



Lighting & Lighting Controls

May 2019

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Introduction and methodology

Objective

This study was conducted by *Consulting-Specifying Engineer* to evaluate the use of lights, lighting equipment and lighting controls by consulting engineers. By gathering data about the dollar amounts of lighting products specified, the types of lighting products selected and the challenges that lighting designers face, *Consulting-Specifying Engineer* provides a snapshot of the engineering community's outlook on lighting products.

Sample

The sample was selected from recipients of *Consulting-Specifying Engineer* for whom email addresses were available. Only respondents involved in the selection of lights, lighting equipment and/or lighting controls were asked topic-related questions.

Method

Subscribers were sent an email asking them to participate in this study. The email included a URL linked to the questionnaire.

- **Data collected:** February 25, 2019, through March 10, 2019
- **Number of respondents:** 220
 - *Margin of error: +/- 6.6% at a 95% confidence level*
- **Incentive:** Survey participants were offered the opportunity to enter a drawing for a \$100 Amazon.com gift card.

Summary of findings

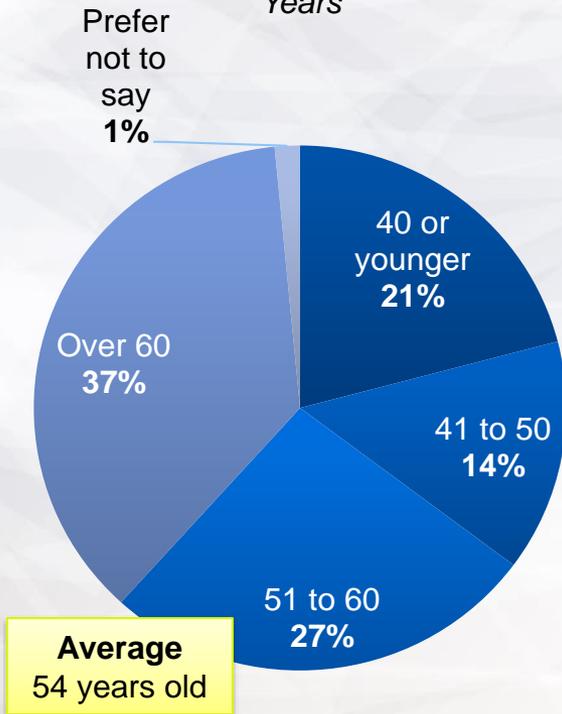
- **Total annual revenue:** In 2018, the average engineering firm earned \$8 million in mechanical, electrical, plumbing and fire protection (MEP/FP) design revenue—up 17% over 2017 MEP/FP design revenue. The average total dollar amount of lighting and lighting control products specified for new and existing buildings has also increased from \$573,000 in 2017 to \$652,000 in 2018 (+14%).
- **Involvement:** Seventy-eight percent of 10 engineers are responsible for determining the requirements/writing the specifications for projects involving lights, lighting equipment, and/or lighting controls; 70% research and evaluate the lighting options and two-thirds recommend the brand to be used. The average engineer spends 24% of their time researching or specifying lighting and lighting controls.
- **Lighting technologies:** Engineers most commonly specify LEDs, occupancy sensors and multi-level lighting or dimming controls for new and existing nonresidential buildings.
- **Project types:** Forty-four percent of 2018 design revenue was generated through new construction projects, 37% retrofit/renovation, 11% maintenance/repair/operation and 7% commissioning/retro-commissioning. The top buildings types for which lighting and lighting control products were specified into include office buildings, industrial/manufacturing facilities/warehouses, hospitals/health care facilities and college/university buildings.
- **Current challenges:** Having an inadequate budget for high-quality design remains the top challenge for lighting engineers. Other difficult tasks include adhering to the expected project deliver date and designing for interoperability and complementing systems.
- **Design factors:** When comparing lighting products, engineers are heavily weighing product quality, initial product cost, reputation of the manufacturer and previous experience with the manufacturer.

Respondent profile

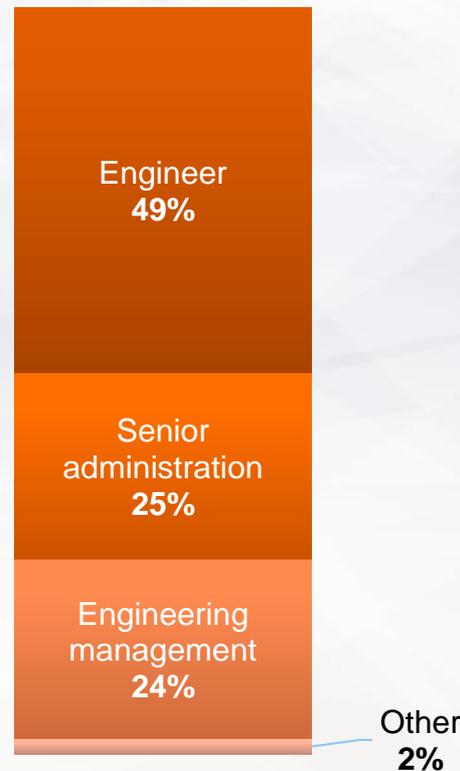
Age, primary job function, experience

The average respondent is 54 years old, with 21 years of industry experience. Forty-nine percent of respondents have senior administration or engineering management primary job functions; another 49% are professional engineers.

