



July 26, 2021

Planning Board
Town of Canandaigua
5440 Routes 5 & 20 West
Canandaigua, New York 14424

**Re: 2536 Rochester Road
Response to PRC Comments**

2759

Dear Planning Board Members:

On behalf of the applicant, Apogee Development LLC, we have reviewed the comments from MRB Group (dated July 23, 2021), Town of Farmington Water & Sewer (dated July 9, 2021), the City of Canandaigua Fire Department (dated July 1, 2021), the NYS Department of Transportation (dated June 23, 2021), the Ontario County Planning Board Meeting (dated July 14, 2021), and the recommendations from the ECB draft meeting minutes (dated July 8, 2021) for the above-referenced project, and have the following responses for the Town's consideration:

MRB Group (dated July 23, 2021)

Site Plan and General Comments

1. Building elevations and/or architectural renderings (if not done so already) should be provided for the Planning Board's review. The size of the proposed building should be labeled on the plans.

Building renderings were provided as part of the application and have also been enclosed with this letter for reference. The building is 120'x54' and notation will be added to the Site Plan (2759-04) as requested.

2. The proposed work within the NYS Route 332 right-of-way will require review and approval from NYSDOT. A copy of all correspondence with NYSDOT is to be provided to the Town Development Office.

Acknowledged.

3. The source and date of survey information should be noted on the plans.

Field survey of the project site was completed by BME Associates on 4/16/2021 and notation in this regard will be added to the Site Plans.

4. The grantee of the existing storm sewer easement should be indicated on the plans. Is there any existing easement over the watermain within the front setback? If not, an easement may need to be provided.

The grantee of the existing storm sewer easement is the Town of Canandaigua and will be added to the plans. There is no record of an easement for the existing watermain along the NYS RT 332 frontage and a 10' wide easement will be provided.

5. All approved variances (if any) should include the date of approval on the plans and should note the conditions of each variance approval (if any).

The Site Notes will be updated with the approved front and rear setback variances received for the property at the 7/20/2021 Town of Canandaigua ZBA meeting.

6. A stormwater facility easement may need to be provided to the Town of Canandaigua. Said easement should include a suitable route from a public right of way and be depicted on the plans. All proposed easements are to be provided to the Town Development Office and MRB Group for review.

The applicant intends to provide a general stormwater facility easement to the Town of Canandaigua to access the site using the parking area and drive lanes for purposes of inspecting the underground stormwater chamber system, bio-retention practices, and swale area in the southwest corner of the property

7. A statement of operations is to be provided and shall include the following information:
- A description of each proposed use
 - The anticipated maximum number of employees on site for each use
 - The hours and days of operation of each use
 - Whether or not there will be any commercial vehicles associated with each use
 - Anticipated delivery needs for each use.

The tenants of the building have not been finalized however an approximate breakdown of the five portions of the building currently planned is provided in the table below. Any delivery of merchandise for the retail uses or restaurant would occur off hours with a box truck.

a.	Retail (±2,200 sf)	Retail (±887 sf)	Retail (±887 sf)	Office/Retail (±1,737 sf)	Restaurant (±2,200 sf patron area)
b.	3 employees	2 employees	2 employees	3 employees (retail)	7 employees
c.	10am-8pm	10am-8pm	10am-8pm	Varies	11am – 10pm
d.	Not anticipated	Not anticipated	Not anticipated	Not anticipated	Not anticipated
e.	Merchandise	Merchandise	Merchandise	Merchandise	Merchandise

8. Vehicle turning movement analysis should be provided to demonstrate how a garbage truck will navigate to and from the proposed dumpster enclosure without intruding upon the bioretention area. Posts may need to be provided around said bioretention area to prevent intrusion.

A turning template for a rear load garbage truck has been included with this letter. The bio-retention areas are proposed with plantings to help create visual awareness of these areas within the parking lot.

Utility, Grading, and Erosion & Sediment Control Plans

9. The location of the fire department connection and RPZ should be shown on the plans.

Acknowledged.

10. The stone aprons around the bioretention areas should be a stone diaphragm instead, and the bioretention area underdrains should be shown on the plans with cleanouts.

The stone aprons will be revised to indicate a stone diaphragm and underdrain piping/cleanouts will be added to the utility plan.

11. An easement or agreement may be required for the riprap and other construction activities extending into the railroad right of way.

The rip-rap at end sections D-3A and D-3B will be removed as it is only required for outlet protection. The proposed check dam near end section D-3B will be adjusted so it is clearly indicated to be placed within the property and noted as such. No other construction activities are proposed within the railroad right of way.

12. The notes regarding protection of bioretention areas and installation of soil media should also be applied to the proposed dry swale.

Acknowledged.

13. Silt fence or silt sock should extend along the southeast property line (near inlet D-2A). Sediment controls may also need to be provided along the lot line shared with the railroad from the dumpster enclosure to the northern corner.

Silt fence will be added to the plans in the requested areas.

14. Structure D-1 is labeled with a top of grate elevation. If a grate is proposed, inlet protection should be shown for this structure on the E&SC plan.

Structure D-1 does not have a grate and the designation label will be revised accordingly.

15. Will there be any interconnection between the storm chambers at the base invert, or only at the manifold invert?

The flow of stormwater through the system is strongly influenced by the surrounding stone media. The stone located immediately around the chambers is an integral part of the system composed of stone with a 40% porosity. The voids in the surrounding stone provide both storage and a path for water to flow between the chamber systems; as such the water level within the chambers will typically be the same as the water level in the surrounding stone. Attached is page #9 of StormTech Technical Note 6.32, which discusses flow paths through the stone layer. Table 5 on the document indicates there will be between 2.5cfs-6.67cfs of flow per length of MC-3500 chamber (14 for the proposed configuration) while using a #3 / #4 stone gradation, which is indicated in the details provided on drawing #2759-15. Thus, for the type of the system proposed, additional manifolds are not necessary as the stone, as intended by the manufacturer, will disperse the inflow through the system.

Landscape, Lighting, and Details

16. What is the purpose of having cobblestone paths extend into the bioretention areas? Also, the field inlets and storm pipes/underdrains should be shown on the bioretention area landscaping plans to verify that there aren't any conflicts.

The cobble stone paths are intended for aesthetic purposes and to provide access to maintain all of the proposed plantings included for these area shown on drawing 2759-10. The underdrains and cleanouts will be added to the plans as requested.

17. Full manufacturer cut sheets should be provided for all proposed exterior lighting.

Lighting cut sheets have been enclosed with this letter.

18. True photometric analysis should be performed for the proposed lighting, and the photometric contours should be labeled. Also, sufficient information is to be provided to demonstrate that the project meetings the illuminance and uniformity requirements of § 220-77.I of the Town Code.

The project was designed to meet the intent of § 220-77.I of the Town Code and a photometric point plot of the property will be prepared and submitted for review under separate cover.

19. The following notes regarding phosphorous use should be added to the landscaping plan:

- No Phosphorous shall be used at planting time unless soil testing has been completed and tested by a Horticultural Testing Lab and the soil tests specifically indicate a phosphorous deficiency that is harmful, or will prevent new lawns and plantings from establishing properly.
- If soil tests indicate a phosphorous deficiency that will impact plant and lawn establishment, phosphorous shall be applied at the minimum recommended level prescribed in the soil test following all NYS DEC regulations.

Acknowledged.

20. All Town of Canandaigua Standard Notes and Standard Details should be replaced with the 2018 versions.

Acknowledged.

21. The dry swale soil media should be the same soil used for the bioretention areas.

Acknowledged.

22. A full Stormwater Pollution Prevention Plan (SWPPP) in compliance with GP-0-20-001 will need to be prepared and provided for review.

A SWPPP will be provided under separate cover for review.

Engineer's Report

23. The following comments pertain to the hydrology model:
- a. Based upon the utility plans, the underground detention system connects into the existing, cut 24" storm pipe at a manhole, whereas this system bypasses this pipe section in the hydrology model. The model should be revised to combine the flows of nodes 9 and 15 at the existing, cut pipe; or, provide calculations demonstrating that the 24" pipe can handle the flows of both nodes combined.

The hydraulic model has been updated as requested and will be included in an updated Engineer's Report to be submitted under separate cover for review.

24. As the proposed project does not involve redevelopment, the use of an alternative practice to provide WQv would be considered a deviation from the design standards. Additional information is to be provided to justify the use of an alternative practice instead of a standard SMP or GI practice. Also, information is to be provided to demonstrate that the practice is properly sized,

provides the amount of WQv claimed, and meets the required minimum standard of 80% removal of Total Suspended Solids, and 40% phosphorus removal. In addition, the proposed ADS Barracuda unit is not on the NYSDEC list of verified proprietary practices for new development. If a standard SMP or GI practice cannot be utilized, it is encouraged that a verified proprietary practice be utilized instead of an unverified practice.

Although the project site has been vacant for over 5 years and does not classify for redevelopment per the NYSDEC Stormwater Management Design Manual Chapter 9, it should be noted the property was previously developed as a gas/service station. The existing subsoils have been compacted from the previous uses and provide limited to no infiltration capability reducing the efficiency of the bio-retention practices and the WQv/RRv they provide. The proposed CDS unit is acceptable under redevelopment conditions and provides additional protection upstream of the underground chamber system. Sizing calculations for the CDS unit will be provided to show the unit's treatment capacity is adequate under the WQv rainfall event (1.0 inch). It should be noted the southwest portion of the project is being used to manage and bypass the large amount of offsite runoff directed to the project site from below the railroad tracks and from the Top's stormwater pond. If no existing offsite drainage was being directed at the project site this area would have been utilized for a standard SMP practice (ie. wet pond) to provide both WQv and quantity controls, instead of providing an underground chamber system and CDS units as currently proposed.

25. The CDS unit contributing drainage area should be indicated on the WQv/RRv map.

Acknowledged.

26. The proposed project will be required to enter into a Stormwater Maintenance Agreement with the Town of Canandaigua.

Acknowledged.

27. Maintenance information should be provided for all proposed stormwater management practices.

Maintenance information for the proposed stormwater management practices will be included in the SWPPP, to be submitted for review under separate cover.

Town of Farmington Water & Sewer (dated July 9, 2021)

28. Utility Note # 14 Needs to state 4" DR-14 PVC Pipe is to be installed not Ductile iron cement lined class 52.

The utility note will be revised as requested.

