

Continuously Variable filter set for the range 365 nm to 815 nm

This filter set consist of a continuously variable long wave pass filters and a continuously variable short wave pass filters. CVLWP 365-785 (LF104558) can be combined with CVSWP 395-815 (LF104557) to make a continuously variable bandpass filter for the range 365 nm to 815 nm nm.

Filter set specifications

| λ_{center} tuning range | Minium bandwidth | Maximum bandwidth | Out of band Blocking | Product numbers |
|--|------------------|-------------------|----------------------|--------------------|
| 380 – 800 nm | 8 – 16 nm | 79 – 120 nm | OD5.4 | LF104557, LF104558 |

Detailed data for the three filters in this set are given below.

CVLWP 365-785 (LF104558)

Continuously variable long-wavelength-pass filter with $\lambda_{50\%}$ travelling from ≤ 365 nm to ≥ 785 nm within ≤ 84 mm

Near-edge average transmittance

| T_{avg} | $\lambda_{50\%}$ | Interval start | Interval end |
|------------------|------------------|-------------------------|------------------------|
| $\geq 85\%$ | 365 nm – 420 nm | $1.01 * \lambda_{50\%}$ | $1.1 * \lambda_{50\%}$ |
| $\geq 90\%$ | 420 nm – 785 nm | $1.01 * \lambda_{50\%}$ | $1.1 * \lambda_{50\%}$ |

Broad-band average transmittance

| T_{avg} | $\lambda_{50\%}$ | Interval start | Interval end |
|------------------|------------------|-------------------------|---|
| $\geq 89\%$ | 365 nm – 420 nm | $1.02 * \lambda_{50\%}$ | $1.45 * \lambda_{50\%}$ |
| $\geq 89\%$ | 420 nm – 785 nm | $1.02 * \lambda_{50\%}$ | $1.55 * \lambda_{50\%}$, or 900 nm (whichever is smallest) |

Broad-band minimum transmittance

| T_{min} | $\lambda_{50\%}$ | Interval start | Interval end |
|------------------|------------------|-------------------------|---|
| $\geq 83\%$ | 365 nm – 420 nm | $1.02 * \lambda_{50\%}$ | $1.45 * \lambda_{50\%}$ |
| $\geq 83\%$ | 420 nm – 785 nm | $1.02 * \lambda_{50\%}$ | $1.55 * \lambda_{50\%}$, or 900 nm (whichever is smallest) |

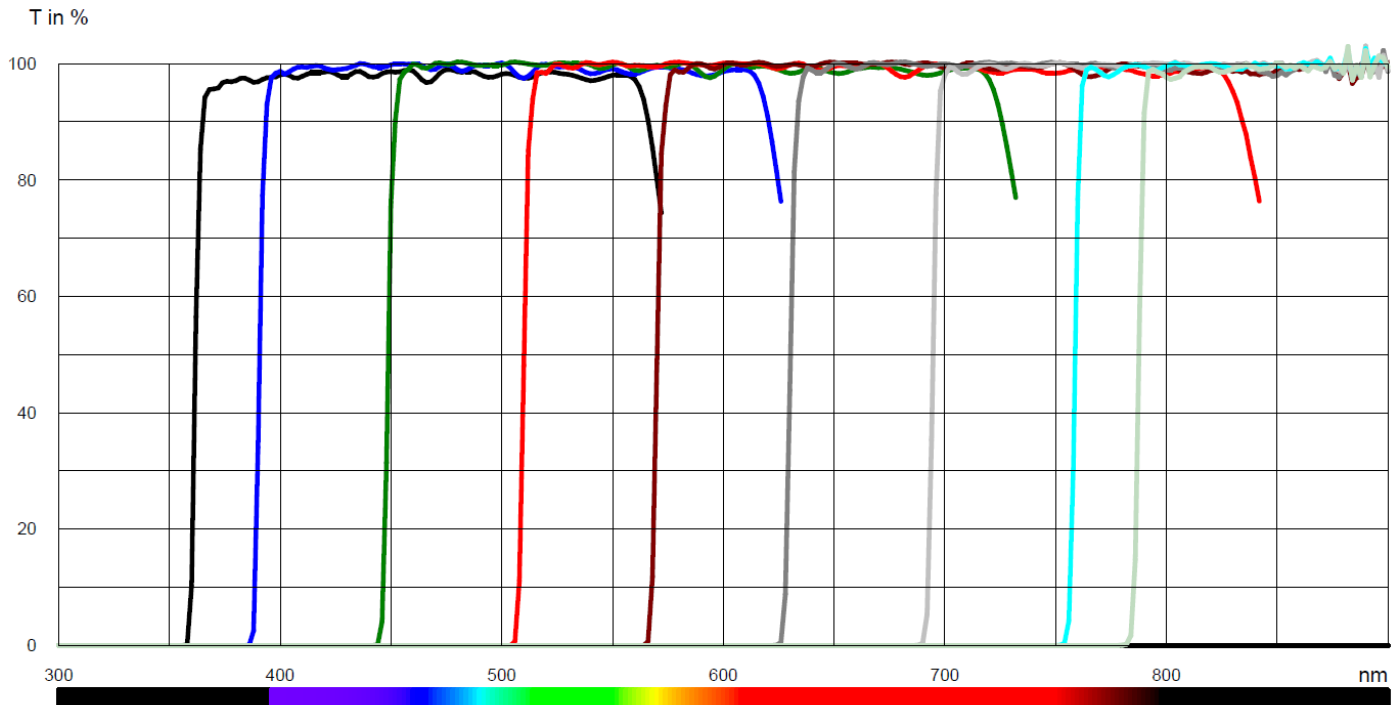
Broad-band blocking (maximum transmittance)

