

**INTERPRETATION IC 90.1-2004-22 OF  
ANSI/ASHRAE/IESNA STANDARD 90.1-2004  
Energy Standard for Buildings Except Low-Rise Residential Buildings**

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**Request from:** Kevin Louk ([klouk@mbakercorp.com](mailto:klouk@mbakercorp.com)), Baker and Associates, 100 Airside Drive, Moon Township, PA 15108.

**Reference:** This request for interpretation refers to the requirements presented in ANSI/ASHRAE/IESNA Standard 90.1-2004, Table 9.6.1, Lighting Power Densities Using the Space-by-Space Method, regarding space types.

**Background:** We are currently working on a project that has multiple military tactical equipment maintenance facilities, which are described by the military as intended to be similar to heavy equipment facilities in the private sector. The facilities have repair areas, maintenance areas, parts storage, and administrative offices within. The repair areas of these facilities have ceiling heights of approximately 32-36 feet depending on overhead bridge crane sizes (10 or 35 ton). The maintenance areas have ceiling heights of approximately 18 feet. The military has required that the repair and maintenance areas shall be lighted to 50 FC average per IESNA Lighting Handbook; Industrial location, Maintenance task, category E. In the repair areas light fixtures must be mounted over 28 feet to avoid the cranes and in the maintenance areas light fixtures must be mounted over 14 feet to provide clearance over the 14 foot high roll-up doors for entry into the space. *"The repair area is where anything beyond regular maintenance is done to the full range of Army tactical equipment. There is a crane for removing engines and transmissions, provisions for welding equipment, provisions for portable hydraulic lifts, compressed air outlets for air tools, and hose bibs in the repair bays. The outermost repair bays also have provisions for component washing and vehicle spot washing. The following is the military's own description of the facility, "It is intended to be similar to heavy equipment or motor pool facilities in the private sector community."*

**Interpretation:** It is our interpretation that the most accurate space types in Table 9.6.1 for the repair and maintenance areas would be under the common space type for Workshop allotting a LPD of 1.9 Watts per square foot, and that the Automotive - Service/Repair building specific space type would not apply to this type of facility but rather an automotive repair area at a noncommercial automobile dealership or noncommercial garage with much lower ceiling heights.

**Question:** Is this interpretation correct?

**Answer:** Yes

**Comments:** The 90.1 space type that most closely matches the typical activities (engine removal/welding and repair of large tactical equipment) and facility geometry (ceiling height) that you have described is "Workshop". The "Automotive – Service/Repair" space type in the 90.1 Standard is intended to apply to the more typical facility with standard automotive service and repair like that found at automobile dealerships and local garages.