29. Utility Note # 15 Needs to state 3,000 PSI concrete is to be used for water thrust blocking.

The utility note will be revised as requested.

30. Tap 20" watermain on 332 and have contractor verify type, size, and location prior to construction and notify design engineer of any discrepancies.

The notation at the point of connection will be updated as requested.

City of Canandaigua Fire Department (dated July 1, 2021)

- Please ensure fire department sprinkler connection (FDC) is a 4" Storz with 30 degree down angle.

Notation has been added to the plans indicating the FDC connection is to be a 4" Storz with 30 degree down angle.

- Please install a Knox Box per Fire Department's recommendations.

Notation has been added to the plans indicating a Knox Box is to be installed per Fire Department's recommendation.

NYS Department of Transportation (dated June 23, 2021)

It looks like there is not much going on in the State right-of-way, except for sidewalk and drainage. Those connections will need a permit. The driveway shows it to stay in the same location, so nothing needed for that. Just recently I was discussing this project with BME Associates and let them know I would be interested in their plans and their drainage report. I see something contradictory to the record plans and would like to verify the difference. Also, any utility connections in the State ROW will need a permit.

An Access Permit Application and Utility Permit Application will be made to the NYSDOT for the sidewalk and watermain connections. The application will include a copy of the Engineer's Report containing all the drainage calculations for the project.

Ontario County Planning Board Meeting (dated July 14, 2021)

CLCSD Comments

1. Plans need to be submitted to this office for review and comment. Permit for new connection will be required.

A set of plans has been submitted to the Canandaigua Lake County Sewer District for review and a permit will be obtained for the new sanitary sewer connection.

OCSWDC Comments

1. Outlet of culvert under railway at 775.94 and grading plan shows created berm at 778.84. Alteration of stormwater drainage there may have negative impacts on flow.

The proposed grading does not create a berm in front of the culvert discharging water into the project site under the existing railroad tracks. The proposed grading will continue to allow offsite runoff to enter the site and be directed toward the NYSDOT storm sewer system as it does under existing conditions.

2. Silt fence placed near railway culvert outlet. May be a problem based on stormwater volume.

No silt fence is proposed near the existing culvert located below the railroad tracks in the southwestern corner of the project site.

3. Temporary soil stockpile should have silt fence distance 10' from toe of slope steeper than 3H:1V. Winter conditions require 15'. This area seems too small for soil stockpile under those conditions.

The soil stockpile location was relocated from the northern limits of the project site from a request by Project Review Committee (PRC). Alternative locations on the project site are limited due to the proposed storm sewer bypass system which is required to be installed during the first phases of construction.

4. Concrete washout must be 100' from storm drain inlets (currently <50').

There are no locations on site to place the concrete washout and provide a 100' separation from all proposed and existing drain inlets. Although the concrete washout is located approximately 40' from proposed catch basin DB-1, this inlet would flow directly into the underground stormwater chambers system which the contractor will be required to protect until final stabilization and project completion.

5. Bio-retention area location on site of construction staging area. Compaction may be a problem.

The project site is a formerly developed gas/service station and existing subsoils have already been compacted, providing no infiltration capabilities. Due to the former development both bio-retention areas have been designed as filtering practices.

CPB Comments

1. What landscaping will be provided around the building foundation or in the area between the sidewalk and the curb? Landscaping may include ground plants, planters, hanging baskets etc.

No plantings are proposed around the building foundation, which is occupied mainly by concrete sidewalk, however the applicant anticipates some planters to be placed based upon individual tenants wants. Some additional shrub plantings will be added to the 10' lawn area between the property line and proposed pavement. Trees are not viable in the front lawn area due to the proximity to the existing watermain located along the front property line.

Recommendations from ECB draft meeting minutes (dated July 8, 2021)

1. The applicant presents a detailed project design which addresses drainage concerns and embraces aspects of the Form Based Code which is proposed but currently not approved for implementation. The setback variances are consistent with current neighboring properties and consistent with setbacks outlined in the FBC.

Acknowledged.

2. The request for a decrease in open space requirement is related to a rather large number of parking spaces for this building with its proposed purposes. This should be better justified by the applicant. Also, "any off-street parking area with at least 20 off-street parking spaces shall designate a minimum of 10% of those spaces as reserved only for the handicapped", so accessible parking spaces would need to increase.

The Site Plan (drawing 2759-04) included a breakdown of the required number of parking spaces based upon the anticipated building uses, which is consistent with what is provided on the plans and will be reviewed with the Planning Board at their upcoming meeting.

3. The ECB suggest that consideration be given to the use of permeable ground cover in the parking lot or patio / outdoor dining areas.

The project site is the former location of a gas and service station. Existing subsoils are compacted and provide no infiltration capabilities, therefore permeable pavement or pavers

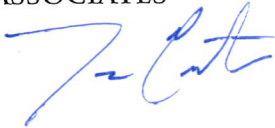
are not able to be utilized for this development. Due to this the bio-retention practices have been sized as filtering practices for the development.

4. The Form Based Code speaks to supporting a connected environment for bicyclists. The concrete sidewalk could become a future shared use path accommodating pedestrian and bicycle traffic, but would require a wider walkway not possible with this proposal. Paving with this project extends all the way to the sidewalk.

There is an existing sidewalk within the NYS RT-322 right of way which may be utilized for both pedestrian and bicyclist access to the project site. The concrete walkways proposed around the building are not intended for bicyclist to loop as there is only one connection onto the public sidewalk along RT-332.

If you require any additional information, or have any questions, please contact our office.

Sincerely,
BME ASSOCIATES



James G. Cretekos, P.E.

