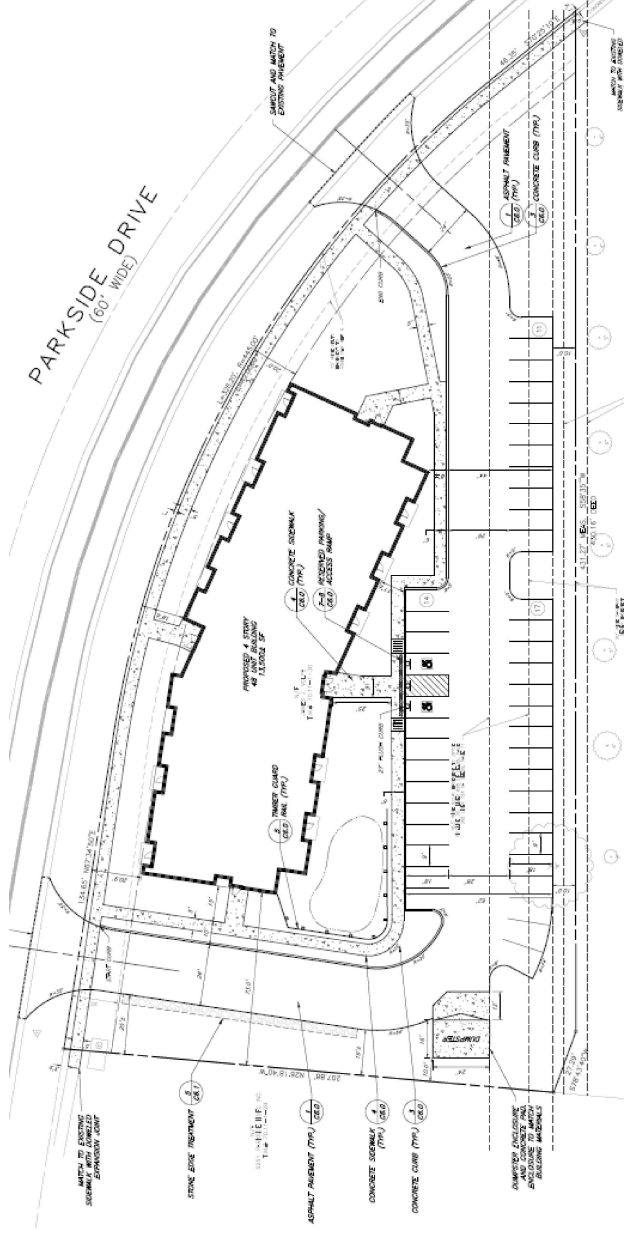


PRELIMINARY ENGINEERS REPORT

FOR

PARKSIDE DRIVE APARTMENTS



Town of Canandaigua - County of Ontario
State of New York

August 1, 2022

Prepared By:

Prepared For:



39 Cascade Drive / Rochester, NY 14614 / Phone (585) 458-7770

Edgemere Development, Inc.
400 Andrews St
Rochester NY 14604

TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	SANITARY SEWER SYSTEM	4
3.0	STORM SEWER SYSTEM	5
4.0	WATER SYSTEM	5
5.0	LIGHTING	6
6.0	TRAFFIC	6

FIGURES

FIGURE 1	LOCATION MAP	2
FIGURE 2	REDUCED SIZE OVERALL PLAN	3

APPENDICES

1	SANITARY CALCULATIONS
2	WATER USAGE CALCULATIONS
3	LIGHTING CUT SHEETS
4	ITE TRIP GENERATION SHEETS

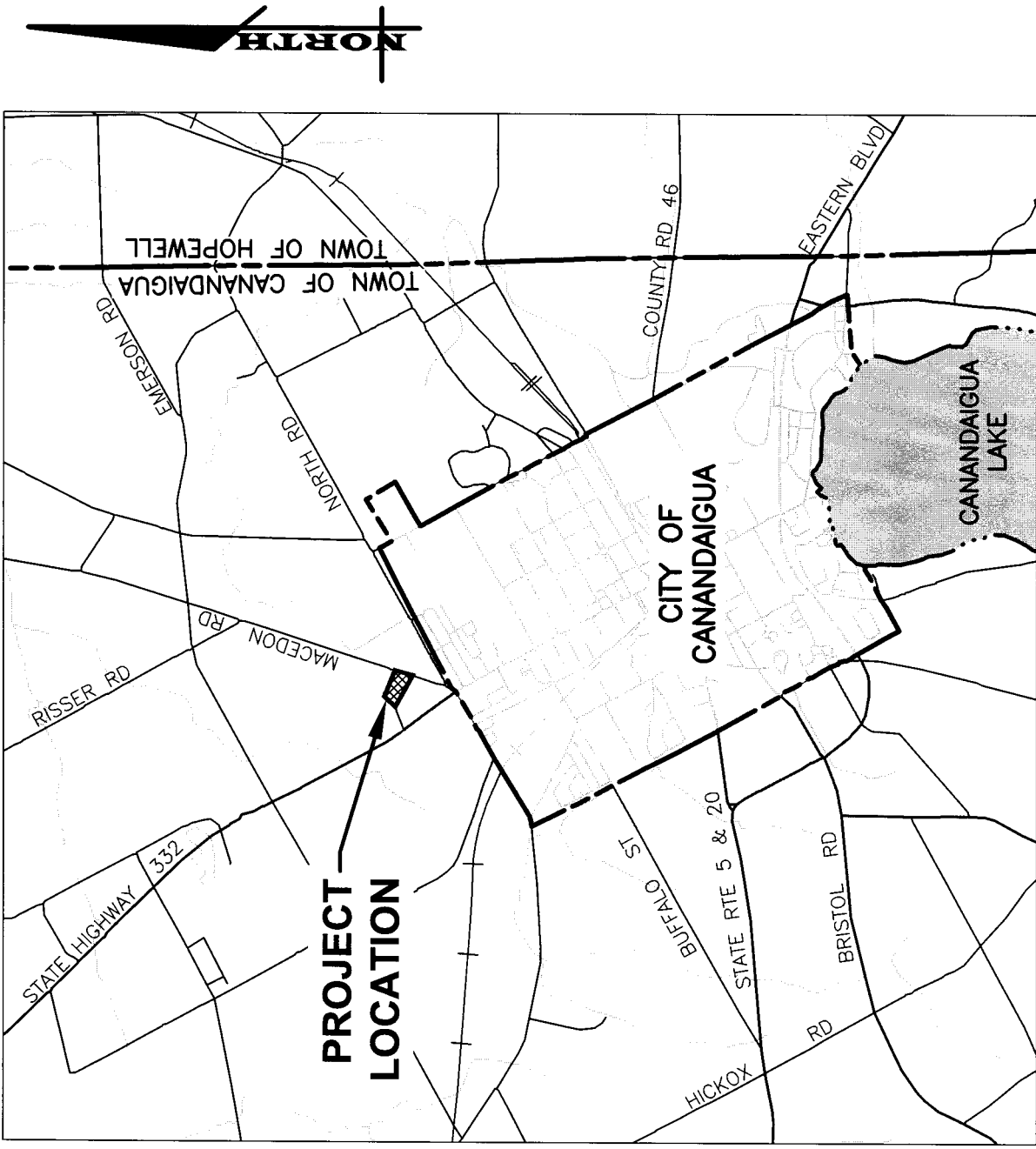


1.0 Introduction

Parkside Drive Apartments is a proposed 48-unit multi-family development located in the Town of Canandaigua. The project will comprise of a 4-story building on a 1.5 +/- acre parcel with a mix of one and two-bedroom apartments and community space for the residents. The proposed site has several easements and constraints on it resulting in a constrained development area.

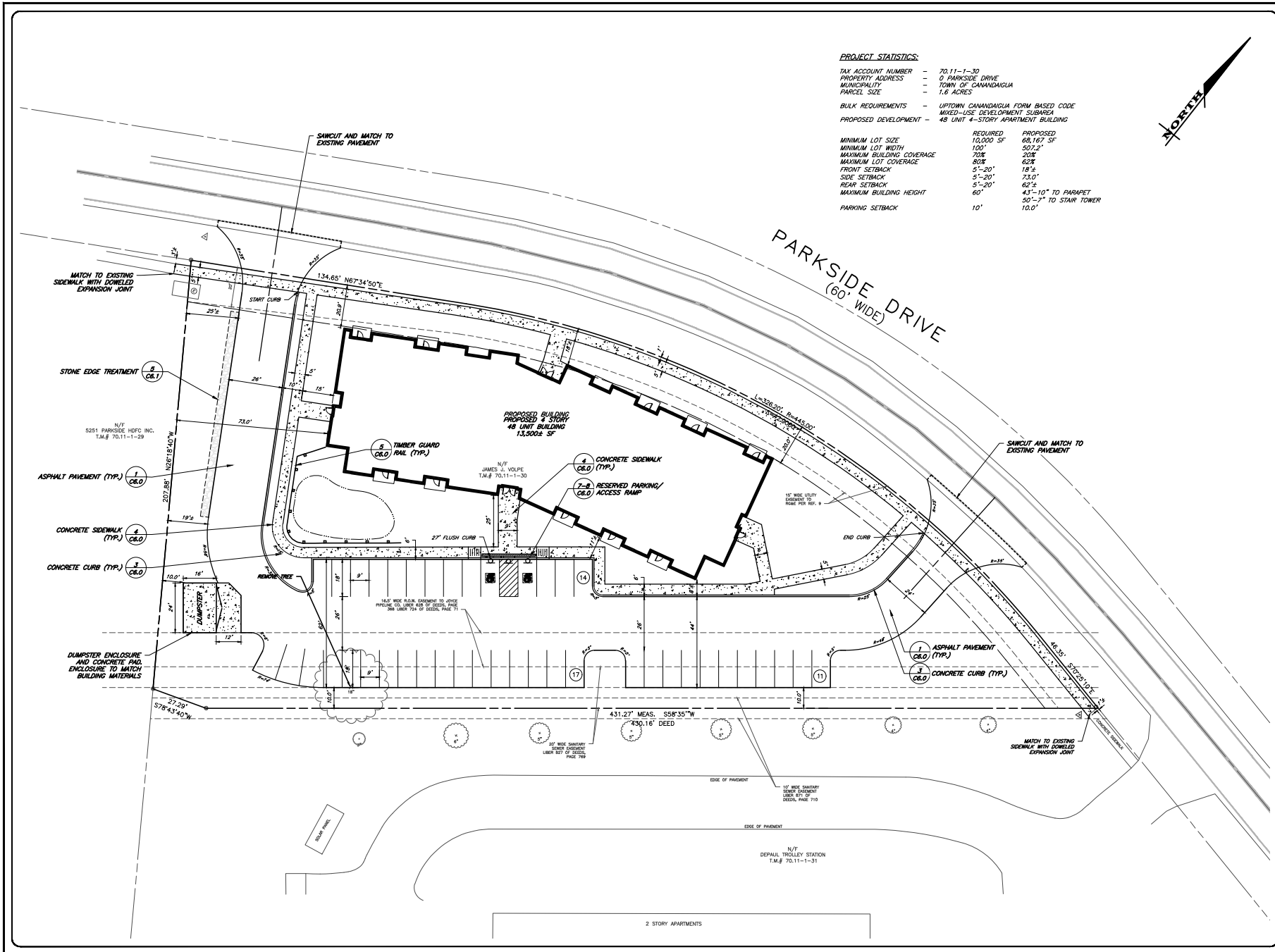
A total of 42 parking spaces will be provided for the 48 units as comparable projects have typical ratios of 75% parking to units. Parking areas and utilities will be maintained by the owner with all utilities located in proximity to the property. Sidewalk will be connected across the project frontage to existing dead end sidewalks to complete pedestrian connectivity through the roadway corridor. See Figure 2 for an overall site plan.

