LGR Dehumidifier Cheat Sheet

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Understanding LGR Dehumidifiers

Low Grain Refrigerant (LGR) dehumidifiers are essential in water damage restoration because they remove moisture efficiently, even in challenging conditions. This cheat sheet will help you calculate moisture removal rates, air exchange needs, and proper placement.

1. Key LGR Dehumidifier Terms

- PPD (Pints Per Day): The amount of moisture the unit can remove in 24 hours.

- CFM (Cubic Feet per Minute): The airflow a dehumidifier circulates.

- GPP (Grains Per Pound): The amount of moisture in the air, measured in grains per pound of dry air.

- ACH (Air Changes per Hour): How many times air is exchanged in the space per hour.

2. LGR Dehumidifier Performance Guide

Room Size (sq ft) | Moisture Level | Recommended LGR PPD

100 - 500 | Light (Humidity <50%) | 50 - 70 PPD

500 - 1000 | Moderate (Humidity 50-80%) | 70 - 100 PPD

1000 - 2000 | Severe (Humidity >80%) | 100 - 130 PPD

2000+ | Extreme (Category 3 Water) | 130+ PPD

3. Moisture Removal Calculation

Step 1: Calculate the Air Volume

Formula: Room Volume = Length × Width × Height (in cubic feet)

Step 2: Determine Airflow Needs (CFM)

Formula: CFM = (Room Volume × Desired ACH) ÷ 60

Example: If a 1500 sq ft room with 8 ft ceilings requires 4 ACH:

- Room Volume = 1500 × 8 = 12,000 ft^3
- CFM Needed = (12,000 × 4) ÷ 60 = 800 CFM

Step 3: Dehumidifier Sizing (PPD) Based on Dehumidifier Type

Formula: PPD = Room Volume ÷ Class Factor (based on dehumidifier type)

Example: If a room has a volume of 12,000 cubic feet and is being dried using an LGR dehumidifier (Class 2 Factor = 50), Conventional (Class 2 Factor = 40), or Desiccant (ACH = 2 ACH):

- LGR PPD = 12,000 ÷ 50 = 240 PPD
- Conventional PPD = 12,000 ÷ 40 = 300 PPD
- Desiccant PPD = (12,000 × 2) ÷ 60 = 400 CFM

4. Best Practices for LGR Dehumidifier Placement

- Place dehumidifiers in the center of the affected area for best airflow.
- Use air movers to push moisture toward the dehumidifier for faster drying.
- Monitor GPP using a hygrometer to ensure proper drying progress.
- Keep dehumidifiers running 24/7 until the moisture content is at the target level.

5. When to Use Multiple LGR Dehumidifiers

If the required PPD exceeds a single unit's capacity, use multiple dehumidifiers. Space them evenly to maximize efficiency.

Example: If a large space needs 160 PPD, use two 80 PPD LGR units instead of one oversized unit.

Quick Reference: Drying Goals

Material | Target Moisture Content

Drywall | 12-16%

Wood | 6-12%

Concrete | <4%

Carpet | 10-12%

Final Tips for Effective Drying

- Monitor moisture readings daily using meters.
- Control humidity below 50% to prevent mold growth, following Florida regulations.
- Ensure proper ventilation while using dehumidifiers.
- Keep a drying log for insurance and documentation.

Check out the full WRT Study Guide for advanced psychrometry and drying strategies!

Created by Dylan Worth for WRT professionals.