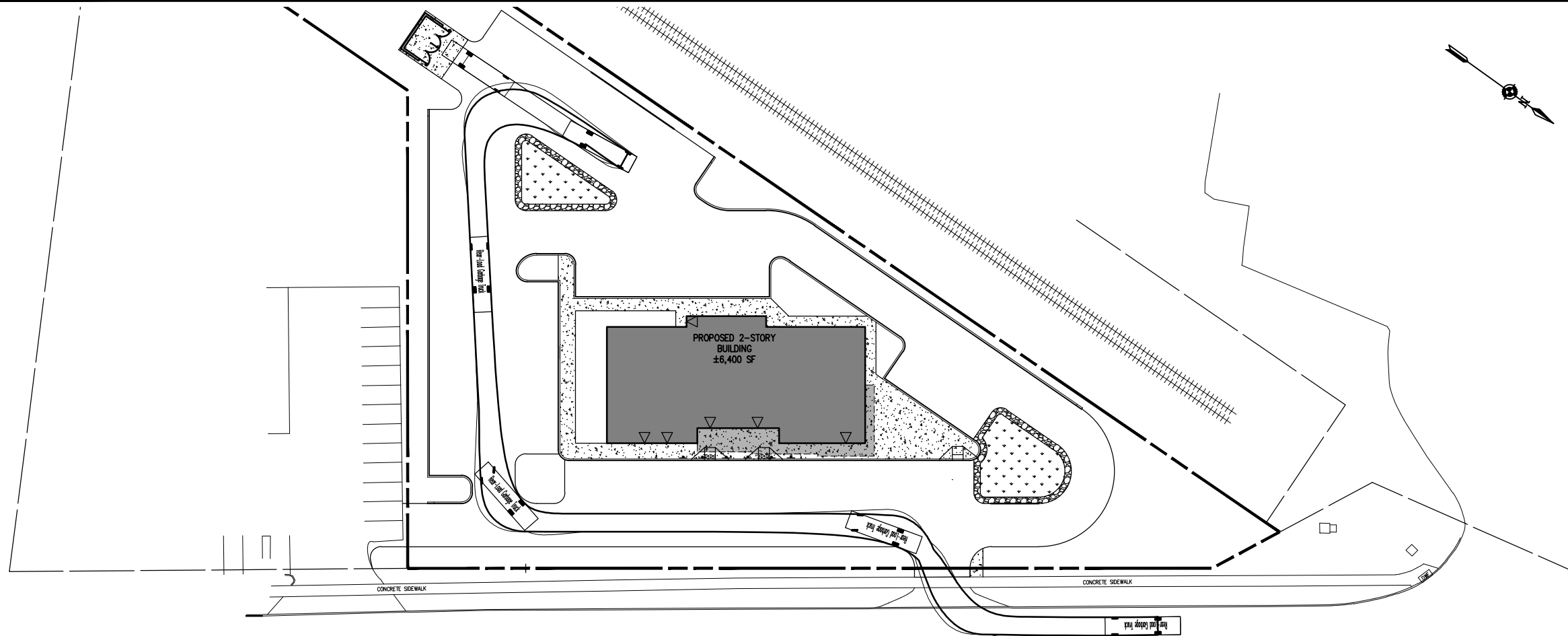
/JGC

c: Bill Dowell; Apogee Development

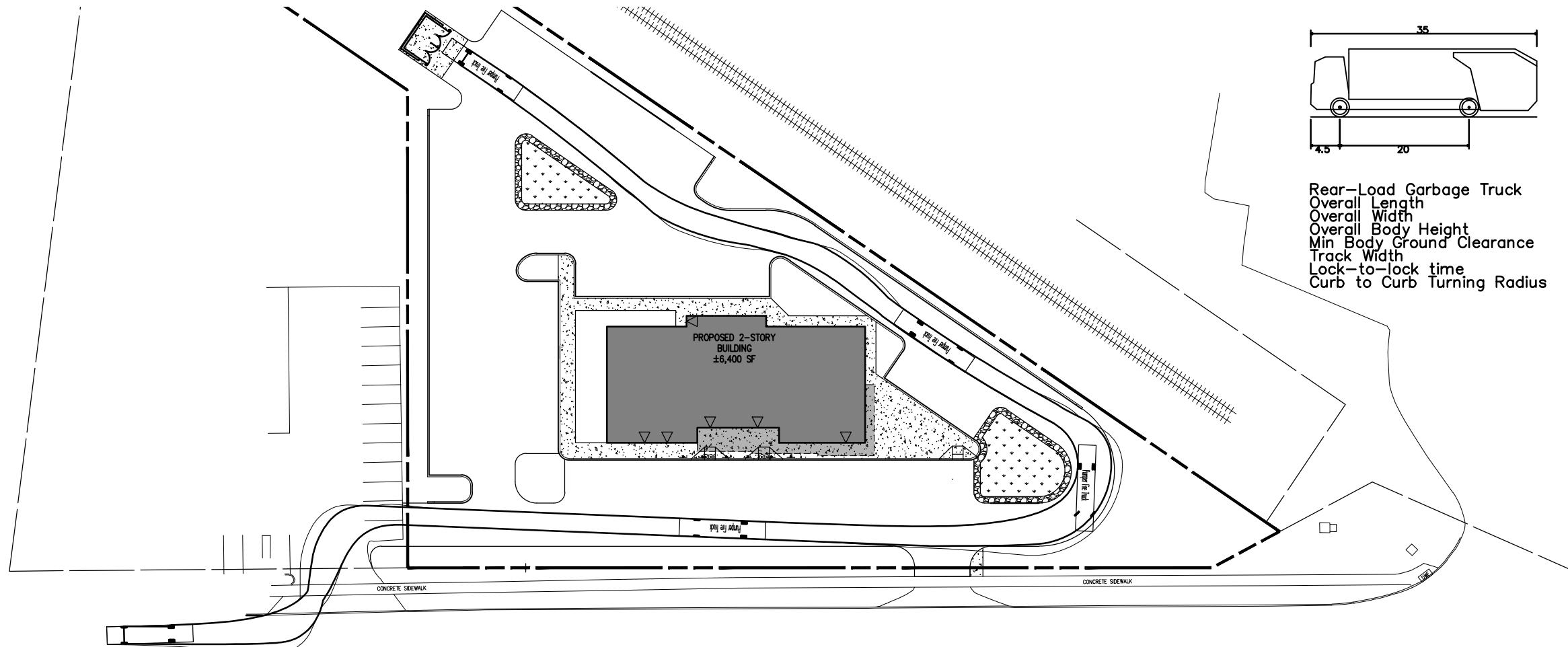




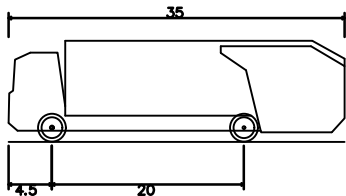




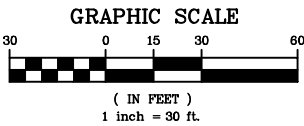
REAR LOAD GARBAGE TRUCK TURNING TEMPLATE (ENTERING MOVEMENT)



REAR LOAD GARBAGE TRUCK TURNING TEMPLATE (EXIT MOVEMENT)



Rear-Load Garbage Truck
Overall Length 35.000ft
Overall Width 8.375ft
Overall Body Height 10.546ft
Min Body Ground Clearance 1.000ft
Track Width 8.375ft
Lock-to-lock time 6.00s
Curb to Curb Turning Radius 29.300ft



Drawing Alteration
The following is an excerpt from the
New York State Education Law Article
145 Section 7209 and applies to this
drawing:
"It is a violation of this law for any
person, unless he is acting under the
direction of a licensed professional
engineer or land surveyor to alter any
item in any way if an item bearing the
seal of an engineer or land surveyor is
altered, the altering engineer or land
surveyor shall affix to the item his seal
and the notation "altered by" followed
by his signature and the date of such
alteration, and a specific description
of the alteration."

REVISIONS	DATE	BY
7		
6		
5		
4		
3		
2		
1		

BME ASSOCIATES
ENGINEERS • SURVEYORS • LANDSCAPE ARCHITECTS
10 LIFT BRIDGE LANE EAST
FAIRPORT, NEW YORK 14450
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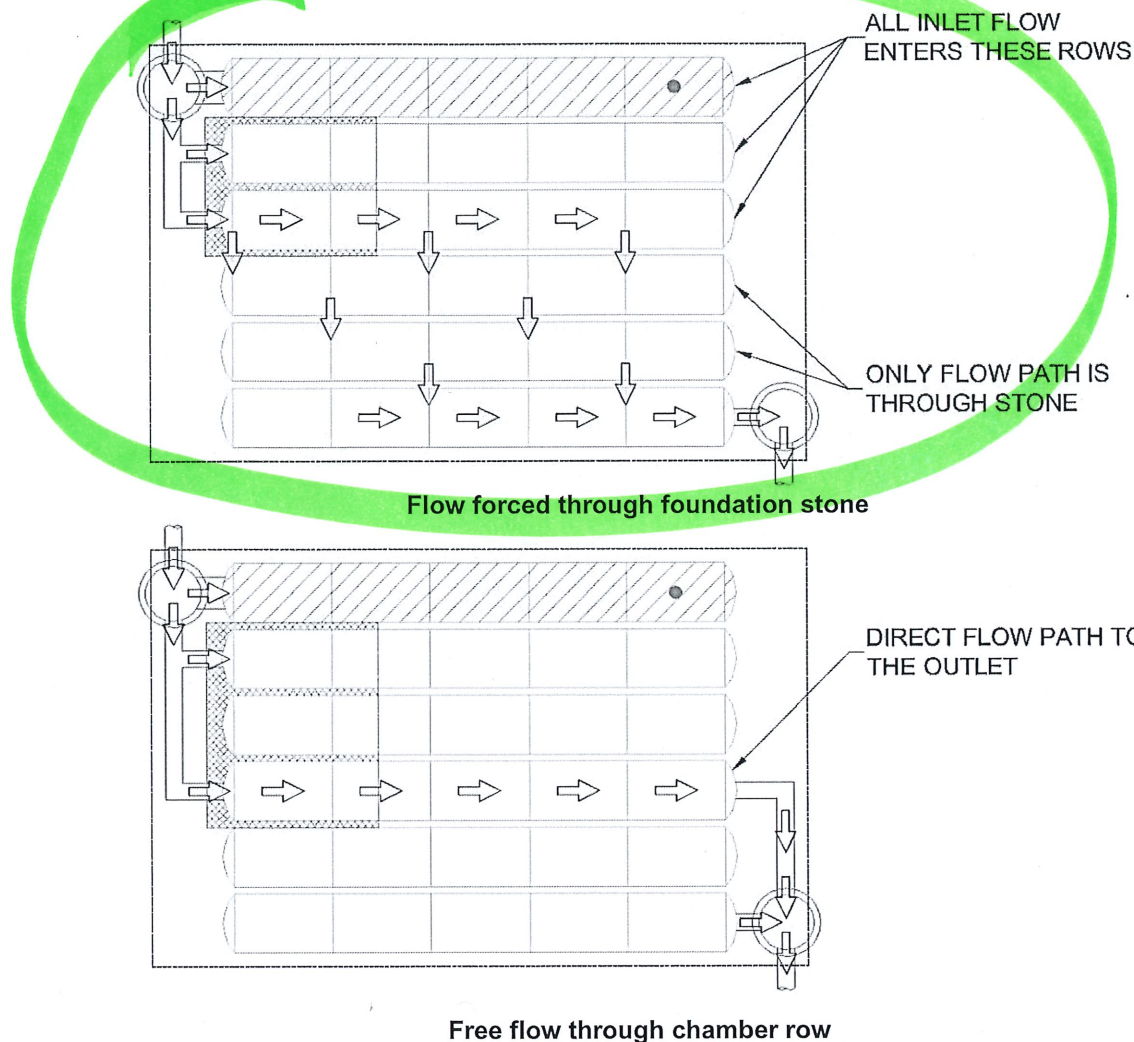
PROJECT 2536 ROCHESTER RD
LOCATION FINAL DESIGN
CLIENT TOWN OF CANADAWA, ONTARIO COUNTY, NEW YORK STATE
APORCE DEVELOPMENT LTD.

DRAWING TITLE
TURNING TEMPLATE (REFUSE)

PROJECT MANAGER
PG VARS
PROJECT ENGINEER
JG CRETEKOS
DRAWN BY
JG CRETEKOS
SCALE 1"=30'
DATE ISSUED JULY 26, 2021
PROJECT NO. 2759
DRAWING NO. EXHIBIT

Figure 5

Flow Path through StormTech Systems based on Manifold Configuration



The aggregate used for StormTech's chambers have permeability's (Darcy k values) that range from $0.1 \frac{ft}{s}$ ($0.03 \frac{m}{s}$) to $1.6 \frac{ft}{s}$ ($0.49 \frac{m}{s}$) (No. 57 and No. 3 respectively) [6]. StormTech has estimated the flow through the stone beneath the chambers (one direction) as:

Table 5

Estimate Flow Rates Through Stone by Gradation and Chamber Model

Stone Gradation	Darcy "k"	Flow by Chamber $cfs \left(\frac{L}{s} \right)$				
		LP-160	SC-310	SC-740	MC-3500	MC-4500
#3	1.6	2.28 (64.5)	3.04 (86.0)	4.17 (118.0)	6.67 (188.7)	4.25 (120.2)
#357, 4, 467, 5	0.6	0.85 (24.0)	1.14 (32.2)	1.60 (45.2)	2.50 (70.7)	1.60 (45.2)
#56, 57	0.1	0.14 (3.9)	0.19 (5.3)	0.26 (7.3)	0.42 (11.8)	0.27 (7.6)



Gardco EcoForm Gen-2 combines economy with performance in an LED area luminaire. Capable of delivering up to 27,800 lumens or more in a compact, low profile LED luminaire, EcoForm offers a new level of customer value. EcoForm features an innovative retrofit arm kit, simplifying site conversions to LED by eliminating the need to drill additional holes in most existing poles. Integral control systems available for further energy savings. Includes Service Tag, our innovative way to provide assistance throughout the life of the product.