The purpose of this report is to support the Preliminary/Final Site Plans for the project dated 08/01/22, being submitted to the Town of Canandaigua Planning Board. This report will describe the proposed utilities and infrastructure improvements including storm, sanitary, water, lighting, and traffic, as they apply to the project development. All improvements on the site will comply with the Town of Canandaigua construction standards and applicable regulations (unless specifically stated otherwise).



LOCATION MAP

NOT TO SCALE



PROJECT STATISTICS:

TAX ACCOUNT NUMBER - 70.11-1-30
PROPERTY ADDRESS - 0 PARKSIDE DRIVE
MUNICIPALITY - TOWN OF CANANDAIGUA
PARCEL SIZE - 1.6 ACRES

BULK REQUIREMENTS - UPTOWN CANANDAIGUA FORM BASED CODE
MIXED-USE DEVELOPMENT SUBAREA
PROPOSED DEVELOPMENT - 48 UNIT 4-STORY APARTMENT BUILDING

	REQUIRED	PROPOSED
MINIMUM LOT SIZE	10,000 SF	68,167 SF
MINIMUM LOT WIDTH	100'	507.2'
MAXIMUM BUILDING COVERAGE	70%	20%
MAXIMUM LOT COVERAGE	80%	62%
FRONT SETBACK	5'-20"	18'
SIDE SETBACK	5'-20"	73'-10"
REAR SETBACK	5'-20"	62'
MAXIMUM BUILDING HEIGHT	60'	43'-10" TO PARAPET 50'-7" TO STAIR TOWER
PARKING SETBACK	10'	10.0'


MARATHON
ENGINEERING
ROCHESTER LOCATION
39 CASCADE DRIVE
ROCHESTER, NY 14614
585-458-7770
ITHACA LOCATION
840 HANSHAW RD, STE 6
ITHACA, NY 14850
607-241-2917
www.marathoneng.com

PRELIMINARY SITE PLANS
for
PARKSIDE DRIVE APARTMENTS

TOWN OF CANANDAIGUA
PARKSIDE DRIVE
ONTARIO COUNTY
STATE OF NEW YORK

JOB NO: 1419-22
SCALE: 1" = 20'
DRAWN: LJB
DESIGNED: MPT
DATE: 8/1/22

REVISIONS

DATE	BY	REVISION
------	----	----------

[illegible]

ROBERT P. BRINGLEY

DRAWING TITLE:
LAYOUT PLAN

04 of 10 SHEET No:	C2.0
1419-22 JOB No:	
	DRAWING No:

2.0 Sanitary Sewer System

An existing 8" PVC sanitary sewer within an easement to the Town of Canandaigua runs along the southeast property line. A 6" SDR-21 PVC lateral at 1.0% will be extended to connect to the existing main with a cleanout placed at the easement line.

Table 1 illustrates the sanitary flow rates required to service the existing Phase I buildings:

Table 1: Calculated Sanitary Flow Rate		
Usage	Bedroom Count	Required Flow Rate
48 Apartments	56	110 gpd/ bedroom 6,160 gal/day
		TOTAL: 6,160 gal/day

Sanitary sewer calculations are included in Appendix 1.

3.0 Storm Sewer System

The proposed project is within a stormwater benefit district that provides projects quantity reduction in conformance with current New York State Department of Environmental Conservation (NYSDEC) permit requirements. This allows projects greater flexibility in development by only requiring new projects to treat stormwater quality and runoff reduction volume (RRv/ green infrastructure). The project discharges in to a roadside swale along Parkside Drive and is then conveyed in to regional stormwater management facilities.

The green infrastructure and water quality volumes are provided by a combination of tree plantings and bioretention practices that treat the water prior to discharge to the roadside swale. D-type hydrologic soils and previous fill placement on the site preclude infiltration or treatment of 100% of the water quality volume.



Storm sewer sizing is designed to convey the 10-year storm with allowances for 100-year storm rainfall in the routing of overland flow to avoid impact to vehicle routing and the building finished floor elevation.

A Stormwater Pollution Prevention Plan (SWPPP) with full analysis of the existing and proposed storm system has been developed for this project and is included under separate cover. A Notice of Intent (NOI) will be filed with the NYSDEC prior to start of construction.

4.0 Water System

The property is located in the Canandaigua-Farmington Water District and has a dead-end 8” water main located approximately 150’ west of the project along Parkside Drive. The main will be extended approximately 200’ to the east with a dead-end perpendicular hydrant just past the proposed 4” combined water service for fire protection and flushing purposes.

The proposed water main and water service will be constructed in conformance with Town of Farmington and Town of Canandaigua Design Standards and the private service will have backflow protection in accordance with New York State Department of Health requirements.

Table 2 illustrates the required flow rates for the proposed building:

Table 2: Required Flow Rates		
Building Type	Water Service Flow	Fire Protection Service Flow
4-story Multi-Family	29 gal/min	300 gal/min

A hydrant test flow was provided by the Town of Farmington that shows a static pressure of 83 psi. There is adequate flows and pressures to provide water service for both domestic and fire protection for the project. Water calculations are provided in Appendix 2.

5.0 Lighting

New lighting will be shoebox style 20’ mounting height LED dark sky compliant light fixtures. Building mounted lighting in accordance with NYS building code will match site lighting temperature and provide lighting at ingress/ egress points. Light temperature will be 3000K. Cut sheets and data for the proposed lighting are included in Appendix 3.



6.0 ITE Trip Generation

The proposed 48-unit building was analyzed utilizing the Institute of Traffic Engineers (ITE) handbook. Similar projects data is utilized to generate anticipated trip generations for a project to determine if there is any anticipated impact to the surrounding transportation network by increasing traffic. Parkside Drive is a local collector road with minimal cut-through traffic and limited driveway access due to its proximity to NYS Route 332 and Macedon Road (County Road 28).

The development will have two driveways allowing multiple points of access to the site. As anticipated peak hour traffic is 17 trips in the AM peak hour and 22 trips in the PM peak hour there is no anticipated impact to the surrounding road network as a result of the proposed project.

ITE calculation sheets are included in Appendix 4.

APPENDIX 1

SANITARY CALCULATIONS

MARATHON ENGINEERING

39 Cascade Drive
Rochester NY 14614
Tel: 585-458-7770 Fax: 585-458-7776
www.marathoneng.com

JOB 1419.22 Parkside Drive Apts.

SHEET NO. _____ OF _____

CALCULATED BY MT DATE 7/26/22

CHECKED BY _____ DATE _____

SCALE Sanitary Flow Calculations

Sanitary:

. 48 units . 56 bedrooms

. Flow: 110 gpd/bedroom.

$$\text{Total Flow} = 56 \text{ bedrooms} \times 110 \frac{\text{gpd}}{\text{bedroom}} = \boxed{6,160 \text{ gpd}}$$

$$\text{Peak flow} = 6,160 \frac{\text{gal}}{\text{day}} \times \frac{1 \text{ day}}{14 \text{ hrs}} \times \frac{1 \text{ hr}}{60 \text{ min}} \times 2.5 (\text{peak})$$

$$\boxed{= 18.3 \text{ gpm}}$$

APPENDIX 2

WATER USAGE CALCULATIONS

WATER FLOW TEST

NAME OF RISK:
FILE NO.:
LOCATION: Edgemere Development
SIZE OF STREET MAIN: 12" ductile
DEAD END: No

[illegible]

WERE TESTS CONDUCTED DURING PERIODS OF (UNDERLINE) HEAVY-NORMAL-LIGHT CONSUMPTION?

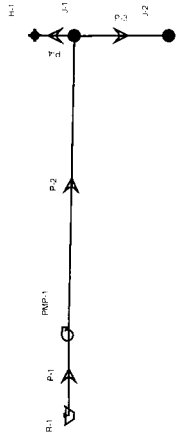
INDICATE IF SEASONAL OR OTHER DEMANDS OVERTAX THE PUBLIC SUPPLY AND DISTRIBUTION SYSTEM. IF NORMAL PRESSURES AND WATERFLOWS ARE AFFECTED, THEN BRIEFLY STATE CONDITIONS AND DURATION.