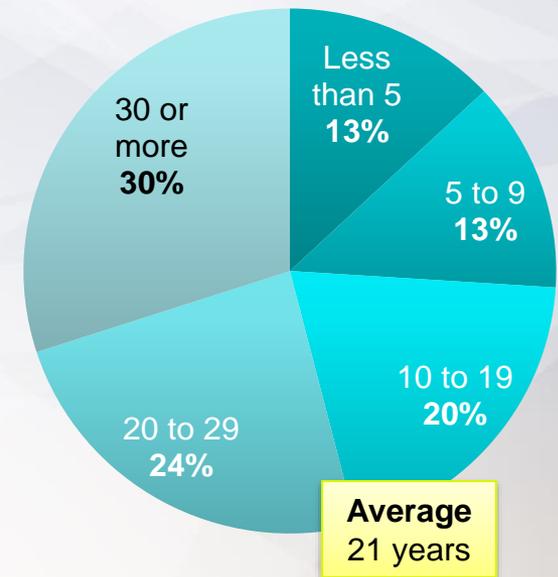
Age
Years



Primary job function



Industry experience
Years

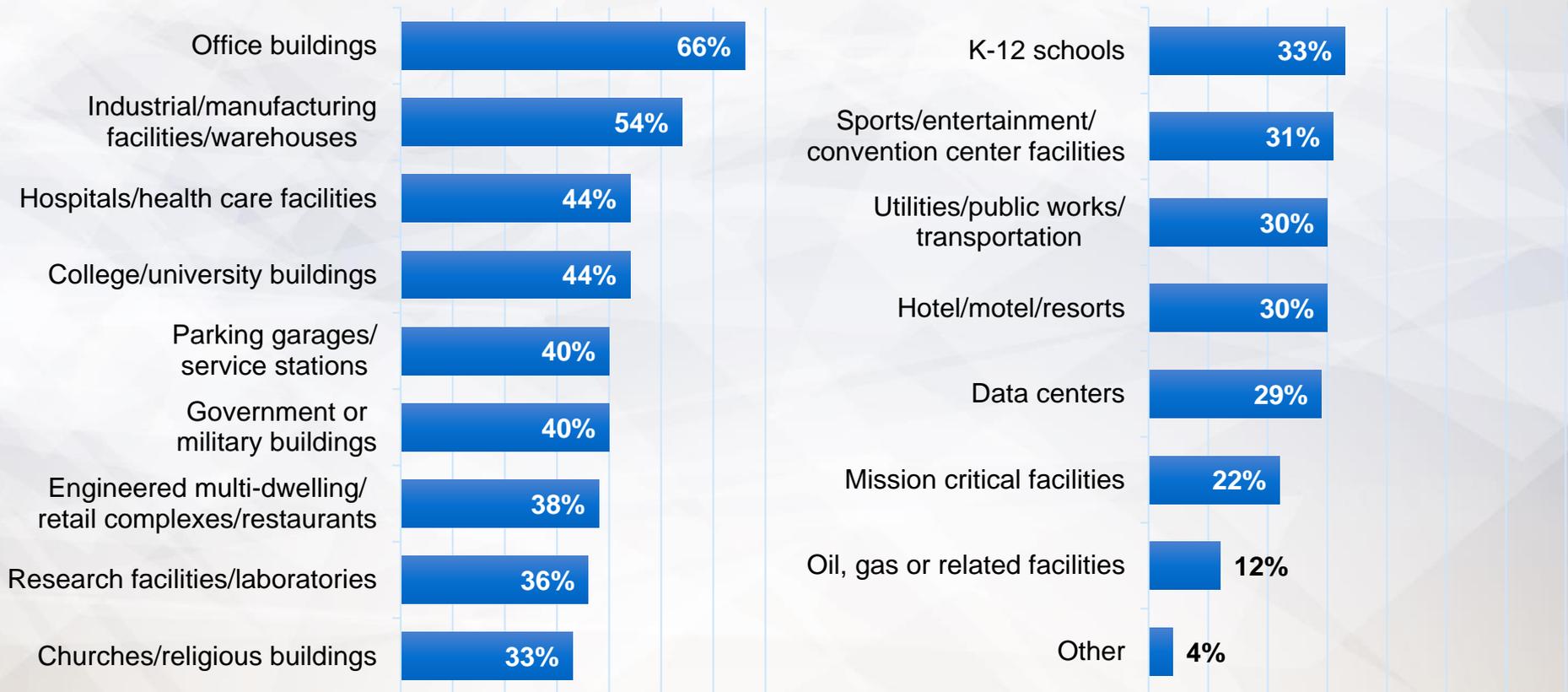


Q: Which of the following ranges includes your current age? (n=196);

Q: Which of the following best describes your job title? (n=214); Q: For approximately how many years have you been involved in lighting design? (n=196)

Building structures

The top structures that respondents specify, design or make product selections for are office buildings (66%), industrial/manufacturing facilities/warehouses (54%), hospitals/health care facilities (44%) and college/university buildings (44%).

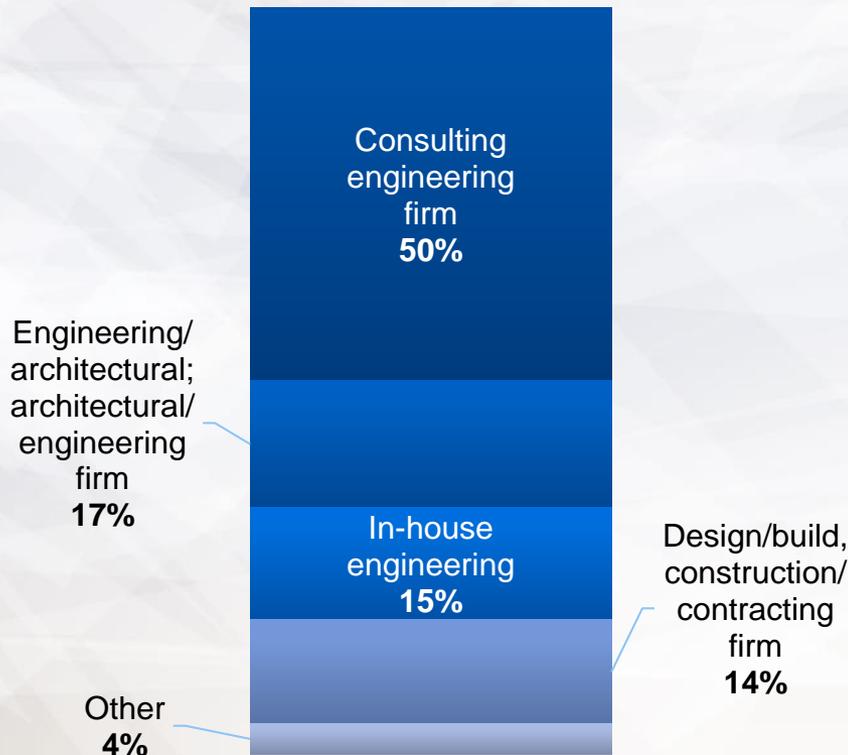


Q: For which of the following types of building structures do you specify, design or make product selections? Check all that apply. (n=220)

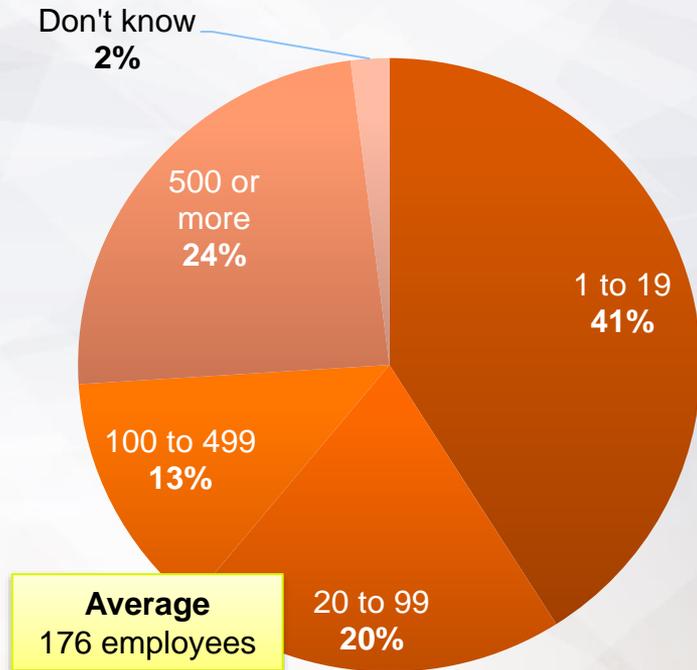
Company profile

Half of respondents work for a consulting engineering firm, and 61% indicated that their firm employs fewer than 100 people; the average firm employs 176 people.

