox, moves further and further away from the object, a mirror lying on a matte ceramic plate. The directional reflection of the softbox in the mirror does not change the brightness since the power setting on the luminaire has not been changed. The matte background, on the other hand, becomes darker, according to the laws described in section 3.

What does this mean for a portrait, for example? If skin or glasses show unpleasant, dominant shiny spots, these can be reduced or avoided altogether by using a shorter distance from the light shaper to the face. The shorter distance allows us to reduce the power at the light while maintaining the correct exposure. This makes the light source itself darker, and with it the directional reflections of the specular areas.

The following sentence summarizes what is central to the controlled rendering of semi-gloss surfaces: The distance between the light source and the object defines the contrast between directional and diffuse reflections.

In the introduction I claimed that the position of a light source is often more important than, for example, its size. With the theoretical knowledge we have acquired, we can now comprehensively answer the seemingly simple question “What happens to the light of a softbox when it is moved closer to the object or model?”

The light gets softer.

The photo becomes brighter, but only the diffuse reflections.

If we compensate for this effect via power, the directional reflections become darker, gloss is reduced.

The light becomes (with predominantly matte surfaces) more three-dimensional and at the same time higher in contrast.
Backgrounds become darker.

So much for the theory.
Now it’s time for 50 set ups in the studio, starting with close up portrait photography.

Copyright: © broncolor, Photo by Urs Recher

5.1 Close up portrait

It’s always interesting to use equipment in an atypical way, like in this case, where a Picobox, normally used in product photography, illuminates a portrait. Unaccustomed use of light forces us “experienced” photographers to open our eyes again and examine the light without bias.

Wanting to emphasize the contours of the face by a significant drop in brightness, I used a Pico-box that is less wide than the model’s face. Hence the very clear, high-contrast light fall-off to both sides.

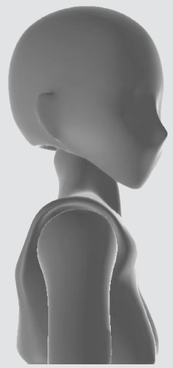
The gradation towards the hairline was achieved by not placing the light source horizontally but angling it slightly towards the camera.

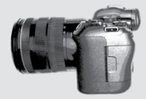
I wanted to leave the shadows rather dark and only lightened them very discreetly with a large white plate from below.

Camera info:

Medium format camera
focal length : 120 mm
f-stop = f / 8
Shutter = 1/125 s
ISO 100

Side View





White Plate

Picolite + Picobox

Scoro 1600s

Copyright: Photo by Urs Recher

5.2 Close up portait

This portrait was not planned but arose very spontaneously after a long dance shoot. After my announcement that the shoot was over, the dancer laid down on the floor very tired to recover.

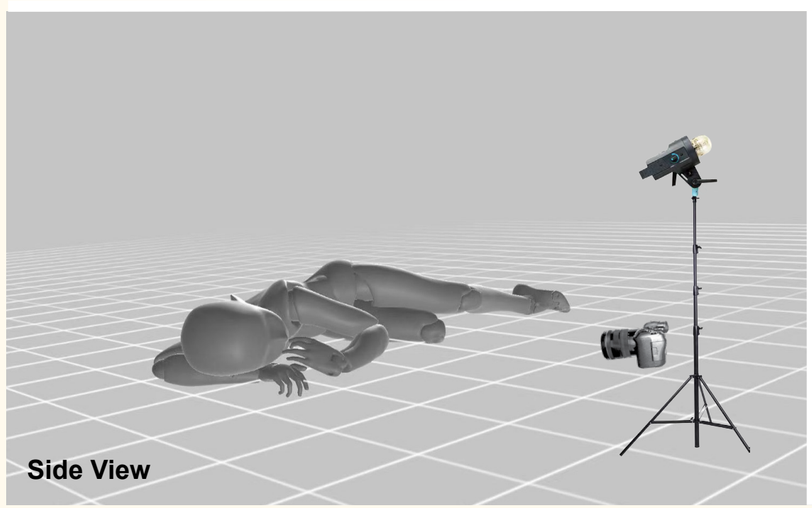
I immediately saw the beauty of this scene but didn’t have time to change to a complex portrait light but chose the fastest and simplest light of all: A consequent diffuse illumination, which in this case even harmonized perfectly with the low contrast set.

I removed the light shaper that was used during the previous shoot and turned the light in a way that all the studio walls and the ceiling were illuminated, but no direct light from the open flash tube reached the model. I, so to speak, used the studio itself as the largest possible and therefore completely diffuse light shaper.

This light allowed me to shoot from every angle as well as over very short distances, since diffuse sets in general are practically shadow-free.

Camera info:

Full frame DSLR
focal length : 105 mm
f-stop = f / 3
Shutter = 1/160 s
ISO 100



Pulso G Lamp head

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

5.3 Close up portait

My photography, especially in the field of portraits, deals very carefully, perhaps even sparingly with color. With this portrait, everything was handled differently (at least temporarily!).

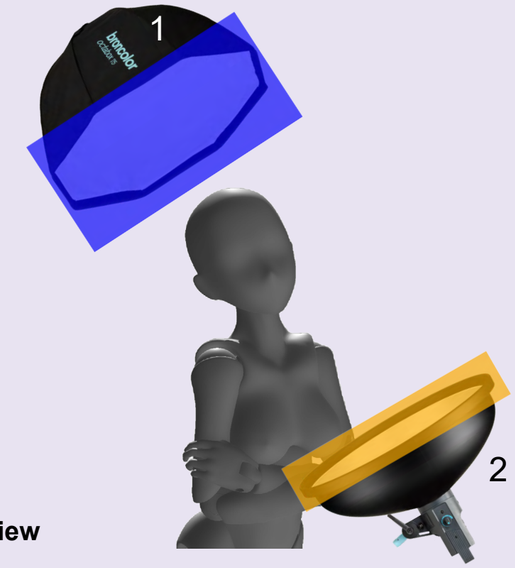
Looking from the camera, I started the light setup on the upper left with an Octabox 75 (1). This light shaper had to be positioned high enough to get deep shadows. On the other hand, the Octabox had to be close enough to the image axis, because it was important to see the reflections in the eyes. Otherwise, the eyes would appear dull due to the lack of high lights.

Then, I positioned a Beauty Dish (2) right below the model's face in such a way that its light would not reach the areas of the face already illuminated by the Octabox - otherwise the colors in those areas would have blended.

Finally, blue gel filters were placed in the Octabox 75, while the Beauty Dish was given a dark orange filter.

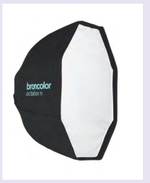
Camera info:

Medium format camera
focal length : 120 mm
f-stop = f / 11
Shutter = 1/125 s
ISO 100



Front View

Beauty Dish



Octabox 75cm

Siros 400L lamp

Copyright: Photo by Urs Recher

5.4 Close up portait

Beauty photography is often misunderstood as shooting with low contrast and soft light. But when a beautiful face with beautiful skin and maybe even professional make-up is in front of my camera, I should also show the shape of the face and the flawless structure of the skin - and that is best done with hard lights!

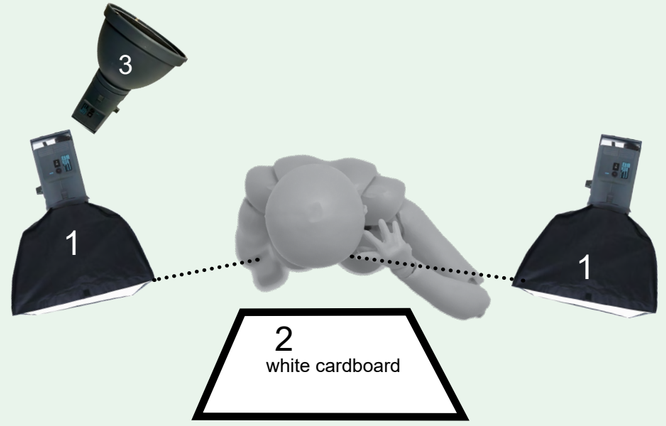
As we have seen in the introductory theory, the softness of a light source depends on its subjective size (as seen from the model or object). In this shot I used two, from their respective nature already small, and therefore rather hard softboxes (1). They were turned away from the model towards the camera. This made the light sources subjectively smaller and the light thus harder, which had a very positive effect on the appearance of the skin. At the same time, this turning away created the form-giving gradations on both sides of the face.

Shadow fill-in was done from below with a white cardboard (2) mounted at about the level of the model's belly button. This (and the rotation of the main lights) explains the narrow but practically black shadows on the shoulders.

Finally, I lit the background slightly center-weighted with a normal reflector and medium grid (3).

Camera info:

Medium format camera
focal length : 120 mm
f-stop = f / 5,6
Shutter = 1/250 s
ISO 100



Top View

honey comb grids

P70 reflector

35x60 softbox

Pulso G Lamp

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

5.5 Close up portait

The entire lighting setup was aimed at creating clear reflections of the water's surface and keeping the entire image in a cool blue tone.

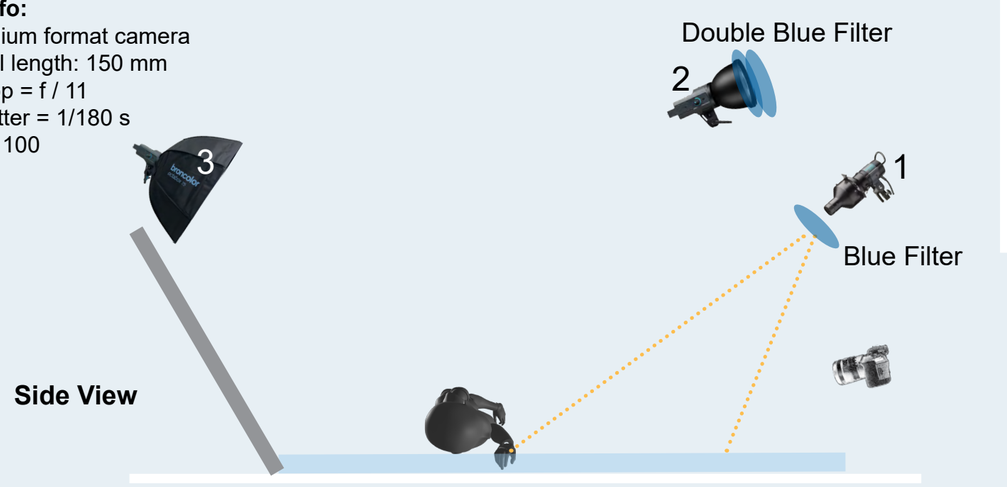
Large, soft light sources would not produce clear reflections - a hard light was essential here. A Picolite with its projection attachment (1) was the best choice to get the desired effect: It emits a very hard light that, thanks to the integrated templates, could be kept very precisely and easily away from the model's body, where consequently only the clear reflections of the water's surface could be seen. The Picolite was filtered slightly blue.

As a general fill light, a P70 standard reflector was used indirectly (2). This light was heavily filtered blue. Using the power setting of the main and fill lights, I was able to control the contrast between them and thus the dominance of the reflections.

Finally, as a backlight over hair and shoulder, an Octabox 75 with grids was used (3). These grids were essential because I didn't want the light to hit my lens or the grey background paper. Otherwise, the blue would have been heavily reduced and turned into a pale grey. This backlight is the only color-neutral light in the set and therefore looked almost warm.

Camera info:

Medium format camera
focal length: 150 mm
f-stop = f / 11
Shutter = 1/180 s
ISO 100



Octabox 75cm

Projection attachment
with Pcolite

Pulso G Lamp
+ P70 reflector

Scoro 3200s

Copyright: © broncolor, Photo by Urs Recher

5.6 Close up portait

A black and white portrait full of interesting lighting effects, let’s look at them in turn:

The obvious main light is a Picolite with projection attachment (1), where the integrated templates are set to bisect the model’s face with a sharp light-shadow boundary. On the illuminated side, this small, precise spot simultaneously provides a highlight in the eyes.

On the shadow side, this eye reflex had to be created with the fill light. Therefore, I chose a small softbox with the dimensions 35x60cm (2) and placed it rather low. The result is a small, bright, and mystical looking reflex.

Due to its position, this fill light (2) was too dominant to take over the complete contrast control, so a discreet indirect light was added (3).

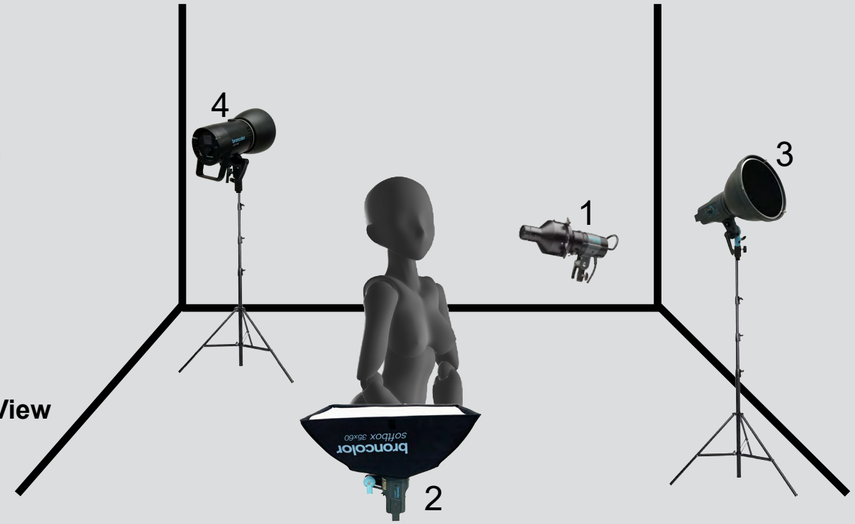
For the illumination of the background, I did not use another flash but a continuous light (4). As the camera was moved during the exposure, the border areas between model and background appeared blurred and created a kind of shadow contour. Alternatively, this technique can also be used to capture the movement of the model. (In this case with a static camera).