| T_{max} | $\lambda_{50\%}$ | Interval start | Interval end |
|------------------|------------------|----------------|--------------------------|
| $\leq 0.1\%$ | 365 nm – 785 nm | 330 nm | $0.995 * \lambda_{50\%}$ |
| $\leq 1\%$ | 365 nm – 785 nm | 330 nm | $0.99 * \lambda_{50\%}$ |
| $\leq 10\%$ | 365 nm – 785 nm | 330 nm | $0.97 * \lambda_{50\%}$ |

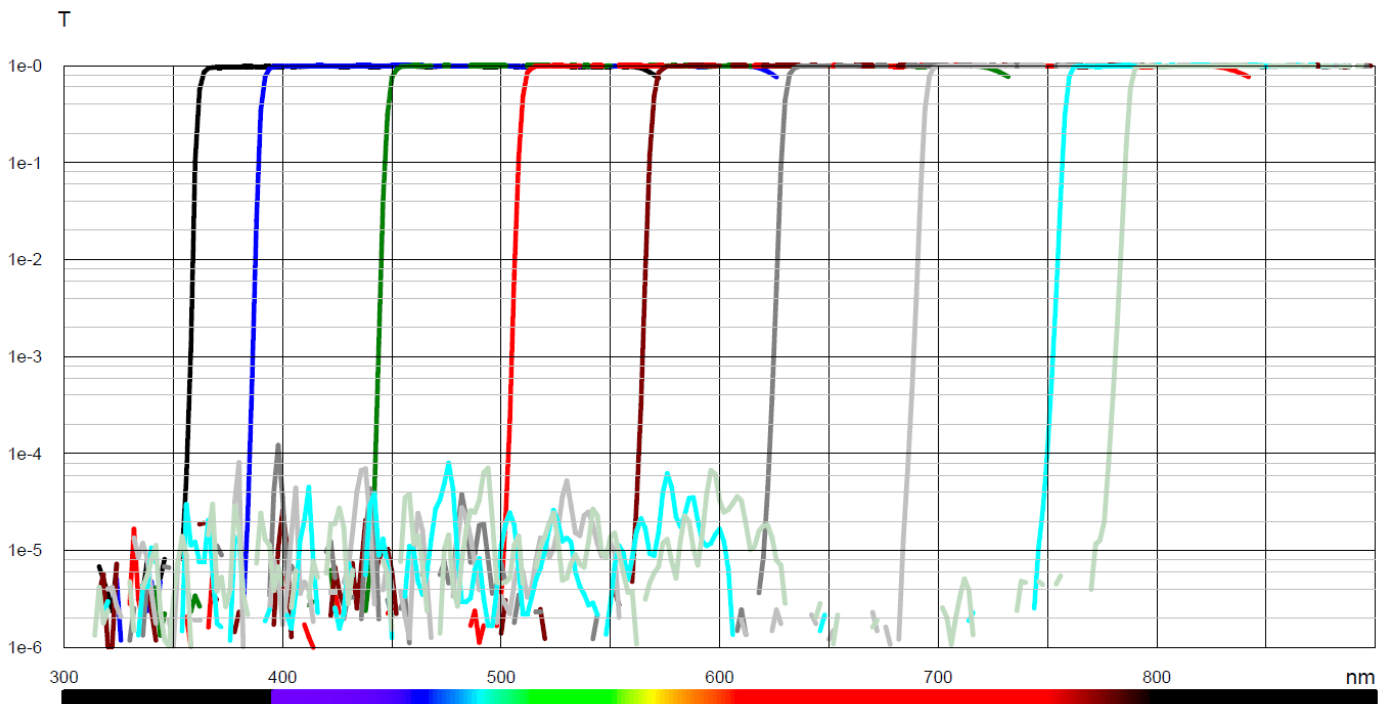
Broad-band blocking (average transmittance)