Project:	
Location:	
Cat.No:	
Type:	
Lamps:	Qty:
Notes:	

Ordering guide

example: ECF-S-64L-900-NW-G2-AR-5-120-HIS-MGY

Prefix	Number of LEDs	Drive Current	LED Color - Generation	Mounting	Distribution	Voltage	Options					Finish
							Dimming controls	Motion sensing lens	Photo-sensing	Electrical	Luminaire	
ECF-S												
ECF-S EcoForm site and area, small	32L 32 LEDs (2 modules)	365 365mA 530 530mA 700 700mA 1A 1050mA 1.2A 1200mA	WW-G2 Warm White 3000K, 70 CRI Generation 2 NW-G2 Neutral White 4000K, 70 CRI Generation 2 CW-G2 Cool White 5000K, 70 CRI Generation 2	AR Arm Mount (standard) ² <i>The following mounting kits must be ordered separately (See accessories)</i> SF Slip Fitter Mount ³ (fits to 2 3/8" O.D. tenon) WS Wall mount with surface conduit rear entry permitted RAM Retrofit arm mount kit ²	Type 2 2 Type 2 2-90 Rotated left 90° 2-270 Rotated right 270° Type 3 3 Type 3 3-90 Rotated left 90° 3-270 Rotated right 270° Type 4 4 Type 4 4-90 Rotated left 90° 4-270 Rotated right 270° Type 5 5 Type 5 5W Type 5W AFR Auto Front Row AFR-90 Auto Front Row, Rotated left 90° AFR-270 Auto Front Row, Rotated right 270°	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 120-277V (50/60Hz) HVU 347-480V (50/60Hz)	DD 0-10V External dimming (by others) ⁴ DCC Dual Circuit Control ^{4,5,6} FAWS Field Adjustable Wattage Selector ^{4,5} SW Interface module for SiteWise ^{4,6,7} LLC Integral wireless module ^{4,6,8,17} BL Bi-level functionality ^{4,17} DynaDimmer: Automatic Profile Dimming CS50 Safety 50% Dimming, 7 hours ^{4,8} CM50 Median 50% Dimming, 8 hours ^{4,8} CS30 Safety 30% Dimming, 7 hours ^{4,8} CM30 Median 30% Dimming, 8 hours ^{4,8}	IMRI3 Integral with #3 lens ¹⁵ IMRI7 Integral with #7 lens ¹⁶	PCB Photocontrol Button ^{8,9} TLRD5 Twist Lock Receptacle 5 Pin ¹⁰ TLRD7 Twist Lock Receptacle 7 Pin ¹⁰ TLRPC Twist Lock Receptacle w/ Photocell ^{9,11}	Fusing F1 Single (120, 277, 347VAC) ⁹ F2 Double (208, 240, 480VAC) ⁹ Pole Mount Fusing FP1 Single (120, 277, 347VAC) ⁹ FP2 Double (208, 240, 480VAC) ⁹ FP3 Canadian Double Pull (208, 240, 480VAC) ⁹ Surge Protection (10kA standard) SP2 Increased 20kA	Square Pole Adapter included in standard product TB Terminal Block ¹² RPA Round Pole Adapter (fits to 3"-3.9" O.D. pole) ¹³ HIS Internal Housing Side Shield ¹⁴	Textured BK Black WH White BZ Bronze DGY Dark Gray MGY Medium Gray Customer specified RAL Specify optional color or RAL (ex: RAL7024) CC Custom color (Must supply color chip for required factory quote)

1. BL-IMRI3/7 equipped with out-boarded sensor housing when voltage is HVU (347-480V)
2. Mounts to a 4" round pole with adapter included for square poles.
3. Limited to a maximum of 45 degrees aiming above horizontal.
4. Not available with other dimming control options.
5. Not available with motion sensor.
6. Not available with photocontrol.
7. Available only in 120 or 277V.

8. Not available in 347 or 480V
9. Must specify input voltage.
10. Dimming will not be connected to NEMA receptacle if ordering with other control options.
11. Not available in 480V. Order photocell separately with TLRD5/7.
12. Not available with DCC.
13. Not available with SF and WS. RPAs provided with black finish standard.

14. HIS not available with Type 5 and 5W optics.
15. Not available with DD, DCC, and FAWS dimming control options.
16. Not available with DD, DCC, FAWS and LLC dimming control options.
17. Must specify a motion sensor lens.

ECF-S EcoForm small

Area luminaire

EcoForm Accessories (ordered separately, field installed)

Shielding Accessories

House Side shield

Standard optic orientation:

HIS-32-H¹⁸ Internal House Side Shield for 32 LEDs (2 modules)

HIS-48-H¹⁸ Internal House Side Shield for 48 LEDs (3 modules)

HIS-64-H¹⁸ Internal House Side Shield for 64 LEDs (4 modules)

Optic at 90 or 270 orientation:

HIS-32-V¹⁸ Internal House Side Shield for 32 LEDs (2 modules)

HIS-48-V¹⁸ Internal House Side Shield for 48 LEDs (3 modules)

HIS-64-V¹⁸ Internal House Side Shield for 64 LEDs (4 modules)

18. Not available with Type 5 or 5W optics

Luminaire Accessories

ECF-BD-G2 Bird deterrent
ECF-RAM-G2-(F) Retrofit Arm mount kit
ECF-SF-G2-(F) Slip Fitter Mount (fits to 2 3/8" O.D. tenon)
ECF-WS-G2-(F) Wall mount with surface conduit rear entry permitted

EcoForm PTF2
(pole top fitter fits 23/8-21/2" OD x 4" depth tenon)

PTF2-ECF-S/L-1-90-(F) 1 luminaire at 90°
PTF2-ECF-S/L-2-90-(F) 2 luminaires at 90°
PTF2-ECF-S/L-2-180-(F) 2 luminaires at 180°
PTF2-ECF-S/L-3-90-(F) 3 luminaires at 90°
PTF2-ECF-S/L-4-90-(F) 4 luminaires at 90°
PTF2-ECF-S/L-3-120-(F) 3 luminaires at 120°

EcoForm PTF3
(pole top fitter fits 3-31/2" OD x 6" depth tenon)

PTF3-ECF-S/L-1-90-(F) 1 luminaire at 90°
PTF3-ECF-S/L-2-90-(F) 2 luminaires at 90°
PTF3-ECF-S/L-2-180-(F) 2 luminaires at 180°
PTF3-ECF-S/L-3-90-(F) 3 luminaires at 90°
PTF3-ECF-S/L-4-90-(F) 4 luminaires at 90°
PTF3-ECF-S/L-3-120-(F) 3 luminaires at 120°

EcoForm PTF4
(pole top fitter fits 31/2-4" OD x 6" depth tenon)

PTF4-ECF-S/L-1-90-(F) 1 luminaire at 90°
PTF4-ECF-S/L-2-90-(F) 2 luminaires at 90°
PTF4-ECF-S/L-2-180-(F) 2 luminaires at 180°
PTF4-ECF-S/L-3-90-(F) 3 luminaires at 90°
PTF4-ECF-S/L-4-90-(F) 4 luminaires at 90°
PTF4-ECF-S/L-3-120-(F) 3 luminaires at 120°

(F) = Specify finish

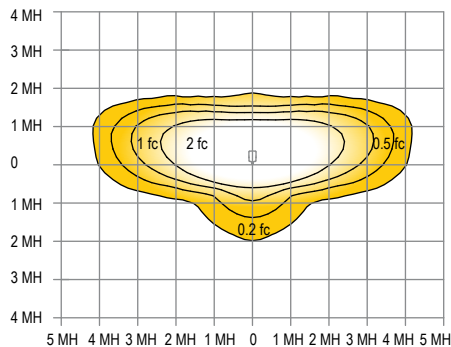
Predicted Lumen Depreciation Data

Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions. L₇₀ is the predicted time when LED performance depreciates to 70% of initial lumen output. Calculated per IESNA TM21-11. Published L₇₀ hours limited to 6 times actual LED test hours

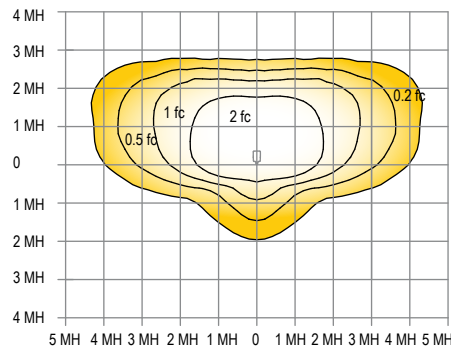
Ambient Temperature °C	Driver mA	Calculated L ₇₀ Hours	L ₇₀ per TM-21	Lumen Maintenance % at 60,000 hrs
25°C	up to 1200 mA	>100,000 hours	>60,000 hours	>88%

Optical distribution

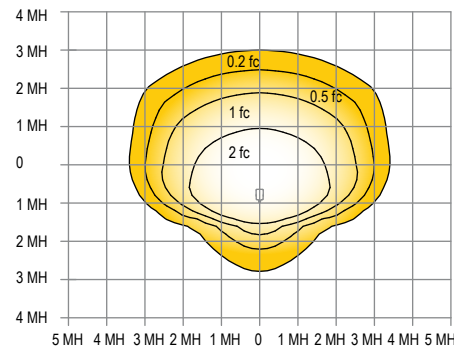
Based on configuration ECF-S-48L-1A-NW-G2 (159W) mounted at 20ft.