Care should be taken to ensure that the modeling lights of all flashes are dim enough to avoid affecting the image.

Camera info:

Medium format camera
focal length : 80 mm
f-stop = f / 16
Shutter = 1/2 s
ISO 100

Front View



F160 LED lamp

35x60 softbox

Strip Grid 5:1

Projection attachment
with Pcolite

Pulso G Lamp
+ P70 reflector

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

5.7 Close up portait

The shooting took place on a gloomy afternoon, the light under the overcast sky was diffuse and rather cold in color. To protect our set a bit from this light I photographed in the penumbra of a bridge.

To give the light some more direction and character, I decided to support the daylight with an Octabox 75 (1). This Octabox was powered by an LED F160. The color temperature of this continuous light source was set at around 4000 Kelvin, while the camera remained set to daylight. The result was a wonderfully beautiful, warm skin tone.

For brightening the shadows, a second LED F160 was used (2), equipped with the standard reflector. Reduced power and a position very close to the camera prevented potential multiple shadows. This light also had a color temperature of around 4000 Kelvin.

Camera info:

Full frame mirrorless
focal length: 44 mm
f-stop = f / 3.2
Shutter = 1/200 s
ISO 500

Octabox 75

F160 LED lamp

Copyright: Photo by Urs Recher

5.8 Close up portait

Normally, one tries to avoid certain areas of a set reflecting light onto other areas. In arrangements that tend to be rather bright, for example, small black cardboards are placed hidden to prevent such uncontrolled internal reflections.

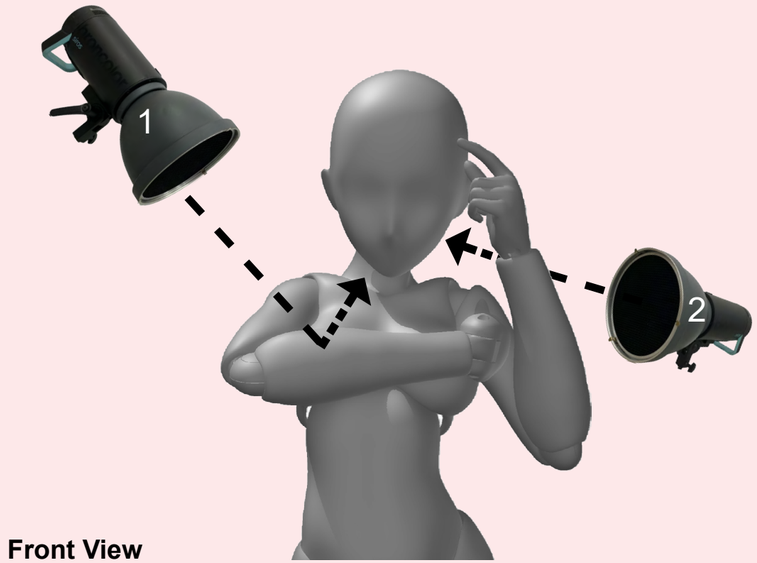
In this portrait, however, I used just such internal reflections as the central creative element; you might even say that the model was her own light shaper!

I instructed the model to assume a pose with her arms as far in front of her body and face as possible. Subsequently, I lit the forearms with very strong backlights and used only the light reflected from there onto the face. I guess you could call the left, vertical arm of the model the main light (1), while the horizontal right arm was used to brighten up the shadows (2). Through this technique, the pink color of the jacket logically became the predominant color.

Narrow grids were essential to balance precisely how much (or rather, how little) light was falling directly on the model and how much on the arms. To support the impression of a dominant backlight, I intentionally only partially eliminated the stray light coming from the right.

Camera info:

Full frame mirrorless
focal length: 92 mm
(Zoom lens 24-105 mm)
f-stop = f / 7
Shutter = 1/200 s
ISO 100



Front View

honey comb grids

P70 reflector

Siros 400s Lamp

Copyright: © broncolor, Photo by Urs Recher

5.9 Close up portait

As you can see from the reflections in the eyes, in both portraits the light source was placed directly above the camera and directed almost vertically downwards. In the case of the black and white image, this is an Octabox 75 (2), in the other case an Octabox 150 (1), i.e., an area lamp with 4 times the surface area.

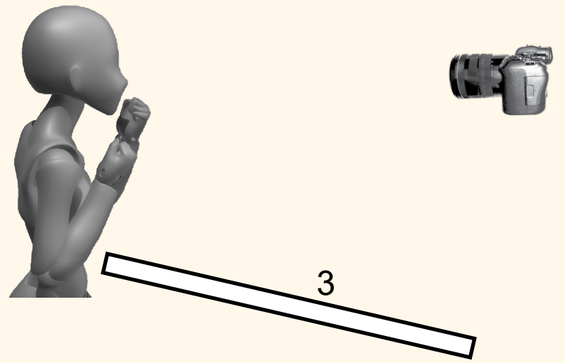
When shooting the color image, it was important to use the larger of the two broncolor Octaboxes, since I wanted to illuminate the face very softly and avoid glossy areas. Since there were relatively dark and disturbing shadows under the chin and between the hands, I additionally brightened them from below with a large white styrofoam (3).

With the very tight cropping of the black and white portrait, these deep shadows were not an issue; additional brightening was unnecessary. I also wanted to emphasize the look of the wet hair and skin provoking a subtle shine with the somewhat more aggressive light of the smaller Octabox (2).

Camera info:

Medium format camera
focal length: 150 mm
f-stop = f / 11 (black and white photo)
f-stop = f / 8 (color photo)
Shutter = 1/125 s
ISO 100

Side View



Octabox 150cm

Octabox 75cm

Siros 400s Lamp

6.1 Half and full body

The entire setup was arranged on a large, black background paper. This was to ensure that it was possible to work with high contrast despite large soft light and reflectors.

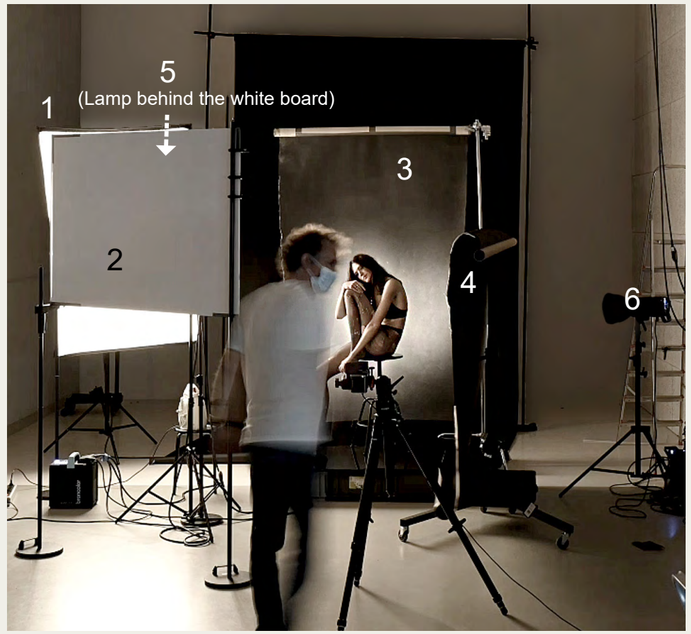
The main light in this situation was practically a backlight: a softbox with side lengths of 90 and 120 cm (1) was positioned a little behind the model. As is often the case, this light shaper was not aimed directly at the model but was clearly rotated towards the camera. This had two reasons: First, it prevented the background (3) from being illuminated unintentionally and second, a lot of light reached the white reflector wall (2), which then provided a powerful fill-in light.

An additional Pulso G lamp with a P70 reflector (5) was aimed at the white reflector (2) to quickly adjust the contrast depending on the pose of the model.

Main and fill-in light came from the same side, as a logical consequence the narrow shadows became very dark. The small light-absorbing wall (4) to the right of the model further increased the contrast and at the same time protected the model from the light of the Siros (6), which, equipped with a 5:1 strip grid, illuminated the background.

Camera info:

Medium format camera
focal length: 120 mm
f-stop = f / 11
Shutter = 1/125 s
ISO 100



Siros 400L
Lamp

90x120xm
softbox

Strip Grid 5:1

Pulso G Lamp
+ P70 reflector

Scoro 1600s

Copyright: Photo by Urs Recher

6.2 Half and full body

This example shows very well that with flash equipment not only the maximum light output counts, but a wide control range is of central interest as well.

The concept for this intimate portrait was to photograph the person sitting at a table and integrating a table lamp in the picture. I decided to use the main light for this, a P70 standard reflector (1). Since not only the light, but also the flashing lamp itself was in the picture, I worked with the lowest possible flash power. With a Scoro 1600 S Wi-Fi, this is 3 joules. Still, I had to stop down to f/16 at ISO 100.

The fill-in light should not disturb the mood of the main light but support its direction. A not-too-large softbox was placed just above the camera for this purpose.
To separate the dark blouse clearly and discreetly from the also dark background, it was illuminated with another P70 reflector (3), here equipped with medium grids.

Camera info:

Medium format camera
focal length: 50 mm
f-stop = f / 16
Shutter = 1/180 s
ISO 100

Side View

honey comb grids

60x100 softbox

P70 reflector

Pulso G Lamp

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

6.3 Half and full body

It being the last shot of the day the sun was already just below the horizon. I photographed with continuous light, an LED F160 to which the small variant of the broncolor Octaboxes was mounted.

As always, when “uncontrolled” light is around, like daylight in this case, I take care of this first. The desired brightness of the environment determines the aperture, shutter speed and sensitivity.

In the second step, the Octabox (1) was added from the right. Since we had to photograph different outfits and the fading daylight changed constantly, the light of the LED F160 had to be adjusted again and again by the assistant. For this, the control range of 4 f-stops was absolutely sufficient.

The colour temperature on the light was set to 4000 Kelvin while the white balance of the camera remained at daylight. The artificial light therefore had approximately the same color as the remaining daylight and therefore looked natural.

Camera info:

Full frame mirrorless
focal length: 40 mm
f-stop = f / 2,8
Shutter = 1/100 s
ISO 1000

Octabox 75

F160 LED lamp

Copyright: © broncolor, Photo by Urs Recher

6.4 Half and full body

In preparation, I covered the grey studio floor with thin Styrofoam plates and white paper. The Styrofoam made the floor a little softer and protected the model from its cold. After framing and fixing the position of the model, she wrapped herself in plastic foil and I put a total of 5 Siros 400 L (1) under the foil, of course without modeling light.

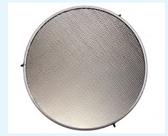
These five lamps were used without any light shapers but covered with blue filters. In this way, and thanks to the white paper, the widest possible diffusion of the light was achieved. In post-processing, a few additional light points were added.

These lights illuminated the face only to a small extent on either side – which made creating the necessary fill-in light a tricky task.

If this light is not strong enough, the face looks very hard and “dirty”. On the other hand, if the foil is lit too strongly, it loses the blue colour and everything becomes greyish. The solution was placing a beauty dish (2) with grids very close to the model. This way I could very precisely and selectively lighten the face.

Camera info:

Medium format camera
focal length: 80 mm
f-stop = f / 11
Shutter = 1/125 s
ISO 100



Honeycomb Grid for Baeuty Dish

Beauty Dish

Pulso G Lamp

Scoro 1600s

Siros 400L Lamp

Copyright: Photo by Urs Recher

6.5 Half and full body

This is one of my favorite light set-ups and a perfect example to illustrate, that a softbox cannot only illuminate softly, but also produce very powerful light. (Compare with the photo of the Buddha statue in the still life chapter).

A medium sized softbox (1) with side lengths of 60 and 100 cm stood to the left of the camera and was turned so far towards the camera (and thus away from the model) that the right half of her face came into the edge of the light source. Therefore, shadow areas also resulted on the side facing the light. The lighting mood became more mystical and the portrait more three-dimensional. A small black flag (2) prevented the light from hitting the lens.

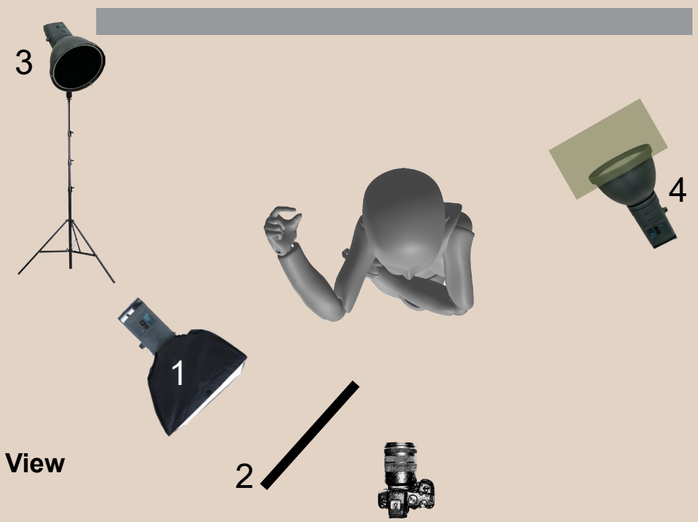
The strong rotation of the light shaper reduced its subjective size, making the light harder and giving the skin a beautiful, perfectly controllable glow.

