Rhythmic Grid

Micro-block formula

Given:

C_w – canvas width, px
R_w – horizontal (width) aspect ratio
R_h – vertical (height) aspect ratio
b – baseline height, px
c – number of columns
g – gutter width, px

(w_μ, h_μ) – width and height of a micro-block
G_w – grid width, $G_w \leq C_w$

Find: $\{(w_\mu, h_\mu) \mid h_\mu \equiv 0 \pmod{b} \ \wedge \ G_w + g \equiv 0 \pmod{w_\mu + g}\}$

The smallest and the largest micro-block fitting the grid:

$$h_{\mu min} = \text{lcm}(b, R_h)$$

$$w_{\mu min} = h_{\mu min}/R_h \cdot R_w$$

$$w_{\mu max} = \left\lfloor \left\lfloor \frac{C_w + g}{c} - g \right\rfloor / w_{\mu min} \right\rfloor \cdot w_{\mu min}$$

$$h_{\mu max} = w_{\mu max}/R_w \cdot R_h$$

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