REMARKS

TEST CONDUCTED, DATE: 7/15/22

BY: Iosh Fagner

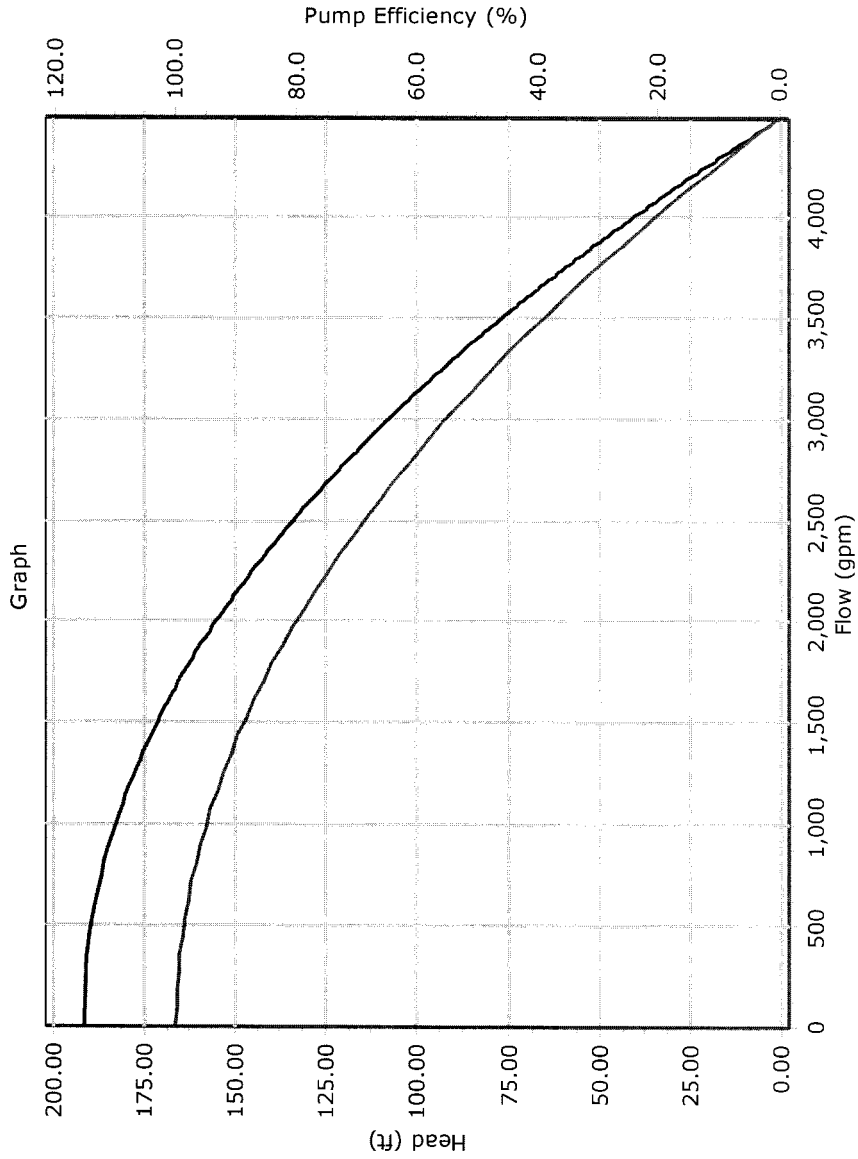
Scenario: Base



Pump Definition Detailed Report: Hyd Flow Test

Element Details			
ID	39	Notes	
Label	Hyd Flow Test		
Pump Definition Type			
Pump Definition Type	Standard (3 Point)	Design Head	175.50 ft
Shutoff Flow	0 gpm	Maximum Operating Flow	3,927 gpm
Shutoff Head	191.70 ft	Maximum Operating Head	46.20 ft
Design Flow	1,350 gpm		
Pump Efficiency Type			
Pump Efficiency Type	Best Efficiency Point	Motor Efficiency	100.0 %
BEP Efficiency	100.0 %	Is Variable Speed Drive?	False
BEP Flow	0 gpm		
Transient (Physical)			
Inertia (Pump and Motor)	0.000 lb·ft²	Specific Speed	SI=25, US=1280
Speed (Full)	0 rpm	Reverse Spin Allowed?	True

Pump Definition Detailed Report: Hyd Flow Test



Scenario: Base
Current Time Step: 0.000 h
FlexTable: Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen- Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Has User Defined Length?	Length (User Defined) (ft)	Flow (gpm)	Vt i
35	P-1	38	R-1	PMP-1	8.0	PVC	120.0	False	0.000	True	1	1,029	
36	P-2	136	PMP-1	J-1	8.0	PVC	130.0	False	0.000	True	300	1,029	
37	P-3	43	J-1	J-2	6.0	PVC	130.0	False	0.000	True	30	28	
38	P-4	18	J-1	H-1	6.0	PVC	130.0	False	0.000	True	10	1,000	

Scenario: Base
Current Time Step: 0.000 h
FlexTable: Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
32	J-1	786.00	<None>	<Collection: 0 items>	0	959.63	75
33	J-2	794.50	<None>	<Collection: 1 item>	29	959.63	71

C:\Users\mtomlinson\AppData\Local\Temp\Bentley\WaterCAD\Untitled1.wtg

Scenario: Base
Current Time Step: 0.000 h
FlexTable: Hydrant Table

ID	Label	Hydrant Status	Include Hydrant Lateral Loss?	Emitter Coefficient (gpm/psi ⁿ)	Length (Hydrant Lateral) (ft)	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
34	H-1	Closed	False	0.000	20	791.00	<None>	<Collection: 1 item>	1,000	958.89	73

APPENDIX 3

LIGHTING CUT SHEETS

Project	Catalog #	Type
Prepared by	Notes	Date



McGraw-Edison

GLEON Galleon

Area / Site Luminaire

Product Features





Interactive Menu

- Ordering Information [page 2](#)
- Mounting Details [page 3](#)
- Optical Distributions [page 4](#)
- Product Specifications [page 4](#)
- Energy and Performance Data [page 4](#)
- Control Options [page 9](#)

Product Certifications



Quick Facts

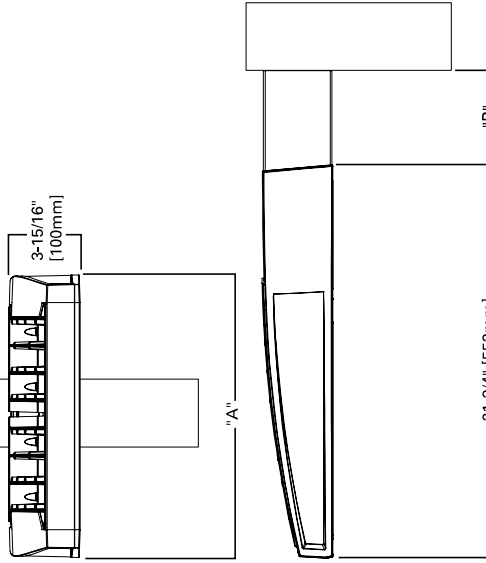
- Lumen packages range from 4,200 - 80,800 (34W - 640W)
- Efficacy up to 156 lumens per watt
- Options to meet Buy American and other domestic preference requirements



Connected Systems

- WaveLinx
- Enlighted

Dimensional Details



NOTES:
1. Visit <https://www.designlights.org/search/> to confirm qualification. Not all product variations are DLC qualified.
2. IDA Certified for 3000K CCT and warmer only.

Number of Light Squares	"A" Width	"B" Standard Arm Length	"B" Extended Arm Length ¹	"B" Quick Mount Arm Length	"B" Quick Mount Extended Arm Length
1-4	15-1/2"	7"	10"	10-5/8"	16-9/16"
5-6	21-5/8"	7"	10"	10-5/8"	16-9/16"
7-8	27-5/8"	7"	13"	10-5/8"	—
9-10	33-3/4"	7"	16"	—	—
NOTES: For arm selection requirements and additional line art, see Mounting Details section.					