Since most of the upper body was also behind the softbox, the dark outfit no longer showed any details. A narrow grid in a P70 reflector (3) subtly emphasized the contours of the arm and hand without affecting the face.

The grey background (5) was additionally illuminated with a green-brownish filter in front of another P70 (4). As the only fill-in light, I used the reflections from the studio walls, floor, and ceiling.

Camera info:

Full frame mirrorless
focal length: 85 mm
f-stop = f / 10
Shutter = 1/200 s
ISO 100



Top View

honey comb grids

60x100 softbox

P70 reflector

Pulso G Lamp

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

6.6 Half and full body

The pattern on the model's left upper arm is not a tattoo, but a projection. For this purpose, the corresponding pattern was printed with the highest possible contrast on a transparent plastic film. With the aid of a projection attachment (1) mounted on a Picolite, this pattern was then projected onto the arm with maximum sharpness.

The light from this projection attachment is very homogeneous. The significant light fall-off towards the forearm was created with objects held into the beam.

In the neck area, a second Picolite (2) took over the light and illuminated the face. This lamp was equipped with a Fresnel Spot Attachment; the very sharp shadow under the chin is typical for this small light shaper. Making the transition between these two lights homogeneous was the most difficult task in the set.

A very discreet backlight was set up behind the model on the right. A small softbox with a textile grid (3) was used for this purpose. For once, the background was not lit concentrically with a normal grid, but rather linearly with a diagonally mounted 5:1 grid on a P70 standard reflector (4).

Camera info:

Medium format camera
focal length: 80 mm
f-stop = f /16
Shutter = 1/125 s
ISO 100

Fresnel Spot Attachment with Picolite

Projection attachment with Pcolite

35x60 softbox

Strip Grid 5:1

Pulso G Lamp
+ P70 reflector

Scoro 1600s

Copyright: Photo by Urs Recher

6.7 Half and full body

I photographed this young woman in Shenzhen, China, after a workshop. Such impromptu shoots should usually go rather quickly, so I decided to use a set with only a single light. The result was a simple image that, although technically not entirely perfect (double contours of the non-moving parts), became one of my favorite photos of the last few years.

On the left side in front of the model, there was a big softbox with the dimensions 120x180cm (1). I rotated this light so far towards the camera that the background on the left showed a clear gradation.

The light fall-off on the right side of the background paper resulted from the model's own shadow. The nice center weighted illumination of the anthracite background paper was thus achieved without any additional light and was necessary to cleanly separate the black-clad model from the background.

The Scoro powerpack was programmed with a sequence of 2 flashes and an interval of 1.9 sec. During this time, the model took two different poses which could be combined in a single exposure as the camera shutter remained open for 2 seconds.

Camera info:

Medium format camera
focal length: 120 mm
f-stop = f / 11
Shutter = 2 s
ISO 100

120x180cm softbox

Pulso G Lamp

Scoro 1600s

Copyright: Photo by Urs Recher

6.8 Half and full body

The large parabolic Paras (with diameters of 177 and 222 cm) are the best light shapers when it comes to setting up a three-dimensional light in the simplest way.

In this example I placed a Para 222 (1) behind the camera and defocused the lamp head. The model saw 24 light points arranged in a huge circle around the lens because the Para reflected the light of the central light source only at the periphery.

The light from all 24 points reached the center of the model dressed in white , but only half the light illuminated the contours. The light coming from the right of the Para could not reach the left side and vice versa. So, it automatically centered in the middle of the body with subtle gradations to all sides.

Two large softboxes (2) additionally illuminated the background. Care was taken to ensure that this additional light was not too bright and reflected at the model. The black outsides of the two softboxes, which were positioned just outside the picture angle, further protected the model from these unwanted reflections.

Camera info:

Medium format camera
focal length: 80 mm
f-stop = f / 8
Shutter = 1/250 s
ISO 100

Side View

Para 222

90x120xm softbox

Pulso G Lamp

Scoro 3200s

Copyright: Photo by Urs Recher

6.9 Half and full body

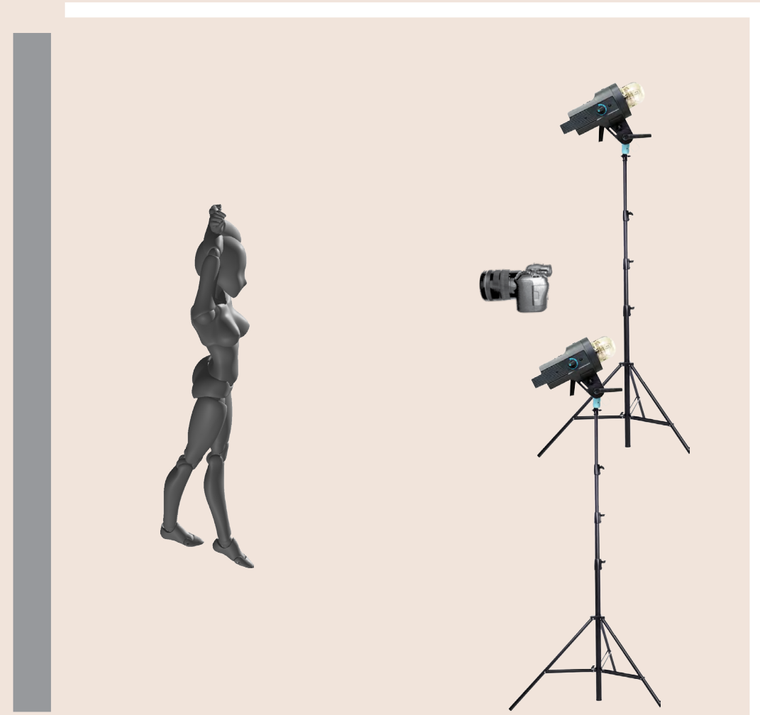
Diffused light is usually used only to brighten dark shadows. However, in certain cases, it can also be suitable as the main light. In this example, I wanted to avoid that light- and shadow effects would disturb the clear forms of the black top on the almost white skin and the red lips.

Two Pulso G lamps without light shapers (bare bulb) were directed away from the model. All studio walls, which were fortunately white, reflected this light and acted as the largest possible light shaper, so to speak.

The shadowless illumination of diffused light has the advantage that the model is absolutely free in her/his movements and that I as a photographer may stand anywhere without running the risk of influencing the light. Even if perfectly focused, photographs in pure diffused light often appear somewhat “soft”. A subtle sharpening in post-processing is then advantageous.

Camera info:

Medium format camera
focal length: 120 mm
f-stop = f / 16
Shutter = 1/125 s
ISO 100



Side View

Pulso G Lamp

Scoro 3200s

Copyright: © broncolor, Photo by Urs Recher; Dancer: Yazmin Verhage

7.1 Dance and sport

The setup pursued the goal of emulating a spot lighting on a large stage. When such a spot is many meters away from the scene in a theater, homogeneous illumination results quite naturally. But when a tall dancer stands on tiptoe and raises her arm, various problems arise with limited studio height:

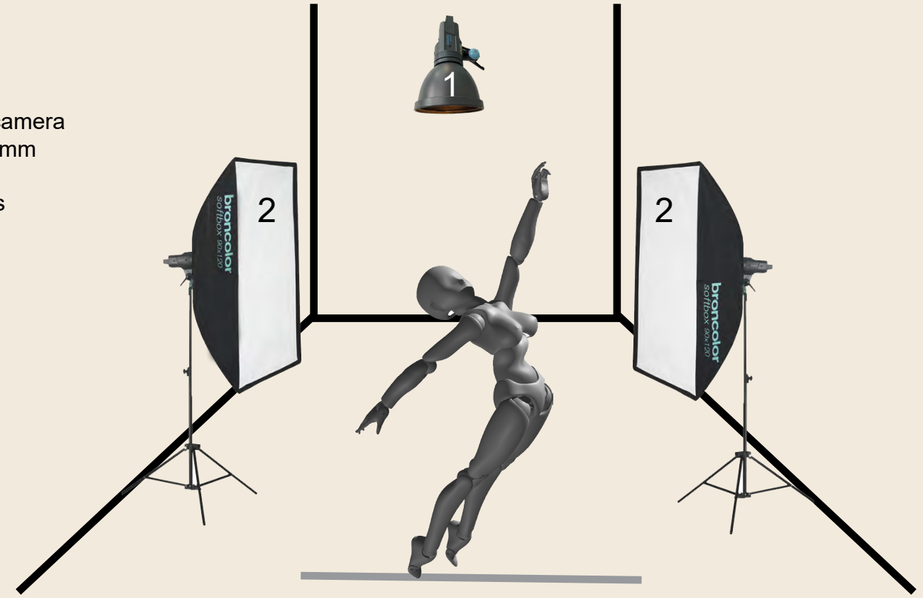
I had a ceiling height of about 4 meters in this rental studio, after all. Assuming that the model's left hand is at a height of 2 meters, it is twice as close to the light as her feet - and thus gets two f-stops lighter. This very uneven lighting had to be counteracted.

The main light, a simple P70 normal reflector with a medium grid (1) was directed vertically downwards, not exactly above the dancer, but slightly shifted towards the camera - this can be clearly seen in the shadow cast. The light was thus concentrated on the lower part of the body, while the upper part was within the darker edge of the grid that compensated for the light fall-off.

Two medium sized softboxes (2) were used as fill-in lights. I placed them slightly behind the dancer to model her athletic legs with the shadow areas in the center. At the same time, I used these lights for the homogeneous illumination of the background.

Camera info:

Medium format camera
focal length: 120mm
f-stop = f / 11
Shutter = 1/250 s
ISO 100



Front View

honey comb grids

Pulso G Lamp + P70 reflector

90x120cm softbox

Scoro 3200s

Copyright: © broncolor, Photo by Urs Recher

7.2 Dance and sport

When working against a dark background and without much ambient light, it is possible to create a strobe effect in a single shot. In this case, the flash unit is programmed with a sequence and the shutter remains open long enough for all partial exposures to reach the chip. In this example, however, we were working outside in a very bright environment and had to proceed differently:

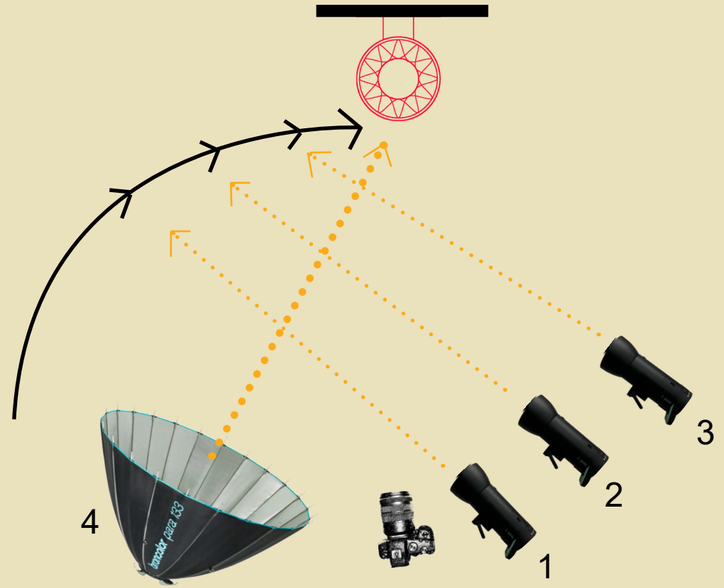
The final image was to consist of four frames, taken very shortly after each other. One battery-powered Siros L illuminated each of the first three positions of the attacking player (1,2,3), while a powerful Para 133 HR (4) provided the light for the main scene at the end of the sequence.

The four Siros L were programmed by means of the bronControl APP to trigger alternately: Each camera exposure sent out a synchronization signal that ignited the next unit. There are no limits to the triggering rhythm.

Since the camera was fixed on a tripod and the individual figures did not overlap, stitching them together in post-processing was very easy.

Camera info:

Full frame DSLR
focal length: 20 mm
f-stop = f / 11
Shutter = 1/200 s
ISO 100



Para 133 HR

L40 Reflector

Siros 800L lamp

Copyright: Photo by Urs Recher; Dancer: Lydia Caruso

7.3 Dance and sport

Contrary to various sets in this chapter, I chose an asymmetrical light setup here. The motivation behind this was to emphasize the direction of movement of the image by means of the light.

The main light, a 90x120cm softbox (1), was positioned at floor level and at an angle of roughly 90° from the right. This light source even illuminated the dancer's back in this extreme pose but had to be supplemented by an additional large softbox from above (2), because otherwise the entire chest and stomach area would have remained in darkness.