| T_{avg} | $\lambda_{50\%}$ | Interval start | Interval end |
|------------------|------------------|----------------|-------------------------|
| $\leq 0.05\%$ | 365 nm – 785 nm | 330 nm | $0.97 * \lambda_{50\%}$ |

Typically measured transmittance of CVLWP 365-785 (LF104558)



Typically measured blocking of CVLWP 365-785 (LF104558)



CVSWP 395-815 (LF104557)

Continuously variable short-wavelength-pass filter with $\lambda_{50\%}$ travelling from ≤ 395 nm to ≥ 815 nm within ≤ 84 nm

Near-edge average transmittance

| T_{avg} | $\lambda_{50\%}$ | Interval start | Interval end |
|-------------|------------------|-------------------------|-------------------------|
| $\geq 83\%$ | 395 nm – 430 nm | $0.95 * \lambda_{50\%}$ | $0.99 * \lambda_{50\%}$ |
| $\geq 88\%$ | 430 nm – 520 nm | $0.95 * \lambda_{50\%}$ | $0.99 * \lambda_{50\%}$ |
| $\geq 90\%$ | 520 nm – 815 nm | $0.95 * \lambda_{50\%}$ | $0.99 * \lambda_{50\%}$ |

Broad-band average transmittance

| T_{avg} | $\lambda_{50\%}$ | Interval start | Interval end |
|-------------|------------------|----------------------------------|-------------------------|
| $\geq 85\%$ | 395 nm – 430 nm | $0.49 * \lambda_{50\%} + 147$ nm | $0.98 * \lambda_{50\%}$ |
| $\geq 87\%$ | 430 nm – 520 nm | $\lambda_{50\%} - 120$ nm | $0.98 * \lambda_{50\%}$ |
| $\geq 90\%$ | 520 nm – 815 nm | $\lambda_{50\%} - 120$ nm | $0.98 * \lambda_{50\%}$ |

Broad-band minimum transmittance

| T_{min} | $\lambda_{50\%}$ | Interval start | Interval end |
|-------------|------------------|----------------------------------|-------------------------|
| $\geq 80\%$ | 395 nm – 430 nm | $0.49 * \lambda_{50\%} + 147$ nm | $0.98 * \lambda_{50\%}$ |
| $\geq 85\%$ | 430 nm – 520 nm | $\lambda_{50\%} - 120$ nm | $0.98 * \lambda_{50\%}$ |
| $\geq 87\%$ | 520 nm – 640 nm | $\lambda_{50\%} - 120$ nm | $0.98 * \lambda_{50\%}$ |
| $\geq 88\%$ | 640 nm – 815 nm | $\lambda_{50\%} - 120$ nm | $0.98 * \lambda_{50\%}$ |

Extended, broad-band average transmittance

| T_{avg} | $\lambda_{50\%}$ | Interval start | Interval end |
|-------------|------------------|----------------------------------|---------------------------|
| $\geq 85\%$ | 520 nm – 640 nm | $0.49 * \lambda_{50\%} + 147$ nm | $\lambda_{50\%} - 120$ nm |
| $\geq 85\%$ | 640 nm – 815 nm | $0.29 * \lambda_{50\%} + 278$ nm | $\lambda_{50\%} - 120$ nm |

Extended, broad-band average transmittance

| T_{min} | $\lambda_{50\%}$ | Interval start | Interval end |
|-------------|------------------|----------------------------------|---------------------------|
| $\geq 80\%$ | 520 nm – 640 nm | $0.49 * \lambda_{50\%} + 147$ nm | $\lambda_{50\%} - 120$ nm |
| $\geq 80\%$ | 640 nm – 815 nm | $0.29 * \lambda_{50\%} + 278$ nm | $\lambda_{50\%} - 120$ nm |

