

# Supplemental Material

## EyelashNet: A Dataset and A Baseline Method for Eyelash Matting

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### 1 OVERVIEW

This supplementary document presents an additional safety evaluation for the UVA flashes, more details about the capturing stage, and more matting results on daily-captured images.

### 2 SAFETY EVALUATION

The UVA flashes are activated 48 times for each subject (twice for each of the 12 expressions of left and right eyes, respectively) when taking photos. The exposure time of the UVA flash is 0.01 seconds. The total UV exposure time of a subject is 0.48 seconds. We use *TENMARS TM-213 UV-AB Light Meter* [1] (as shown in Fig. 1) to measure the UV irradiance of our system. Table 1 presents the UV irradiance of one UVA flash measured at multiple distances. Although it is 0.5 meters under our scenario, we use the irradiance at 0.1 meters to calculate the maximum exposure dose to highlight the safety of our system. The maximum UV radiant exposure for each subject is:

$$3 \times 62 \mu\text{W}/\text{cm}^2 \times 0.48\text{s} = 0.8928 \text{J}/\text{m}^2, \quad (1)$$

which is much lower than the  $30 \text{J}/\text{m}^2$  exposure limits [2] for unprotected skin and eyes.

Table 1. The UV irradiance of one flash measured at multiple distances

Distance (meter)	0.1	0.2	0.3	0.4
UV radiant exposure ( $\mu\text{W}/\text{cm}^2$ )	62	35	19	9

### 3 DETAILS IN THE CAPTURING STAGE

**Eyelash coloring.** We first apply the eye patches to the subject’s lower eyelids. Then we color the lower eyelid’s eyelashes of the subject carefully using *Noris 110UV ink* to avoid applying the ink to the eyes or skin. The process can be more straightforward if the subject looks upwards during the coloring. After that, we color the upper eyelid eyelashes with the subject’s eyes closed. The eyelashes

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Fig. 1. We show the *TENMARS TM-213 UV-AB Light Meter* and its *CERTIFICATE OF CALIBRATION*, respectively.

located on the inner corner of the eyes or the root of eyelashes can be full-colored by rolling the disposable brush. We use a low-power UV light to check whether the coloring is adequate. The ink dries quickly with a small fan blowing. We perform the above operation twice to the subject’s left and right eyes, respectively, for a better coloring effect. Finally, we use cotton swabs and makeup remover to clean up the ink applied accidentally to the skin.

**Acquisition device.** Since the system needs to work for a long time, we use power adapters to provide continuous power to the Canon 80D cameras. A ball-and-socket controls the orientation of the camera. We set the Canon 80D’s camera shutter to 1/20s, aperture to 8.0, ISO to 1250, shooting mode to the standard style, sharpness to 7, and focus mode to a single point focus. Each UVA

Fig. 2. Exemplars of alpha matte estimation on daily-captured images under different variations, such as poses, illuminations, shadows, ages, races, etc.

flash is precisely positioned and triggered by a freely adjustable bracket and a wireless flash trigger, respectively.

#### 4 RESULTS ON DAILY-CAPTURED IMAGES

Fig. 2 shows more results on daily-captured images.

#### REFERENCES

- [1] TENMARS. 2021. TENMARS ELECTRONICS CO., LTD. <http://www.tenmars.com/m/home.php?Lang=en>.
- [2] The International Commission on Non-Ionizing Radiation Protection. 2004. GUIDELINES ON LIMITS OF EXPOSURE TO ULTRAVIOLET RADIATION OF WAVELENGTHS BETWEEN 180 nm AND 400 nm (INCOHERENT OPTICAL RADIATION). *Health Physics* 87, 2 (Aug. 2004), 171–186.