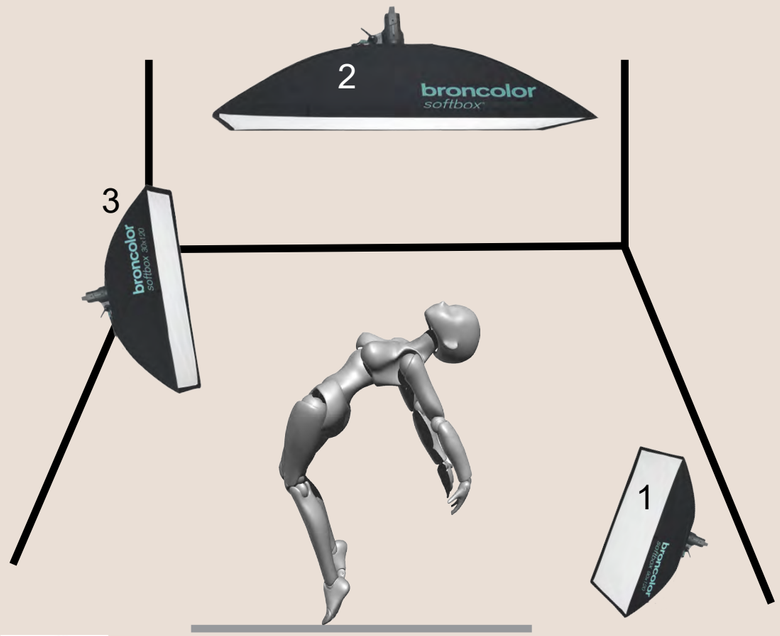
A very subtle edge brightening from the back left (3) was the third and final light. Since I had to give the dancer a lot of space, all the lights were relatively far away from her and illuminated the whole studio. Fill-in lights and additional lights on the (white) background wall were unnecessary.

To capture the rapid movements sharply, I used the short flash duration of a Scoro powerpack. Even if the camera was set to 1/200s, the effective exposure time was only 1/8000s.

<< To prevent dust explosions, the use of flour is strongly discouraged. >>

Camera info:

Full frame DSLR
focal length: 85 mm
f-stop = f / 8
Shutter = 1/200 s
(flash duration 1/8000 s)
ISO 100



Front View


30x120cm softbox


120x180cm softbox


90x120cm softbox


Pulso G Lamp


Scoro 3200s

Copyright: Photo by Urs Recher; Dancer: Max Ossenberg-Engels

7.4 Dance and sport

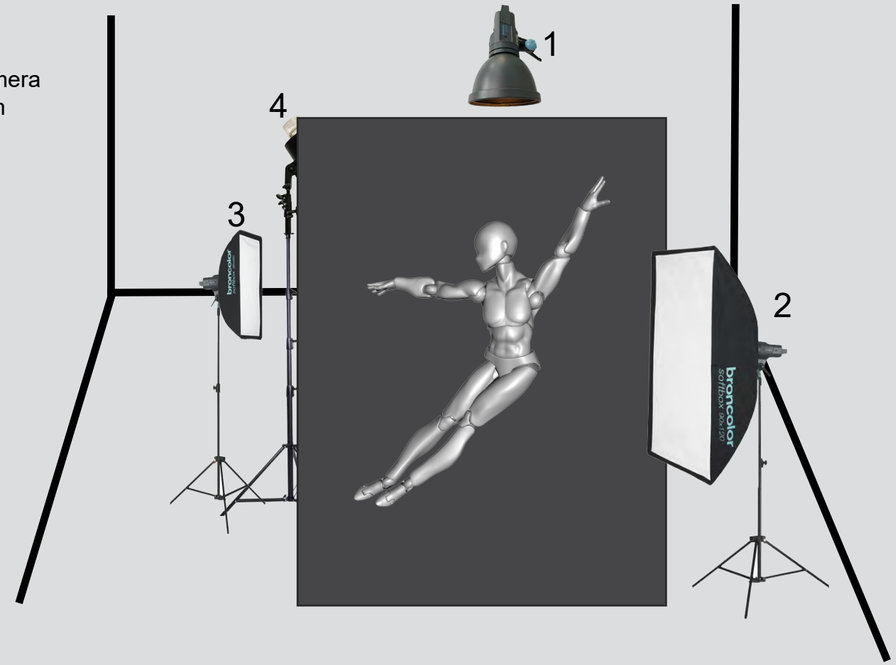
The main light (a P70 normal reflector with grid, (1)) was positioned vertically above the dancer. The dancer's expansive pose necessitated a wide grid, and the resulting illumination was correspondingly less punctual.

This main light was supported by a 90x120cm softbox (2) coming from the right in a right angle. Since the dancer's face was not reached by these lights, an additional, discreet fill-in from the left became necessary. For this I chose a small softbox 35x60cm (3) which I could direct primarily at the dark face. The white shirt didn't need any additional light and the dancer's right arm and leg were already sufficiently illuminated by the main light.

To ensure that the grey background paper stood out clearly enough against the white studio wall, I placed a Siros 400 L (4) without any light shaper behind it. A battery-powered monolight was the best choice, as it meant that no power cables had to be retouched.

Camera info:

Medium format camera
focal length: 80 mm
f-stop = f / 13
Shutter = 1/250 s
ISO 100



Front View

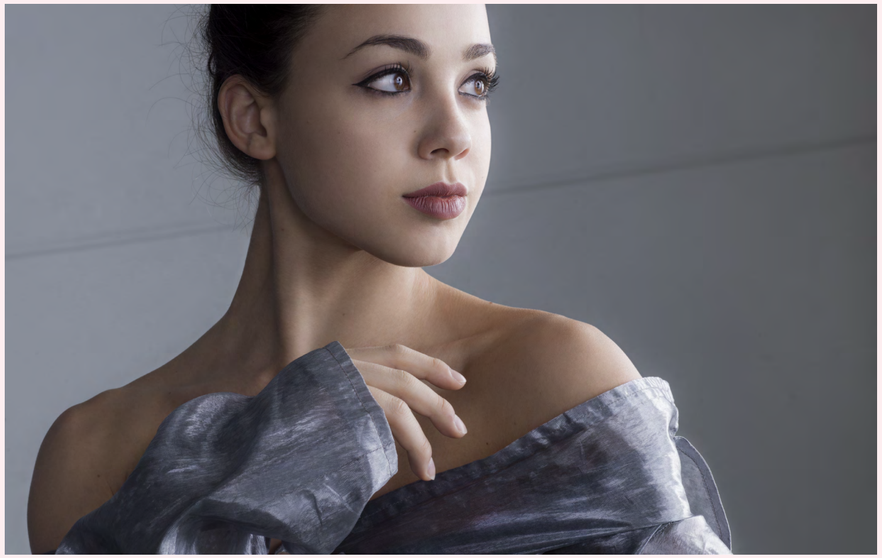
90x120cm softbox

35x60cm softbox

Siros 400L lamp

Pulso G + P70 reflector + wide grids

Scoro 3200s



Copyright: Photo by Urs Recher; Dancer : Gaia Mentoglio

7.5 Dance and sport

A soft but high contrast light is often perfect for shaping an object, face, or body beautifully. For a small set like a portrait, this can easily be accomplished with a large softbox over a short distance. Here, however, we were dealing with a full body shot, so we had to proceed differently:

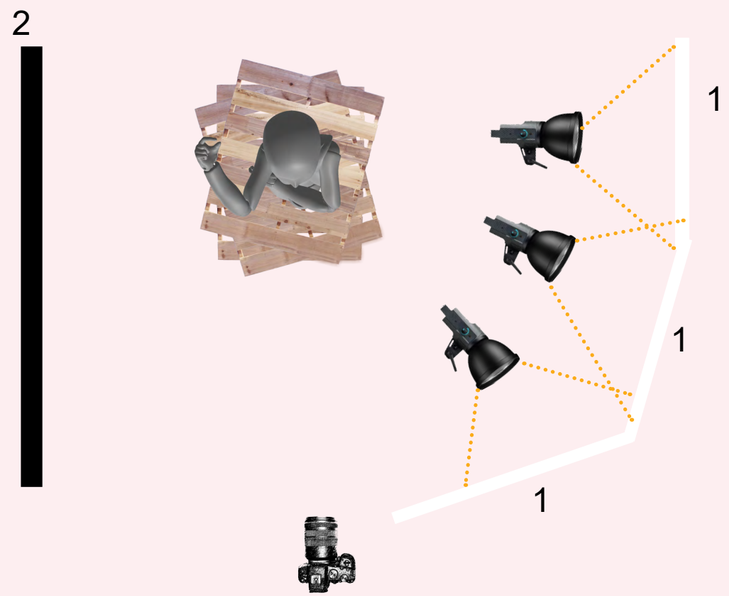
To guarantee the necessary softness, a very large light source was needed. (Read the explanations about absolute and subjective size of light sources in the first part of this book). I used styrofoam plates (1) for this purpose, which were illuminated with three P70 standard reflectors. It is important that the reflector wall is drawn through from behind the model to the camera. To prevent double shadows, the light circles of the three P70 reflectors overlapped slightly.

Since this light setup is very uncontrolled and illuminates the entire studio, contrast-enhancing black light-absorbers (2) are usually necessary on the side facing away from the light.

Both photos are taken in identical light, which is perfect for full body as well as portraits. Since the size of the light setup allows almost no shadows, this light also is a good option for group shots.

Camera info : - Full body
Medium format camera
focal length: 80 mm
f-stop = f / 8
Shutter = 1/180 s
ISO 100

Camera info : - Portrait
Medium format camera
focal length: 120 mm
f-stop = f / 19
Shutter = 1/180 s
ISO 100



Top View

Pulso G Lamp
+ P70 reflector

Scoro 1600s

Copyright: Photo by Urs Recher; Dancer: Lydia Caruso

7.6 Dance and sport

I made first light tests with a completely white illuminated background. However, this meant that the subbject's contours could not be very bright at the contours, otherwise a clean separation from the background was not guaranteed. However, the stretchy white fabric that enveloped the dancer looked grey and dirty against the white background, so I decided to take a different approach:

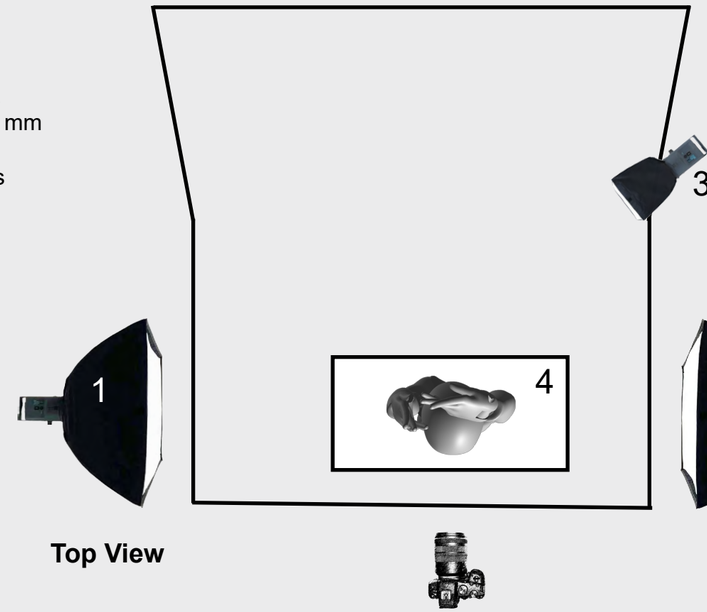
The backlight was turned off and the figure was placed in a "pincer light" between two large soft-boxes (1 and 2). These two light sources each illuminated the scene at an angle of about 90° from both sides with the right, slightly smaller softbox (1) being assigned a higher output. Using the orientation of the softboxes, I was also able to control how much light hit the paper background, illuminating it very light grey and homogeneously.

It was now possible to work with white contours as well, so I positioned an additional narrow soft-box (3) from the back right to support the main light.

The dancer stood on a shiny white acrylic plate (4). The transition of this plate towards the paper background was retouched, otherwise the shot is "out-of-camera".

Camera info:

Full frame DSLR
focal length: 105 mm
f-stop = f / 8
Shutter = 1/160 s
ISO 100



Top View

Softbox 30x120 | 90x120cm softbox | Pulso G Lamp | Scoro 3200s

Copyright: Photo by Urs Recher; Dancer: Max Ossenberg-Engels

7.7 Dance and sport

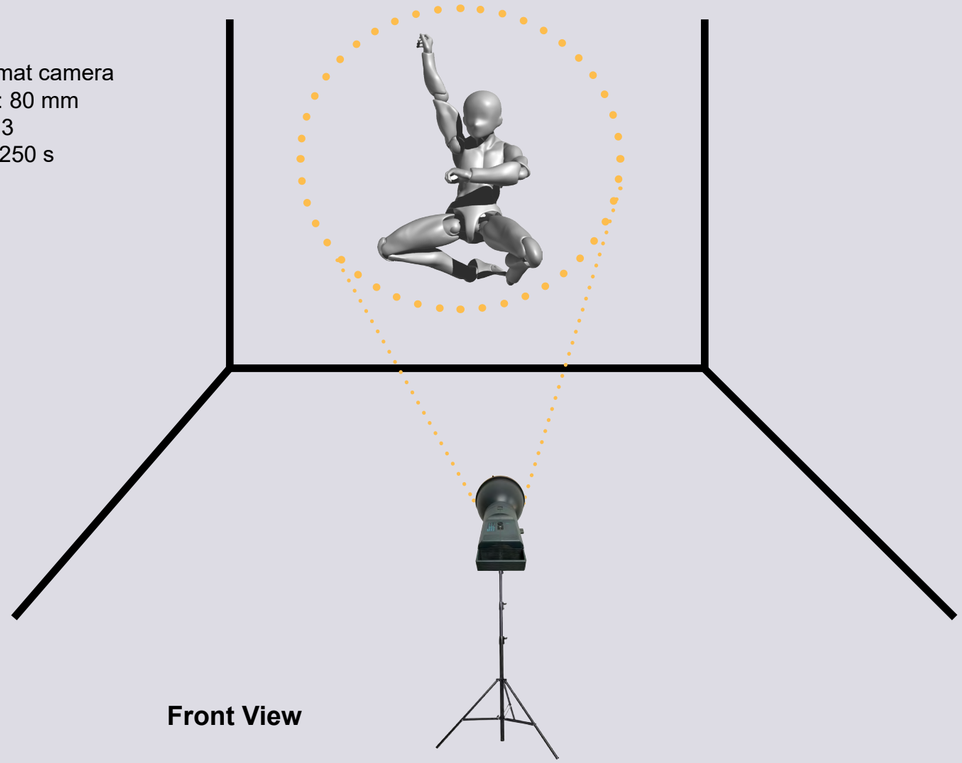
Here we see certainly the simplest light set of the whole book. The idea was once again to emulate a potential lighting situation on a stage.