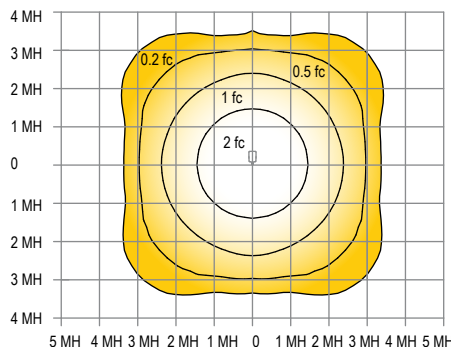
Type 2



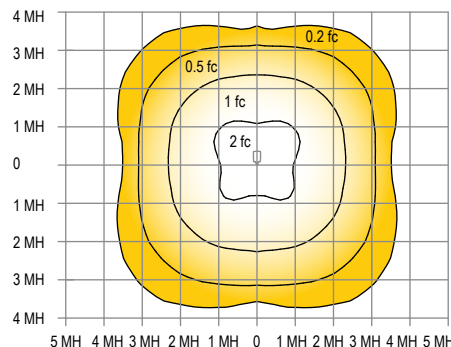
Type 3



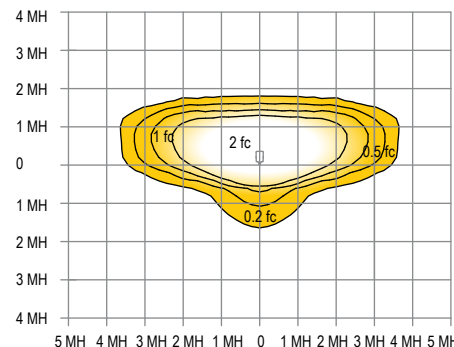
Type 4



Type 5



Type 5W



AFR

ECF-S EcoForm small

Area luminaire

3000K LED Wattage and Lumen Values

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Average System Watts	Type 2			Type 3			Type 4		
					Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
ECF-S-32L-365-WW-G2-x	32	365	3000	40	5,508	B1-U0-G1	138	5,428	B1-U0-G2	136	5,637	B1-U0-G2	141
ECF-S-32L-530-WW-G2-x	32	530	3000	56	7,159	B2-U0-G2	129	7,055	B1-U0-G2	127	7,327	B1-U0-G2	132
ECF-S-32L-700-WW-G2-x	32	700	3000	73	9,234	B2-U0-G2	127	9,034	B2-U0-G2	124	9,452	B2-U0-G2	130
ECF-S-32L-1A-WW-G2-x	32	1050	3000	106	13,001	B3-U0-G2	123	12,719	B2-U0-G2	120	13,306	B2-U0-G3	126
ECF-S-32L-1.2A-WW-G2-x	32	1200	3000	122	14,421	B3-U0-G3	119	14,108	B2-U0-G3	116	14,760	B2-U0-G3	121
ECF-S-48L-900-WW-G2-x	48	900	3000	135	17,115	B3-U0-G3	127	16,744	B3-U0-G3	124	17,518	B2-U0-G3	130
ECF-S-48L-1A-WW-G2-x	48	1050	3000	159	19,381	B3-U0-G3	122	18,960	B3-U0-G3	119	19,836	B3-U0-G4	125
ECF-S-48L-1.2A-WW-G2-x	48	1200	3000	183	21,515	B3-U0-G3	118	21,048	B3-U0-G4	115	22,020	B3-U0-G4	121
ECF-S-64L-900-WW-G2-x	64	900	3000	178	22,652	B3-U0-G3	127	22,161	B3-U0-G4	125	23,185	B3-U0-G4	130
ECF-S-64L-1A-WW-G2-x	64	1050	3000	206	25,520	B3-U0-G3	124	24,966	B3-U0-G4	121	26,120	B3-U0-G4	127

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Average System Watts	Type AFR			Type 5			Type 5W		
					Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
ECF-S-32L-365-WW-G2-x	32	365	3000	40	5,706	B2-U0-G1	143	5,790	B3-U0-G1	145	5,604	B3-U0-G1	140
ECF-S-32L-530-WW-G2-x	32	530	3000	56	7,417	B2-U0-G1	133	7,526	B3-U0-G2	135	7,284	B3-U0-G2	131
ECF-S-32L-700-WW-G2-x	32	700	3000	73	9,567	B2-U0-G2	131	9,707	B4-U0-G2	133	9,395	B4-U0-G2	129
ECF-S-32L-1A-WW-G2-x	32	1050	3000	106	13,467	B3-U0-G2	128	13,665	B4-U0-G2	129	13,227	B4-U0-G2	125
ECF-S-32L-1.2A-WW-G2-x	32	1200	3000	122	14,939	B3-U0-G2	123	15,158	B4-U0-G2	125	14,671	B4-U0-G2	121
ECF-S-48L-900-WW-G2-x	48	900	3000	135	17,731	B3-U0-G2	131	17,990	B4-U0-G2	133	17,413	B5-U0-G3	129
ECF-S-48L-1A-WW-G2-x	48	1050	3000	159	20,076	B3-U0-G2	127	20,372	B5-U0-G3	128	19,717	B5-U0-G3	124
ECF-S-48L-1.2A-WW-G2-x	48	1200	3000	183	22,288	B3-U0-G2	122	22,616	B5-U0-G3	124	21,888	B5-U0-G3	120
ECF-S-64L-900-WW-G2-x	64	900	3000	178	23,465	B3-U0-G2	132	23,810	B5-U0-G3	134	23,045	B5-U0-G3	130
ECF-S-64L-1A-WW-G2-x	64	1050	3000	206	26,437	B4-U0-G3	128	26,150	B5-U0-G3	127	25,964	B5-U0-G4	126

4000K LED Wattage and Lumen Values

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Average System Watts	Type 2			Type 3			Type 4		
					Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
ECF-S-32L-365-NW-G2-x	32	365	4000	40	5,798	B1-U0-G1	145	5,713	B1-U0-G2	143	5,934	B1-U0-G2	148
ECF-S-32L-530-NW-G2-x	32	530	4000	56	7,536	B2-U0-G2	135	7,426	B1-U0-G2	133	7,713	B1-U0-G2	138
ECF-S-32L-700-NW-G2-x	32	700	4000	73	9,720	B2-U0-G2	133	9,509	B2-U0-G2	130	9,949	B2-U0-G2	136
ECF-S-32L-1A-NW-G2-x	32	1050	4000	106	13,685	B3-U0-G2	130	13,388	B2-U0-G3	127	14,006	B2-U0-G3	133
ECF-S-32L-1.2A-NW-G2-x	32	1200	4000	122	15,180	B3-U0-G3	125	14,851	B2-U0-G3	122	15,537	B2-U0-G3	128
ECF-S-48L-900-NW-G2-x	48	900	4000	135	18,016	B3-U0-G3	133	17,625	B3-U0-G3	130	18,440	B3-U0-G3	136
ECF-S-48L-1A-NW-G2-x	48	1050	4000	159	20,401	B3-U0-G3	129	19,958	B3-U0-G4	126	20,880	B3-U0-G4	132
ECF-S-48L-1.2A-NW-G2-x	48	1200	4000	183	22,647	B3-U0-G3	124	22,156	B3-U0-G4	121	23,179	B3-U0-G4	127
ECF-S-64L-900-NW-G2-x	64	900	4000	178	23,844	B3-U0-G3	134	23,327	B3-U0-G4	131	24,405	B3-U0-G4	137
ECF-S-64L-1A-NW-G2-x	64	1050	4000	206	26,863	B3-U0-G3	130	26,280	B3-U0-G4	128	27,495	B3-U0-G4	134

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Average System Watts	Type AFR			Type 5			Type 5W		
					Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
ECF-S-32L-365-NW-G2-x	32	365	4000	40	6,006	B2-U0-G1	150	6,094	B3-U0-G1	152	5,898	B3-U0-G2	147
ECF-S-32L-530-NW-G2-x	32	530	4000	56	7,807	B2-U0-G1	140	7,922	B3-U0-G2	142	7,667	B3-U0-G2	138
ECF-S-32L-700-NW-G2-x	32	700	4000	73	10,070	B2-U0-G2	138	10,218	B4-U0-G2	140	9,889	B4-U0-G2	136
ECF-S-32L-1A-NW-G2-x	32	1050	4000	106	14,176	B3-U0-G2	134	14,384	B4-U0-G2	136	13,923	B4-U0-G2	132
ECF-S-32L-1.2A-NW-G2-x	32	1200	4000	122	15,725	B3-U0-G2	129	15,956	B4-U0-G2	131	15,443	B4-U0-G2	127
ECF-S-48L-900-NW-G2-x	48	900	4000	135	18664,	B3-U0-G2	138	18,937	B4-U0-G3	140	18,329	B5-U0-G3	136
ECF-S-48L-1A-NW-G2-x	48	1050	4000	159	21,133	B3-U0-G2	133	21,444	B5-U0-G3	135	20,755	B5-U0-G3	131
ECF-S-48L-1.2A-NW-G2-x	48	1200	4000	183	23,461	B3-U0-G2	128	23,806	B5-U0-G3	130	23,040	B5-U0-G3	126
ECF-S-64L-900-NW-G2-x	64	900	4000	178	24,700	B3-U0-G2	139	25,063	B5-U0-G3	141	24,258	B5-U0-G4	136
ECF-S-64L-1A-NW-G2-x	64	1050	4000	206	27,828	B4-U0-G3	135	27,526	B5-U0-G3	134	27,330	B5-U0-G4	133

ECF-S EcoForm small

Area luminaire

5000K LED Wattage and Lumen Values

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Average System Watts	Type 2			Type 3			Type 4		
					Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
ECF-S-32L-365-CW-G2-x	32	365	5000	40	5,798	B1-U0-G1	145	5,713	B1-U0-G2	143	5,934	B1-U0-G2	148
ECF-S-32L-530-CW-G2-x	32	530	5000	56	75,36	B2-U0-G2	135	7,426	B1-U0-G2	133	7,713	B1-U0-G2	138
ECF-S-32L-700-CW-G2-x	32	700	5000	73	9,720	B2-U0-G2	133	9,509	B2-U0-G2	130	9,949	B2-U0-G2	136
ECF-S-32L-1A-CW-G2-x	32	1050	5000	106	13,685	B3-U0-G2	130	13,388	B2-U0-G3	127	14,006	B2-U0-G3	133
ECF-S-32L-1.2A-CW-G2-x	32	1200	5000	122	15,180	B3-U0-G3	125	14,851	B2-U0-G3	122	15,537	B2-U0-G3	128
ECF-S-48L-900-CW-G2-x	48	900	5000	135	18,016	B3-U0-G3	133	17,625	B3-U0-G3	130	18,440	B3-U0-G3	136
ECF-S-48L-1A-CW-G2-x	48	1050	5000	159	20,401	B3-U0-G3	129	19,958	B3-U0-G4	126	20,880	B3-U0-G4	132
ECF-S-48L-1.2A-CW-G2-x	48	1200	5000	183	22,647	B3-U0-G3	124	22,156	B3-U0-G4	121	23,179	B3-U0-G4	127
ECF-S-64L-900-CW-G2-x	64	900	5000	178	23,844	B3-U0-G3	134	23,327	B3-U0-G4	131	24,405	B3-U0-G4	137
ECF-S-64L-1A-CW-G2-x	64	1050	5000	206	26,863	B3-U0-G3	130	26,280	B3-U0-G4	128	27,495	B3-U0-G4	134