Ordering Information

SAMPLE NUMBER: GLEON-SA4C-740-U-T4FT-GM

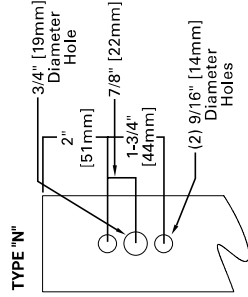
Product Family ^{1,2}		Light Engine		Color Temperature	Voltage	Distribution	Mounting	Finish
		Configuration	Drive Current					
GLEON=Galileo BAA-GLEON=Gallean, Buy American Act Compliant ³⁵ TAA-GLEON=Gallean, Trade Agreements Act Compliant ³⁵	SA1=1 Square SA2=2 Squares SA3=3 Squares SA4=4 Squares SA5=5 Squares ⁶ SA6=6 Squares ⁶ SA7=7 Squares ⁶ SA8=8 Squares ⁶ SA9=9 Squares ⁶ SA0=10 Squares ⁶	A=600mA B=800mA C=1000mA D=1200mA ¹⁶	722=70CRI, 2200K 727=70CRI, 2700K 730=70CRI, 3000K 735=70CRI, 3500K 740=70CRI, 4000K 750=70CRI, 4500K 760=70CRI, 6000K 827=80CRI, 2700K 830=80CRI, 3000K AMB=Amber, 590nm ^{14,16}	U=120÷277V 1=120V 2=208V 3=240V 4=277V 8=480V ^{7,8} 9=347V ⁷	T2=Type II T2R=Type II Roadway T3=Type III T3R=Type III Roadway T4TF=Type IV Forward Throw T4W=Type IV Wide SNOQ=Type V Narrow SWOQ=Type V Square Medium SL2=Type II w/ Spill Control SL3=Type II w/ Spill Control SL4=Type IV w/Spill Control SLL=90° Spill Light Eliminator Left SLR=90° Spill Light Eliminator Right RW=Rectangular Wide Type I AFL=Automotive Frontline	[Blank]=Arm for Round or Square Pole EA=Extended Arm ⁹ MA=Master Arm Adapter ¹⁰ WM=Wall Mount QME=Quick Mount Arm (Standard Length) ¹¹ QMA=Quick Mount Arm (Extended Length) ¹² RALXX=Custom Color	AP=Grey BK=Bronze BZ=Black DP=Dark Platinum GM=Graphite Metallic WH=White RALXX=Custom Color	
Options (Add as Suffix)		Controls and Systems Options (Add as Suffix)			Accessories (Order Separately) ³⁶			
DIM=External 0÷10V Dimming Leads ^{19,20} F=Single Fuse (120, 277 or 347V Specify Voltage) FF=Double Fuse (208, 240 or 480V Specify Voltage) 20K=Series 20KV UL 1449 Surge Protective Device 2L=Two Circuits ^{17,18} HA=50°C High Ambient HSS=Installed House Side Shield ²⁸ GRSBK=Glare Reducing Shield, Black ²³ GRSWH=Glare Reducing Shield, White ²³ LCF=Light Square Trim Painted to Match Housing ²⁷ MT=Installed Mesh Top TH=Toolless Door Hardware CC=Coastal Construction finish ³ LR9=Optics Rotated 90° Left RR9=Optics Rotated 90° Right CE=CE Marking ²⁹ AHD145=After Hours Dim, 5 Hours ²² AHD245=After Hours Dim, 6 Hours ²² AHD255=After Hours Dim, 7 Hours ²² AHD355=After Hours Dim, 8 Hours ²² DALI=DALI Drivers	BPC=Button Type Photocontrol PR=NEMA 3-PIN Photocontrol Receptacle PR7=NEMA 7-PIN Photocontrol Receptacle ²¹ SPB2=Dimming Occupancy Sensor with Bluetooth Interface, 8' - 20' Mounting ³⁴ SPB4=Dimming Occupancy Sensor with Bluetooth Interface, 21' - 40' Mounting ³⁴ MS-L20=Motion Sensor for ON/OFF Operation, 9' - 20' Mounting Height ²⁴ MS-L40W=Motion Sensor for ON/OFF Operation, 21' - 40' Mounting Height ²⁴ MS/X-L20-BH-Level Motion Sensor, 9' - 20' Mounting Height ^{24,25} MS/X-L40W-BH-Level Motion Sensor, 21' - 40' Mounting Height ^{24,25} MS/DIM-L20=Motion Sensor for Dimming Operation, 9' - 20' Mounting Height ²⁴ MS/DIM-L40W=Motion Sensor for Dimming Operation, 21' - 40' Mounting Height ²⁴ ZW=WaveLinX Module and 4-PIN Receptacle ZD=WaveLinX Module with DALI driver and 4-PIN Receptacle SWPD4XX=WaveLinX Sensor Only, 7'-15' ^{13,32,33} SWPD5XX=WaveLinX Sensor Only, 15'-40' ^{13,32,33} WOBXX=WaveLinX Sensor with Bluetooth, 7'-15' ^{13,32} WOFXX=WaveLinX Sensor with Bluetooth, 15'-40' ^{13,32} LWR-LW=Enlightened Sensor, 8'-16' Mounting Height ²⁶ LWR-LN=Enlightened Sensor, 16'-40' Mounting Height ²⁶ DIM10-MS/DIM-L08-Synapse Occupancy Sensor (<8 Mounting) ¹⁹ DIM10-MS/DIM-L20-Synapse Occupancy Sensor (9-20 Mounting) ¹⁹ DIM10-MS/DIM-L40-Synapse Occupancy Sensor (21-40 Mounting) ¹⁹	OAR/A1016=NEMA Photocontrol Multi-Tap - 105-285V OAR/A1027=NEMA Photocontrol - 480V OAR/A1201=NEMA Photocontrol - 347V OAR/A1013=Photocontrol Shorting Cap OAR/A1014=120V Photocontrol MA1252=10KV Surge Module Replacement MA1037-XX=Single Tenon Adapter for 2-3/8" O.D. Tenon MA1037-XX-2@180° Tenon Adapter for 2-3/8" O.D. Tenon MA1197-XX-3@120° Tenon Adapter for 2-3/8" O.D. Tenon MA1188-XX-4@90° Tenon Adapter for 2-3/8" O.D. Tenon MA1189-XX-2@90° Tenon Adapter for 2-3/8" O.D. Tenon MA1190-XX-3@90° Tenon Adapter for 2-3/8" O.D. Tenon MA1191-XX-2@120° Tenon Adapter for 2-3/8" O.D. Tenon MA1038-XX=Single Tenon Adapter for 3-1/2" O.D. Tenon MA1039-XX-2@180° Tenon Adapter for 3-1/2" O.D. Tenon MA1192-XX-3@120° Tenon Adapter for 3-1/2" O.D. Tenon MA1193-XX-4@90° Tenon Adapter for 3-1/2" O.D. Tenon MA1194-XX-2@90° Tenon Adapter for 3-1/2" O.D. Tenon MA1195-XX-3@90° Tenon Adapter for 3-1/2" O.D. Tenon FSIR-100=Wireless Configuration Tool for Occupancy Sensor ²⁴ GLEON-MT1=Field Installed Mesh Top for 1-4 Light Squares GLEON-MT2=Field Installed Mesh Top for 5-6 Light Squares GLEON-MT3=Field Installed Mesh Top for 7-8 Light Squares GLEON-MT4=Field Installed Mesh Top for 9-10 Light Squares GLEON-QM=Quick Mount Arm Kit ¹¹ GLEON-QMEA=Quick Mount Extended Arm Kit ¹² LS/HSSBK=Installed House Side Shield ^{23,30} LS/GRSBK=Glare Reducing Shield, Black ^{23,30} LS/GRSWH=Glare Reducing Shield, White ^{23,30} LS/PFS=Perimeter Shield, Black ¹⁵ WOLC-7P-10A=WaveLinX Outdoor Control Module ^{19,31} SWPD4-XX=WaveLinX Wireless Sensor, 7-15' Mounting Height ^{13,19,32,33} SWPD5-XX=WaveLinX Wireless Sensor, 15-40' Mounting Height ^{13,19,32,33}						
NOTES: 1. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information. 2. Designlights Consortium™ Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details. 3. Coasted construction finish sail spray tested to over 5,000-hours per ASTM B117, with a scribe rating of 9 per ASTM D1654. Not available with TH option. 4. Not compatible with MS/4L-XX or MS/1-LXX sensors. 5. Not compatible with standard quick mount arm (QM). 6. Not compatible with extended quick mount arm (QMEA). 7. Requires the use of an internal step down transformer when combined with sensor options. Not available with sensor at 1200mA. Not available in combination with the HA high ambient and sensor options at 1A. 8. 480V must utilize Wye system only. Per NEC, not for use with ungrounded systems. Impedance grounded systems or corner grounded systems (commonly known as "Delta" systems). 9. May be required when two or more luminaires are oriented on a 90° or 120° drilling pattern. Refer to arm mounting requirement table. 10. Factory installed. 11. Maximum 8 light squares. 12. Requires 6 light squares. 13. Requires ZW or ZD receptacle. 14. Narrow-band 590nm +/-5nm for wildlife and observatory use. Choose drive current A, supplied at 500mA drive current only. Available with SWQ, SMQ, SL2, SL3 and SL4 distributions. Can be used with HSS option. 15. Set of 4 pcs. One set required per Light Square. 16. Not available with HA option. 17. ZL is not available with MS, MS/X or MS/DIM at 347V or 480V. ZL in SA2 through SA4 requires a larger housing, normally used for SA5 or SA6. Extended arm option may be required when mounting two or more fixtures per pole at 90° or 120°. Refer to arm mounting requirement table. 18. Not available with Enlightened wireless sensors. 19. Cannot be used with other control options. 20. Low voltage control lead brought out "18" outside fixture. 21. Not available if any "MS" sensor is selected. Motion sensor has an integral photocell. 22. Requires the use of BPC photocontrol or the PR7 or PR photocontrol receptacle with photocontrol accessory. See After Hours Dim supplemental guide for additional information. 23. Not for use with T4TF, T4W or SL4 optics. See EIS files for details. 24. The FSIR-100 configuration tool is required to adjust parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Cooper Lighting Solutions for more information. 25. Replace X with number of Light Squares operating in low output mode. 26. Enlightened wireless sensors are factory installed only requiring network components LWP-EM-1, LWP-GW-1 and LWP-PoE8 in appropriate quantities. 27. Not available with house side shield (HSS). 28. Not available with SMO, SMO-LVP, RW, etc. A black trim plate is used when HSS is selected. 29. CE is not available with the LWR, MS, MS/X, MS/DIM, BPC, PR or PR7 options. Available in 120÷277V only. 30. One required for each Light Square. 31. Requires PR7. 32. Replace XX with sensor color (WH, BZ or BK). 33. WAC Gateway required to enable field-configurability. Order WAC-PoE and WPOE-120 (10V to PoE injector) power supply if needed. 34. Smart device with mobile application required to change system defaults. See controls section for details. 35. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements. 36. For BAA or TAA requirements. Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.								