I used nothing but a normal reflector with medium grids. It was the last shot of the day, and the dancer was already sweating and his skin shiny, but despite growing exhaustion he jumped tirelessly into the cone of light. The "brutal" light clearly supported these two factors - correction in post-processing was deliberately omitted.

Since both the dancer's skin and clothing separated clearly from the virtually black shadow, a contrast-reducing fill-in light was not indicated. (A welcome help, of course, was that the white background reflected some light and created a narrow backlight edge on the dark pants).

Camera info:

Medium format camera
focal length: 80 mm
f-stop = f / 13
Shutter = 1/250 s
ISO 100



Front View

honey comb
grids

Pulso G Lamp
+ P70 reflector

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher; Dancer: Carmela Bonomi

7.8 Dance and sport

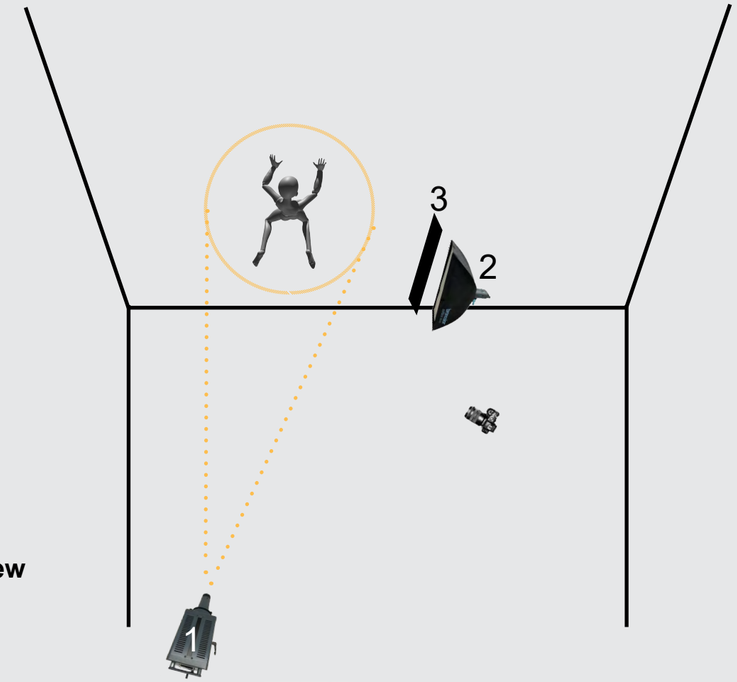
Comparing the photograph and the sketch of the set, you quickly realize, that something can't be right. The explanation is simple: The final photo was rotated 90° clockwise. What looks like the studio floor in reality is a vertical wall.

The main light was a Pulso Spot 4 (1) with the associated projection attachment 150mm. This light shaper projected a circular aperture mask very sharply onto the white studio wall. The Pulso Spot 4 (1) is characterized by incredible precision, but it is not particularly bright, this necessitated a high power-setting, which is always accompanied by a longer flash duration. Since I exposed the photo at the exact moment the model was at the highest point and thus briefly motionless, a flash duration of around 1/1000s was sufficient to "freeze" the dancer.

A narrow softbox with side lengths of 30 and 120 cm (2) was leaned against the wall. Together with the black flag (3), it was possible to ensure that the shadows on the model's body were brightened, but that the wall itself did not receive any additional light.

Camera info:

Medium format camera
focal length: 35 mm
f-stop = f / 6.3
Shutter = 1/250 s
ISO 100



Top View

projecting attach-ment 150mm

Pulso Spot 4

30x120cm softbox

Pulso G Lamp

Scoro 3200s

Copyright: © broncolor, Photo by Urs Recher

7.9 Dance and sport

My approach when working outside with daylight is the same as when combining continuous light and flash in the studio; I first photograph the scene without flash and use shutter speed, aperture, and sensitivity to define the mood of the image - in this case a clear underexposure of the daylight.

Because the clouds in the sky predominated, I decided not to build on the sunlight but to optimize the light for when the sun was obscured.

I opted for a pincer light and placed the athlete between a Para 88 (1) and a P45 narrow angle reflector (2). Since the pose and position in the air were impossible to predict and different each time, I placed both lights in front of the model to prevent dark shadows on the body, which could have otherwise been problematic because of the black T-shirt.

The larger and therefore less aggressive light, the Para 88 (1), came to stand on the right, as this light source caused the reflection on the rusty steel ramp. The reflection from a P45 (2) would have been burned out.

Both lights were positioned low enough to also illuminate the face under the baseball cap and the underside of the skateboard.

Camera info:

Medium format camera
focal length: 38 mm
f-stop = f / 9,5
Shutter = 1/800 s
ISO 100

Front View

P45 Reflector

MobiLED

Move 1200L

Para 88

Copyright: © broncolor, Photo by Urs Recher; Dancers: Tana Rosás Suñe and Diego Benito Gutierrez

7.10 Dance and sport

You'll find variations of this set-up in this book - the differences are subtle but important. The idea is always to work with a dominant overhead light, which should remind of a stage performance.

We experimented with different outfits for the dancers, including very dark ones. To always guarantee a good separation from the background, I removed the grid from the main light (1) and used its laterally emitted light as a discreet brightening of the background wall. In the corresponding nude photograph, this was not necessary because the naked skin was generally brighter and less contrasty.

The spot effect of the top light could be enhanced if a normal reflector with grids were used instead of the large softbox. You will also find this set (which however only works for individual shootings) explained in this chapter.

Symmetrically from both sides 2 softboxes (2) brighten the shadows. These two lights should not be placed too frontally, otherwise the bodies would be illuminated too flatly. There was no danger of creating very dark shadows even without additional brightening, because the whole set was large and the indirect reflections over the studio walls already reduced the contrast sufficiently.

Camera info:

Medium format camera
focal length: 90 mm
f-stop = f / 19
Shutter = 1/90 s
ISO 100

120x180cm
softbox

90x120cm
softbox

Pulso G Lamp

Scoro 3200s

Copyright: Photo by Urs Recher; Dancer Gaia Mentoglio

7.11 Dance and sport

A fantastic dance performance, where very creative work was done with semi-transparent fabrics in front and behind the artists, inspired me for this shooting. I implemented the idea with an extremely thin plastic foil which the entire lighting design was oriented on.

The lighting setup started with a basic light: a large softbox 120x180cm (1) mounted vertically above the dancer and the foil. It provided most of the light for the dancer and was responsible for the reflections at the very top of the foil.

But only with this (main) light source the plastic foil appeared too transparent and the whole picture too dark - additional reflections had to be created. To do this, I placed vertically oriented, narrow softboxes (2) on the left and right. In front of these lights, black flags (3) were mounted, which corresponded in the width with the softboxes (30cm). The plastic foil was thus not generally illuminated, but only where the dancer pushed the foil forward. A weak fan pushed the foil back again slightly.

Finally, to let the previously unlit areas of the foil shine discreetly, a ring flash (not visible in the sketch) at low power was attached around the lens.

Camera info:

Medium format camera
focal length: 80 mm
f-stop = f / 16
Shutter = 1/180 s
ISO 100


Ringflash


Softbox 120x180


Softbox 30x120


Pulso G Lamp


Scoro 3200s

Copyright: © broncolor, Photo by Urs Recher; Dancer: Yazmin Verhage

7.12 Dance and sport

When combining continuous light and flash, you are well advised to start with the continuous light, because this defines sensitivity, aperture, and shutter speed. The flash can always be easily adjusted to the continuous light in a second step, since the Scoro1600 S Wi-Fi, for example, has a control range of 9 f-stops.

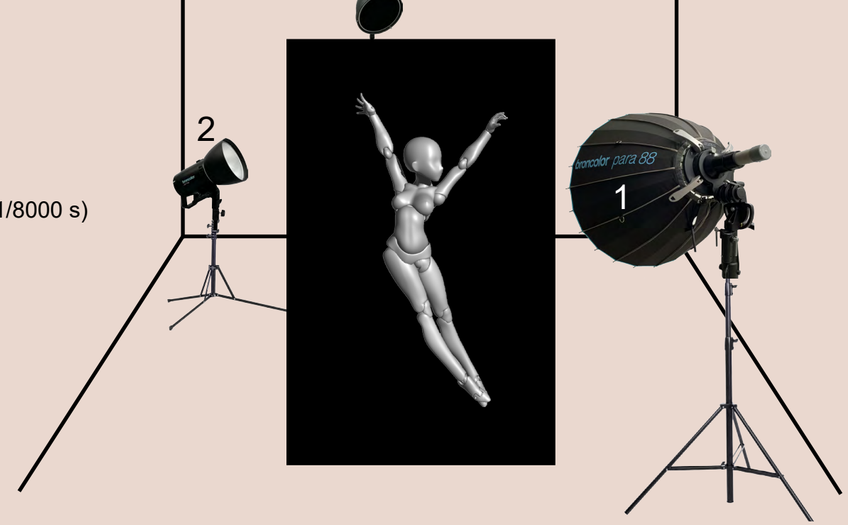
Sporty models can stay in the air for around ¼ second during a jump (without a trampoline). Professional dancers even manage 1/3 s. A slower shutter speed however would not make the image brighter, since the model is moving. The area of motion blur would simply become larger, but not brighter. The continuous light source (2) was behind the black paper background to avoid its light falling on it.

After adjusting the continuous light and fixing the camera settings, I switched on the Para 88 (1). It was fully focused, so the light didn't hit the background and maximized the light output at the same time. This allowed me to work with a very short flash duration and therefore completely freeze the fast movement.

The contour of a discreet backlight (3) increased the impression of sharpness on the shadow side. A P70 with a wide grid was used here. At the same time, this light brightened the dancer's dark hair.

Camera info:

Full frame mirrorless
focal length: 70 mm
f-stop = f / 5.6
Shutter = 1/4 s
*(flash duration around 1/8000 s)
ISO 100



Front View

Para 88

F160 LED lamp

honey comb
grids

Pulso G Lamp
+ P70 reflector

Scoro 1600s

8.1 Products

The perfume bottle (1) stands in a very shallow pool of water (2). The pool is floored with a black acrylic plate and has a border of around 1 cm. The water depth is no more than 5 mm.

As a first step, I positioned the camera and, depending on the reflection angles on the water surface, the Pulso G (5), which illuminated the background in such a way that a nice, tight halo could be seen around the bottle. Since I was working with a long focal length and thus a narrow picture angle, a very narrow grid was mandatory. I opted for a somewhat colder lighting mood and therefore filtered this light slightly blue (10).

The homogeneous reflection in the upper, shiny part of the bottle was achieved with a Picobox (3) that backlit a white acrylic plate (9), which was positioned as a luminous extension of the pool, so to speak. This light had practically no effect on the matte black part of the object. I had to brighten this additionally and very selectively with another Picolite and the corresponding projection attachment (4).

The backlight created unpleasant reflections on the neck of the bottle. To correct this, the white cardboard (8) was eliminating this reflection. Then I illuminated it homogeneously with a normal reflector and grids (6).

Camera info:

Medium format camera
focal length: 150 mm
f-stop = f / 19
Shutter = 1/125 s
ISO 100


honey comb grids extra narrow


honey comb grids


Pulso G Lamp + P70 reflector


Projection attachment


Picobox + Picolite

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

8.2 Products

The shadow-free illumination in the center could indicate the use of a ring flash. However, this special effect lamp would illuminate the artichoke completely homogeneously and flatly.

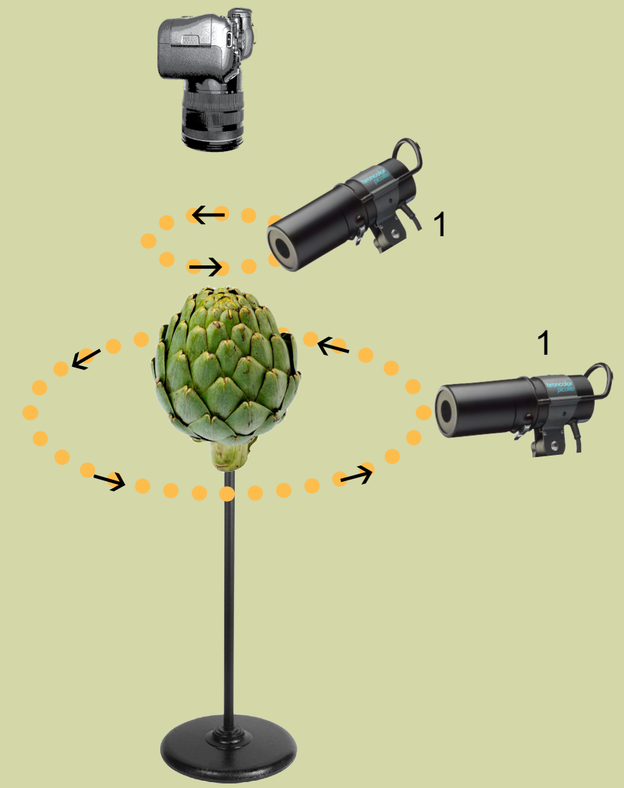
In order to better control the light and be able to photograph the object in a more exciting and three-dimensional way, I used a Picolite with a narrow honeycomb (1) but didn't like the resulting shadows. So, I moved the Picolite in circles around the object while flashing it a total of thirty times. Thus, the shadow-free characteristics of a ring flash were combined with the control of a Picolite.

