

CUSTOM DYNAMICS® | TECHNICAL SERVICE BULLETIN

HEADLIGHT & TAILLIGHT CONDENSATION



How to identify normal lens condensation versus warrantable water ingress

TECHNICIAN KEY POINT

Modern headlights and taillights are designed to manage temperature and pressure changes. Depending on the design, controlled ventilation allows pressure equalization. Under certain temperature and humidity conditions, temporary condensation can form on the inside surface of the lens. This is different from water entering the housing through a failed seal or other defect.

WHY CONDENSATION HAPPENS: Warm, humid air contains water vapor. When it contacts a lens colder than the air's dew point, vapor becomes tiny droplets - the same process that fogs a mirror or forms dew.

COMMON TRIGGERS

- Rain or washing
- High humidity
- Cool mornings or evenings
- Rapid temperature changes
- Short trips or storage

WHY IT DOES NOT CAUSE ISSUES: Normal misting is self-correcting. As the housing warms and drier air circulates through its vents, droplets evaporate and leave through the normal airflow path. Without pooling, running water, or a persistent leak path, condensation does not affect light output, electrical operation, or service life.

CLEARING TIME VARIES: Housing size, vent location, weather, airflow, sunlight, and operating time all influence how quickly moisture clears. A slower clearing rate alone does not prove a leak. Continue normal operation unless the condition becomes heavy, widespread, pooled, or persistent.

DIAGNOSTIC COMPARISON

CHECK	NORMAL CONDENSATION — NO ACTION NEEDED	POSSIBLE WATER INGRESS — CONTACT SUPPORT
APPEARANCE	Haze, fog, or fine droplets	Heavy moisture, streams, or pooled liquid
LOCATION	Localized at edges, corners, or coolest areas	Widespread or collecting at the bottom
BEHAVIOR	Changes with weather and trends toward clearing	Returns repeatedly, remains heavy, or worsens
ACTION	Continue normal use; no repair required	Submit for inspection and warranty review

WHEN TO CONTACT US

If heavy moisture remains after several normal operating cycles, repeatedly returns under normal conditions, forms running droplets, pools at the bottom of the housing, or affects lighting operation, contact Custom Dynamics for warranty evaluation.

DO: Operate the light normally and allow temperature conditions to stabilize; photograph the complete light and the moisture pattern if it persists.

DON'T: Drill the housing, cover vents, open or reseal the light, or use a heat gun/hair dryer.

VISUAL REFERENCE



Evaluate the overall moisture pattern - not one isolated droplet.



ACCEPTABLE

Condensation in cooler lens area



ACCEPTABLE

Small localized droplets near lens edge



ACCEPTABLE

Light localized haze



ACCEPTABLE

Fine misting / droplets; no standing water



WARRANTY REVIEW

Heavy or widespread moisture



WARRANTY REVIEW

Persistent Droplets / Suspected Ingress

BOTTOM LINE

Temporary haze or fine droplets are normal and typically dissipate as environmental conditions normalize without harming the light. Standing water, running droplets, persistent heavy moisture, or a related lighting malfunction should be reported for warranty inspection.