Ordering Code	Total LEDs	LED Current (mA)	Color Temp.	Average System Watts	Type AFR			Type 5			Type 5W		
					Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)	Lumen Output	BUG Rating	Efficacy (LPW)
ECF-S-32L-365-CW-G2-x	32	365	5000	40	6,006	B2-U0-G1	150	6,094	B3-U0-G1	152	5,898	B3-U0-G2	147
ECF-S-32L-530-CW-G2-x	32	530	5000	56	7,807	B2-U0-G1	140	7,922	B3-U0-G2	142	7,667	B3-U0-G2	138
ECF-S-32L-700-CW-G2-x	32	700	5000	73	10,070	B2-U0-G2	138	10,218	B4-U0-G2	140	9,889	B4-U0-G2	136
ECF-S-32L-1A-CW-G2-x	32	1050	5000	106	14,176	B3-U0-G2	134	14,384	B4-U0-G2	136	13,923	B4-U0-G2	132
ECF-S-32L-1.2A-CW-G2-x	32	1200	5000	122	15,725	B3-U0-G2	129	15,956	B4-U0-G2	131	15,443	B4-U0-G2	127
ECF-S-48L-900-CW-G2-x	48	900	5000	135	18,664	B3-U0-G2	138	18,937	B4-U0-G3	140	18,329	B5-U0-G3	136
ECF-S-48L-1A-CW-G2-x	48	1050	5000	159	21,133	B3-U0-G2	133	21,444	B5-U0-G3	135	20,755	B5-U0-G3	131
ECF-S-48L-1.2A-CW-G2-x	48	1200	5000	183	23,461	B3-U0-G2	128	23,806	B5-U0-G3	130	23,040	B5-U0-G3	126
ECF-S-64L-900-CW-G2-x	64	900	5000	178	24700	B3-U0-G2	139	25063	B5-U0-G3	141	24258	B5-U0-G4	136
ECF-S-64L-1A-CW-G2-x	64	1050	5000	206	27828	B4-U0-G3	135	27526	B5-U0-G3	134	27330	B5-U0-G4	133

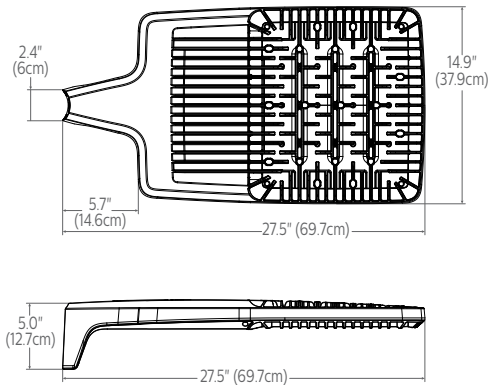
ECF-S EcoForm small

Area lumineuse

Dimensions

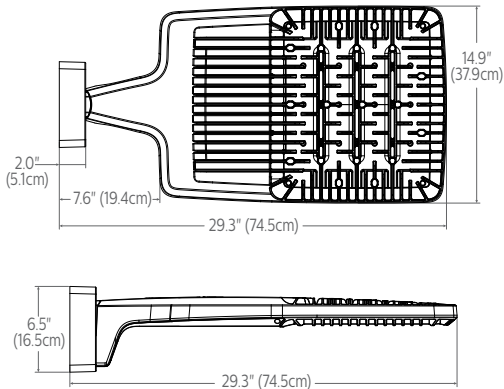
Standard Arm (AR)

Weight: 22 Lbs (9.9 Kg) EPA: 0.21ft² (.019m²)



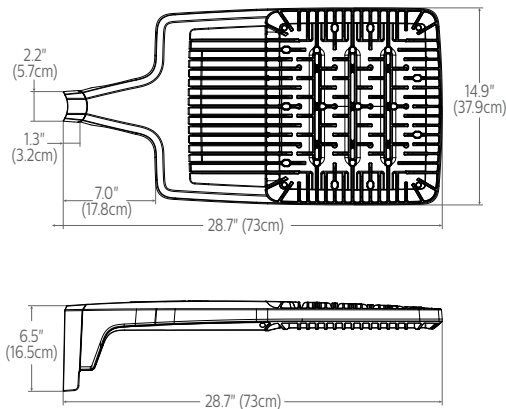
Wall (WS)

Weight: 27 Lbs. (12. 2Kg) EPA: 0.27ft² (.025m²)



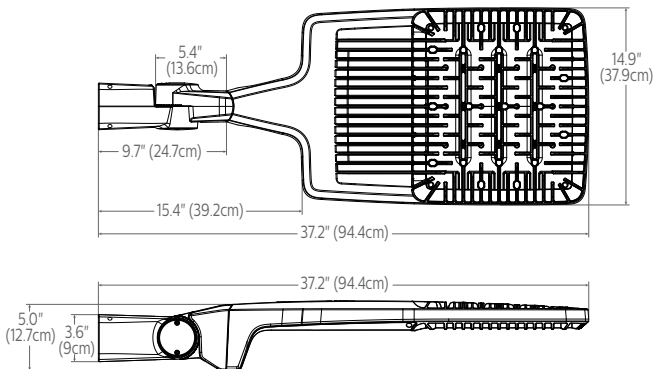
Retrofit Arm (RAM)

Weight: 24 Lbs (10.9 Kg) EPA: 0.24ft² (.022m²)

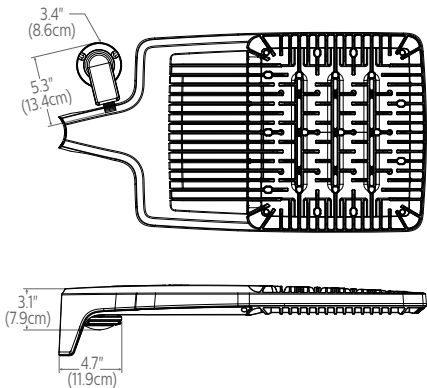


Slip fitter (SF)

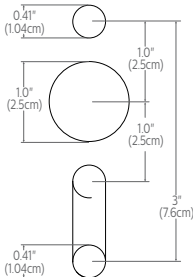
Weight: 27 Lbs (12.2 Kg) EPA: 0.33ft² (.031m²)



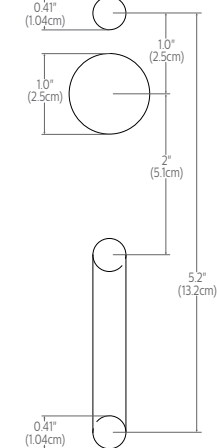
Outboard IMR-HVU sensor



Standard Arm (AR) drill pattern



Retrofit Arm (RAM) drill pattern



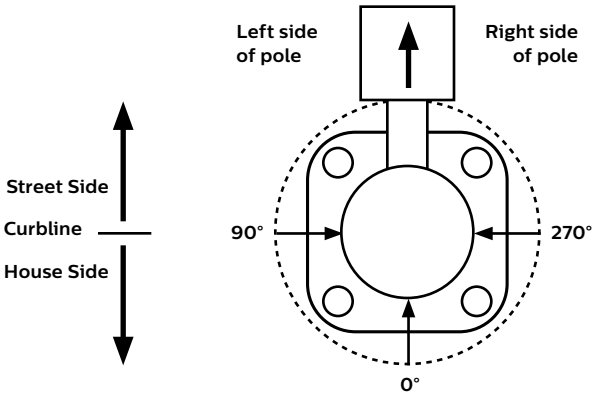
ECF-S EcoForm small

Area luminaire

Optical Orientation Information

Standard Optic Position

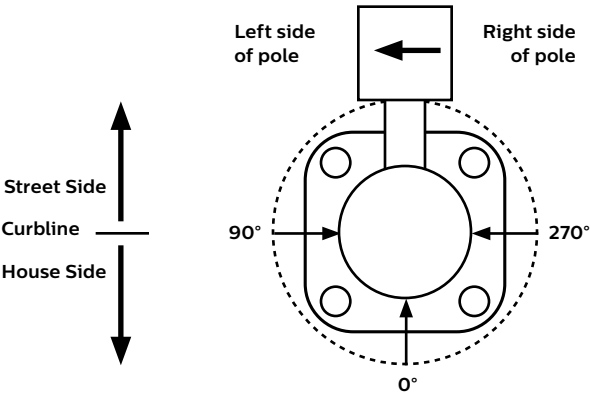
Luminaires ordered with asymmetric optical systems in the standard optic position will have the optical system oriented as shown below:



Note: The hand hole will normally be located on the pole at the 0° point.

Optic Rotated Left (90°) Optic Position

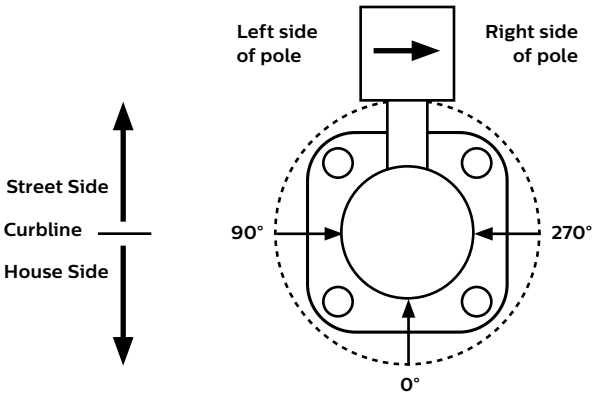
Luminaires ordered with optical systems in the Optic Rotated Left (90°) optic position will have the optical system oriented as shown below (Type 5 and 5W optics are not available with factory set rotatable optics):



Note: The hand hole will normally be located on the pole at the 0° point.

Optic Rotated Right (270°) Optic Position

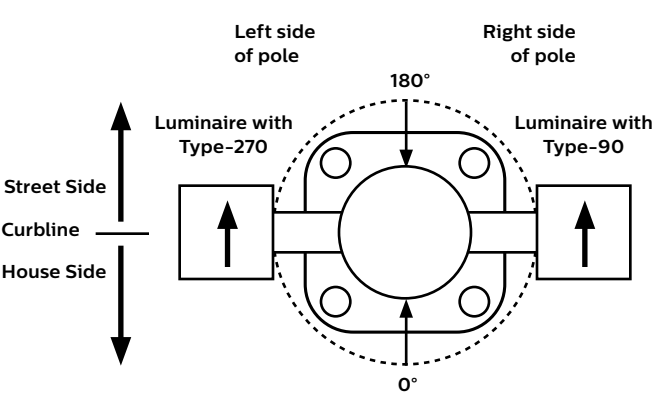
Luminaires ordered with optical systems in the Optic Rotated Right (270°) optic position will have the optical system oriented as shown below (Type 5 and 5W optics are not available with factory set rotatable optics):



Note: The hand hole will normally be located on the pole at the 0° point.

Twin Luminaire Assemblies with Type-90/Type-270 Rotated Optical Systems

Twin luminaire assemblies installed with rotated optical systems are an excellent way to direct light toward the interior of the site (Street Side) without additional equipment. It is important, however, that care be exercised to insure that luminaires are installed in the proper location.



Luminaires with Optic Rotated Right (270°) are installed on the LEFT Side of Pole

Luminaires with Optic Rotated Left (90°) are installed on the RIGHT Side of Pole

Note: The hand hole location will depend on the drilling configuration ordered for the pole.