Company type



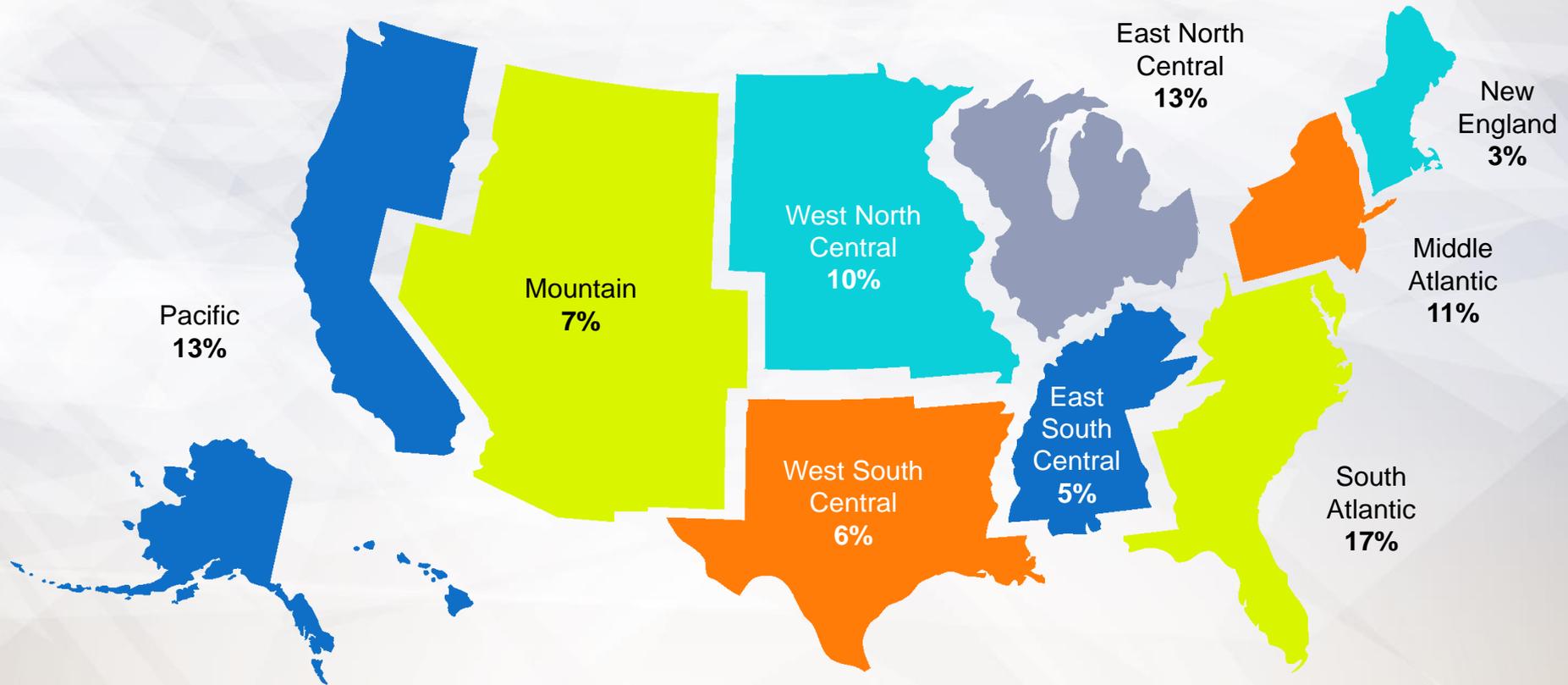
Company size No. of employees



Q: Which of the following best describes your company? (n=220); Q: Approximately how many people are employed by your firm? (n=196)

Location

Thirty-one percent of respondents are located along the East Coast of the U.S. and another 15% reside beyond the U.S. border. Other countries represented include Brazil, Canada, Costa Rica, the Dominican Republic, Jordan, Mexico and Singapore.



**Data gathered by matching respondents to their Consulting-Specifying Engineer audience profiles.*

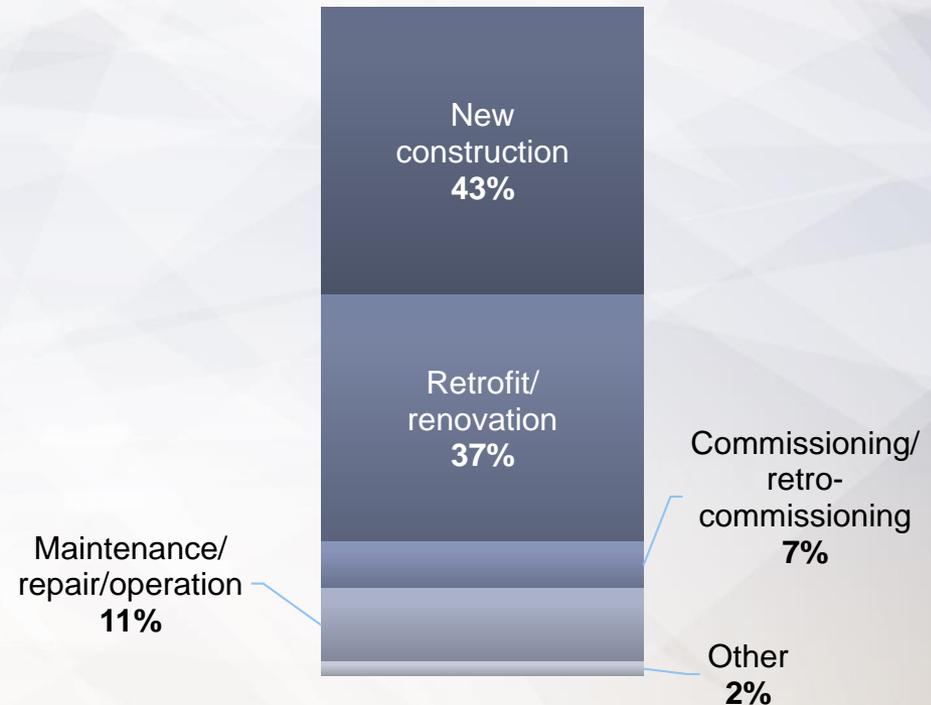
Annual MEP/FP design revenue

The average firm generated \$8.3 million in mechanical, electrical, plumbing and fire protection (MEP/FP) design revenue in 2018. Most MEP/FP design projects in 2018 were new construction or retrofit/renovations.