LumenSafe Integrated Network Security Camera Technology Options (Add as Suffix)

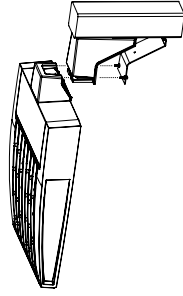
Product Family	Camera Type	Data Backhaul
L=LumenSafe Technology  LumenSafe Technology	D=Standard Dome Camera H=H-Res. Dome Camera Z=Remote PTZ Camera	R=Cellular, Rogers W=Wi-Fi Networking w/ Omni-Directional Antenna E=Ethernet Networking

Mounting Details

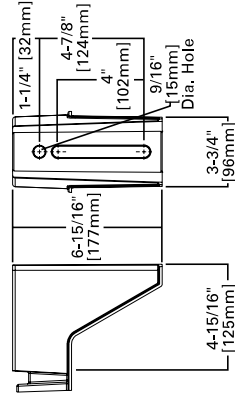
Standard Arm (Drilling Pattern)



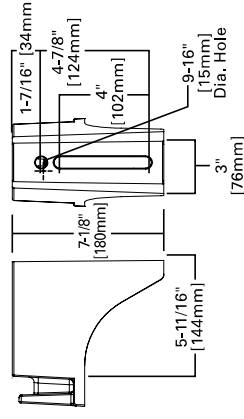
Quick Mount Arm (Includes fixture adapter)



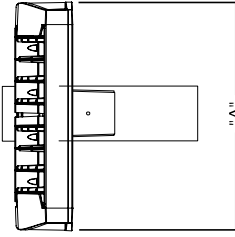
QM and QMEA Pole Mount



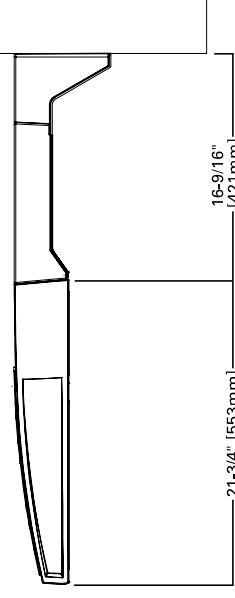
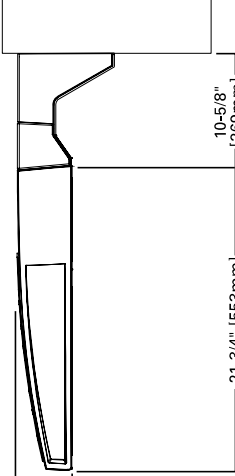
QML Pole Mount



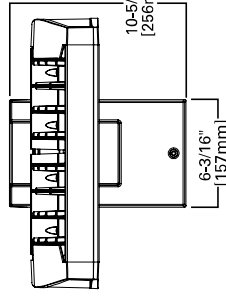
QM Quick Mount Arm (Standard)



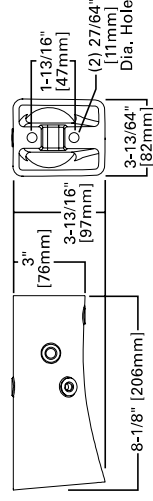
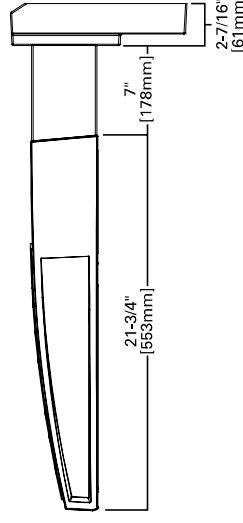
QMEA Quick Mount Arm (Extended)



Standard Wall Mount

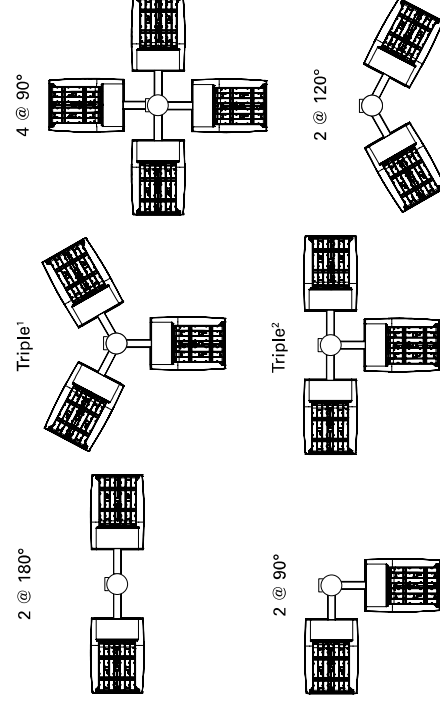


Mast Arm Mount



Arm Mounting Requirements

Number of Light Squares	Standard Arm @ 90° Apart	Standard Arm @ 120° Apart	Quick Mount Arm @ 90° Apart	Quick Mount Arm @ 120° Apart
1	Standard	Standard	QM Extended	Quick Mount
2	Standard	Standard	QM Extended	Quick Mount
3	Standard	Standard	QM Extended	Quick Mount
4	Standard	Standard	QM Extended	Quick Mount
5	Extended	Standard	QM Extended	Quick Mount
6	Extended	Standard	QM Extended	Quick Mount
7	Extended	Extended	—	Quick Mount
8	Extended	Extended	—	Quick Mount
9	Extended	Extended	—	—
10	Extended	Extended	—	—

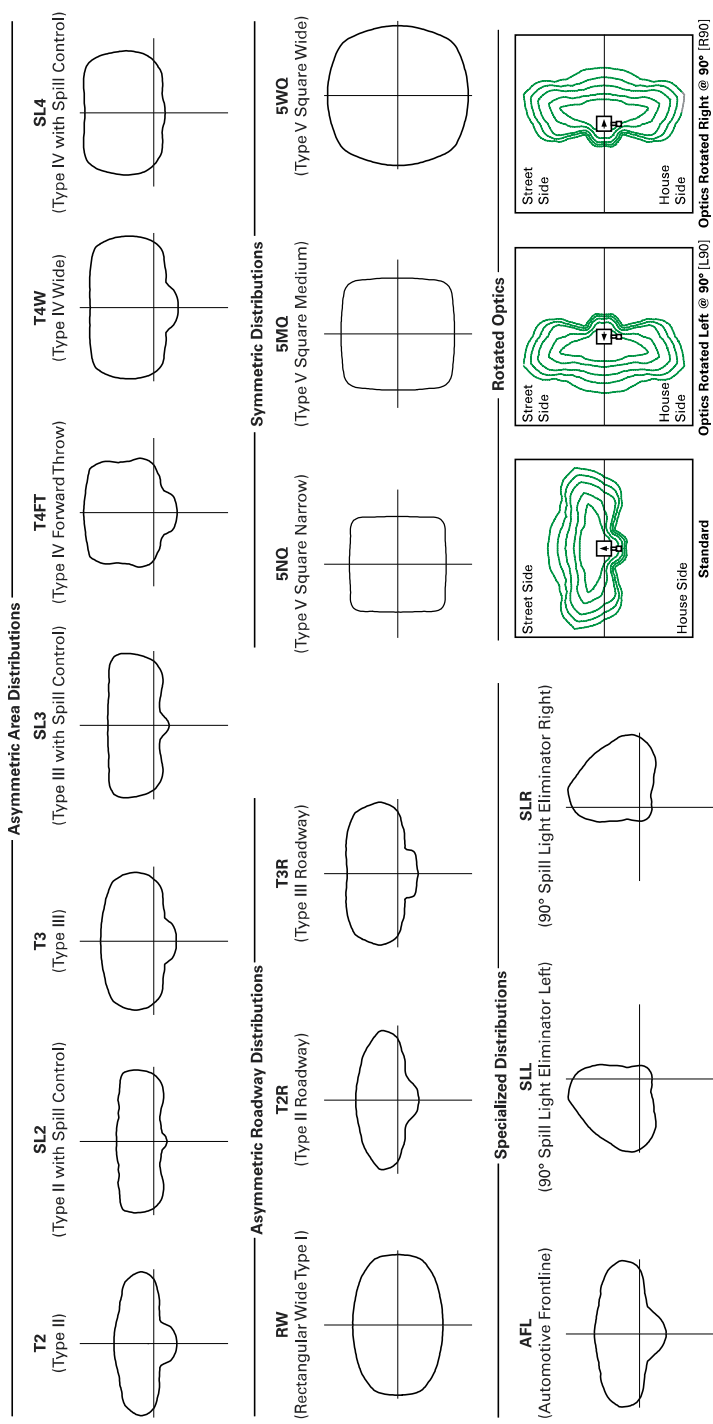


NOTES: 1 Round poles are 3 @ 120°. Square poles are 3 @ 90°. 2 Round poles are 3 @ 90°. 3 Shown with 4 square configurations.

Fixture Weights and EPAs

Number of Light Squares	Weight with Standard and Extended Arm (lbs.)	EPA with Standard and Extended Arm (Sq. Ft.)	Weight with QM Arm (Sq. Ft.)	Weight with QML (lbs.)	EPA with QML (Sq. Ft.)	Weight with QMEA (lbs.)	EPA with QMEA (Sq. Ft.)
1-4	33	0.96	1.11	—	—	38	1.11
5-6	44	1.00	1.11	—	—	49	1.11
7-8	54	1.07	1.11	58	1.11	—	—
9-10	63	1.12	—	67	1.11	—	—

Optical Distributions



Product Specifications

Construction

- Extruded aluminum driver enclosure
- Heavy-wall, die-cast aluminum end caps
- Die-cast aluminum heat sinks
- Patent pending interlocking housing and heat sink

Optics

- Patented, high-efficiency injection-molded AccuLED Optics technology
- 16 optical distributions
- 3 shielding options including HSS, GRS and PFS
- IDA Certified (3000K CCT and warmer only)

Electrical

- LED drivers are mounted to removable tray

assembly for ease of maintenance

- Standard with 0-10V dimming
- Standard with Cooper Lighting Solutions proprietary circuit module designed to withstand 10kV of transient line surge
- Suitable for operation in -40°C to 40°C ambient environments. Optional 50°C high ambient (HA) configuration.