The Scoro powerpack was programmed with a sequence of 30 flashes and an interval (the time between two flashes of a sequence) of 1 second. The camera had to remain open for at least 30 seconds.

Camera info :

Medium format camera
focal length: 120 mm
f-stop = f / 32
Shutter = 32 s
ISO 100

Side View



Picolite +
Honeycomb grids

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

8.3 Products

The purpose of this set was to have a light setup that could be adapted very quickly to different products. Meaning, here in particular, their glossy behavior and (in)transparency.

The glasses were placed on a white shiny acrylic plate (2) and some 30 cm behind it, a white cardboard (3) was placed. In a first step, a P70 normal reflector with narrow grids (1) was directed onto this white cardboard in a way that, as seen from the camera, the glasses appeared in the center of a bright reflection. This reflection also created the nice shadow in front of the object.

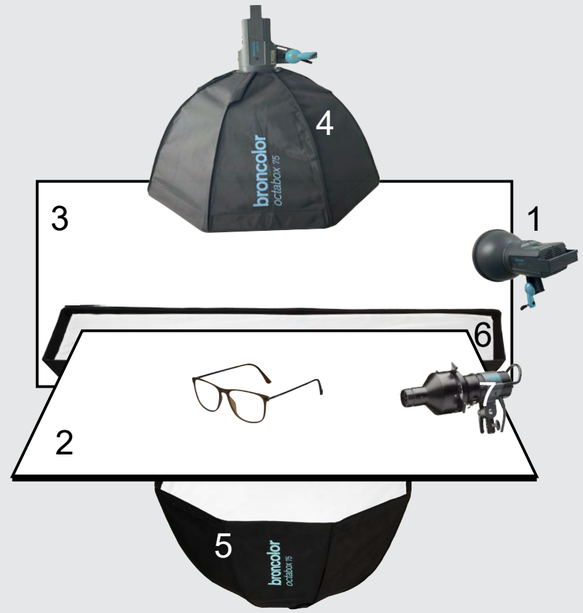
So far, the gradation of the main light faded into very dark corners - I needed a fill in light. Two identical, small Octaboxes 75 (4 and 5) were used, one above and one below the acrylic. As these two lights had the same effect on the contrast, I could choose, which one should be stronger: The upper one to emphasize the reflections or the lower one to generate more light shining through the object.

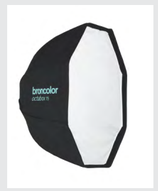
I placed a narrow and long softbox (6) very close to the white cardboard, hidden behind the table. This position guaranteed a linear and very fast gradation.

Finally, a Picolite with Projection attachment (7) was ready to illuminate important design elements on the object.

Camera info :

Medium format camera
focal length: 80 mm
f-stop = f / 22
Shutter = 1/250 s
ISO 100




Octabox 75cm


30x120cm softbox


honey comb grids


Pulso G Lamp + P70 reflector


Projection attachment with Pcolite


Scoro 1600s

Copyright: Photo by Urs Recher

8.4 Products

In the beginning I put the two small softboxes 35x60cm (1) and (2) as backlights. These wonderfully shaped the contour of the statue, emphasized the moss growth, and modeled the ears, as well as the neck area perfectly.

However, these two light sources shone full force into the camera and reduced the contrast by scattering light. The two black boxes (4) prevented this unwanted effect.

The main light was a more difficult task: choosing too large a softbox would have generated a light so soft, it would have blurred the structure of the lava stone. If such a large light were pointed directly at the subject, it would be very flat and would not show any form-giving gradations.

Therefore, I chose a small softbox (3) with 35 and 60 cm edge length, turned it slightly away from the object and more towards the camera. Since this reduced the subjective size of the light source (as seen from the object), the light became harder and highlighted the structure of the material much better.

Rotating the main light like this, it provided additional brightness gradients and thus a clearer rendering of the shapes - also on the side the light came from.

Camera info:

Medium format camera
focal length: 120 mm
f-stop = f / 22
Shutter = 1/125 s
ISO 100

Top View


35x60cm softbox


Pulso G Lamp


Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

8.5 Products

The central task was to photographically reproduce the shapes and the idiosyncratic construction of this design chair. I decided to use shadows as the dominant photographic design element.

Since the wooden structure of the object was very detailed, it was important to use a very small, hard light source. The best light shaper for such sharp shadows is the Sunlite Set (1). It consists of an elongated U-shaped flash tube which, when directed at the object, acts as an almost point light source. In addition, the Sunlite Set includes a 4-wing barn door that allows the amount of light emitted laterally to be precisely controlled. In a reflective environment, as it is the case in a bright studio, this has a direct influence on the darkness of the shadow.

Since even the Sunlite Set is not a perfect point, the distance between the object and the wall still has some influence on the shadow's sharpness.

Two normal reflectors equipped with narrow grids created some additional, unobtrusive reflections on the shiny wood. The grids were essential as they allowed keeping the light off the background, while leaving the dominant shadows of the Sunlite Set undisturbed. The wooden board at the back right supported the grid.

Camera info:

Medium format camera
focal length: 80 mm
f-stop = f / 13
Shutter = 1/250 s
ISO 200

Sunlite Set

honey comb grids

Pulso G Lamp + P70 reflector

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

8.6 Products

Since the lighting was strongly dependent on the camera angle and the position of the watch, these were defined first and not changed afterwards.

The first (main) light was a Picolite with a Fresnel Spot attachment (1), which backlit a white acrylic plate (2) and nicely shaped the links of the shiny watch band. Since this light still left relatively large black areas, I expanded the gradation on the diffuser with a larger P65 reflector (3), which was placed immediately behind it.

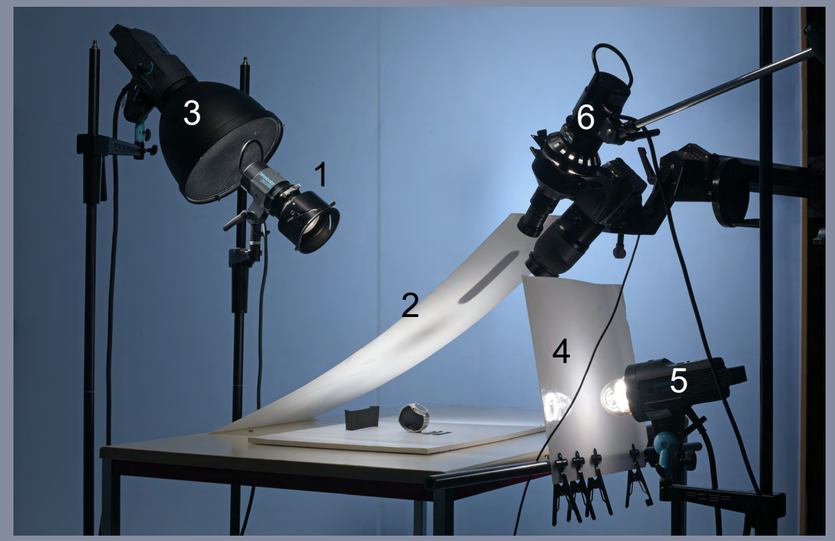
As a fill-in from the front, another acrylic plate was used (4). Here, however, I created the gradation with an open flash tube (5) that was positioned only a few centimeters away from the diffuser material.

The previous light setup consisted exclusively of soft gradations, perfect for the shiny areas but just too soft for the textured dial, which appeared dull and pale. To show its texture more clearly, a Picolite with Projection attachment (6) very precisely illuminated only the dial, which now appeared brilliant and in a richer color.

Small black paper snippets locally created higher contrast and separated the wristband from the background with a discreet dark line.

Camera info:

Medium format camera
focal length: 120 mm
f-stop = f / 22
Shutter = 1/125 s
ISO 100




Projection attachment with Pcolite


Fresnel Spot Attachment with Picolite


honey comb grids


Pulso G Lamp + P65 reflector

Scoro 1600s

8.7 Products

Transparent objects are photographed primarily with light passing through the object, possibly with additional light that shows the texture and reflective behavior of the surface. In this situation, the amount of light that passes through the object can be increased by hiding reflectors directly behind it - if the lighting setup allows it!

To photograph the two gin bottles, I chose a different approach. Wanting to keep the viewer's attention longer I made the composition a bit more complex by playing with different perspectives in a single shot. A mirror and a piece of glass were used for this purpose.

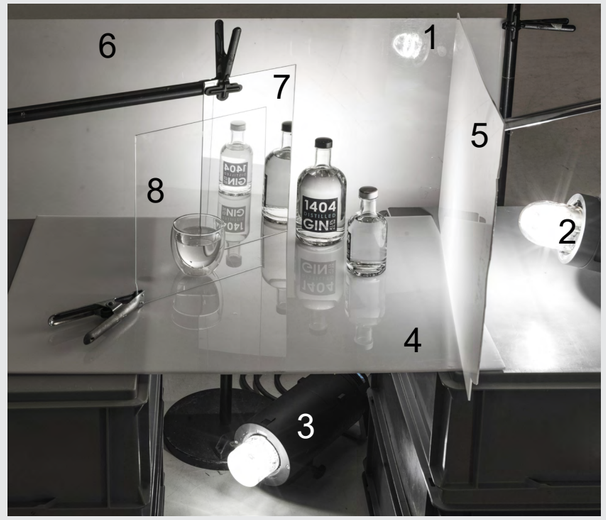
Adding these elements made lighting the set much more difficult. The lighting had to work in two different directions at the same time; the two perspectives differed by 90°. This made it impossible to use hidden reflectors behind the bottles.

In the end, three acrylic plates (4,5 and 6) were used, each backlit with a lamp head without any light modifier (1,2 and 3). I preferred bare flash tubes over reflectors (with grids) because they produce smaller and more contrasting gradations on the diffusion plates. Since the smaller of the bottles measured only about 14 cm, this technique was essential.

In post-processing the label of the smaller bottle had to be mirrored and at the same time the left half of the image had to be made a bit slimmer.

Camera info:

Medium format camera
focal length: 120 mm
f-stop = f / 22
Shutter = 1/180 s
ISO 100



Siros 400L lamp

Pulso G Lamp

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

8.8 Products

The perfect contour separating the dark object from the black background was achieved by using a large octagonal softbox (1) that shone around the black background (2) visible in the image. Special care must be taken to ensure that this dominant backlight does not shine too strongly into the lens.

A strip-shaped softbox (3) with the dimensions 30x120 cm was positioned very close to the helmet so that a long, uninterrupted reflection was visible in the visor. To make this reflection as homogeneous and sharply defined as possible, the softbox was equipped with the 3rd diffuser. The light from this light source also illuminated the inside of the helmet.

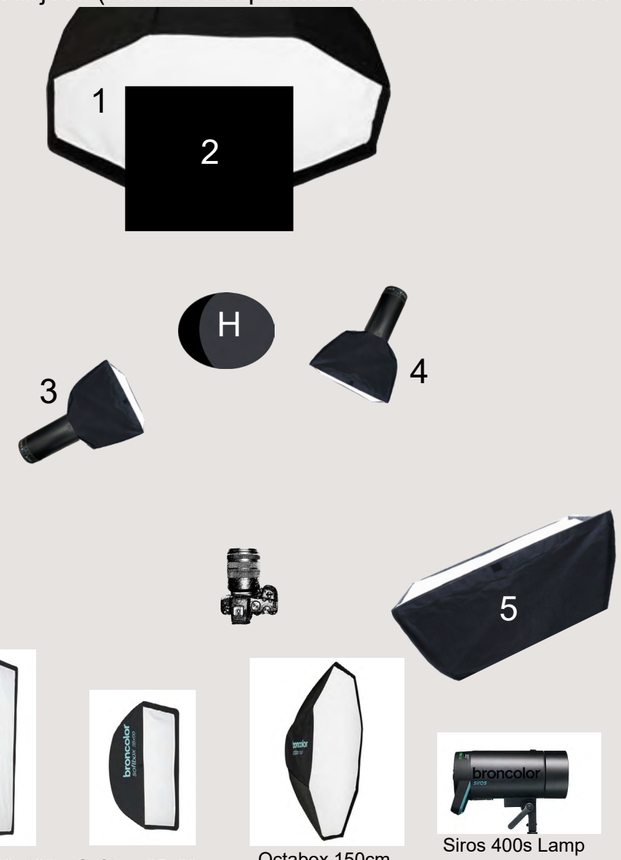
To the right of the helmet, a small 35x60 softbox (4) was set up and rotated towards the camera in such a way that the object was, so to speak, at the edge of the light. This created a brightness gradient and nicely emphasized the shape of the helmet.

Finally, the shiny elements in the center were emphasized by placing a rather large softbox 90x120cm (5) relatively far away from the subject. (Read the explanations on direct and diffuse reflections in chapter 1).