Total MEP/FP design revenue



MEP/FP design billings
Average



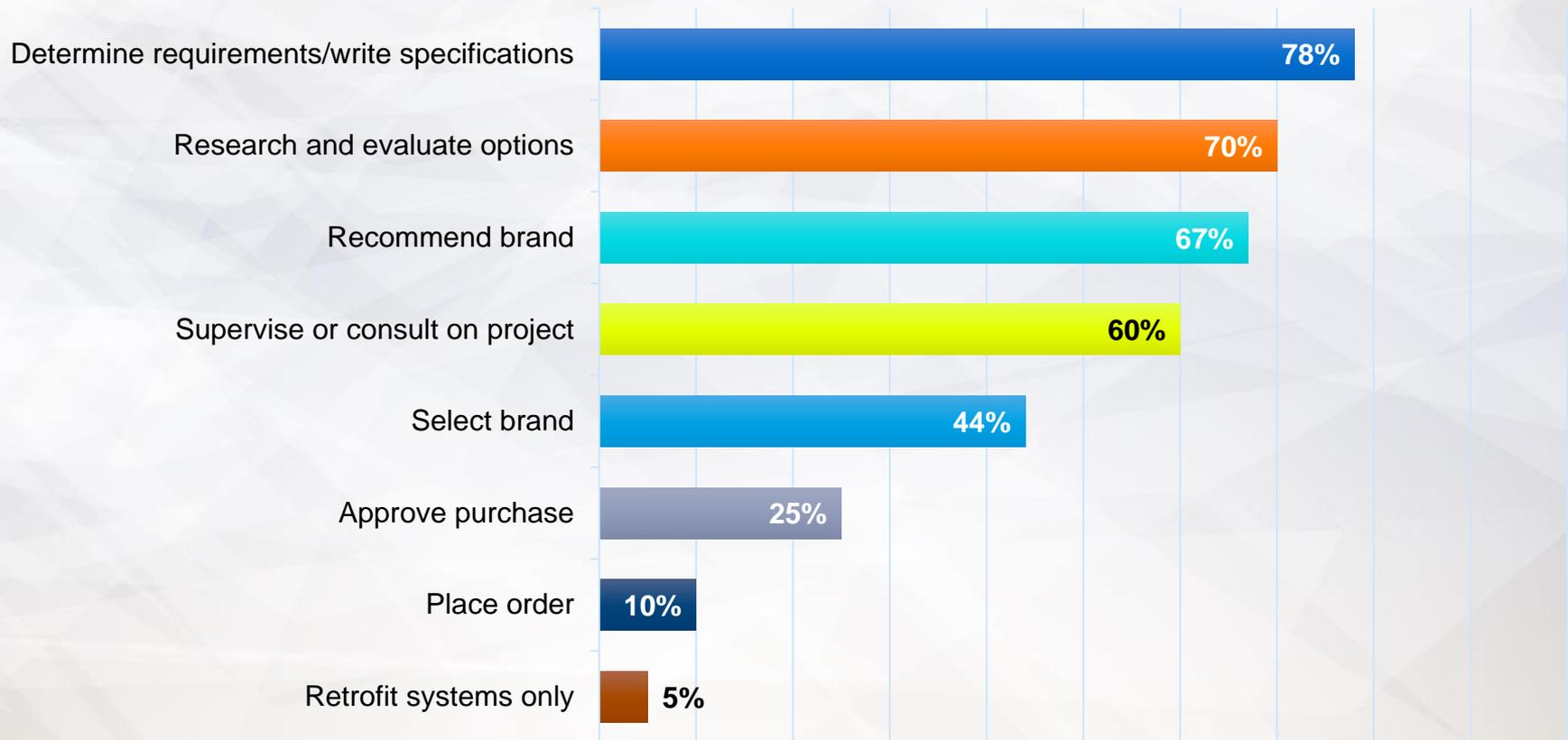
Q: Which of the following ranges best describes your firm's annual mechanical, electrical, plumbing and fire protection design revenue? (n=220);

Q: Define the percentage of last year's design revenue that was spent in each of the areas shown. (n=213)

Lighting and lighting controls

Involvement in product selections

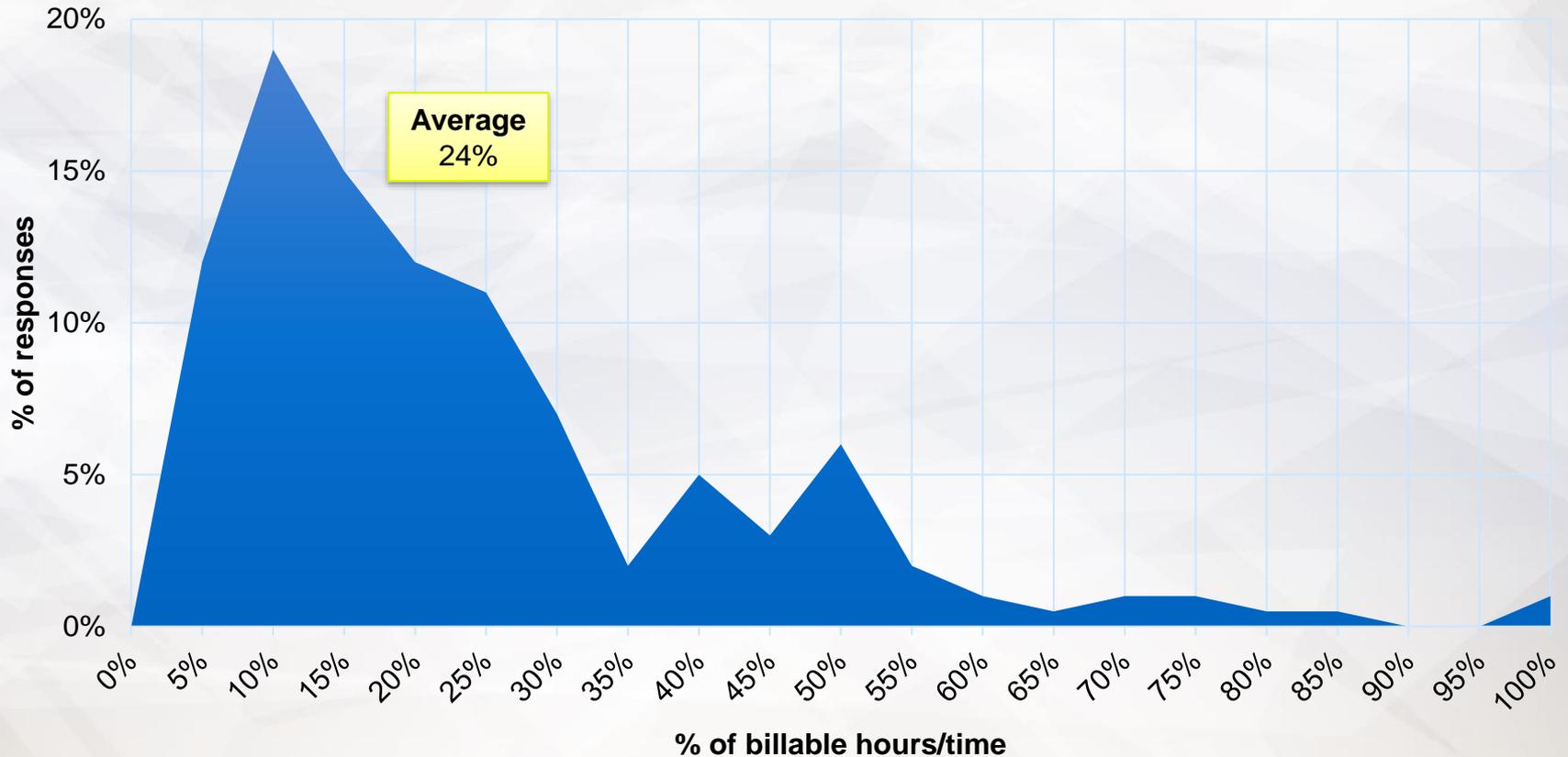
Seventy-eight percent of engineers are involved in determining requirements/writing specifications in the selection of lights, lighting equipment and/or lighting controls.