Mounting

- Standard extruded arm includes internal bolt guides and round pole adapter
- Extended arms (EA and QMEA) may be required in 90° or 120° pole mount configurations, see arm mounting requirements table

- Mast arm (MA) factory installed
- Wall mount (WM) option available
- Quick mount arm (QM and QMEA) includes pole adapter and factory installed fixture mount for fast installation to square or round poles

Finish

- Super housing durable TGIC polyester powder coat paint, 2.5 mil nominal thickness
- Heat sink is powder coated black
- RAL and custom color matches available
- Coastal Construction (CC) option available
- Warranty**
- Five year warranty

Energy and Performance Data

Lumen Maintenance (TM-21)

Drive Current	Ambient Temperature	25,000 hours*	50,000 hours*	60,000 hours*	100,000 hours**	Theoretical L70 hours**
Up to 1A	25°C	99.4%	99.0%	98.9%	98.3%	> 2.4M
	40°C	98.7%	98.3%	98.1%	97.4%	> 1.9M
	50°C	98.2%	97.2%	96.8%	95.2%	> 851,000
1.2A	25°C	99.4%	99.0%	98.9%	98.3%	> 2.4M
	40°C	98.5%	97.9%	97.7%	96.7%	> 1.3M

* Supported by IES TM-21 standards

** Theoretical values represent estimations commonly used; however, refer to the IES position on LED Product Lifetime Prediction, IES PS-10-18, explaining proper use of IES TM-21 and LM-80.

Lumen Multiplier

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97



View GLEON IES files

Nominal Power Lumens (1.2A)

Supplemental Performance Guide**

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
T2	Nominal Power (Watts)	67	129	191	258	320	382	448	511	575	640
	Input Current @ 120V (A)	0.58	1.16	1.78	2.31	2.94	3.56	4.09	4.71	5.34	5.87
	Input Current @ 208V (A)	0.33	0.63	0.93	1.27	1.57	1.87	2.22	2.52	2.8	3.14
T2R	Input Current @ 240V (A)	0.29	0.55	0.80	1.10	1.35	1.61	1.93	2.18	2.41	2.71
	Input Current @ 277V (A)	0.25	0.48	0.70	0.96	1.18	1.39	1.69	1.90	2.09	2.36
	Input Current @ 347V (A)	0.20	0.39	0.57	0.78	0.96	1.15	1.36	1.54	1.72	1.92
T3	Input Current @ 480V (A)	0.15	0.30	0.43	0.60	0.73	0.85	1.03	1.16	1.28	1.45
Optics											
T2	4000K Lumens	7,972	15,580	23,245	30,714	38,056	45,541	53,857	61,024	68,072	75,366
	BUG Rating		B1-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	119	121	122	119	119	119	120	119	118	118
T2R	4000K Lumens	8,462	16,539	24,680	32,609	40,401	48,348	57,176	64,783	72,266	80,010
	BUG Rating		B1-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	126	128	129	126	126	127	128	127	126	125
T3	4000K Lumens	8,125	15,879	23,693	31,307	38,787	46,417	54,893	62,197	69,381	76,818
	BUG Rating		B1-U0-G2	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	121	123	124	121	121	122	123	122	121	120
T3R	4000K Lumens	8,306	16,232	24,220	32,001	39,651	47,447	56,114	63,580	70,924	78,523
	BUG Rating		B1-U0-G2	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	124	126	127	124	124	124	125	124	123	123
T4FT	4000K Lumens	8,173	15,970	23,831	31,488	39,014	46,686	55,212	62,558	69,783	77,261
	BUG Rating		B1-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	122	124	125	122	122	122	123	122	121	121
T4W	4000K Lumens	8,067	15,764	23,522	31,080	38,510	46,082	54,499	61,751	68,881	76,263
	BUG Rating		B2-U0-G2	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	120	122	123	120	120	121	122	121	120	119
SL2	4000K Lumens	7,958	15,552	23,206	30,662	37,989	45,462	53,763	60,920	67,952	75,235
	BUG Rating		B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	119	121	121	119	119	119	120	119	118	118
SL3	4000K Lumens	8,124	15,877	23,690	31,302	38,784	46,410	54,885	62,189	69,372	76,805
	BUG Rating		B1-U0-G2	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	121	123	124	121	121	121	123	122	121	120
SL4	4000K Lumens	7,719	15,085	22,510	29,741	36,850	44,097	52,148	59,089	65,913	72,977
	BUG Rating		B1-U0-G3	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	115	117	118	115	115	115	116	116	115	114
5NQ	4000K Lumens	8,380	16,375	24,436	32,287	40,003	47,870	56,610	64,144	71,552	79,221
	BUG Rating		B3-U0-G1	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	125	127	128	125	125	125	126	126	124	124
5MQ	4000K Lumens	8,534	16,676	24,885	32,881	40,739	48,752	57,653	65,326	72,868	80,679
	BUG Rating		B3-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	127	129	130	127	127	128	129	128	127	126
5WQ	4000K Lumens	8,556	16,723	24,951	32,968	40,847	48,881	57,808	65,499	73,063	80,894
	BUG Rating		B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	128	130	131	128	128	128	129	128	127	126
SLL/SLR	4000K Lumens	7,140	13,951	20,817	27,506	34,081	40,783	48,231	54,649	60,959	67,492
	BUG Rating		B1-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	107	108	109	107	107	107	108	107	106	105
RW	4000K Lumens	8,304	16,228	24,215	31,994	39,641	47,437	56,100	63,566	70,907	78,504
	BUG Rating		B3-U0-G1	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
	Lumens per Watt	124	126	127	124	124	124	125	124	123	123
AFL	4000K Lumens	8,335	16,287	24,302	32,110	39,784	47,610	56,303	63,796	71,163	78,790
	BUG Rating		B1-U0-G1	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4	B4-U0-G4	B4-U0-G5
	Lumens per Watt	124	126	127	124	124	125	126	125	124	123

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

Nominal Power Lumens (1A)

Supplemental Performance Guide**

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		59	113	166	225	279	333	391	445	501	558
Input Current @ 120V (A)		0.51	1.02	1.53	2.03	2.55	3.06	3.56	4.08	4.60	5.07
Input Current @ 208V (A)		0.29	0.56	0.82	1.11	1.37	1.64	1.93	2.19	2.46	2.75
Input Current @ 240V (A)		0.26	0.48	0.71	0.96	1.19	0.41	1.67	1.89	2.12	2.39
Input Current @ 277V (A)		0.23	0.42	0.61	0.83	1.03	1.23	1.45	1.65	1.84	2.09
Input Current @ 347V (A)		0.17	0.32	0.50	0.64	0.82	1.00	1.14	1.32	1.50	1.68
Input Current @ 480V (A)		0.14	0.24	0.37	0.48	0.61	0.75	0.91	0.99	1.12	1.28
Optics											
T2	4000K Lumens	7,267	14,201	21,190	28,000	34,692	41,515	49,096	55,627	62,053	68,703
	BUG Rating		B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	123	126	128	124	124	125	126	125	124	123
T2R	4000K Lumens	7,715	15,077	22,497	29,725	36,829	44,073	52,122	59,056	65,876	72,937
	BUG Rating		B1-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	131	133	136	132	132	132	133	133	131	131
T3	4000K Lumens	7,408	14,475	21,598	28,539	35,358	42,313	50,039	56,698	63,246	70,024
	BUG Rating		B1-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	126	128	130	127	127	127	128	127	126	125
T3R	4000K Lumens	7,571	14,798	22,078	29,172	36,145	43,253	51,153	57,959	64,653	71,581
	BUG Rating		B1-U0-G2	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	128	131	133	130	130	130	131	130	129	128
T4FT	4000K Lumens	7,451	14,559	21,725	28,703	35,564	42,558	50,330	57,027	63,613	70,430
	BUG Rating		B1-U0-G2	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	126	129	131	128	127	128	129	128	127	126
T4W	4000K Lumens	7,354	14,371	21,442	28,333	35,105	42,007	49,681	56,291	62,792	69,521
	BUG Rating		B1-U0-G2	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	125	127	129	126	126	126	127	126	125	125
SL2	4000K Lumens	7,254	14,178	21,155	27,951	34,631	41,443	49,011	55,533	61,944	68,584
	BUG Rating		B1-U0-G2	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	123	125	127	124	124	124	125	125	124	123
SL3	4000K Lumens	7,406	14,474	21,596	28,534	35,355	42,307	50,033	56,690	63,237	70,014
	BUG Rating		B1-U0-G2	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	126	128	130	127	127	127	128	127	126	125
SL4	4000K Lumens	7,037	13,751	20,519	27,112	33,592	40,198	47,538	53,864	60,087	66,524
	BUG Rating		B1-U0-G3	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	119	122	124	120	120	121	122	121	120	119
5NQ	4000K Lumens	7,640	14,928	22,275	29,431	36,465	43,637	51,606	58,472	65,226	72,218
	BUG Rating		B3-U0-G1	B4-U0-G2	B6-U0-G2	B6-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	129	132	134	131	131	131	132	131	130	129
5MQ	4000K Lumens	7,779	15,203	22,684	29,973	37,137	44,441	52,555	59,549	66,427	73,545
	BUG Rating		B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	132	135	137	133	133	133	134	134	133	132
5WQ	4000K Lumens	7,800	15,243	22,744	30,052	37,236	44,560	52,697	59,708	66,603	73,742
	BUG Rating		B3-U0-G2	B4-U0-G2	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	132	135	137	134	133	134	135	134	133	132
SLL/ SLR	4000K Lumens	6,510	12,719	18,977	25,075	31,067	37,176	43,967	49,817	55,569	61,525
	BUG Rating		B1-U0-G2	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	110	113	114	111	111	112	112	112	111	110
RW	4000K Lumens	7,570	14,793	22,073	29,165	36,137	43,243	51,140	57,945	64,637	71,564
	BUG Rating		B3-U0-G1	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	128	131	133	130	130	130	131	130	129	128
AFL	4000K Lumens	7,598	14,847	22,154	29,272	36,267	43,400	51,326	58,156	64,872	71,824
	BUG Rating		B1-U0-G1	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4	B4-U0-G4	B4-U0-G4
	Lumens per Watt	129	131	133	130	130	130	131	131	129	129