ECF-S EcoForm small

Area luminaire

Specifications

Housing

One-piece die cast aluminum housing with integral arm and separate, self-retained hinged, one-piece die cast door frame. Luminaire housing rated to IP66, tested in accordance to Section 9 of IEC 60598-1.

Vibration resistance

Luminaire is tested and rated 3G over 100,000 cycles conforming to standards set forth by ANSI C136.31-2010. Testing includes vibration in three axes, all performed on the same luminaire.

Light engine

Light engine comprises of a module of 16-LED aluminum metal clad board fully sealed with optics offered in multiples of 2, 3, and 4 modules or 32, 48, and 64 LEDs. Module is RoHS compliant. Color temperatures: 3000K +/-125K, 4000K, 5000K +/- 200K. Minimum CRI of 70. LED light engine is rated IP66 in accordance to Section 9 of IEC 60598-1.

Energy saving benefits

System efficacy up to 133 lms/W with significant energy savings over Pulse Start Metal Halide luminaires. Optional control options provide added energy savings during unoccupied periods.

Optical systems

Type 2, 3, 4, 5, 5W, and AFR distributions available. Internal Shield option mounts to LED optics and is available with Type 2, 3, 4, and AFR distributions. Types 2, 3, 4, and AFR when specified and used as rotated, are factory set only. Performance tested per LM-79 and TM-15 (IESNA) certifying its photometric performance. Luminaire designed with 0% uplight (U0 per IESNA TM-15).

Mounting

Standard luminaire arm mounts to 4" O.D. round poles. Can also be used with 5" O.D. poles. Square pole adapter included with every luminaire. Round Pole Adapter (RPA) required for 3-3.9" poles. EcoForm features a retrofit arm kit. When specified with the retrofit arm (RAM) option, EcoForm seamlessly simplifies site conversions to LED by eliminating the need for additional pole drilling on most existing poles. RAM will be boxed separately. Also optional are slipfitter and wall mounting accessories. Note that only fixed mounts (AR, RAM, WS) are required to meet IDA compliance. SF mounting will not meet IDA.

Control options

0-10V dimming (DD): Access to 0-10V dimming leads supplied through back of luminaire (for secondary dimming controls by others). Cannot be used with other control options.

Dual Circuit Control (DCC): Luminaire equipped with the ability to have two separate circuits controlling drivers and light engines independently. Permits separate switching of separate modules controlled by use of two sets of leads, one for each circuit. Not recommended to be used with other control options, motion response, or photocells.

SiteWise (SW): SiteWise system includes a controller fully integrated in the luminaire that enables the luminaires to communicate with a dimming signal transmitter cabinet located on site using patented central dimming technology. A locally accessible mobile app allows users to access the system and set functionalities such as ON/OFF, dimming levels and scheduling. SiteWise is available with motion response options in order to bring the light back to 100% when motion is detected. Cannot be used with other control options or photocell options. Additional functionalities are available such as communication with indoor lighting and connection to BMS systems. Complete information on the control system can be found on the SiteWise website at philips.com/sitewise.

Automatic Profile Dimming (CS/CM/CE/CA): Standard dimming profiles provide flexibility towards energy savings goals while optimizing light levels during specific dark hours. Dimming profiles include two dimming settings including dim to 30% or 50% of the total lumen output. When used in combination with not programmed motion response it overrides the controller's schedule when motion is detected. After 5 minutes with no motion, it will return to the automatic dimming profile schedule. Automatic dimming profile scheduled with the following settings:

- **CS50/CS30:** Security for 7 hours night duration (Ex., 11 PM - 6 AM)
- **CM50/CM30:** Median for 8 hours night duration (Ex., 10 PM - 6 AM)

All above profiles are calculated from mid point of the night. Dimming is set for 6 hours after the mid point and 1 or 2 hours before depending of the duration of dimming. Cannot be used with other dimming control options.

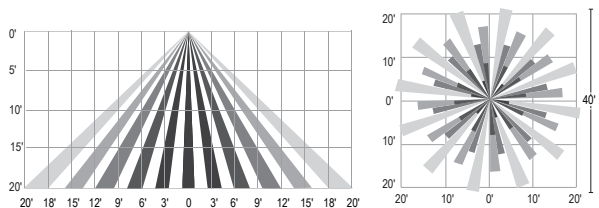
Field Adjustable Wattage Selector (FAWS): Luminaire equipped with the ability to manually adjust the wattage in the field to reduce total luminaire lumen output and light levels. Comes pre-set to the highest position at the lumen output selected. Use chart below to estimate reduction in lumen output desired. Cannot be used with other control options or motion response.

FAWS Position	Percent of Typical Lumen Output
1	25%
2	50%
3	55%
4	65%
5	75%
6	80%
7	85%
8	90%
9	95%
10	100%

Note: Typical value accuracy +/- 5%

Wireless system (LLC): Optional wireless controller integral to luminaire ready to be connected to a Limelight system (sold by others). The system allows you to wirelessly manage the entire site, independent lighting groups or individual luminaires while on-site or remotely. Based on a high-density mesh network with an easy to use web-based portal, you can conveniently access, monitor and manage your lighting network remotely. Wireless controls can be combined with site and area, pedestrian, and parking garage luminaires as well, for a completely connected outdoor solution. Equipped with motion response with #3 lens for 8-25' mounting heights. Also available with remote pod accessory where pod is mounted separate from luminaire to pole or wall.

LLC wireless controller with #3 lens



Motion response options

Bi-Level Infrared Motion Response (BL-IMRI): Motion Response module is mounted integral to luminaire factory pre-programmed to 50% dimming when not ordered with other control options. BL-IMRI is set/operates in the following fashion: The motion sensor is set to a constant 50%. When motion is detected by the PIR sensor, the luminaire returns to full power/light output. Dimming on low is factory set to 50% with 5 minutes default in "full power" prior to dimming back to low. When no motion is detected for 5 minutes, the motion response system reduces the wattage by 50%, to 50% of the normal constant wattage reducing the light level. Other dimming settings can be provided if different dimming levels are required. This can also be done with FSIR-100 Wireless Remote Programming Tool (contact Technical Support for details).

ECF-S EcoForm small

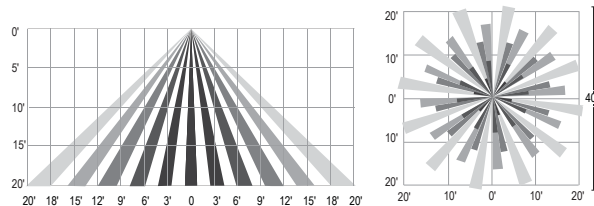
Area luminaire

Specifications

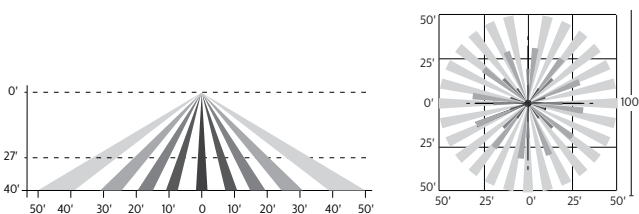
Infrared Motion Response with Other Controls: When used in combination with other controls (Automatic Dimming Profile and SiteWise), motion response device will simply override controller's schedule with the added benefits of a combined dimming profile and sensor detection. In this configuration, the motion response device cannot be re-programmed with FSIR-100 Wireless Remote Programming Tool. The profile can only be re-programmed via the controller.

Infrared Motion Response Lenses (IMRI3/IMRI7): Infrared Motion Response Integral module is available with two different sensor lens types to accommodate various mounting heights and occupancy detection ranges. Lens #3 (IMRI3) is designed for mounting heights up to 20' with a 40' diameter coverage area. Lens #7 is designed for higher mounting heights up to 40' with larger coverage areas up to 100' diameter coverage area. See charts for approximate detection patterns:

IMRI3 Luminaire or remote mount controller with #3 lens



IMRI7 Luminaire or remote mount controller with #7 lens



Electrical

Twist-Lock Receptacle (TLRD5/TLRD7/ TLRPC): Twist Lock Receptacle with 5 pins enabling dimming or with 7 pins with additional functionality (by others) can be used with a twistlock photoelectric cell or a shorting cap. Dimming Receptacle Type B (5-pin) and Type D-24 (7-pin) in accordance to ANSI C136.41. Can be used with third-party control system. Receptacle located on top of luminaire housing. When specifying receptacle with twistlock photoelectric cell, voltage must be specified. When ordering Twist-lock receptacle (TLRD5 or TLRD7), photocell or shorting cap is not included. TLRPC is shipped standard with 5 pin.

Driver: Driver efficiency (>90% standard). 120-480V available (restrictions apply). Open/short circuit protection. Optional 0-10V dimming to 10% power. RoHS compliant.

Button Photocontrol (PCB): Button style design for internal luminaires mounting applications. The photocontrol is constructed of a high impact UV stabilized polycarbonate housing. Rated voltage of 120V or 208-277V with a load rating of 1000 VA. The photocell will turn on with 1-4Fc of ambient light.

Surge protection (SP1/SP2): Surge protection device tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with DOE MSSLC Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High test level 10kV/10kA. 20kV / 10kA surge protection device that provides extra protection beyond the SP1 10kV/10kA level.

Listings

UL/cUL wet location listed to the UL 1598 standard, suitable for use in ambient temperatures from -40° to 40°C (-40° to 104°F). Most EcoForm configurations are qualified under Premium and Standard DesignLights Consortium® categories. Consult DLC Qualified Products list to confirm your specific luminaire selection is approved. CCTs 3000K and warmer are Dark Sky Approved.

Finish

Each standard color luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) textured polyester powdercoat finish. Standard colors include bronze (BZ), black (BK), white (WH), dark gray (DGY), and medium gray (MGY). Consult factory for specs on optional or custom colors.

Service Tag

Each individual luminaire is uniquely identifiable, thanks to the Service tag application. With a simple scan of a QR code, placed on the inside of the mast door, you gain instant access to the luminaire configuration, making installation and maintenance operations faster and easier, no matter what stage of the luminaire's lifetime. Just download the APP and register your product right away. For more details visit: signify.com

Warranty

EcoForm luminaires feature a 5-year limited warranty. See signify.com/warranties for complete details and exclusions.





Gardco LED wall sconce 161 offers distinction through its styling, powerful optical design, array of distributions, and impressive selection of control possibilities. Designed to compliment the 121, this luminaire is the large and extended version of the 121, providing performance capability up to that of a 400W metal halide luminaire, while using considerably less energy.