Q: In what ways, if any, are you involved in the selection of lights, lighting equipment and/or lighting controls? Check all that apply. (n=220)

Time spent researching/specifying

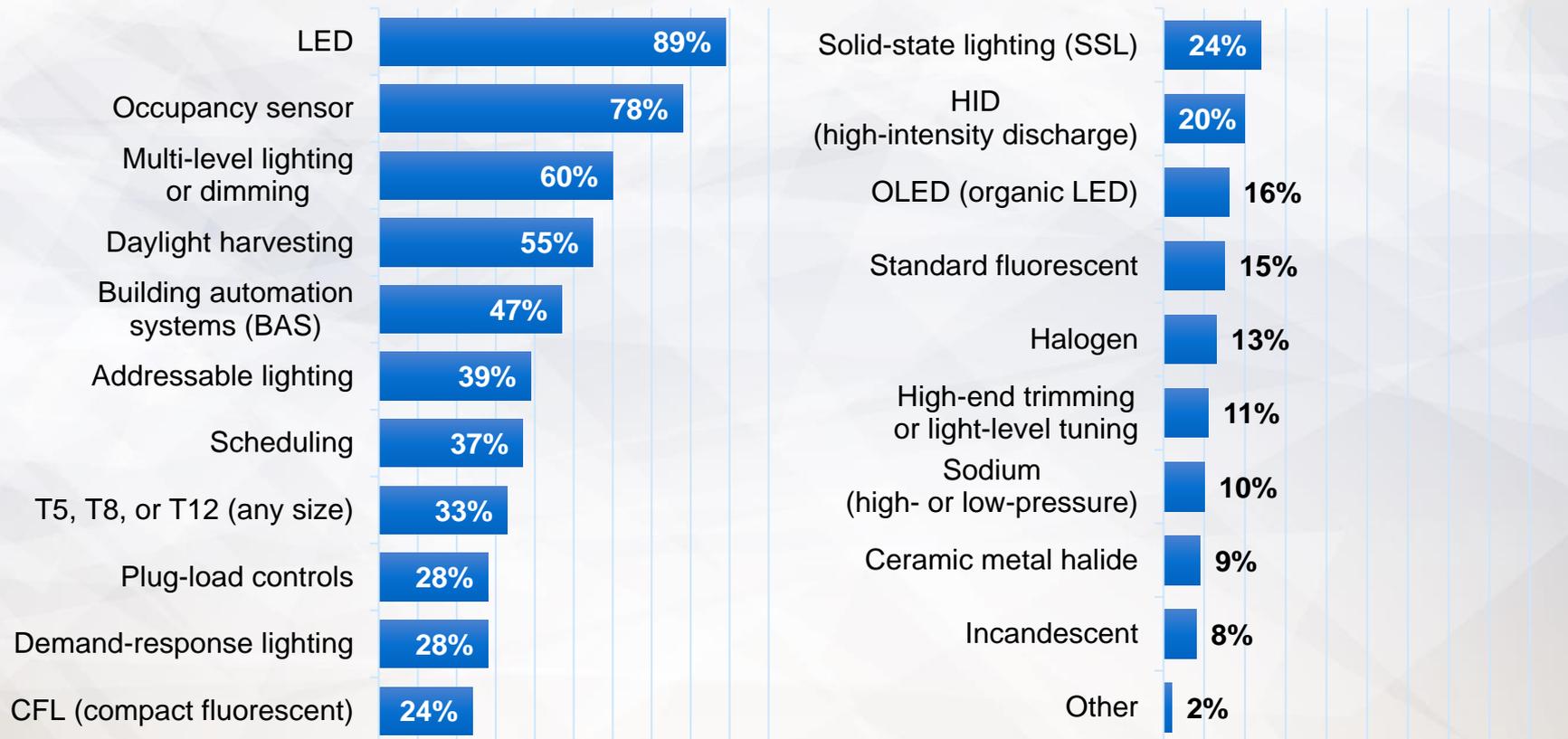
On average, engineers spend 24% of their billable hours/time at work researching and/or specifying lighting and lighting controls.



Q: What percentage of your billable hours/time at work is spent researching and/or specifying lighting and lighting controls? (n=217)

Lights, lighting systems, controls specified

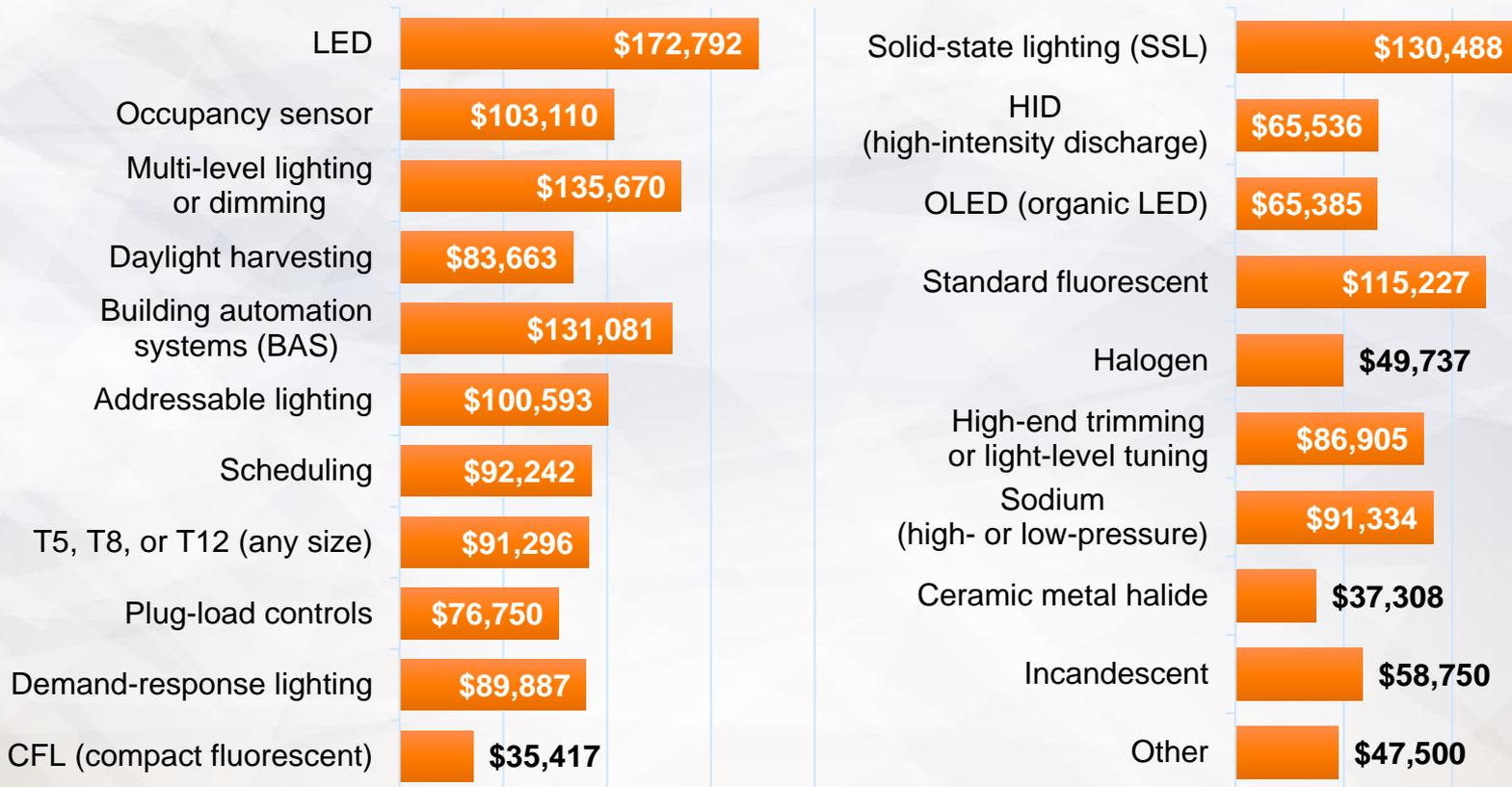
The top types of lights, lighting systems and controls currently being specified by engineers are LEDs (89%), occupancy sensors (78%), multi-level lighting or dimming (60%) and daylight harvesting (55%).



