



Fig. 5. (a) Voltage dependent reflectance ($\lambda = 550\text{nm}$) of three specified LC modes, and (b) color gamut coverage at -20°C . The LED turn-on duty ratio is 90%.

6. Conclusion

We have explored two LC mixtures with ultra-low rotational viscosity. These new LCs exhibit several attractive features for wearable displays based on field sequential color LCOS: (1) Submillisecond response time at room temperature while keeping vivid colors at -20°C . (2) Low power consumption by avoiding the need of a heating device. (3) High brightness and excellent ambient contrast ratio. (4) Suppressed color breakup with higher frame rate and fast LC response time. (5) Standard LCOS cell gap, which is easy for mass production. This fast-response LCOS is promising for next generation wearable displays.

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