Camera info:

Medium format camera
focal length: 120 mm
f-stop = f / 22
Shutter = 1/125 s
ISO 100

Top View




Softbox 90x120


Softbox 30x120

Softbox 35x60

Octabox 150cm

Siros 400s Lamp

Copyright: © broncolor, Photo by Urs Recher

8.9 Products

The lighting setup started with the main light: a 30x180 cm softbox (1) behind a diffuser. This light illuminated the entire side of the motorcycle and shaped the metallic areas particularly advantageously.

All other lights “only” set accents or brightened up particularly dark areas:

The two softboxes (2) and (3) guaranteed a proper separation of saddle, tank and handlebars from the background.
Another softbox measuring 90x120cm (5) and the white cardboard in front added reflections to the otherwise too dark front section of the engine.

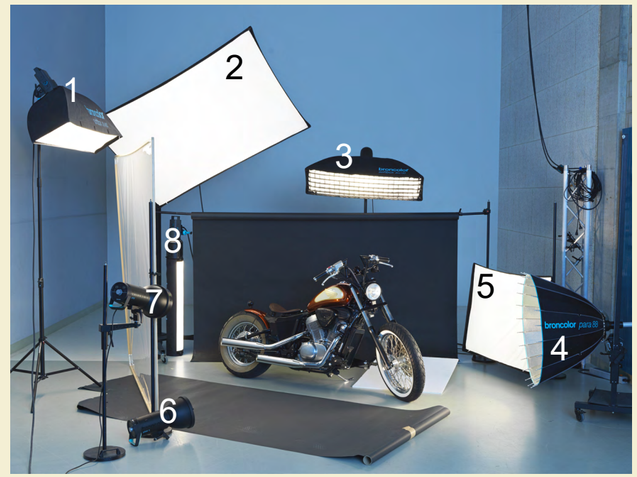
The Para 88 (4) on the right as well as the P70 normal reflectors equipped with narrow grids (6) and (7) primarily illuminated the black areas of the tires and emphasized their profile. The Litepipe (8) in the back was administered the same task.

Not visible in the BTS shot: a ring flash (9) surrounding the lens subtly brightened up the deep, dark areas of the engine.

All these lights illuminated the ground in a very boring way. I therefore decided to take a separate shot of the floor. For this I "painted" the floor with light by walking around the motorcycle with a LED light illuminating the floor ("light painting"). To do this, the camera was set to a long shutter speed.This is a lot of lights and a lot of photographic work. The benefit is only a minimum of post-production!

Camera info:

Medium format camera
focal length: 120 mm
f-stop = f / 16
Shutter = 1/125 s
ISO 100



Softbox 120x180, 30x180, 30x120, 90x120

Ringflash

Litepipe

Siros 800s Lamp

Para 88

Pulso G + P70 reflector + grids

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

8.10 Products

The costumer’s ask was to illustrate the enormous light output of a Para photographically. I therefore decided to capture the light emitted by the Para itself. This was done purely by photographic means, without any tricks in post-processing.

As with most advertising shots for broncolor, a black background was desired. To ensure a nice shape and a clean separation of the also black object, I first worked with two large softboxes 90x120cm as backlight (1). They were positioned in a way that, depending on the angle of incidence, the two uppermost and lowermost segments of the reflector both appeared in a different brightness.

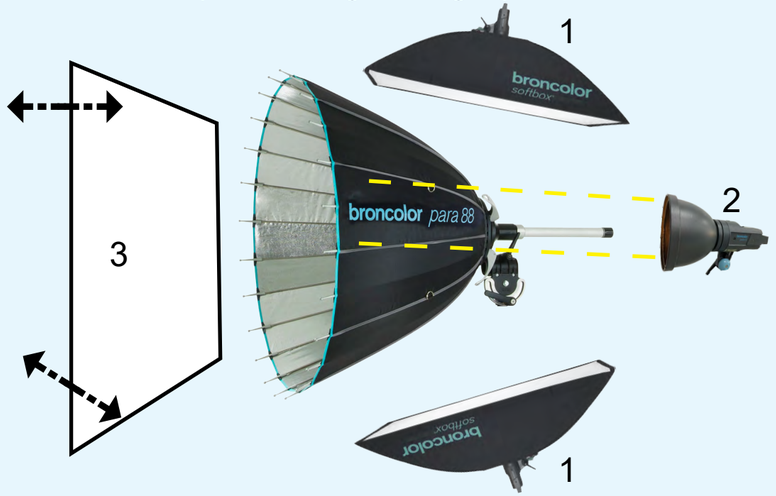
These backlights, however, left the lettering in complete darkness. Selective lighting with a normal reflector and middle grid (2) highlighted the brand and product name.

In the Para a LED F160 lamp was mounted, set to daylight and not visible from the camera. After the flash exposure, I moved a white diffuser (3) back and forth, left and right in the light from the LED. It is important that this happens as close as possible to the reflector to get the impression that the light is in fact coming out of the Para.

Both, the room light in the studio and all modeling lights must be switched off so that only the light from the LED lamp has an influence on the picture during this long exposure time of 32 seconds.

Camera info:

Medium format camera
focal length: 120 mm
f-stop = f / 16
Shutter = 32 s
ISO 100



Front View

Softbox 90x120

F160 LED lamp

Pulso G + P70
reflector + grids

Scoro 3200s

Copyright: © broncolor, Photo by Urs Recher

8.11 Products

Untypically, I started the lighting setup not with the main light, but with an effect light. The Picolite coming from the left (1) was equipped with a projection attachment and allowed to illuminate very precisely and powerfully only the left side of the lying lip gloss facing away from the camera. This light was rather unimportant for all products and produced only the red-white reflection on the white table and a few bright edges.

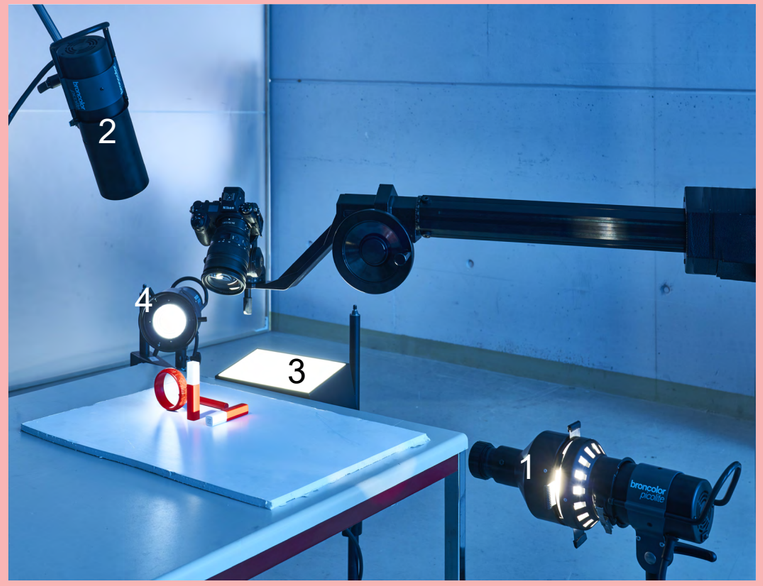
I used another Picolite with a narrow a grid (2) as the main light. Distance and angle were chosen so that the round spotlight of the grid and the reflection of the projection attachment could be perceived as one light.

In order not to dilute the shadows and the red reflections on the left, it was necessary to fill-in in such a way that the light reached the products but not the table. For this purpose, the corresponding light source, a Picobox (3), was positioned exactly at table height, with very little inclination towards the objects.

Only the ring had a few previously unlit areas at the top right. These were subtly brightened with a Fresnel spot attachment (4).

Camera info:

Full frame mirrorless
focal length: 28 mm
f-stop = f / 14
Shutter = 1/125 s
ISO 100



Picobox
with Pcolite

Projection attachment
with Pcolite

Fresnel Spot Attachment with Picolite

Picolite +
Honeycomb grids

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

8.12 Products

It can be very challenging to illuminate backgrounds behind very small objects in a controlled manner. Standard light shapers are often too large for this. The technique described here solves this problem very elegantly:

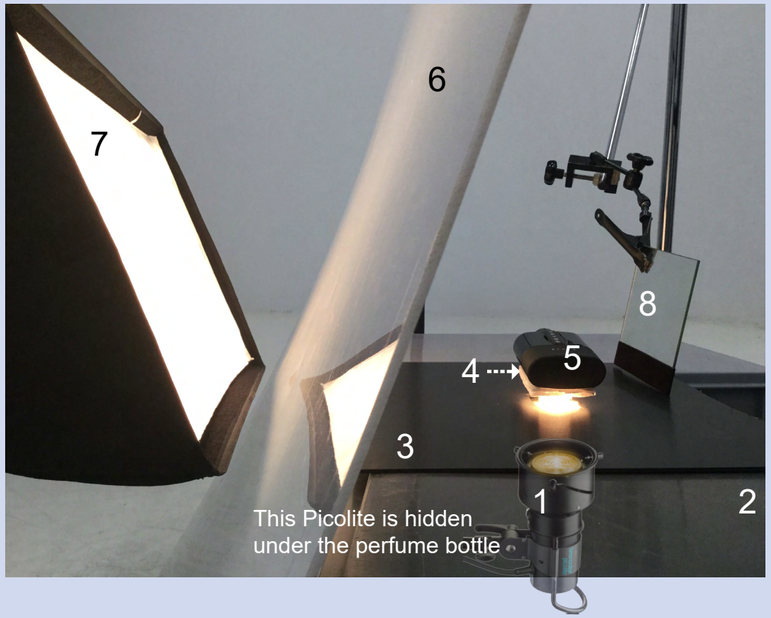
The object (5) was mounted flying, so to speak; a few centimeters above a glass plate (2). Placed on the glass plate was a dark cardboard (3) in which a hole had been cut - this hole was only slightly smaller than the object itself.

Through the glass plate and through this hole, a compact spotlight was now used to illuminate a small white cardboard (4) that was hidden under the perfume bottle. The light source here was a Picolite with a Fresnel Spot attachment (1). The white cardboard then reflected this light back onto the background. The gradation of the background illumination was defined by the distance between the bottle and the background.

A small softbox with the dimensions 35x60 cm (7) backlit a white acrylic plate (6). This gradation shapes the bottle. A mirror (8) reflected this gradient onto the pump without causing disturbing reflections on the body of the bottle.

Camera info:

Medium format
focal length: 120 mm
f-stop = f / 16
Shutter = 1/90 s
ISO 100



Softbox 35x60

Fresnel Spot Attachment with Picolite

Pulso G Lamp

Scoro 1600s

Copyright: © broncolor, Photo by Urs Recher

8.13 Products

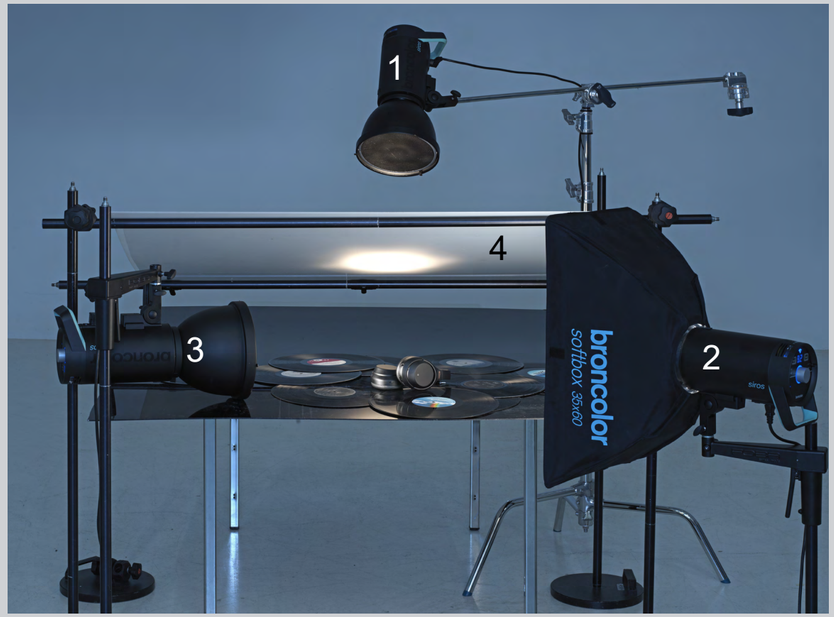
After positioning the LPs, the headphones, and the camera, I first took care of the main light. The gloss of the black LPs, but also their structure made a backlight essential. I positioned a normal reflector with a narrow honeycomb (1) behind a white acrylic plate (4) so that it created a nice halo around the headphones.

Then, from the right, a small softbox (2) with the dimensions of 35x60 cm was added as a fill-in. A small black cardboard partially absorbed this light, creating a nice gradation on the right auricle, which appeared too flat otherwise .

The relatively dominant high lights on the front left of the subject came from another normal reflector (3) which, lying on the left of the shooting table, directly illuminated the headphones. Additional reflections on the LPs were caused by small mirrors.

Camera info:

Medium format camera
focal length: 80 mm
with tilt/shift adapter
f-stop = f / 22
Shutter = 1/125 s
ISO 100



honey comb grids

P70 reflector

Softbox 35x60

Siros 400s Lamp

Copyright: Photo by Urs Recher

8.14 Products

The simple setup was commenced with translucent light from below: A white but not opaque acrylic plate (2) was backlit with a Boxlite 40 (1). On this I placed an aquarium with side lengths of 35 and 80 cm and vertically above it I positioned the camera.