Q: What types of lights, lighting systems, or controls do you currently specify? Check all that apply. (n=220)

Total value of lights, lighting systems, controls specified

With LEDs topping the list of lighting products currently being specified, engineers reported specifying an average of approximately \$173,000 each year in LED fixtures for new and existing buildings.

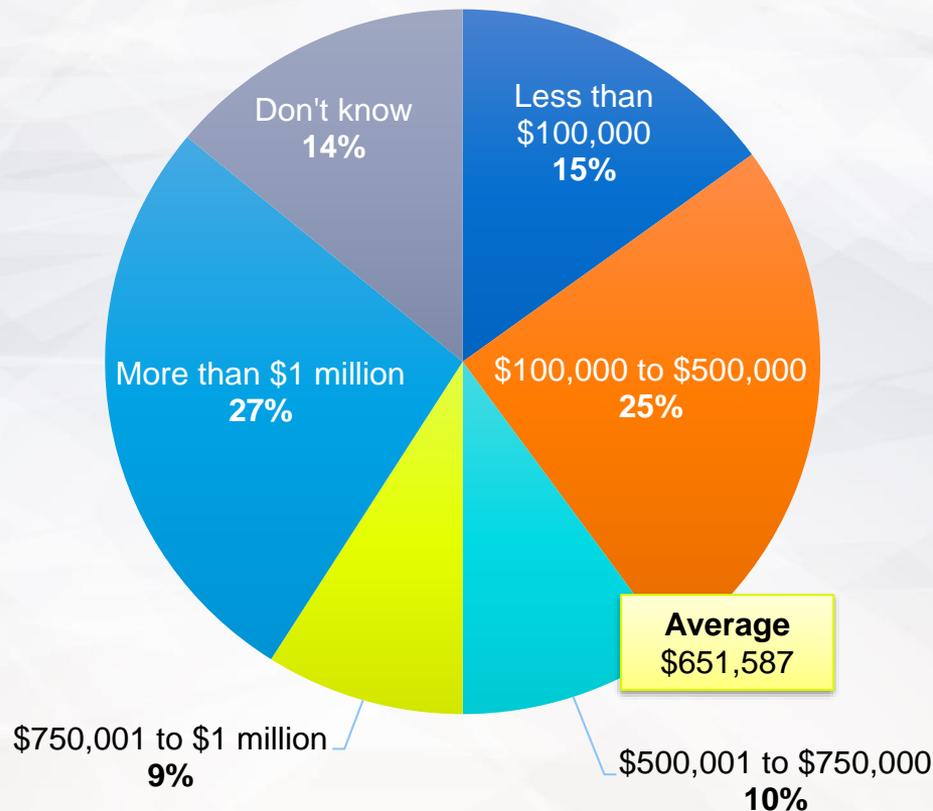


Q: Please estimate the total annual dollar amount of each product type specified by your firm for new and existing buildings.

(n=193;166;127;117;100;83;79;69;60;57;51;50;41;34;33;25;24;22;18;17;5)

Dollar amount specified for lighting, lighting controls

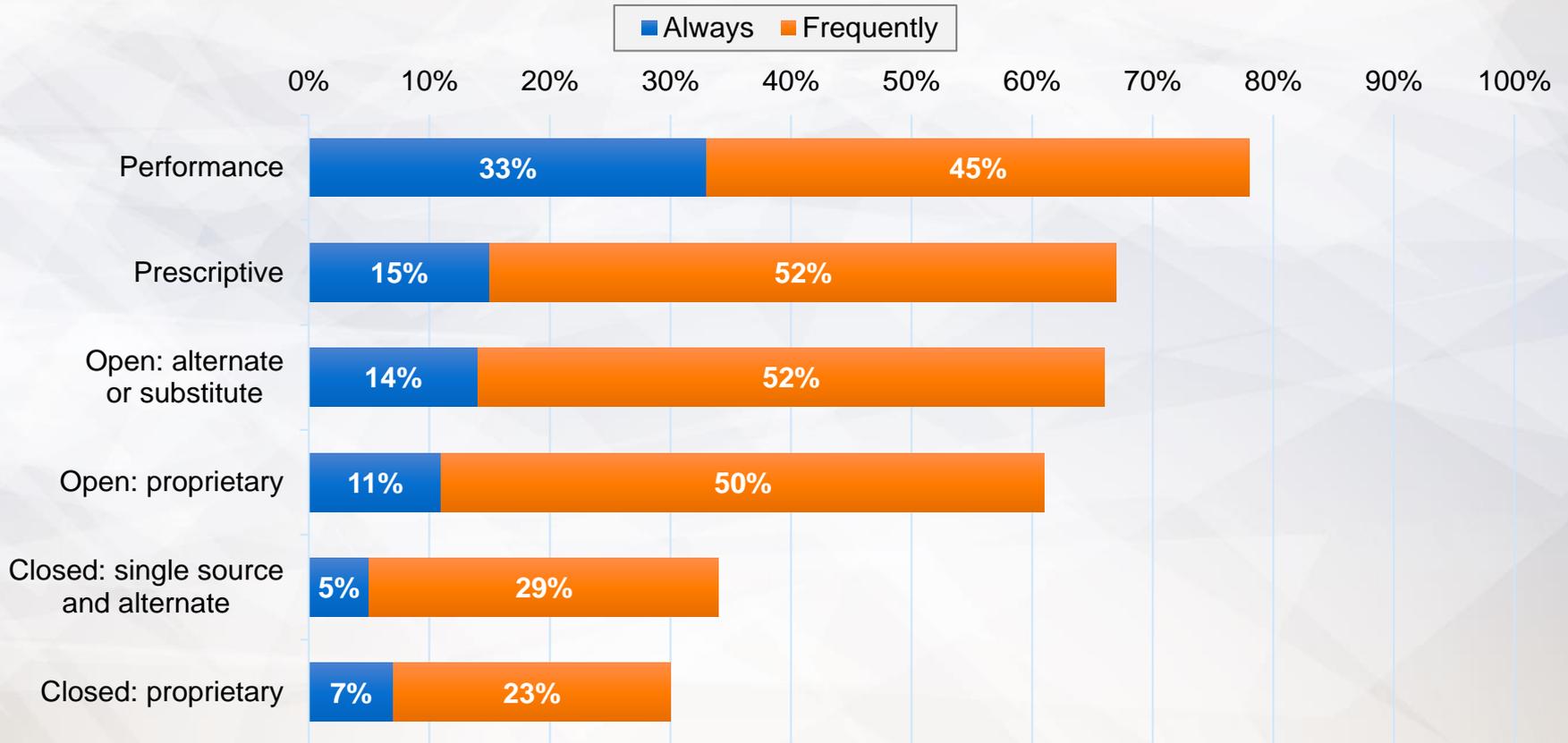
Forty-six percent of lighting and lighting control products specified on an annual basis by engineering firms for new and existing buildings were valued at more than \$500,000.