* Nominal data for 700 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

Nominal Power Lumens (800ma)

Supplemental Performance Guide**

Number of Light Squares		1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)		44	85	124	171	210	249	295	334	374	419
Input Current @ 120V (A)		0.39	0.77	1.13	1.54	1.90	2.26	2.67	3.03	3.39	3.80
Input Current @ 208V (A)		0.22	0.44	0.62	0.88	1.06	1.24	1.50	1.68	1.87	2.12
Input Current @ 240V (A)		0.19	0.38	0.54	0.76	0.92	1.08	1.30	1.46	1.62	1.84
Input Current @ 277V (A)		0.17	0.36	0.47	0.72	0.83	0.95	1.19	1.31	1.42	1.67
Input Current @ 347V (A)		0.15	0.24	0.38	0.49	0.63	0.77	0.87	1.01	1.15	1.52
Input Current @ 480V (A)		0.11	0.18	0.29	0.37	0.48	0.59	0.66	0.77	0.88	0.96
Optics											
T2	4000K Lumens	5,871	11,474	17,121	22,622	28,029	33,542	39,667	44,944	50,134	55,508
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	133	135	138	132	133	135	134	135	134	132
T2R	4000K Lumens	6,233	12,181	18,176	24,016	29,756	35,608	42,111	47,714	53,224	58,929
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5
	Lumens per Watt	142	143	147	140	142	143	143	143	142	141
T3	4000K Lumens	5,986	11,695	17,450	23,057	28,568	34,186	40,430	45,809	51,099	56,576
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	136	138	141	135	136	137	137	137	137	135
T3R	4000K Lumens	6,117	11,955	17,838	23,569	29,203	34,946	41,328	46,827	52,235	57,832
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	139	141	144	138	139	140	140	140	140	138
T4FT	4000K Lumens	6,019	11,763	17,551	23,190	28,734	34,384	40,663	46,074	51,396	56,904
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	137	138	142	136	137	138	138	138	137	136
T4W	4000K Lumens	5,942	11,610	17,324	22,891	28,363	33,940	40,138	45,480	50,732	56,169
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	135	137	140	134	135	136	136	136	136	134
SL2	4000K Lumens	5,862	11,454	17,091	22,583	27,980	33,484	39,598	44,867	50,048	55,411
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	133	135	138	132	133	134	134	134	134	132
SL3	4000K Lumens	5,985	11,694	17,447	23,053	28,565	34,182	40,424	45,804	51,092	56,568
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	136	138	141	135	136	137	137	137	137	135
SL4	4000K Lumens	5,685	11,111	16,577	21,905	27,140	32,478	38,409	43,520	48,546	53,748
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G4	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	129	131	134	128	129	130	130	130	130	128
5NQ	4000K Lumens	6,172	12,061	17,997	23,778	29,462	35,256	41,694	47,242	52,699	58,347
	BUG Rating	B2-U0-G1	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
	Lumens per Watt	140	142	145	139	140	142	141	141	141	139
5MQ	4000K Lumens	6,285	12,283	18,328	24,217	30,004	35,907	42,462	48,112	53,669	59,421
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
	Lumens per Watt	143	145	148	142	143	144	144	144	144	142
5WQ	4000K Lumens	6,303	12,317	18,377	24,281	30,085	36,001	42,575	48,241	53,812	59,579
	BUG Rating	B3-U0-G1	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	143	145	148	142	143	145	144	144	144	142
SLL/SLR	4000K Lumens	5,260	10,276	15,332	20,259	25,101	30,037	35,522	40,249	44,898	49,708
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	120	121	124	118	120	121	120	121	120	119
RW	4000K Lumens	6,116	11,952	17,834	23,563	29,196	34,938	41,317	46,817	52,224	57,819
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	139	141	144	138	139	140	140	140	140	138
AFL	4000K Lumens	6,139	11,996	17,899	23,650	29,302	35,064	41,468	46,987	52,412	58,030
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4
	Lumens per Watt	140	141	144	138	140	141	141	141	140	138

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

Nominal Power Lumens (600mA)

Number of Light Squares	1	2	3	4	5	6	7	8	9	10
Nominal Power (Watts)	34	66	96	129	162	193	226	257	290	323
Input Current @ 120V (A)	0.30	0.58	0.86	1.16	1.44	1.73	2.03	2.33	2.59	2.89
Input Current @ 208V (A)	0.17	0.34	0.49	0.65	0.84	0.99	1.14	1.30	1.48	1.63
Input Current @ 240V (A)	0.15	0.30	0.43	0.56	0.74	0.87	1.00	1.13	1.30	1.43
Input Current @ 277V (A)	0.14	0.28	0.41	0.52	0.69	0.81	0.93	1.04	1.22	1.33
Input Current @ 347V (A)	0.11	0.19	0.30	0.39	0.49	0.60	0.69	0.77	0.90	0.99
Input Current @ 480V (A)	0.08	0.15	0.24	0.30	0.38	0.48	0.53	0.59	0.71	0.77

Optics										
T2	4000K Lumens	4,787	9,357	13,961	18,448	22,856	27,353	32,347	36,651	40,884
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	141	142	145	143	141	142	143	143	141
T2R	4000K Lumens	5,083	9,934	14,822	19,585	24,266	29,038	34,341	38,911	43,404
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
	Lumens per Watt	150	151	154	152	150	150	152	151	150
T3	4000K Lumens	4,880	9,537	14,231	18,803	23,296	27,878	32,970	37,358	41,671
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	144	145	148	146	144	144	146	145	144
T3R	4000K Lumens	4,988	9,749	14,547	19,220	23,814	28,497	33,703	38,188	42,598
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	147	148	152	149	147	148	149	149	147
T4FT	4000K Lumens	4,909	9,591	14,312	18,911	23,432	28,040	33,161	37,574	41,913
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	144	145	149	147	145	145	147	146	145
T4W	4000K Lumens	4,845	9,468	14,128	18,668	23,130	27,678	32,732	37,088	41,371
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	143	143	147	145	143	143	145	144	143
SL2	4000K Lumens	4,779	9,341	13,937	18,416	22,818	27,305	32,292	36,589	40,813
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	141	142	145	143	141	141	143	142	141
SL3	4000K Lumens	4,879	9,536	14,229	18,800	23,294	27,874	32,965	37,351	41,666
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	144	144	148	146	144	144	146	145	144
SL4	4000K Lumens	4,637	9,059	13,519	17,863	22,132	26,486	31,322	35,490	39,589
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	136	137	141	138	137	137	139	138	137
5NQ	4000K Lumens	5,033	9,835	14,676	19,392	24,026	28,751	34,002	38,526	42,975
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G2	B5-U0-G3	B5-U0-G3
	Lumens per Watt	148	149	153	150	148	149	150	150	148
5MQ	4000K Lumens	5,126	10,015	14,946	19,747	24,468	29,281	34,628	39,236	43,766
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	151	152	156	153	151	152	153	153	151
5WQ	4000K Lumens	5,139	10,043	14,985	19,801	24,533	29,359	34,721	39,339	43,883
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	151	152	156	153	151	152	154	153	151
SLL/SLR	4000K Lumens	4,289	8,380	12,502	16,520	20,469	24,494	28,967	32,823	36,613
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	126	127	130	128	126	127	128	128	126
RW	4000K Lumens	4,987	9,746	14,543	19,215	23,808	28,491	33,695	38,178	42,587
	BUG Rating	B2-U0-G1	B3-U0-G1	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4
	Lumens per Watt	147	148	151	149	147	148	149	149	147
AFL	4000K Lumens	5,007	9,782	14,597	19,285	23,896	28,594	33,817	38,317	42,742
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3
	Lumens per Watt	147	148	152	149	148	148	150	149	147

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

Control Options

0-10V (DIM)

This fixture is offered standard with 0-10V dimming driver(s). The DIM option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (BPC, PR and PR7)

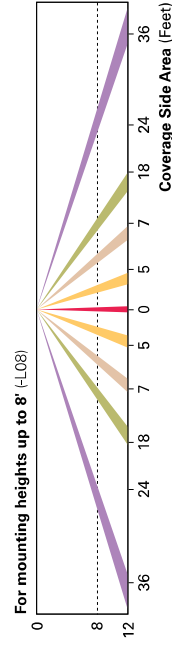
Optional button-type photocontrol (BPC) and photocontrol receptacles (PR and PR7) provide a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PR7 receptacle.

After Hours Dim (AHD)

This feature allows photocontrol-enabled luminaires to achieve additional energy savings by dimming during scheduled portions of the night. The dimming profile will automatically take effect after a "dusk-to-dawn" period has been calculated from the photocontrol input. Specify the desired dimming profile for a simple, factory-shipped dimming solution requiring no external control wiring. Reference the After Hours Dim supplemental guide for additional information.