Already now I took a precise light measurement. I photographed directly from above onto the white plate without putting anything into the aquarium. The aperture of the camera and power of the flash were chosen, so that the white gave a value of about 245 RGB. This guaranteed that the image was not burnt anywhere, even where the water-milk mixture later splashed away. The brightest white in the image was defined this way.

I also worked with a Striplite 60 (3) lying on the side of the shooting table. This brightened the less transparent areas of the tulip and created subtle reflections on the splashes.

The Scoro 1600 S Wi-Fi was programmed to t0.1(min), the shortest possible flash duration: 1/10’000 s! This influenced the color temperature of the light and made a new white balance necessary.

The rest was pretty much left to chance. I threw the tulip into the milk-water mixture about 20 times and tried to press the shutter release at the right moment each time.

Camera info:

Medium format camera
focal length: 80 mm
f-stop = f / 16
Shutter = 1/125 s
(flash duration: 1/10,000 s)
ISO 100

Striplite 60

BoxLite 40

Scoro 1600s

Copyright: Photo by Urs Recher

9.1 Nudes

The most important feature of this setup is that all the lights (including the fill light) are on the same side of the camera.

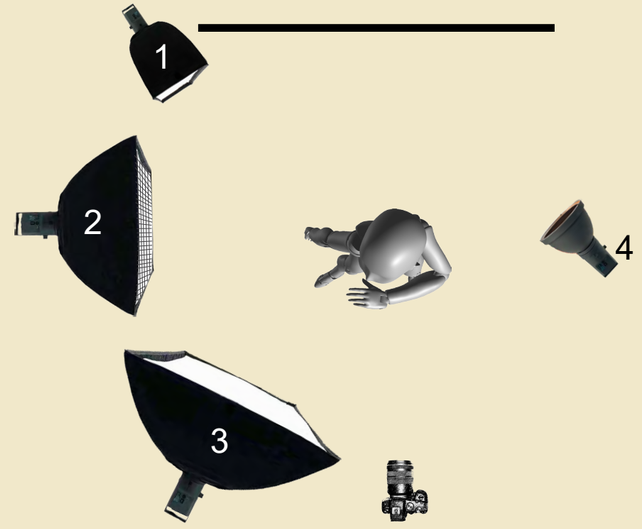
The bright outline on the far left, which perfectly separated the body from the dark background, was created with a narrow softbox 30x180cm (1). This light source was directed almost completely toward the camera to prevent any influence on the background.

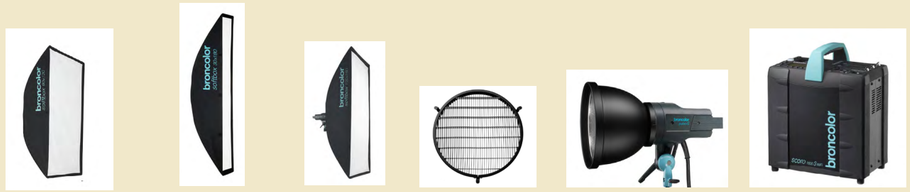
The middle softbox with the dimensions 90x120cm (2) could be seen as the main light. It was equipped with a textile grid and oriented in a way, that its light could not hit the background either.

Finally, the largest softbox 120x180cm (3) controlled the depth of the shadows. But since this light source was also on the left of the camera, a very fine and almost black shadow line remained.
A normal reflector (4) with strip grids 5:1 illuminated the background discreetly and was only just bright enough to separate the narrow shadows clearly from the background. The entire lighting setup was extremely soft but at the same time had strong contrasts - and thus presented perfectly for modeling a body beautifully.

Camera info:
Medium format camera
focal length: 120 mm
f-stop = f / 22
Shutter = 1/125 s
ISO 100

Top View





90x120cm softbox + Grids
30x180cm softbox
120x180cm softbox
strip grid 5:1
Pulso G Lamp + P70 reflector
Scoro 1600s

Copyright: Photo by Urs Recher

9.2 Nudes

This picture was taken spontaneously after a previous, longer shooting. We wanted to work very simply and quickly and therefore decided to use a one-light set:

A single large softbox with the dimensions 120x180cm was lowered from a ceiling rail system so far that it was just outside the picture angle. The light was thus very soft and the core shadow under the model narrowly limited. Since I used nothing but the natural reflections of the grey floor paper, the contrast remained pleasantly high.

As light falls off according to the inverse square law, the hair was illuminated much more than the body. A hair light was unnecessary despite the very dark hair color of the model. The even and clear light fall-off towards the background can also be explained by the low position of the light source.

Camera info:

Medium format camera
focal length: 80 mm
f-stop = f / 20
Shutter = 1/250 s
ISO 100

120x180cm softbox
with Pulso G lamp

Scoro 1600s

Copyright: Photo by Urs Recher; Dancer: Lydia Caruso

9.3 Nudes

Photographing a black object against a black background is a challenge in itself. When it is a black body that is also moving freely over several square meters, it does not necessarily make the photographic work any easier...

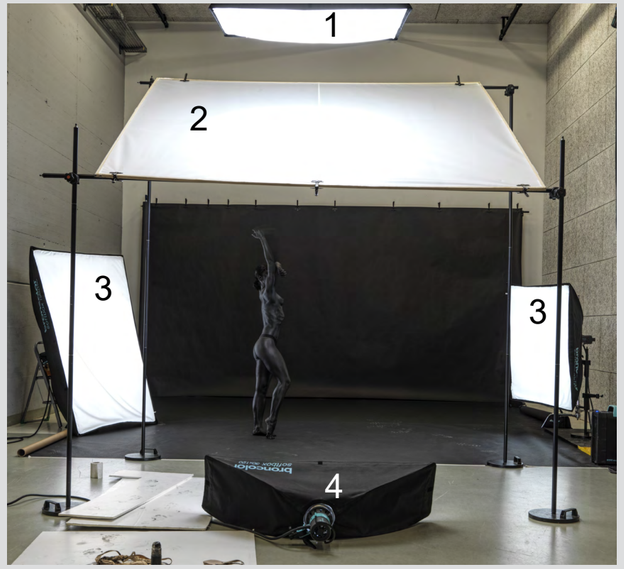
Since the image basically consists of shadows only, i.e., dark pixels, the play between light and shadow could not be used to model the body. I therefore used controlled reflections to emphasize the muscles and body shapes of the dancer in the best possible way.

Let's have a look at the symmetrical main light first: The two softboxes 120x180cm & 90x120cm (3). The introductory chapter explains why distant light shapers illuminate a set more homogeneously. At the same time, more distant light sources become more aggressive in that they create more dominant reflections on the skin. Both qualities were welcome to me here: The dancer had more space to move without my lighting changing too much, and at the same time, the resulting highlights sculpted the body perfectly.

The very narrow softbox 30x120cm (4) lying on the floor was used to compensate for the changing gloss level of the skin (drying of the body paint and perspiration). Finally, as a general and very soft base lighting without additional gloss spots, the whole set was lit from above with a large softbox 120x180cm (1) through an additional diffuser (2).

Camera info:

Medium format camera
focal length: 80 mm
f-stop = f / 19
Shutter = 1/125 s
ISO 100




Softbox 120x180


Softbox 90x120


Softbox 30x120


Pulso G Lamp


Scoro 3200s

Copyright: Photo by Urs Recher

9.4 Nudes

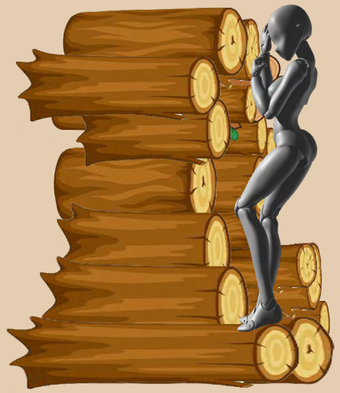
Normally, in my (two-dimensional) photographs, I try to capture an object, face or body as three-dimensionally as possible. This is especially true for nude photography, where the shapes of a body should be rendered as vividly as possible. This is usually best achieved with the interplay of light and shadow from side lights.

For this shoot, I started out the same way, but then decided to take a different approach: Instead of lighting the scene laterally, I placed the only light source, a battery-powered Siros 800 L , very close to the camera, slightly to the left and above the lens. I chose flash power, aperture, and shutter speed in a way that the available daylight became almost irrelevant.

This almost shadowless light infiltrated the entire set, giving the unsteady, three-dimensional background a very special, rather unusual, and flat appearance. Fine shadow lines nevertheless modulated the model's body very nicely.

Camera info:

Full frame DSLR
focal length: 35 mm
f-stop = f / 8
Shutter = 1/125 s
ISO 200



Side View

P70 reflector

Siros 800L lamp

Copyright: Photo by Urs Recher

9.5 Nudes

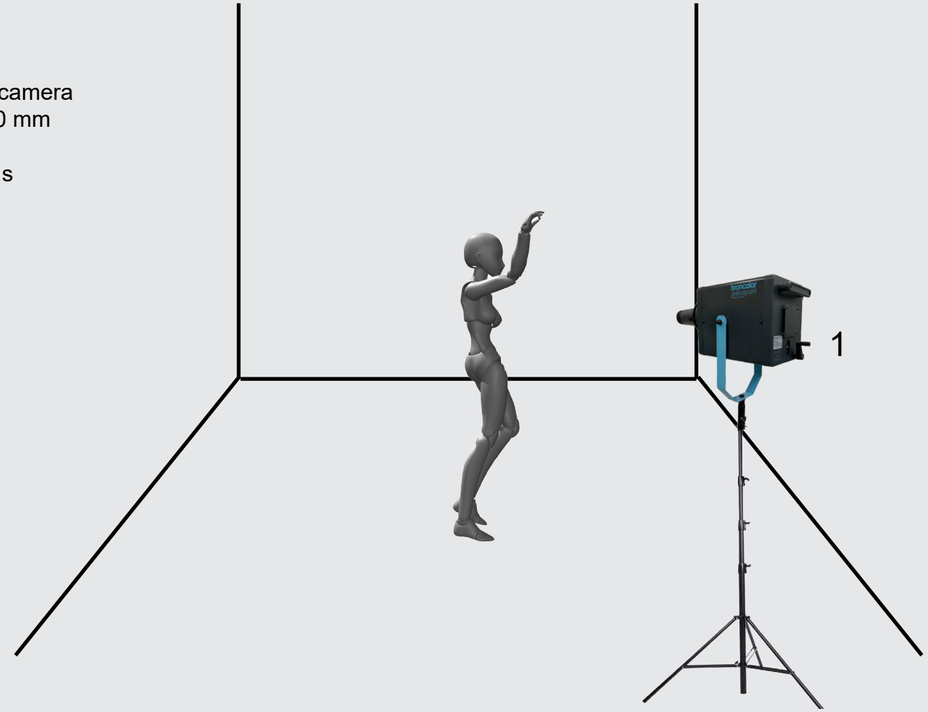
This is not a full body tattoo or a bodypainting but a projection of a slide onto a body. I used a black and white slide of a church portal and projected it onto the model's body with a Pulso Spot 4 (1) and the corresponding projection attachment.

The model stood a few meters in front of a black paper background. But since I didn't want to create large-area shadows, I placed the spot close to the shooting axis. Therefore, the projection was also clearly visible on the background and was removed in post-processing.

You can also experiment with LCD / LED projectors, but in this case, you are confronted with pixelated projections and much longer exposure times. The Pulso Spot 4 allows high resolution projections with short flash durations. However, it is recommended to work without modeling light whenever possible, as its temperature radiation in combination with a flash discharge could damage the fragile slide.

Camera info:

Medium format camera
focal length: 120 mm
f-stop = f /8
Shutter = 1/125 s
ISO 200



projecting attachment 150mm

Pulso Spot 4

Scoro 3200s

Copyright: Photo by Urs Recher; Dancers: Tana Rosás Suñe and Diego Benito Gutierrez

9.6 Nudes

Looking closely at the set, it may be surprising that no light source was in front of the models, there were only backlights, or at best sidelights. Since I had to give the constantly moving models enough room to do so, all the light sources were further away from the models than I would normally prefer for more static sets. This made the light less “local” but illuminated the entire studio. The reflections from the walls, ceiling and floor created enough indirect illumination, and I was able to use only lateral lighting that modeled the bodies optimally.

The main light (1) was a large softbox with side lengths of 120 and 180cm that came vertically from above: This light source was equipped with textile grids to keep the light away from the background and to enhance the spot effect of the main light.

Two 90x120cm softboxes were used on the sides (2). Both were rotated slightly towards the camera to keep their light away from the background as well.

Camera info:

Medium format camera
focal length: 80 mm
f-stop = f /16
Shutter = 1/125 s
ISO 100

Softbox 120x180

Softbox 90x120

Pulso G Lamp

Scoro 3200s

Profile of Urs Recher

1967	Born in Basel, Switzerland
1983-86	Attended High school in Muttenz, Switzerland
1987	Military service
1987-89	Study of Mathematics and Physics at the University of Zurich, 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 in Basel, Switzerland
1993-96	Independent photographer in Santiago de Chile, Chile
1996-98	Independent photographer and freelance assistant in Switzerland (Basel) and The Netherlands (Rotterdam)
Since 1998	Photographer and consultant at Bron Elektronik AG, Allschwil, Switzerland
Since 1997	Married to Debby and
In 2000	daughter Anouk was born
2011	Light Architecture Volume I Published

LIGHT

ARCHITECTURE 3