Q: What is the total annual dollar amount of lighting and lighting control products specified by your firm for new and existing buildings? (n=220)

Type of lighting specifications written

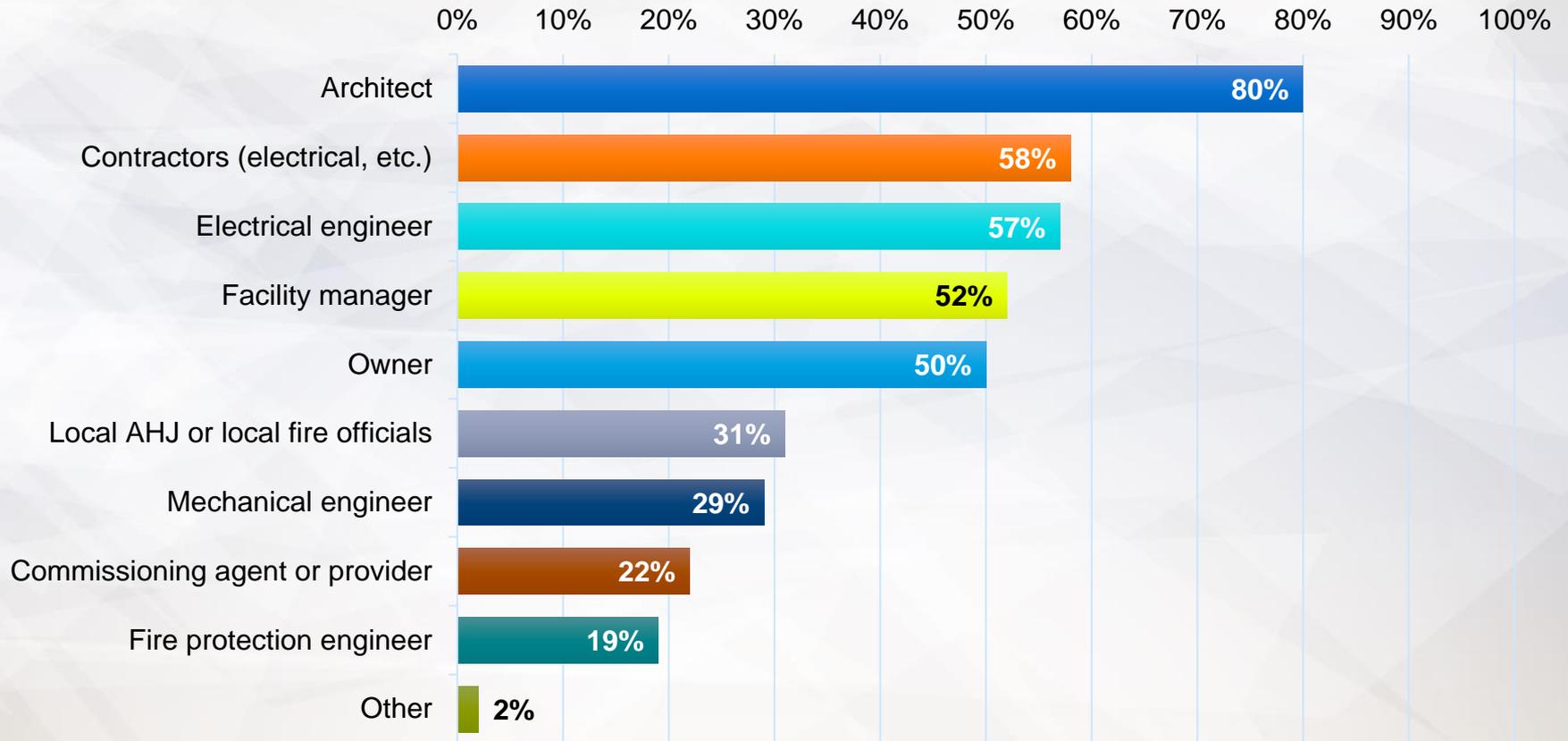
Performance lighting specifications—those in which the test is restricted to stating the performance that must be achieved by the completed work—are used by 78% of engineering firms, and 67% generally issue prescriptive specifications.



Q: Of the total lighting specifications issued by your firm, how often are you using each of the following? (n=219;220;220;220;219;220)