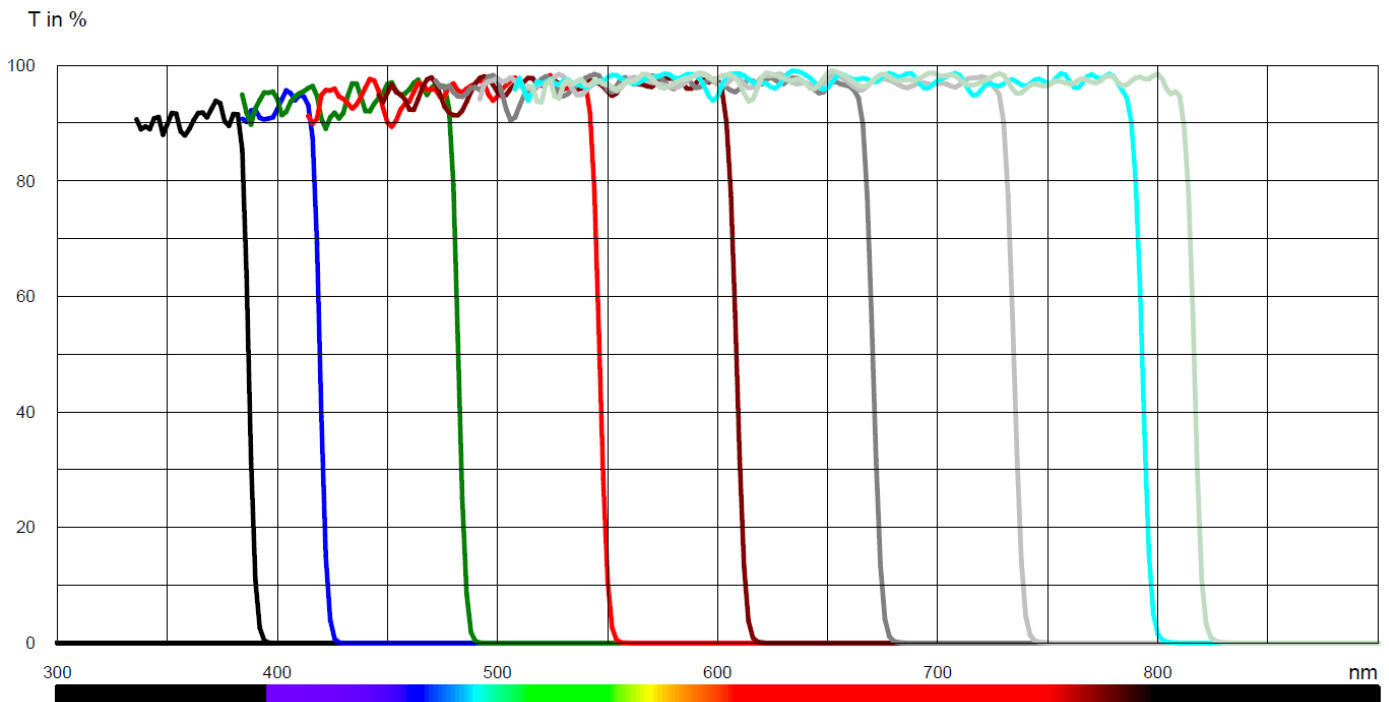
Broad-band blocking (maximum transmittance)

| T_{max} | $\lambda_{50\%}$ | Interval start | Interval end |
|--------------|------------------|--------------------------|--|
| $\leq 0.2\%$ | 395 nm – 815 nm | $1.025 * \lambda_{50\%}$ | $1.4 * \lambda_{50\%} + 220$ nm, or 900 nm (whichever is smaller) |
| $\leq 1\%$ | 395 nm – 815 nm | $1.02 * \lambda_{50\%}$ | $1.45 * \lambda_{50\%} + 220$ nm, or 900 nm (whichever is smaller) |
| $\leq 10\%$ | 395 nm – 815 nm | $1.015 * \lambda_{50\%}$ | $1.45 * \lambda_{50\%} + 220$ nm, or 900 nm (whichever is smaller) |

Broad-band blocking (average transmittance)

| T_{avg} | $\lambda_{50\%}$ | Interval start | Interval end |
|---------------|------------------|-------------------------|---|
| $\leq 0.02\%$ | 395 nm – 815 nm | $1.03 * \lambda_{50\%}$ | $1.4 * \lambda_{50\%} + 220$ nm, or 900 nm (whichever is smaller) |

Typically measured transmittance of CVSWP 395-815 (LF104557)



Typically measured blocking of CVSWP 395-815 (LF104557)

