

S3. Random slope exploration

For each dependent variable, a likelihood ratio test was used to test whether adding random slopes for condition at the participant level significantly improved the model. The effect of *Light condition* on $M_{RT10\%fast}$ was structurally influenced by interindividual differences ($\chi^2(5) = 21.09$, $p < 0.001$). The different conditions led to a wide range in response times: some participants were faster in the bright or intermittent light compared to the dim, whereas others responded slower ($M_{Dim} = 360 \pm 19$, $M_{Bright} = 357 \pm 4$, $M_{Intermittent} = 360 \pm 9$). Furthermore, the interindividual differences for the effect of *Light condition* on $Sensation_{vc}$ were also statistically significant ($\chi^2(5) = 38.09$, $p < 0.001$), indicating that the color sensation of the lighting environment significantly varied between individuals over the three light conditions ($M_{Dim} = 0.23 \pm 0.49$, $M_{Bright} = -0.91 \pm 0.88$, $M_{Intermittent} = 0.32 \pm 0.19$). None of the other parameters showed statistically significant interindividual differences (Table S3.1).

Table S3.1 Test statistics of the likelihood ratio tests comparing models with and without random slopes for Light condition at the participant level

Dependent Variable	$\chi^2(5)$	p
Vitality	2.69	0.75
KSS	12.70	0.03
Mean RT	12.26	0.03
$M_{RT10\%slow}$	5.04	0.41
$M_{RT10\%fast}$	21.09	< 0.001
SD_{RT}	2.40	0.79
CV_{RT}	2.95	0.71
PVT motivation	10.38	0.07
Mean SCL	5.69	0.34
Pupil Power	10.07	0.07
PUI	3.45	0.63
SD_{PD}	5.57	0.35
Calm	7.06	0.22
Happy	7.53	0.18
$Sensation_{vi}$	14.34	0.01
$Sensation_{vc}$	38.09	< 0.001
Comfortv	11.42	0.04

Note: Statistically significant effects are presented in bold. p : p-value