Design coordination

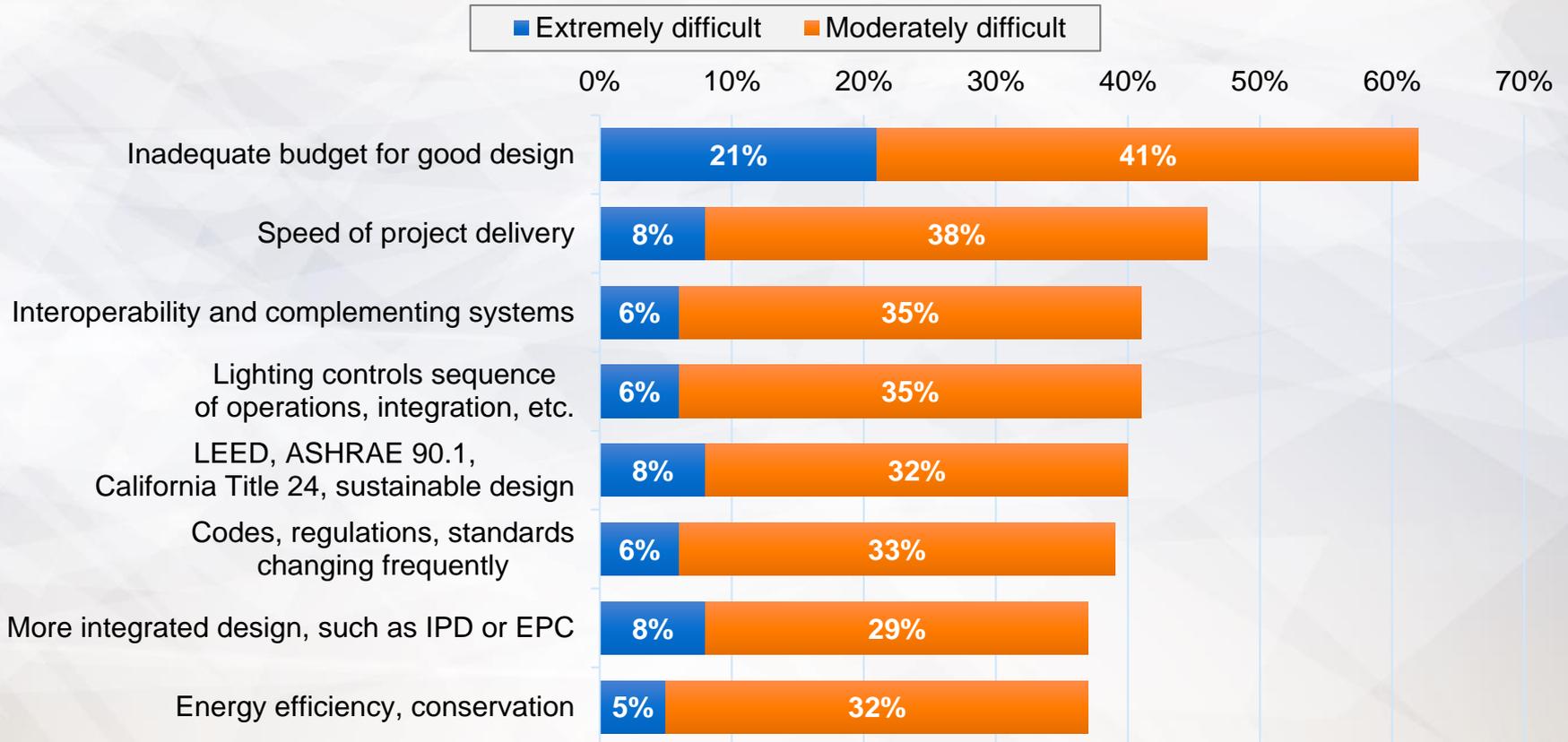
In addition to their lighting design team, eight in 10 engineers reported architects as having the most input and impact on projects, followed by contractors, electrical engineers, facility managers and owners.



Q: In addition to your lighting design team, who else has an impact on your projects? Check all that apply. (n=219)

Challenges facing engineers

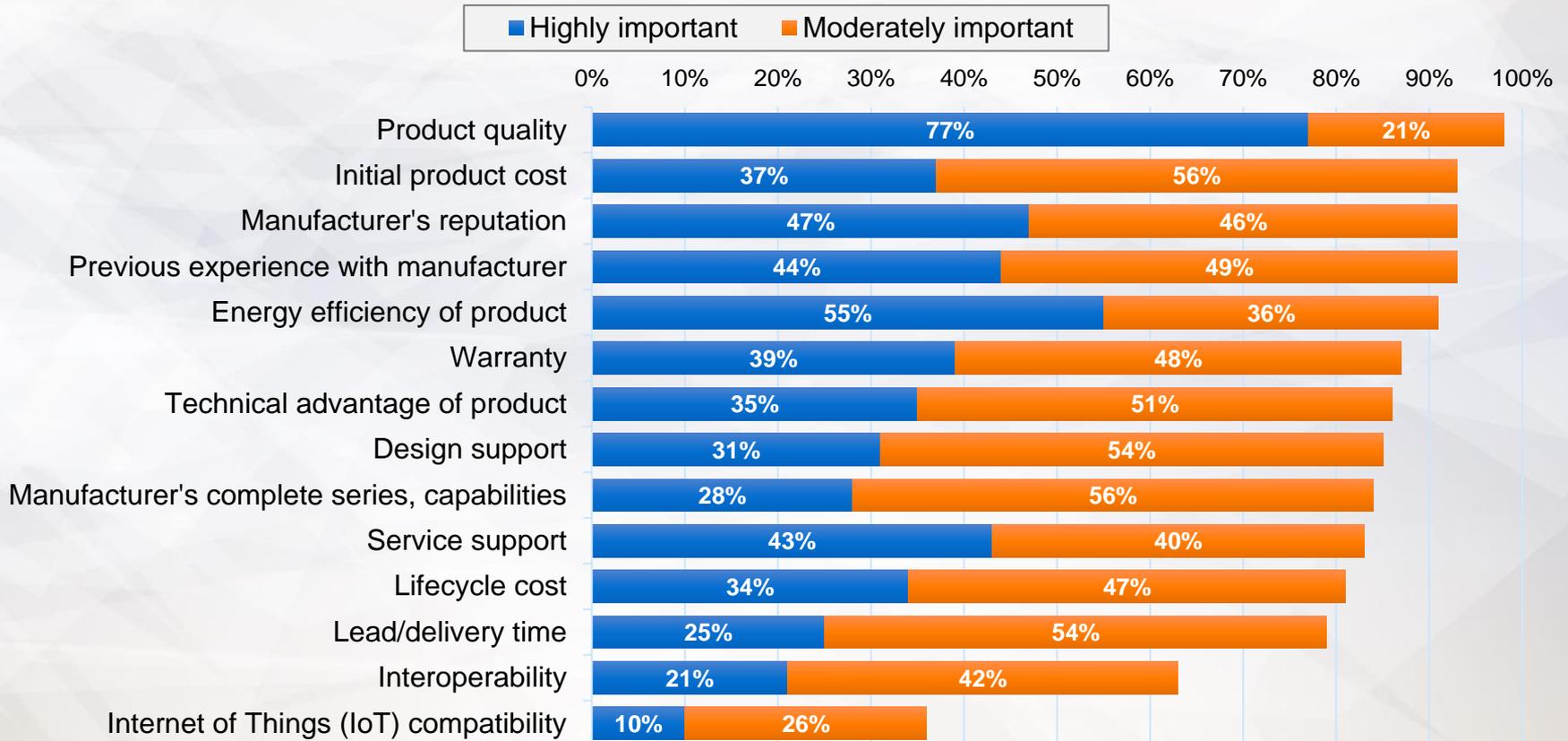
The top lighting engineering and design challenges that today's engineers are facing include inadequate budgets for high quality designs, compacted project delivery schedules, designing for interoperability and complementing systems and lighting controls sequence of operations, integration, etc.



Q: Please rate the difficulty posed by each of the following lighting engineering and design challenges. (n=219)

Important product factors

The most important factors to respondents' selection of lighting products are quality (98%), initial product cost (93%), manufacturer's reputation (93%), previous experience with the manufacturer (93%) and energy efficiency (91%).



Q: In your design/specification activity, how important is each of the following factors to your selection of one lighting product over another?
(n=218;218;219;218;218;218;219;218;218;218;215;217)

Additional resources

Thank you for downloading the *Consulting-Specifying Engineer* 2019 Lighting & Lighting Controls Study. Use the links below to access additional information on lighting and lighting controls news, products and research.

News, articles, products

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Contact information

Amanda Pelliccione
Director of Research
apelliccione@cfemedia.com

Amara Rozgus
Editor-in-Chief
arozgus@cfemedia.com