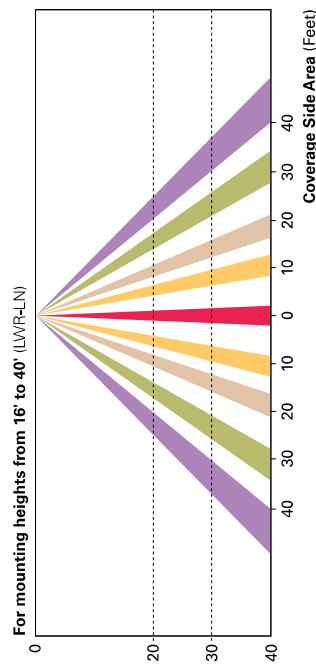
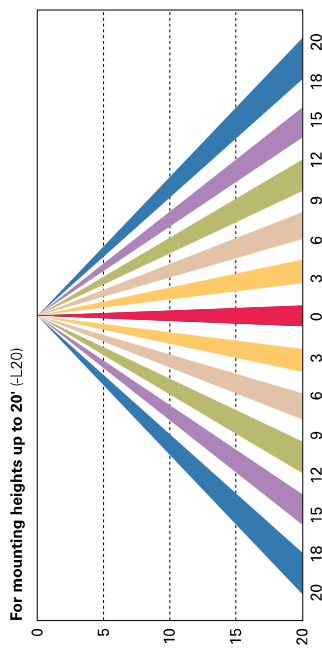
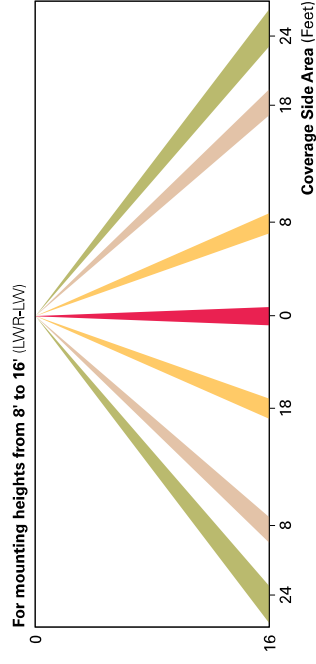
Dimming Occupancy Sensor (SPB, MS/DIM-LXX, MS/X-LXX and MS-LXX)

These sensors are factory installed in the luminaire housing. When the SPB or MS/DIM sensor options are selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MS/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of five minutes. The MS-LXX sensor is factory preset to turn the luminaire off after five minutes of no activity. The MS/X-LXX is also preset for five minutes and only controls the specified number of light engines to maintain steady output from the remaining light engines. SPB motion sensors require the Sensor Configuration mobile application by Wattstopper to change factory default dimming level, time delay, sensitivity and other parameters. Available for iOS and Android devices. The SPB sensor is factory preset to dim down to approximately 10% power with a time delay of five minutes. The MS/DIM occupancy sensors require the FSIR-100 programming tool to adjust factory defaults.



Enlightened Wireless Control and Monitoring System (LWR-LW and LWR-LN)

Enlightened is a connected lighting solution that combines a broad selection of energy-efficient LED luminaires with a powerful integrated wireless sensor system. The sensor controls the lighting system in compliance with the latest energy codes and collects valuable data about building performance and use. Software applications turn the granular data into information through energy dashboards and specialized apps that make it simple and help optimize the use of building resources, beyond lighting.



WaveLinX Wireless Outdoor Lighting Control Module (WOLC-7P-10A)

The 7-pin wireless outdoor lighting control module enables WaveLinX to control outdoor area, site and flood lighting. WaveLinX controls outdoor lighting using schedules to provide ON, OFF and dimming controls based on astronomical or time schedules based on a 7 day week.

LumenSafe Integrated Network Security Camera (LD)

Cooper Lighting Solutions brings ease of camera deployment to a whole new level. No additional wiring is needed beyond providing line power to the luminaire. A variety of networking options allows security integrators to design the optimal solution for active surveillance. As the ideal solution to meet the needs for active surveillance, the LumenSafe integrated network camera is a streamlined, outdoor-ready fixed dome that provides HDTV 1080p video. This IP camera is optimally designed for deployment in the video management system or security software platform of choice.

Synapse (DIM10)

SimplySNAP integrated wireless controls system by Synapse. Includes factory installed DIM10 Synapse control module and MS/DC motion sensor; requires additional Synapse system components for operation. Contact Synapse at www.synapsewireless.com for product support, warranty and terms and conditions.

APPENDIX 4

ITE TRIP GENERATION SHEETS

Land Use: 221

Multifamily Housing (Mid-Rise)

Description

Mid-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors). Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (Land Use 225), and mid-rise residential with 1st-floor commercial (Land Use 231) are related land uses.

Additional Data

In prior editions of *Trip Generation Manual*, the mid-rise multifamily housing sites were further divided into rental and condominium categories. An investigation of vehicle trip data found no clear differences in trip making patterns between the rental and condominium sites within the ITE database. As more data are compiled for future editions, this land use classification can be reinvestigated.

For the six sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.46 residents per occupied dwelling unit.

For the five sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 95.7 percent of the total dwelling units were occupied.

Time-of-day distribution data for this land use are presented in Appendix A. For the eight general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:00 and 8:00 a.m. and 4:45 and 5:45 p.m., respectively.

For the four dense multi-use urban sites with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:15 and 5:15 p.m., respectively. For the three center city core sites with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 6:45 and 7:45 a.m. and 5:00 and 6:00 p.m., respectively.

For the six sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.46 residents per occupied dwelling unit.

For the five sites for which data were provided for both occupied dwelling units and total dwelling units, an average of 95.7 percent of the units were occupied.

The average numbers of person trips per vehicle trip at the five center city core sites at which both person trip and vehicle trip data were collected were as follows:

- 1.84 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.94 during Weekday, AM Peak Hour of Generator
- 2.07 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 2.59 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 32 dense multi-use urban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.90 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.90 during Weekday, AM Peak Hour of Generator
- 2.00 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 2.08 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 13 general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.56 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.88 during Weekday, AM Peak Hour of Generator
- 1.70 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 2.07 during Weekday, PM Peak Hour of Generator

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), British Columbia (CAN), California, Delaware, District of Columbia, Florida, Georgia, Illinois, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, Ontario, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, Virginia, and Wisconsin.

Source Numbers

168, 188, 204, 305, 306, 321, 357, 390, 436, 525, 530, 579, 638, 818, 857, 866, 901, 904, 910, 912, 918, 934, 936, 939, 944, 947, 948, 949, 959, 963, 964, 966, 967, 969, 970

Multifamily Housing (Mid-Rise) (221)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 53

Avg. Num. of Dwelling Units: 207

Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate

0.36

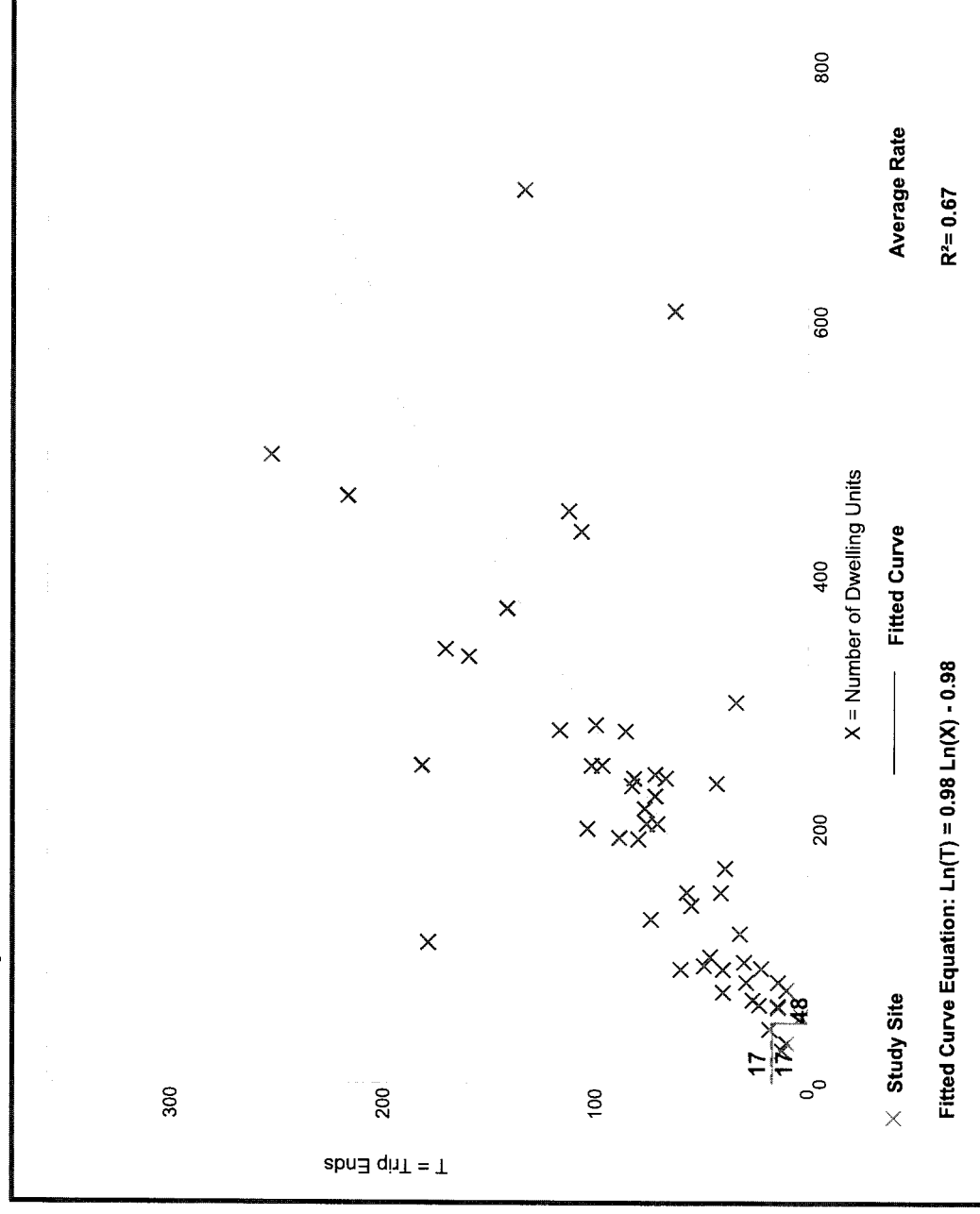
Range of Rates

0.06 - 1.61

Standard Deviation

0.19

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 60

Avg. Num. of Dwelling Units: 208

Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate

0.44

Range of Rates

0.15 - 1.11

Standard Deviation

0.19

Data Plot and Equation