Project: _____

Location: _____

Cat.No: _____

Type: _____

Lamps: _____ Qty: _____

Notes: _____

Ordering guide

Luminaire	Number of LEDs	Drive Current	LED Color Generation	Distributions	Voltage	Dimming Control ⁴	Electrical	Options	Finish
161								WS	
161 LED wall sconce	46L² 46 LEDs (1 module)	600 600mA 900 900mA	NW-G2 Neutral White 4000K, 70 CRI Generation 2 CW-G2 Cool White 5000K, 70 CRI Generation 2	2 IES Type 2 3 IES Type 3 4 IES Type 4	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 120-277V AC HVU 347-480V AC	DD 0-10V Dimming Driver ² DCC Dual Circuit Control ¹ DynaDimmer: Automatic Profile Dimming CS50 Safety 50% Dimming, 7 hours ^{1,2,3} CM50 Median 50% Dimming, 8 hours ^{1,2,3} Photoelectric Systems PCB Photocontrol Button ^{2,4,5} Infrared Motion Response Systems IMRI3 Integral with #3 lens ^{1,2,3}	Fusing F1 Single (120, 277, 347VAC) ⁵ F2 Double (208, 240, 480VAC) ⁵ F3 Canadian Double Pull (208, 240, 480VAC) ⁵	WS Surface mount conduit feed junction box	Textured BK Black WH White BZ Bronze DGY Dark Gray MGY Medium Gray Customer specified RAL Specify optional color or RAL (ex: OC-LGP or OC-RAL7024) CC Custom color (Must supply color chip for required factory quote)

1. Not available with Dimming Driver (DD) option. 4. Not available with 480V.
 2. Not available with Dual Circuit Control (DCC) option. 5. Must specify specific input voltage.
 3. Available in 120-277V or UNV only.

Accessories (order separately)

FS1R-100 MR hand held programmer (For use with 'IMRI3' motion response when field programming is required). If desired, only one is needed per job.

161 LED wall sconce

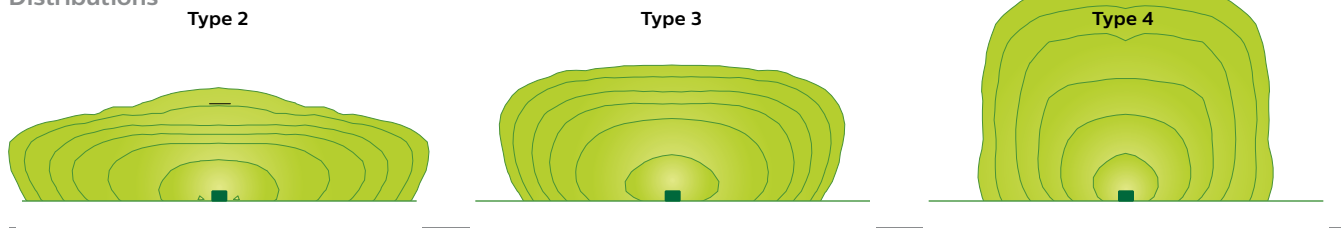
Wall Sconce

LED Wattage and Lumen Values

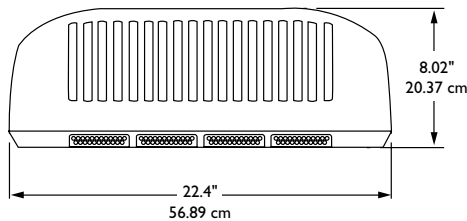
Neutral White Ordering Codes	Total LEDs	Module Qty	LED Current (mA)	Color Temp. ³ (K)	Average System Wattage ¹	Type 2			Type 3			Type 4		
						Lumen Output ^{1,2}	BUG Rating	Efficacy (LPW)	Lumen Output ^{1,2}	BUG Rating	Efficacy (LPW)	Lumen Output ^{1,2}	BUG Rating	Efficacy (LPW)
161-46L-600-NW-G2	46	1	600	4000	91	11,000	B2-U0-G2	120	10,653	B2-U0-G2	117	10,245	B2-U0-G2	112
161-46L-900-NW-G2	46	1	900	4000	138	15,056	B3-U0-G3	109	14,581	B2-U0-G2	106	14,022	B2-U0-G2	102
161-92L-600-NW-G2	92	2	600	4000	181	21,811	B3-U0-G3	121	21,122	B3-U0-G3	117	20,313	B3-U0-G3	112
161-92L-800-NW-G2	92	2	800	4000	242	27,302	B3-U0-G3	113	26,440	B3-U0-G4	109	25,427	B3-U0-G4	105

1. Wattage and lumen output may vary by +/- 8% due to LED manufacturer forward voltage specification and ambient temperature. Wattage shown is average for 120V through 277V input. Actual wattage may vary by an additional +/- 10% due to actual input voltage.
2. Lumen values based on photometric tests performed in compliance with IESNA LM-79.
3. Warm White color temperatures will result in decreased lumen output.
Contact outdoorlighting.applications@signify.com for details or additional information.

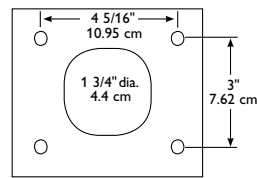
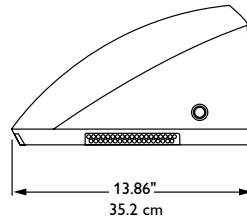
Distributions



Dimensions



Approximate luminaire weight: 40lbs (18.15kg)



Mounting plate and bolt pattern
Mounting plate center is located in the center of the luminaire width and 3.5" (8.89cm) above the luminaire bottom (lens down position). Splices must be made in the J-box (by others). Mounting plate must be secured by max. 5/16" (.79cm) diameter bolts (by others) structurally to the wall.

Luminaire options

DD: 0-10V dimming driver with leads supplied through back of luminaire (for secondary dimming controls by others).

Dynadimmer Automatic Profile Dimming: Automatic dimming profiles (CS50/CM50) offer safety, or median settings, for shorter or longer duration. Dimming profiles provide flexibility towards energy savings goals while optimizing light levels during specific dark hours. 50% dimming is standard. 75% and 25% dimming is also available if different light levels are required (contact Technical Support for details).

Profile	Dimming		
	Schedule	Duration	Level
Median	10 PM - 6 AM	8 hours	50%
Safety	11 PM - 6 AM	7 hours	50%

IMRI3: Infrared Motion Response Integral. IMRI module is mounted integral to luminaire. Motion response for IMRI is set/operates in the following fashion: The motion sensor is set to a constant 50%. When motion is detected by the PIR sensor, the luminaire returns to full power/light output. Dimming on low is factory set to 50% with 5 minute default in "full power" prior to dimming back to low. When no motion is detected for 5 minutes, the motion response system reduces the wattage by 50%, to 50% of the normal constant wattage reducing the light level. IMRI can also be specified with automatic profile dimming for the added benefit of a combined dimming profile with sensor detection, where the PIR sensor will override the dimming profile when occupancy is detected.

Passive infrared (PIR) motion sensor, WattStopper FSP-211, equipped with lens. Available in 120V through 277V input only. Motion sensor off state power is 0.0 watts. The FSP-211 can also be reprogrammed with WattStopper's FSIR-100 remote programming tool accessory.

DCC: Dual Circuit Control permits separate switching of LED modules. Available as an option with 2 modules only.

F1: Fusing Single (for 120, 277 or 347VAC)

F2: Fusing Double (for 208, 240 or 480VAC)

F3: Fusing Canadian Double Pull (for 208, 240 or 480VAC)

161 LED wall sconce

Wall Sconce

Specifications

Housing

Main body castings made of a low copper die cast Aluminum alloy (A360) for a high resistance to corrosion, 0.100" (2.5mm) minimum thickness.

Driver/Electrical Door

Removable die-cast aluminum door made of a low copper alloy (A360). Provides access to electronic components/LED drivers. Designed for robust IP66 rated seal using one-piece silicone rubber gasket surrounding the entire perimeter of the electronics compartment.

Light Engine

Electrical components are RoHS compliant. IP66 sealed light engines. LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

LED Module

Composed of high performance white LEDs. Color temperature as per ANSI/NEMA bin Neutral White, 4000 Kelvin nominal (3985 +/- 275K), CRI 70 Min. 161 luminaires also offer 3000K and 5000k color temperatures.

Optical System

The advanced LED optical systems provide IES Types 2, 3, and 4 distributions. Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. System is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. Dark sky compliant with 0% uplight and U0 per IESNA TM-15. Designed and tested to rating IK10 in accordance with European standard EN 62262 (equivalent of international standard IEC 62262 2002).

Driver

High power factor of 90% min. Electronic driver, operating range 50/60Hz. Auto adjusting universal voltage input from 120 to 277VAC or 347 to 480 VAC rated for both application line to line or line to neutral, Class 1, THD of 20% max. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built-in driver surge protection of 4kV (min).

Other Integrated Features

Surge Protection: Each luminaire is provided as standard with surge protector (designed SPI) tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/5kA waveforms for Line Ground, Line Neutral and Neutral Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid State Street Lighting Consortium) Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High Test Level 10kV / 5kA.

Wiring

#2 - #14 AWG wires from the primary circuit, located inside the housing. Due to the inrush current that occurs with electronic drivers, recommend using a time delay or slow blow fuse to avoid unnecessary and unwanted fuse blowing that can occur with fast acting fuses.

Hardware

All exposed screws shall be stainless and/or corrosion resistant and captive. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish

Five standard colors offered in textured black, white, bronze, dark gray and medium gray. RAL and custom color matching available. Color in accordance with the AAMA 2604 standard. Application of polyester powder coat paint (2.5 mil minimum). The thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

LED Product Manufacturing Standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with EC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Luminaire Useful Life

Luminaire Useful Life accounts for LED lumen maintenance. Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, LED LM-80/TM-21, expected to reach 100,000 + hours with >L70 lumen maintenance @ 25°C.

Certifications and Compliance

cULus Listed for Canada and USA. LED luminaires with neutral white color temperature are DesignLights Consortium qualified. Entire luminaire is rated for operation in ambient temperature of -40°C (-40°F) up to +40°C (+104°F).

Limited Warranty

5-year limited warranty. See signify.com/warranties for details and restrictions. Visit our eCatalog or contact your local sales representative for more information.

